

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

OR

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of event requiring this shell company report _____

Commission File Number: 000-29442



FORMULA SYSTEMS (1985) LTD.
(Exact Name of Registrant as Specified in Its Charter
and translation of Registrant's name into English)

Israel
(Jurisdiction of Incorporation or Organization)

5 Haplada Street, Or Yehuda 60218, Israel
(Address of Principal Executive Offices)

Asaf Berenstin; 5 Haplada Street, Or Yehuda 6021805, Israel
Tel: 972 3 5389487, Fax: 972 3 5389645
(Name, Telephone, E-mail and/or Facsimile Number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange On Which Registered
American Depositary Shares, each representing one Ordinary Share, NIS 1 par value	FORTY	NASDAQ Global Select Market

Securities registered or to be registered pursuant to Section 12(g) of the Act: **None**

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: **None**

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

As of December 31, 2019, the registrant had 15,294,267 outstanding ordinary shares, NIS 1 par value, of which 145,725 were represented by American Depositary Shares.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Emerging Growth Company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP

International Financial Reporting Standards as
issued by the International Accounting Standards
Board

Other

If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains various “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and the safe harbor provisions of the U.S Private Securities Litigation Reform Act of 1995, as amended, with respect to our business, financial condition and results of operations. Such forward-looking statements reflect our current view with respect to future events and financial results. Statements which use the terms “anticipate,” “believe,” “expect,” “plan,” “intend,” “estimate”, “may”, “will” and similar expressions are intended to identify forward looking statements. Such statements reflect our current views with respect to future events and are subject to certain risks and uncertainties.

Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Except as required by applicable law, including the securities laws of the United States, we undertake no obligation to publicly release any update or revision to any forward looking statements to reflect new information, future events or circumstances, or otherwise after the date hereof. Important factors that could cause our actual results, levels of activity, performance or achievements to differ materially from the results, levels of activity, performance or achievements expressed or implied by the forward-looking statements, include, but are not limited to:

- the COVID-19 (coronavirus) pandemic, which may last longer than expected and materially adversely affect our results of operations;
- the degree of our success in our plans to leverage our global footprint to grow our sales;
- the degree of our success in integrating the companies that we have acquired through the implementation of our M&A growth strategy;
- the lengthy development cycles for our solutions, which may frustrate our ability to realize revenues and/or profits from our potential new solutions;
- our lengthy and complex sales cycles, which do not always result in the realization of revenues;
- the degree of our success in retaining our existing customers or competing effectively for greater market share;
- difficulties in successfully planning and managing changes in the size of our operations;
- the frequency of long-term, large, complex projects that we perform from time to time that involve complex estimates of project costs and profit margins, which sometimes change mid-stream;
- the challenges and potential liability that heightened privacy laws and regulations pose to our business;
- the occasional disputes with clients, which may adversely impact our results of operations and our reputation;
- various intellectual property issues related to our business;
- potential unanticipated product vulnerabilities or cybersecurity breaches of our or our customers’ systems;
- risks related to industries, such as the banking, healthcare, defense and the telecom, in which certain of our clients operate;
- risks associated with our global sales and operations, such as changes in regulatory requirements, wide-spread viruses and epidemics like the recent novel coronavirus outbreak, or fluctuations in currency exchange rates; and
- risks related to our and our subsidiaries’ principal location in Israel.

While we believe our forward-looking statements are based on reasonable assumptions, should one or more of the underlying assumptions prove incorrect, or these risks or uncertainties materialize, our actual results may differ materially from those expressed or implied by the forward-looking statements. Please also read the risks discussed in Item 3 – “Key Information” under the caption “Risk Factors” and cautionary statements appearing elsewhere in this annual report in order to review conditions that we believe could cause actual results to differ materially from those contemplated by the forward-looking statements.

CERTAIN TERMS AND CONVENTIONS

Our consolidated financial statements appearing in this annual report are prepared in U.S. dollars and in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board, or IASB. All references in this annual report to “dollars” or “\$” are to U.S. dollars and all references in this annual report to “NIS” are to New Israeli Shekels. References to the Israeli CPI refer to the Israeli consumer price index. References herein to the “ADSs” refer to our American Depositary Shares, each of which represents one ordinary share, par value NIS 1.0 per share, of our company.

Statements made in this annual report concerning the contents of any contract, agreement or other document are summaries of such contracts, agreements or documents and are not complete descriptions of all of their terms. If we have filed any of these documents as an exhibit to this annual report or to any previous filing with the Securities and Exchange Commission, or the SEC, you may read the document itself for a complete recitation of its terms.

As used in this annual report, references to “we,” “our,” “ours,” “our company,” “our Group” and “us” refer to Formula Systems (1985) Ltd. and its subsidiaries and affiliate company, unless otherwise indicated. References to “Formula” refer to Formula Systems (1985) Ltd. alone. Our operations are currently conducted through our subsidiaries – Matrix IT Ltd., or Matrix, Sapiens International Corporation N.V., or Sapiens, Magic Software Enterprises Ltd., or Magic Software, Michpal Micro Computers (1983) Ltd., or Michpal, InSync Staffing Solutions, Inc., or InSync, Ofek Ariel Photography Ltd. or Ofek Ariel Photography (acquired in March 2020) and our affiliated company TSG Advanced IT Systems, Ltd., or TSG, in which we hold a 50% share interest.

All trademarks appearing in this annual report are the property of their respective holders.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. Selected Financial Data

The following tables present selected consolidated financial data as of the dates and for each of the periods indicated. Except where we have indicated otherwise, we have presented all of the consolidated financial information in this document in accordance with IFRS as issued by the IASB. Historically, we had prepared our consolidated financial statements in accordance with United States generally accepted accounting principles, or U.S. GAAP, for all periods up to and including the year ended December 31, 2015. For the year ended December 31, 2016, we transitioned our reporting to IFRS. In order to comply with requirements of the SEC related to our transition to IFRS, we set the date of transition as January 1, 2015 and retrospectively applied IFRS as of that date and for the year ended December 31, 2015. Accordingly, we have presented herein consolidated statements of financial position that comply with IFRS applicable as of December 31, 2015, in addition to as of December 31, 2016, 2017, 2018 and 2019. Our consolidated statements of profit or loss presented herein in IFRS cover the years ended December 31, 2016, 2017, 2018 and 2019, as well as the year ended December 31, 2015 (as adjusted from its prior preparation in accordance with U.S. GAAP).

The selected financial information as of, and for the years ended, December 31, 2015, 2016, 2017, 2018 and 2019 set forth below should be read in conjunction with, and is qualified in its entirety by, reference to “Item 5. Operating and Financial Review and Prospects” and our audited consolidated financial statements and the notes thereto included in this annual report. Our historical results set forth herein are not necessarily indicative of our future results.

	Year ended December 31,				
	2015	2016	2017	2018	2019
	U.S. dollars in thousands (except per share data)				
Revenues	973,194	1,108,621	1,355,139	1,492,988	1,701,115
Cost of revenues	741,270	849,840	1,058,316	1,159,676	1,315,066
Gross profit	231,924	258,781	296,823	333,312	386,049
Research and development expenses, net	15,123	22,328	39,853	41,223	46,690
Selling, marketing, general and administrative expenses	140,935	147,953	184,164	182,472	200,870
Operating income	75,866	88,500	72,806	109,617	138,489
Financial expenses	(14,955)	(17,594)	(29,870)	(15,852)	(22,443)
Financial income	5,422	6,008	8,751	7,562	3,791
Pre-tax income before share of profits of companies accounted for at equity, net	66,333	76,914	51,687	101,327	119,837
Taxes on income	15,984	21,163	13,371	24,301	27,201
Share of profits of companies accounted for at equity, net	5	349	1,124	369	1,787
Net income	50,354	56,100	39,440	77,395	94,423
Attributable to:					
Equity holders of the Company	19,829	22,445	10,352	32,365	38,820
Non-controlling interests	30,525	33,655	29,088	45,030	55,603
	50,354	56,100	39,440	77,395	94,423
Earnings per share (basic)	1.41	1.58	0.72	2.20	2.56
Earnings per share (diluted)	1.35	1.49	0.68	2.14	2.44
Number of shares used in computing earnings per share (basic)	14,071,210	14,213,719	14,436,763	14,740,462	15,189,758
Number of shares used in computing earnings per share (diluted)	14,665,365	15,525,261	14,731,603	15,571,838	15,340,867

Statements of Financial Position:

	As of December 31,				
	2015	2016	2017	2018	2019
	(U.S. Dollars in thousands)				
Total current assets	588,984	633,659	694,801	781,100	965,504
Total long-term assets	58,728	70,925	57,774	63,045	87,091
OPERATING LEASE RIGHT-OF-USE ASSETS	-	-	-	-	104,130
PROPERTY, PLANTS AND EQUIPMENT, NET	22,003	26,130	29,807	29,182	43,059
INTANGIBLE ASSETS AND GOODWILL, NET	545,677	623,808	781,255	791,224	889,473
TOTAL ASSETS	1,215,392	1,354,522	1,563,637	1,664,551	2,089,257
Total current liabilities	290,793	359,038	432,947	525,534	671,392
Total long-term liabilities	219,320	271,642	357,768	333,620	521,531
Total equity	705,279	723,842	772,922	805,397	896,334
TOTAL LIABILITIES AND EQUITY	1,215,392	1,354,522	1,563,637	1,664,551	2,089,257

Dividends

In November 2019, Formula declared a cash dividend to its shareholders of \$0.46 per share, which was paid in January 2020. The aggregate amount distributed by Formula was approximately \$7.0 million.

In August 2019, Formula declared a cash dividend to its shareholders of \$0.52 per share, which was paid in September 2019. The aggregate amount distributed by Formula was approximately \$8.0 million.

In December 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in January 2019. The aggregate amount distributed by Formula was approximately \$5.0 million.

In May 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in June 2018. The aggregate amount distributed by Formula was approximately \$5.0 million.

In September 2017, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in November 2017. The aggregate amount distributed by Formula was approximately \$5.0 million.

In December 2016, Formula declared a cash dividend to its shareholders of \$0.48 per share, which was paid in January 2017. The aggregate amount distributed by Formula was approximately \$7.1 million.

In June 2016, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in July 2016. The aggregate amount distributed by Formula was approximately \$5.0 million.

In January 2016, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in February 2016. The aggregate amount distributed by Formula was approximately \$5.0 million.

In June 2015, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in August 2015. The aggregate amount distributed by Formula was approximately \$5.0 million.

Cash dividends may be declared and paid in NIS or dollars. Dividends to the holders of Formula's ADSs are paid by the depositary of the ADSs, for the benefit of owners of ADSs. If a dividend is declared and paid in NIS in Israel, the NIS amount is converted into, and paid out in, dollars by the depositary of the ADSs.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Investing in our ordinary shares and/or ADSs involves a high degree of risk and uncertainty. You should carefully consider the risks and uncertainties described below before making such an investment. Our business prospects, operating results and financial condition could be seriously harmed due to any of the following risks. Additional risks and uncertainties that we are not aware of or that we currently believe are immaterial may also adversely affect our business prospects, financial condition, and results of operations. The trading prices of our ordinary shares and ADSs could decline due to the actualization of any of these risks, and you may lose all or part of your investment.

Risks Related to Our Business and Our Industry

The current novel strain of coronavirus (COVID-19) and any other pandemic, epidemic or outbreak of an infectious disease may adversely affect our business

In December 2019, COVID-19 was identified in Wuhan, China. This virus continues to spread globally and as of June 2020, has spread to over 100 countries, including the United States and Israel. The spread of COVID-19 has resulted in the World Health Organization declaring the outbreak of COVID-19 as a "pandemic" having a significant impact on global economic activity, with governments around the world having closed office spaces, public transportation and schools and imposing quarantines and restrictions on travel and mass gatherings to slow the spread of the virus. The Government of Israel now requires all travelers arriving in Israel to remain in home quarantine until 14 days have passed since the date of entry into Israel. Non-Israeli residents will be required to prove they have the means to self-quarantine before being allowed entry into Israel. In addition, gatherings of people in one place have been restricted, schools have been seldomly closed and employees are being asked to work remotely. Prolonged economic uncertainties or downturns could trigger a global recession that could materially adversely affect our business.

We currently anticipate that the COVID-19 outbreak will have a negative effect on our operations. The restrictions imposed as a result of the outbreak are likely to cause operating difficulties, and is likely to have a negative impact on our ability to generate revenues causing order cancellations, delays and the inability of certain of our sales and support teams to travel and/or meet with customers or provide on-site services. Our business depends on our current and prospective customers' ability and willingness to invest money in IT systems and services, which in turn is dependent upon their overall economic health. Negative economic conditions in the global economy or certain regions, especially in the United States and Israel, including conditions resulting from financial and credit market fluctuations, could cause a decrease in corporate spending on products and services that we sell. In 2019, 62% of our revenues were generated from Israel, 27% of our revenues generated from North America, and 11% from the rest of the world. Negative economic conditions may cause customers in general to reduce their IT spending. Customers may delay or cancel projects, choose to focus on in-house development efforts or seek to lower their costs by renegotiating maintenance and support agreements. Additionally, customers may be more likely to make late payments in worsening economic conditions, which could require us to increase our collection efforts and require us to incur additional associated costs to collect expected revenues. To the extent purchases of licenses for our software are perceived by customers and potential customers to be discretionary, our revenues may be disproportionately affected by delays or reductions in general IT spending. The extent to which COVID-19 impacts our business will depend on future developments, which are highly uncertain and cannot be predicted, including new information which may emerge concerning the severity of COVID-19 and the actions to contain COVID-19 or treat its impact, among others.

The implementation of our M&A growth strategy, which requires the integration of our multiple acquired companies and their respective businesses, operations and employees with our own, involves significant risks, and the failure to integrate successfully may adversely affect our future results.

In the past decade we have completed more than 70 acquisitions. Most recently, in the first quarter of 2020, we acquired sum.como GMBH, 70% of the issued and outstanding share capital of Ofek Ariel Photography and Liram Financial Software Ltd, after having acquired Unique Software Industries Ltd in the fourth quarter of 2019, Cálculo S.A.U and NetEffects Inc in the third quarter of 2019, Powwow Inc and Techtop Ltd in the second quarter of 2019 and Medatech Information Technologies Ltd., Dana Engineering Ltd and OnTarget Group Inc in the first quarter of 2019. These acquisitions are part of our integrated M&A growth strategy, which is centered on three key factors: growing our customer base, expanding geographically and adding complementary solutions and services to our portfolio— all while we seek to ensure our continued high quality of services and product delivery. Any failure to successfully integrate the business, operations, and employees of our acquired companies, or to otherwise realize the anticipated benefits of these acquisitions, could harm our results of operations. Our ability to realize these benefits will depend on the timely integration and consolidation of organizations, operations, facilities, procedures, policies and technologies, and the harmonization of differences in the business cultures between these companies and their personnel. Integration of these businesses will be complex and time consuming, will involve additional expense and could disrupt our business and divert management's attention from ongoing business concerns. The challenges involved in integrating these acquired entities and other former acquisitions include:

- Preserving customer, supplier and other important relationships

- Integrating complex, core products and services that we acquire with our existing products and services
- Integrating financial forecasting and controls, procedures and reporting cycles
- Combining and integrating information technology, or IT, systems
- Integrating employees and related HR systems and benefits, maintaining employee morale and retaining key employees
- Potential confusion that we may have in our dealings with customers and prospective customers as to the products we are offering to them and potential overlap among those products

The benefits we expect to realize from these acquisitions are, necessarily, based on projections and assumptions about the combined businesses of our Group, and assume, among other things, the successful integration of these acquired entities into our business and operations. Our projections and assumptions concerning our acquisitions may be inaccurate, however, and we may not successfully integrate the acquired companies and our operations in a timely manner, or at all. We may also be exposed to unexpected contingencies or liabilities of the acquired companies. If we do not realize the anticipated benefits of these transactions, our growth strategy and future profitability could be adversely affected.

Rapid technological changes may adversely affect the market acceptance of our products and services, and our business, results of operations and financial condition could be adversely affected.

We compete in markets that are characterized by rapid technological changes. Other companies are also seeking to offer software solutions and other products and services in our markets, including enterprise mobility solutions, digital transformation solutions, big data and data analytics solutions, Internet of Things (IOT) solutions, Extended reality, cyber solutions, storage systems, business intelligence (BI) solutions, DevOps. AI and machine learning and deep learning solutions, Robotic process automation solutions, internet-related solutions, such as cloud computing and complementary services and business solutions for the insurance and financial services industry. These companies may develop technological or business model innovations or offer services in the markets that we seek to address that are, or are perceived to be, equivalent or superior to our products and services. Furthermore, many of our smaller competitors have been acquired and may be acquired in the future by larger competitors, which provides such smaller competitors with greater resources and potentially a larger client base for which they can develop solutions. Our customers or potential customers may prefer suppliers that are larger than us, are better known in the market or that have a greater global reach.

In addition, our customers' business models may change in ways that we do not anticipate and these changes could reduce or eliminate our customers' needs for our products and services. Our operating results depend on our ability to adapt to market changes and develop and introduce new products and services into existing and emerging markets.

The introduction of new technologies, devices and business models could render existing products and services obsolete and unmarketable and could exert price pressures on our products and services. Our future success will depend upon our ability to address the increasingly sophisticated needs of our customers by:

- Supporting existing and emerging hardware, software, databases and networking platforms; and
- Developing and introducing new and enhanced software development technology and applications that keep pace with such technological developments, emerging new product markets and changing customer requirements.

The market for software solutions and related services and for business solutions is highly competitive and fragmented and has low entry barriers. Many of our smaller competitors have been acquired or may be acquired by larger competitors, which provides such smaller competitors with greater resources and potentially a larger client base for which they can develop solutions. Our customers or potential customers may prefer suppliers that are larger than us, are better known in the market, or that have a greater global reach. In addition, we and some of our competitors have developed business models to allow customers to outsource their core systems to external providers (known as BPO). We are seeking to partner with BPO providers, but there can be no assurance that such BPO providers will adopt our solutions rather than those of our competitors. Determinations by current and potential customers to use BPO providers that do not use our solutions may result in the loss of such customers and limit our ability to gain new customers.

Adapting to evolving technologies can require substantial financial investments, distract management and adversely affect the demand for our existing products and services.

Because our solutions are complex and require rigorous testing, development cycles can be lengthy, taking us up to two years to develop and introduce new, enhanced or modified solutions. Moreover, development projects can be technically challenging and expensive. The nature of these development cycles may cause us to experience delays between the time we incur expenses associated with research and development and the time we generate revenues, if any, from such expenses. In addition, adapting to evolving technologies may require us to invest a significant amount of resources, time and attention into the development, integration, support and marketing of those technologies. The acceptance and growth of cloud computing, big data, enterprise mobility, IOT solutions, Extended reality, Robotic process automation solutions, and digital transformation are examples of rapidly changing technologies, which we have adapted into our products, packaged software solution and software service offerings. This required us to make a substantial financial investment to develop and implement cloud computing and enterprise mobility into our software solution models and has required significant attention from our management to refine our business strategies to include the delivery of these solutions. As the market continues to adopt these new trends, we expect to continue to make substantial investments in our software solutions, system integrations and professional services related to these changing technology trends. Even if we succeed in adapting to a new technology by developing attractive products and offer new services and successfully bringing them to market, there is no assurance that the new product or service will have a positive impact on our financial performance and could even result in lower revenue, lower margins and higher costs and therefore could negatively impact our financial performance. If release dates of any future products or enhancements are delayed our business, financial condition and results of operations could be adversely affected.

Other unfavorable national and global economic conditions could adversely affect our business, operating results and financial condition.

During periods of slowing economic activity, our customers may reduce their demand for our products, technology and professional services, which would reduce our sales, and our business, operating results and financial condition may be adversely affected. Economic challenges may develop, including threatened sovereign defaults, credit downgrades, restricted credit for businesses and consumers and potentially falling demand for a variety of products and services. These developments, or the perception that any of them could occur, could result in longer sales cycles, slower adoption of new technologies and increased price competition for our products and services. We could also be exposed to credit risk and payment delinquencies on our accounts receivable, which are not covered by collateral. In particular, there is currently significant uncertainty about the future relationship between the U.S. and various other countries, with respect to trade policies, treaties, government regulations, and tariffs. For example, the recent imposition of tariffs and/or changes in tariffs on various products by the U.S. and other countries, including China and Canada, have introduced greater uncertainty with respect to trade policies and government regulations affecting trade between the U.S. and other countries, and new and/or increased tariffs have subjected, and may in the future subject, us to additional costs and expenditure of resources. Major developments in trade relations, including the imposition of new or increased tariffs by the U.S. and/or other countries, and any emerging nationalist trends in specific countries could alter the trade environment and consumer purchasing behavior which, in turn, could have a material effect on our financial condition and results of operations. While the U.S. and China recently signed a “phase one” trade deal on January 15, 2020 to reduce planned increases to tariffs, concerns over the stability of bilateral trade relations remain. In addition, the UK’s exit from the European Union on January 31, 2020, known as Brexit, and the ongoing negotiations of the future trading relationship between the UK and the European Union during the transition period set to end December 31, 2020 have yet to provide clarity on what the outcome will be for the UK or Europe. Changes related to Brexit could subject us to heightened risks in that region, including disruptions to trade and free movement of goods, services and people to and from the UK, disruptions to the workforce of our business partners, increased foreign exchange volatility with respect to the British pound and additional legal, political and economic uncertainty. If these actions impacting our international distribution and sales channels result in increased costs for us or our international partners, such changes could result in higher costs to us, adversely affecting our operations, particularly as we expand our international presence.

If global economic and market conditions, or economic conditions in the United States, Europe or Asia or other key markets, remain uncertain or weaken, our business, operating results and financial condition may be adversely affected.

Our development cycles are lengthy, we may not have the resources available to complete development of new, enhanced or modified, solutions and we may incur significant expenses before we generate revenues, if any, from our solutions.

Because certain of our solutions are complex and require rigorous testing, development cycles can be lengthy, taking us up to two years to develop and introduce new, enhanced or modified solutions. Moreover, development projects can be technically challenging and expensive. The nature of these development cycles may cause us to experience delays between the time we incur expenses associated with research and development and the time we generate revenues, if any, from such expenses. We may also not have sufficient funds or other resources to make the required investments in product development. Furthermore, we may invest substantial resources in the development of solutions that do not achieve market acceptance or commercial success. Even where we succeed in our sales efforts and obtain new orders from customers, the complexity involved in delivering our solutions to such customers makes it more difficult for us to consummate delivery in a timely manner and to recognize revenue and maximize profitability. Failure to deliver our solutions in a timely manner could result in order cancellations, damage our reputations and require us to indemnify our customers. Any of these risks relating to our lengthy and expensive development cycle could have a material adverse effect on our business, financial conditions and results of operations.

Our sales cycle is variable, depends upon many factors outside our control, and could cause us to expend significant time and resources prior to earning associated revenues.

The typical sales cycle for certain of our solutions and services is lengthy and unpredictable, requires pre-purchase evaluation by a significant number of persons in our customers' organizations, and often involves a significant operational decision by our customers. Our sales efforts involve educating our customers and industry analysts and consultants about the use and benefits of our solutions, including the technical capabilities of our solutions and the efficiencies achievable by organizations deploying our solutions. Customers typically undertake a significant evaluation process, which frequently involves not only our solutions, but also those of our competitors and can result in a lengthy sales cycle. Our sales cycle for new customers is typically one year to two years and can extend even longer in some cases. We spend substantial time, effort and money in our sales efforts without any assurance that such efforts will produce any sales.

Investment in highly skilled research and development and customer support personnel is critical to our ability to develop and enhance our solutions and support our customers, but an increase in such investment may reduce our profitability.

As a provider of software solutions that rely upon technological advancements, we rely heavily on our research and development activities to remain competitive. We consequently depend in large part on the ability to attract, train, motivate and retain highly skilled information technology professionals for our research and development team, particularly individuals with knowledge and experience in the insurance industry. Because our software solutions are highly complex and are generally used by our customers to perform critical business functions, we also depend heavily on other skilled technology professionals to provide ongoing support to our customers. Skilled technology professionals are often in high demand and short supply. If we are unable to hire or retain qualified research and development personnel and other technology professionals to develop, implement and modify our solutions, we may be unable to meet the needs of our customers. Even if we succeed in retaining the necessary skilled personnel in our research and development and customer support efforts, our investments in our personnel and product development efforts increase our costs of operations and thereby reduce our profitability, unless accompanied by increased revenues. Given the highly competitive industry in which we operate, we may not succeed in increasing our revenues in line with our increasing investments in our personnel and research and development efforts.

Furthermore, as we seek to expand the marketing and offering of our products and services into new territories, it requires the retention of new, additional skilled personnel with knowledge of the particular market and applicable regulatory regime. Such skilled personnel may not be available at a reasonable cost relative to the additional revenues that we expect to generate in those territories, or may not be available at all. In particular, wage costs in lower-cost markets where we have recently added personnel, such as India, are increasing and we may need to increase the levels of our employee compensation more rapidly than in the past to remain competitive. The transition of projects to new locations may also lead to business disruptions due to differing levels of employee knowledge and organizational and leadership skills. Although we have never experienced an organized labor dispute, strike or work stoppage, any such occurrence, including in connection with unionization efforts, could disrupt our business and operations and harm our financial condition.

If we fail to adapt to changing market conditions and cannot compete successfully with existing or new competitors, our business could be harmed.

We may be unable to compete successfully with existing or new competitors. Our failure to adapt to changing market conditions and to compete successfully with established or new competitors could have a material adverse effect on our results of operations and financial condition. We face intense competition for the software products and services that we sell, including competition for managed services we provide to customers under long-term service agreements. These managed services include management of data center operations and IT infrastructure, application management and ongoing support, systems modernization and consolidation, and management of end-to-end business processes for billing and customer care operations.

The market for information systems is highly competitive and fragmented, and we expect competition to continue to increase. We compete with independent software and service providers, system integrators and with the in-house IT and network departments of communications companies. Our main competitors include firms that provide IT services (including consulting, systems integration and managed services), software vendors that sell products for specific aspects of a total information system, software vendors that specialize in systems for particular communications services (such as internet, wireline and wireless services, cable, satellite and service bureaus) and network equipment providers that offer software systems in combination with the sale of network equipment. We also compete with companies that provide digital commerce software and solutions.

We face competition, both in Israel and internationally, from a variety of companies, including companies with significantly greater resources than ours who are likely to enjoy substantial competitive advantages, including:

- longer operating histories;
- closer proximity to future markets;
- greater financial, technical, marketing and other resources;
- cheaper costs, including labor cost;
- political leverage;
- greater name recognition;
- well-established relationships with our current and potential clients;
- a broader range of products and services;
- the ability to deliver projects at a level of quality that rivals our own;
- responsiveness to customer needs; and
- the ability to hire, retain and motivate key personnel.

Both Matrix's and Magic Software's principal domestic competitors in the Israeli market are Israeli IT services companies and systems integrators, the largest of which are IBM Israel, HP Israel, Hilan Ltd., Malam-Team, One-1, Taldor Computer Systems, Tefen, Aman, the Elad Group, Yael, SQLink, Emet Michshuv, LogOn and HMS. In addition, in recent years, large accounting and advisory firms such as Deloitte and E&Y have expanded their service portfolio to include managed services and consulting in the fields of BI, Cybersecurity, ERP and CRM, which we see as direct competition, especially as they already have a deep understanding of the relevant client's business because of the accounting and auditing services they provide to it, and because they already have earned the trust of the client, which is an essential part of providing any services to a client. This international trend is as evident in Israel as it is in all major markets around the world. Matrix's competitors in the United States market include many companies that provide similar services to those offered by Matrix, as well as providers of offshore services, which charge low rates. In some cases, Matrix competes with IBM, Accenture and the large accounting and advisory firms. Matrix's international competitors in the Israeli market include Microsoft, IBM, HP, Oracle and CA. These international competitors often use local subcontractors to provide personnel for contracts performed in Israel. Most of these international entities are also business partners of Matrix. Competitors with respect to infrastructure solutions include HP, Lenovo and Dell. With respect to cloud services, competitors include All Cloud, DoIT, Google, Microsoft and Amazon Web Services. Matrix's competitors with respect to training are the training centers of the Technion, IITC, HackerU, Ness Technologies, SQLink and Sela.

Furthermore, several software development centers in Israel and worldwide offer software development services at lower prices than we do. Due to the intense competition in the markets in which we operate, software products and services prices may fluctuate significantly. As a result, we may have to reduce the prices of our products, which in turn, may adversely affect our revenues and the gross margins for our products.

With respect to Magic Software's low-code application development solutions, Magic Software competes in the application platform, SOA architecture and enterprise mobility markets. Among its current competitors are OutSystems, Appien, Mendix, Kony, Microsoft, and Pegasystems. With respect to Magic Software's integration solutions, Magic Software competes in the integration platform market. Among its current competitors are IBM, Informatica, TIBCO, MuleSoft, Jitterbit, Talend, Dell –Boomi, Scribe and Software AG.

There are several similar products in the market utilizing the model driven architecture, or MDA, approach utilized by AppBuilder. The market for this type of platform is highly competitive. Companies such as CA and IBM have tools that compete directly with AppBuilder. Furthermore, new development paradigms have become very popular in IT software development and developers today have many alternatives.

The telecom BSS domain in which Magic Software operates through its wholly owned FTS subsidiary is a highly competitive market in which FTS competes based on product quality, service quality, timeliness of delivery and pricing. Within the global billing, charging and policy control market, FTS principally competes against global IT providers and the in-house IT departments of telecommunications operators. Among the competitors focused on this market are Amdocs, Ericsson, Comverse, NetCracker Technology, CSG Systems, Redknee Solutions and Oracle Communications.

There are also a number of smaller or regional telecom BSS competitors who compete on a regional or domestic market level. These tend to be smaller players, and may include companies such as Comarch, Mind CTI, Tecnotree, Cerillion, Openet and Elitcore, among others.

Sapiens' competitors in the insurance software solutions market differ based on the size, geography and lines of business in which it operates. Some of its competitors offer a full suite of services, while others only offer one module; some operate in specific (domestic) geographies, while others operate on a global basis. In addition, delivery models vary, with some competitors keeping delivery in-house, or using IT outsourcing (ITO) or business process outsourcing (BPO).

Sapiens' different types of competitors include:

- Global software providers with their own IP;
- Local/domestic software vendors with their own IP, operating in a designated geographic market and/or within a designated segment of the insurance industry;
- BPO providers who offer end-to-end outsourcing of insurance carriers business, including core software administration (although BPO providers want to buy comprehensive software platforms to serve as part of the BPO proposition from vendors and may seek to purchase Sapiens' solutions for this purpose);
- Internal IT departments, who often prefer to develop solutions in-house; and
- New insurtech companies with niche solutions.

With respect to Sapiens DECISION, we believe that Sapiens is considered a pioneer in this disruptive market landscape. Since the introduction of Sapiens innovative approach to enterprise architecture to the market, Sapiens has identified only a small number of potential competitors.

These competitors may be able to respond more quickly to new or emerging technologies or changes in customer requirements. They may also benefit from greater purchasing economies, offer more aggressive product and service pricing or devote greater resources to the promotion of their products and services. Current and potential competitors have established or may establish cooperative relationships among themselves or with third parties to increase such competitors' ability to successfully market their tools and services. We also expect that competition will increase as a result of continued consolidation within the industry. Our further penetration of international markets may likewise cause us to face additional competition. As a result, we cannot assure you that the products and solutions that we offer will compete successfully with those of our competitors.

We may be unable to differentiate our tools and services from those of our competitors or successfully develop and introduce new tools and services that are less costly than, or superior to, those of our competitors. This could have a material adverse effect on our ability to compete.

As some of our revenues are derived from the Israeli government sector, including defense, healthcare, education and finance, a reduction of government spending in Israel on IT services may reduce our revenues and profitability; and any delay in the annual budget approval process may negatively impact our cash flows.

We perform work for a wide range of Israeli governmental agencies and related subcontractors. Any reduction in total Israeli government spending for political or economic reasons may reduce our revenues and profitability. In addition, the government of Israel has occasionally experienced significant delays in the approval of its annual budget in recent years. Such delays in the future could negatively affect our cash flows by delaying the receipt of payments from the government of Israel for services performed.

TSG, our jointly-controlled affiliate, together with Israel Aerospace Industries Ltd. or IAI, derives most of its revenues directly or indirectly from government agencies, mainly the Israeli Ministry of Defense (IMOD) and authorities of various countries, pursuant to contracts awarded to it under defense and homeland security-related programs. The funding of these programs could be reduced or eliminated due to numerous factors, including geo-political events and macro-economic conditions that are beyond our control. Reduction or elimination of government spending under those contracts would cause a negative effect on TSG's revenues, results of operations, cash flow and financial condition. Furthermore, the Israeli government may reduce its expenditures for defense items or change its defense priorities in the coming years. In addition, the Israeli defense budget may be adversely affected if there is a reduction in U.S. foreign military assistance.

Our clients' complex regulatory requirements may increase our costs, which could negatively impact our profits.

Some of our clients, particularly those in the financial services, life sciences, healthcare and defense verticals, are subject to complex and constantly changing regulatory requirements. On occasion, these regulatory requirements change unpredictably. These regulations may increase our potential liabilities if our services are found to contribute to a failure by our clients to comply with the requirements applicable to them and may increase compliance costs as regulatory requirements increase or change. These increased costs could negatively impact our profits.

With respect to certain of our defense sector command and control software solutions, which are developed and offered by our jointly controlled investee, TSG, we depend on governmental approval of our exports.

Our international sales, as well as our international procurement of skilled human resources, technology and components, related to our command and control, cyber and intelligence software solutions, depends largely on export license approvals from the governments of Israel, the U.S. and other countries. If we fail to obtain material approvals in the future, or if material approvals previously obtained are revoked or expire and are not renewed, our ability to sell our products and services to overseas customers and our ability to obtain goods and services essential to TSG's business could be interrupted, resulting in a material adverse effect on TSG's business, revenues, assets, liabilities and results of operations.

Catastrophes may adversely impact the P&C insurance industry, preventing us from expanding or maintaining our existing customer base and increasing our revenues.

Sapiens' customers include P&C insurance carriers that have experienced, and will likely experience in the future, catastrophe losses that adversely impact their businesses. Catastrophes can be caused by various events, including, amongst others, hurricanes, tsunamis, floods, windstorms, earthquakes, hail, tornados, explosions, severe weather and fires, or the spread of pandemics of disease, such as COVID-19. Moreover, acts of terrorism or war could cause disruptions in our subsidiaries' or our subsidiaries' customers' businesses or the economy as a whole. The risks associated with natural disasters and catastrophes are inherently unpredictable, and it is difficult to predict the timing of such events or estimate the amount of loss they will generate. In the event a future catastrophe adversely impacts our subsidiaries' current or potential customers, we may be prevented from maintaining and expanding our customer base and from increasing our revenues because such events may cause customers to postpone purchases of new products and professional service engagements or discontinue projects.

Decreases in the capital markets may adversely impact the life insurance industry, thereby preventing Sapiens from expanding or maintaining its existing customer base and increasing our revenues.

Sapiens customers include life insurance carriers that have invested some of their funds in the capital markets. Those carriers may experience in the future major losses in those capital market investments that may cause disruptions to their businesses or to the economy as a whole. Any such major disruption, may cause those existing or potential new customers to postpone purchases of new products or professional service engagements, or discontinue existing projects with Sapiens, which, in turn, may prevent us from increasing our revenues, or from maintaining or expanding our customer base.

If existing customers are not satisfied with our solutions and services and either do not make subsequent purchases from us or do not continue using such solutions and services, or if our relationships with our largest customers are impaired, our revenue could be negatively affected.

The loss of any of our major customers or a decrease or delay in orders or anticipated spending by such customers could reduce our revenues and profitability, due to our reliance on such customers. Our customers could also engage in business combinations, which could increase their size, reduce their demand for our products and solutions as they recognize synergies or rationalize assets, and increase or decrease the portion of our total sales concentration with respect to any single customer.

For example, five customers of Sapiens (together with its subsidiaries) accounted for, in the aggregate, 20.7% and 15.6% of Sapiens' consolidated revenues in 2018 and 2019, respectively (or 4.0% and 3% of our consolidated revenues in those respective years). In addition, Magic Software's (together with its subsidiaries) five largest customers accounted for, in the aggregate, 25.9% and 23.3% of its revenues in 2018 and 2019, respectively (or 5.1% and 4.5% of our consolidated revenues in those respective years). One of Magic Software's five largest customers accounted for 13% and 9% of its revenues in 2018 and 2019, respectively (or 2.5% and 1.7% of our consolidated revenues in those respective years). One significant customer of TSG accounted for approximately 37% and 34% of its revenues in 2018 and 2019, respectively (or 1.7% and 1.7% of our consolidated revenues in those respective years). A significant customer (not the same customer in each year) of InSync accounted for approximately 25.3% and 28.7% of its revenues in 2018 and 2019, respectively (or 0.6% and 0.6% of our consolidated revenues in those respective years).

There can be no assurance that the existing customers of our significant subsidiaries and affiliates will enter into new project contracts with us or that they will continue using our technologies and IT services. A significant decline in our revenue stream from existing customers would have an adverse effect on our operating results.

Our business often involves long-term, large, complex implementation projects across the globe, which involve uncertainties, mainly during the implementation period, such as changes to the estimated project costs and changes in project schedule. Such changes may cause disputes between us and our customers, due to failure on our part, or even in absence of failures on our part, and may in some cases result in cancellation of those projects. Such cancellation can adversely impact our revenues, profitability and/or, in some cases, our relationship with the relevant customer.

Our business is characterized by relatively large, complex implementation projects or engagements that can have a significant impact on our total revenue and cost of revenue from quarter to quarter. A high percentage of our expenses, particularly employee compensation, are relatively fixed. Therefore, variations in the timing of the initiation, estimate of scope of work, progress or completion of projects or engagements can cause significant variations in operating results from quarter to quarter.

This is particularly the case for fixed-price contracts, where our delivery requirements sometimes span more than one year. For a highly complex, fixed-price project that requires customization, we may not be able to accurately estimate our actual costs of completing the project. We are often dependent on the assistance of third-parties (such as our customers' vendors or IT employees, or our system integrator partners) in implementing such a project, which may not be provided in a timely manner. If our actual cost-to-completion of such a project significantly exceeds the estimated costs, we could experience a loss on the related contract, which (when multiplied by multiple projects) could have a material adverse effect on our results of operations, financial position and cash flow.

Similarly, delays in implementation projects (whether fixed price or not) may affect our revenue and cause our operating results to vary widely. Our solutions are delivered over periods of time ranging from several months to a few years. Payment terms are generally based on periodic payments or on the achievement of milestones. Any delays in payment or in the achievement of milestones may have a material adverse effect on our results of operations, financial position or cash flows.

For non-fixed price contracts, we generally provide our customers with up-front estimates regarding the duration, budget and costs associated with the implementation of our products. Due to the complexities described above, however, we may not meet those upfront estimates and/or the expectations of our customers, which could lead to a dispute with a client.

As an example, in 2017, Sapiens was involved in a dispute with a significant customer (which accounted for approximately 12% of Sapiens' and 2.3% of our consolidated revenues in 2016) under a software development project agreement. Work on the project was eventually canceled due to the dispute and Sapiens entered into a settlement agreement with the customer, which resulted in a reduction in Sapiens' revenues and operating profit relative to its prior estimates for 2017. In 2018, a significant customer in South Africa changed the scope of an ongoing project significantly, which resulted in a decrease in the revenues realized from that customer during 2018, thereby adversely impacting Sapiens' revenues in 2018. In 2019, a significant European customer of Sapiens cancelled, for convenience (and not due a failure by Sapiens to comply with the terms of the agreement with such customer) an implementation project. While Sapiens recognized and collected the vast majority of the sums payable to it under the foregoing implementation project, the cancellation resulted in the loss of potential future revenues from that customer. Similar such disputes with other significant customers in the future, whether due to failure on our part, or even absent such failure on our part, could result in lost revenues, and lower profit margins, and could harm our reputation, thereby adversely affecting our ability to attract new customers and to sell additional solutions and services to existing customers.

Changes in privacy regulations may impose additional costs and liabilities on us, limit our use of information, and adversely affect our business.

Personal privacy has become a significant issue in the United States, Europe, and many other countries where we operate. Many government agencies and industry regulators continue to impose new restrictions and modify existing requirements about the collection, use, and disclosure of personal information. Changes to laws or regulations affecting privacy and security may impose additional liability and costs on us and may limit our use of such information in providing our services to customers. If we were required to change our business activities, revise or eliminate services or products, or implement burdensome compliance measures, our business and results of operations may be harmed. Additionally, we may be subject to regulatory enforcement actions resulting in fines, penalties, and potential litigation if we fail to comply with applicable privacy laws and regulations.

In particular, our European activities are subject to the European Union General Data Protection Regulation, or GDPR, which has created additional compliance requirements for us. GDPR broadens the scope of personal privacy laws to protect the rights of European Union citizens and requires organizations to report on data breaches within 72 hours and be bound by more stringent rules for obtaining the consent of individuals on how their data can be used. GDPR became enforceable on May 25, 2018 and non-compliance may expose entities such as our company to significant fines or other regulatory claims. In the United States, our operations in various states, such as New York and California, are now subject to expanded privacy regulations. In California, we are subject to the California Consumer Privacy Act, or CCPA, a statute that went into effect on January 1, 2020. The CCPA imposes enhanced disclosure requirements for us regarding our interactions with customers who are residents of California, such as comprehensive privacy notices for consumers when we, or our agents, collect their personal information. We may be further required to ensure third-party compliance, as under the CCPA we could be liable if third parties that collect, process or retain personal information on our behalf violate the CCPA's privacy requirements. The sanctions for non-compliance could include fines and/or civil lawsuits.

While we have invested in, and intend to continue to invest in, reasonably necessary resources to comply with these standards, to the extent that we fail to adequately comply, that failure could have an adverse effect on our business, financial conditions, results of operations and cash flows.

If we fail to locate, successfully compete for and consummate suitable acquisitions and investments, we may be unable to grow or maintain our market share.

We and our subsidiaries consider it a significant part of our business strategy to pursue acquisitions and other initiatives in order to expand our product or services offerings or otherwise enhance our market position and strategic strengths. Consequently, we intend to pursue acquisitions of, and investments in, other businesses, particularly businesses offering products, technologies and services that are complementary to ours and are suitable for integration into our business. We cannot assure you that we will be able to locate suitable potential acquisition or investment opportunities in Israel or internationally, or if we do identify suitable candidates, that at the conclusion of related discussions and negotiations, we will be able to consummate the acquisitions or investments on terms which are favorable to us. If and when acquisition or investment opportunities arise, we expect to compete for these opportunities with other established and well-capitalized entities and we cannot guarantee that we will succeed in such competition on terms which remain favorable to us. If we fail to consummate further acquisitions or investments in the future, our ability to grow or to even maintain our market share may be harmed.

Any future acquisitions of, or investments in, companies or technologies, especially those located outside of Israel, may distract our management, disrupt our business and may be difficult to finance on favorable terms.

As described above, it is a significant part of our Group's strategy to pursue acquisitions of, and investments in, companies offering products, technologies and services in order to expand our product offerings or services or otherwise enhance our market position and strategic strengths. In the past three years we made a number of acquisitions, including each of the acquisitions described below in "Item 4. Information on the Company— A. History and Development of the Company— Capital Expenditures and Divestitures."

Mergers and acquisitions of companies are inherently risky and subject to many factors outside of our control and no assurance can be given that our future acquisitions will be successful and will not adversely affect our business, operating results, or financial condition. In the future, we may seek to acquire or make strategic investments in complementary businesses, technologies, services or products, or enter into strategic partnerships or alliances with third parties in order to expand our business. Failure to manage and successfully integrate such acquisitions could materially harm our business and operating results. Prior acquisitions have resulted in a wide range of outcomes, from successful introduction of new products technologies and professional services to a failure to do so. Even when an acquired company has previously developed and marketed products, there can be no assurance that new product enhancements will be made in a timely manner or that pre-acquisition due diligence will have identified all possible issues that might arise with respect to such products. If we acquire other businesses, we may face difficulties, including:

- Difficulties in integrating the operations, systems, technologies, products, and personnel of the acquired businesses or enterprises;
- Diversion of management's attention from normal daily operations of the business and the challenges of managing larger and more widespread operations resulting from acquisitions;
- Potential difficulties in completing projects associated with in-process research and development;
- Difficulties in entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions;
- Insufficient revenue to offset increased expenses associated with acquisitions; and
- The potential loss of key employees, customers, distributors, vendors and other business partners of the companies we acquire following and continuing after announcement of acquisition plans.

Furthermore, we may not be able to retain the key employees that may be necessary to operate the businesses we acquired and may acquire and we may not be able to timely attract new skilled employees and management to replace them. An acquisition may also involve accounting charges and/or amortization of significant amounts of intangible assets, which would adversely affect our ability to achieve and maintain profitability. These difficulties could disrupt our ongoing business, distract our management and employees, increase our expenses and adversely affect our results of operations.

Any acquisition or investment in a company located outside of Israel poses additional risks, including risks related to the monitoring of a management team from a great distance and the need to integrate a potentially different business culture. Our failure to successfully integrate such a newly acquired business or such an investment could harm our business.

We may furthermore need to raise capital in connection with any such acquisition or investment, which we would likely seek via public or private equity or debt offerings. For example, we issued \$58.3 million (net of issuance expenses) of secured debentures, or Series A Secured Debentures, and convertible debentures, or Series B Convertible Debentures as part of a public offering in Israel in September 2015, an additional \$44.1 million of Series A Secured Debentures via a private placement in Israel in January 2018, and \$82.3 million of Series C Secured Debentures via a public offering in Israel in March 2019. In July 2018, Magic Software consummated a private placement in which it received net proceeds of \$34.6 million. Furthermore, in September 2017, Sapiens issued NIS 280 million (approximately \$78.2 million, net of \$0.96 million of debt discount and issuance costs) principal amount of Series B unsecured, non-convertible debentures, in a public offering and private placement in Israel and an additional NIS 210 million (approximately \$60.0 million) of Series B unsecured debentures via a public offering in Israel in June 2020. The issuance of equity securities pursuant to any such financing could be dilutive to our existing shareholders. The issuance of equity securities by any of our investees pursuant to any such financing could be dilutive to our existing interest in these investees. If we raise funds through debt offerings, we may be pressured in serving such debt. If we use cash or debt financing, our financial liquidity will be reduced, the holders of our debt may have claims on our assets ahead of holders of our ordinary shares and our business operations may be restricted by the terms of any debt. Our ability to raise capital in this manner also depends upon market and other conditions, many of which are beyond our control. Due to unfavorable conditions, we could be required to seek alternative financing methods, such as bank financings, which involve borrowing money on terms that are not favorable to us. Difficulties in raising equity capital or obtaining debt financing on favorable terms, or the unavailability of financing, including bank borrowings, may hinder our ability to implement our strategy for selective acquisitions and investments.

If we fail to manage our growth— both organic and non-organic— that could effectively harm our business.

We have experienced rapid growth during the last five years, through acquisitions and organic growth. The number of our employees (including our affiliated company TSG) increased over the last five years, especially in Israel and in India, from approximately 10,108 as of December 31, 2014 to approximately 17,378 as of December 31, 2019, and may increase further as we aim to further expand our businesses. To manage our anticipated future growth effectively, we must continue to maintain and may need to enhance our information technology infrastructure, financial and accounting systems and controls and manage expanded operations and employees in geographically distributed locations. We also must attract, train and retain a significant number of additional qualified sales and marketing personnel, professional services personnel, software engineers, technical personnel and management personnel. Our failure to manage our rapid growth effectively could have a material adverse effect on our business, results of operations and financial condition. Our growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of new services or product enhancements. For example, since it may take as long as six months to hire and train a new member of our professional services staff, we make decisions regarding the size of our professional services staff based upon our expectations with respect to customer demand for our products and services. If these expectations are incorrect, and we increase the size of our professional services organization without experiencing an increase in sales of our products and services, we will experience reductions in our gross and operating margins and net income. If we are unable to effectively manage our growth, our expenses may increase more than expected, our revenues could decline or grow more slowly than expected and we may be unable to implement our business strategy. Our rapid growth may also be accompanied by greater exposure to litigation, including suits by clients, vendors, employees or former employees, as the sizes of our workforce and our overall international operations increase. All such litigation carries with it related costs and could divert our management's attention from ongoing business concerns. We also intend to continue to expand into additional international markets which, if not technologically or commercially successful, could harm our financial condition and prospects.

Our subsidiaries may be required to increase or decrease the scope of their operations in response to changes in the demand for their products and services, and if they fail to successfully plan and manage changes in the size of their operations, their business will suffer.

In the past, our subsidiaries have both grown and contracted their operations, in some cases rapidly, to profitably offer their products and services in a continuously changing market. If they are unable to manage these changes, or to plan and manage any future changes in the size and scope of their operations, their business will be negatively impacted.

Restructurings and cost reduction measures that our subsidiaries have implemented in the past have reduced the size of their operations and workforce. Reductions in personnel can result in significant severance, administrative and legal expenses, and may also adversely affect or delay various sales, marketing and product development programs and activities. These cost reduction measures have included, and may in the future include, employee separation costs and consolidating and/or relocating certain of their operations to different geographic locations.

Acquisitions, organic growth and absorption of significant numbers of customers' employees in connection with managed services projects have, from time to time, increased our subsidiaries' headcount. During periods of expansion, our subsidiaries may need to serve several new customers or implement several new large-scale projects in short periods of time. This may require those subsidiaries to attract and train additional IT professionals at a rapid rate, as well as quickly expand their facilities, which may be difficult to successfully implement.

The increasing amount of identifiable intangible assets and goodwill recorded on our statement of financial position may lead to significant impairment charges in the future.

We regularly review our long-lived assets, including identifiable intangible assets and goodwill, for impairment. Goodwill and indefinite life intangible assets are subject to impairment review at least annually. Other long-lived assets are reviewed when there is an indication that impairment may have occurred. The amount of goodwill and identifiable intangible assets on our consolidated statement of financial position was \$781.3 million, \$791.2 million and \$889.5 million as of December 31, 2017, 2018 and 2019, respectively, as a result of our acquisitions, and may increase further following future acquisitions. Impairment testing under IFRS may lead to further impairment charges in the future. Any significant impairment charges could have a material adverse effect on our results of operations.

During the years ended December 31, 2017, 2018 and 2019, no impairment was required for any of our cash generating units and no impairment losses were identified for these intangible assets and software products.

Our and our investees' credit facility agreements with banks and other financial institutions, and our and our investees' debentures, are subject to a number of restrictive covenants which, if breached, could result in acceleration of our obligation to repay our debt.

In the context of our and our subsidiaries' and affiliate's engagements with banks and other financial institutions for receiving various credit facilities and under the terms governing our Series A Secured Debentures and Series C Secured Debentures, and Sapiens' non-convertible unsecured Series B Debentures, we have undertaken to comply with a number of conditions and limitations on the manner in which we can operate our business. These include limitations on our ability to undergo a change of control, distribute dividends, incur debt or a floating charge on our assets, or undergo an asset sale or other change that results in a fundamental change in our operations. These credit facilities, agreements and deed of trusts that we have entered into with the trustees for the holders of each of our debentures also require us to comply with certain financial covenants. Those covenants include maintenance of certain financial ratios related to shareholders' equity, total rate of debt and liabilities, minimum outstanding balance of total cash and short-term investments, and operating results that are customary for companies of comparable size, and maintenance of a minimum rating level for the debentures. These limitations and covenants may force us to pursue less than optimal business strategies or forego business arrangements which could have been financially advantageous to us and, by extension, to our shareholders. The deeds of trust of each of our debentures furthermore provides for an upwards adjustment in the interest rate payable under the debentures in the event that our debentures' rating is downgraded below a certain level. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of any of our debentures (below BBB-) would constitute an event of default that could result in the acceleration of our obligation to repay the debentures, which accelerated repayment may be difficult for us to effect. In addition, we have secured our Series A Secured Debentures and Series C Secured Debentures with certain of the shares of Formula's publicly held subsidiaries Matrix, Sapiens and Magic Software. A breach of the restrictive covenants could result in the acceleration of our obligations to repay our or our subsidiaries' debt.

Marketing our products and services in international markets may require increased expenses and greater exposure to risks that we may not be able to successfully address.

We intend to continue to focus our efforts on selling proprietary and nonproprietary software solutions and IT services in international markets and to devote significant resources to these efforts to expand our international operations as part of our growth strategy. If we are unable to continue achieving market acceptance for our solutions or continue to successfully penetrate international markets, our business will be harmed. In 2018 and 2019, we generated approximately 40% and 38% of our consolidated revenues, respectively, from customers located outside of Israel (including but not limited to the United States, Europe, Japan, Asia-Pacific, India and South Africa). The expansion of our existing operations and entry into additional international markets will require significant management attention and financial resources, which could adversely affect our business.

Our current international operations and our plans to further expand our international operations subjects us to many risks inherent to international business activities, including:

- Limitations and disruptions resulting from the imposition of government controls;
- Compliance with a wide variety of foreign legal and regulatory standards;
- Compliance with the U.S. Foreign Corrupt Practices Act of 1977, as amended, or FCPA, particularly in emerging market countries;
- The adverse impact of the global outbreak of diseases, such as the coronavirus, which may cause customers to cancel projects with us, preclude potential future opportunities for our business and harm our ability to maintain a healthy workforce that can implement our services and solutions offerings;
- Import and export license requirements, tariffs, taxes and other trade barriers;
- Political, social and economic instability abroad, terrorist attacks and security concerns in general;
- Trade restrictions;
- Changes in tariffs;
- Increased exposure to fluctuations in foreign currency exchange rates;
- Complexity in our tax planning, and increased exposure to changes in tax regulations in various jurisdictions in which we operate, which could adversely affect our operating results and limit our ability to conduct effective tax planning;
- Increased financial accounting and reporting requirements and complexities;
- Weaker protection of intellectual property rights in some countries;
- Greater difficulty in safeguarding intellectual property;
- Increased management, travel, infrastructure and legal compliance costs associated with having multiple international operations;
- Longer payment cycles and difficulties in enforcing contracts and collecting accounts receivable;
- The need to localize our products and licensing programs for international customers; and
- Lack of familiarity with and unexpected changes in foreign regulatory requirements;

As we continue to expand our business globally, our success will depend, to a large extent, on our ability to anticipate and effectively manage these and other risks associated with our international operations. Any of these risks could harm our international operations and reduce our international sales, adversely affecting our business, results of operations, financial condition and growth prospects.

Furthermore, as we seek to expand the marketing and offering of our products into new territories, because insurance regulations vary by legal jurisdiction, the investment required to adapt Sapiens solutions to the legal and language requirements of such territories may prevent or delay us from effectively expanding into such territories. Such adaptation process requires the retention of new, additional skilled personnel with knowledge of the particular market and applicable regulatory regime. Such skilled personnel may not be available at a reasonable cost relative to the additional revenues that we expect to recognize in those territories, or may not be available at all.

Errors or defects in our software solutions could inevitably arise and would harm our profitability and our reputation with customers, and could even give rise to claims against us.

The quality of our solutions, including new, modified or enhanced versions thereof, is critical to our success. Since our software solutions are complex, they may contain errors that cannot be detected at any point in their testing phase. While we continually test our solutions for errors or defects and work with customers to identify and correct them, errors in our technology may be found in the future. Testing for errors or defects is complicated because it is difficult to simulate the breadth of operating systems, user applications and computing environments that our customers use, and our solutions themselves are increasingly complex. Errors or defects in our technology have resulted in terminated work orders and could result in delayed or lost revenue, diversion of development resources and increased services, termination of work orders, damage to our brand and warranty and insurance costs in the future. In addition, time-consuming implementations may also increase the number of services personnel we must allocate to each customer, thereby increasing our costs and adversely affecting our business, results of operations and financial condition.

In addition, since our customers rely on our solutions to operate, monitor and improve the performance of their business processes, they are sensitive to potential disruptions that may be caused by the use of, or any defects in, our software. As a result, we may be subject to claims for damages related to software errors in the future. Liability claims could require us to spend significant time and money in litigation or to pay significant damages. Regardless of whether we prevail, diversion of key employees' time and attention from our business, the incurrence of substantial expenses and potential damage to our reputation might result. While the terms of our sales contracts typically limit our exposure to potential liability claims and we carry errors and omissions insurance against such claims, there can be no assurance that such insurance will continue to be available on acceptable terms, if at all, or that such insurance will provide us with adequate protection against any such claims. A significant liability claim against us could have a material adverse effect on our business, results of operations and financial position. In addition, the professional liability insurance that we maintain may not be sufficient against potential claims. Accordingly, we could fail to realize revenues and suffer damage to our reputation as a result of, or in defense of, a substantial claim.

Failure to meet customer expectations with respect to the implementation and use of our solutions or damage caused by our solutions to our customers' information systems could result in negative publicity, reduced sales and diversion of resources, may cause the cancellation of our contracts and may subject us to liability claims, all of which would harm our business, results of operations, financial condition and growth prospects.

Some of the products and software services that we provide involve key aspects of customers' information systems and may be considered critical to the operations of our clients' businesses. As a result, our customers have a greater sensitivity to failures in these systems than do customers of other software products generally. In addition, our exposure to legal liability may be increased in the case of contracts in which we become more involved in our clients' operations. If a customer's system fails during or following the provision of products or services by us, or if we fail to provide customers with proper support for our software products or do so in an untimely manner, we are exposed to the risks of cancellation of our contract with the customer and a legal claim for substantial damages being filed against us, regardless of whether or not we are responsible for the failure. While we typically strive to include provisions designed to limit our exposure to legal claims relating to our services and the solutions we develop, these provisions may not adequately protect us or may not be enforceable in all cases. The general liability insurance coverage that we maintain, including coverage for errors and omissions, is subject to important exclusions and limitations. We cannot be certain that this coverage will continue to be available on reasonable terms or will be available in sufficient amounts to cover one or more large claims, or that the insurer will not disclaim coverage as to any future claim. A successful assertion of one or more large claims against us that exceeds our available insurance coverage or changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could adversely affect our profitability.

In addition, we generally provide our customers with upfront estimates regarding the duration, budget and costs associated with the implementation of our products. Implementation of some of our solutions is complex and meeting the anticipated duration, budget and costs often depends on factors relating to our customers or their other vendors. We may not meet the upfront estimates and expectations of our customers for the implementation of products as a result of our products' capabilities or service engagements by us, our system integrator partners or our customers' IT employees. Consequently, if we fail to meet upfront estimates and the expectations of our customers for the implementation of our products, our reputation could be harmed, which could adversely affect our ability to attract new customers and sell additional products and services to existing customers.

Please see the risk factor titled "Our business often involves long-term, large, complex implementation projects ..." above for three examples of modifications or cancellations of projects by customers of Sapiens within the last three years that have had an adverse impact on Sapiens' results of operations.

Incorrect or improper use of our products or our failure to properly train customers on how to implement or utilize our products could result in customer dissatisfaction and negatively affect our business, results of operations, financial condition and growth prospects.

Certain of our products are complex and are deployed in a wide variety of network environments. The proper use of our solutions requires training of the customer. If our solutions are not used correctly or as intended, inadequate performance may result. Additionally, our customers or third-party partners may incorrectly implement or use our solutions. Our solutions may also be intentionally misused or abused by customers or their employees or third parties who are able to access or use our solutions. Similarly, our solutions are sometimes installed or maintained by customers or third parties with smaller or less qualified IT departments, potentially resulting in sub-optimal installation and, consequently, performance that is less than the level anticipated by the customer. Because our customers rely on our software, services and maintenance support to manage a wide range of operations, the incorrect or improper use of our solutions, our failure to properly train customers on how to efficiently and effectively use our solutions, or our failure to properly provide implementation or maintenance services to our customers has resulted in terminated work orders and may result in termination of work orders, negative publicity or legal claims against us in the future. Also, as we continue to expand our customer base, any failure by us to properly provide these services will likely result in lost opportunities for follow-on sales of our software and services.

In addition, if there is substantial turnover of customer personnel responsible for implementation and use of our products, or if customer personnel are not well trained in the use of our products, customers may defer the deployment of our products, may deploy them in a more limited manner than originally anticipated or may not deploy them at all. Further, if there is substantial turnover of the customer personnel responsible for implementation and use of our products, our ability to make additional sales may be substantially limited.

If our customers terminate contracted projects or choose not to retain us for additional projects, our revenues and profitability may be negatively affected.

Most of our IT professional services customers typically retain us on a non-exclusive basis. Many of our customer contracts, including those that are on a fixed price and timeframe basis, can be terminated by the customer with or without cause upon 90 days' notice or less, and generally without termination-related penalties. Additionally, many of our contracts with customers are limited to discrete projects without any commitment to a specific volume of business or future work and may involve multiple stages. Furthermore, the increased breadth of our service offerings may result in larger and more complex projects for our customers that require us to devote resources to more thoroughly understand their operations. Despite these efforts, our customers may choose not to retain us for additional stages or may cancel or delay planned or existing engagements due to any number of factors, including:

- a customer's financial difficulties;

- a change in a customer’s strategic priorities;
- a customer’s demand for price reductions; and
- a decision by a customer to utilize its in-house IT capacity or work with our competitors.

These potential terminations, cancellations or delays in planned or existing engagements could make it difficult for us to use our personnel efficiently and may negatively affect our revenues and profitability.

There may be consolidation in the markets and industries in which we operate, which could reduce the use of our products and services and adversely affect our revenues.

Mergers or consolidations among our customers could reduce the number of our customers and potential customers. This could adversely affect our revenues even if these events do not reduce the aggregate number of customers or the activities of the consolidated entities. If our customers merge with or are acquired by other entities that are not our customers, or that use fewer of our products and services, they may discontinue or reduce their use of our products and services. Any of these developments could materially and adversely affect our results of operations and cash flows. Furthermore, with respect to TSG in particular, as the number of companies in the defense industry has decreased in recent years, the market share of some prime contractors has increased. Some of these companies are vertically integrated with in-house capabilities similar to TSG’s in certain areas. Thus, at times TSG could be seeking business from certain of these prime contractors, while at other times it could be in competition with some of them. Failure to maintain good business relations with these major contractors could negatively impact TSG’s business, which focuses on the defense market.

If we are unable to retain effective control over our subsidiaries, we would cease to consolidate them and our operating results may fluctuate significantly.

Except for our joint control in TSG, we currently have effective control under IFRS 10 in each of our other investees, despite the lack of absolute majority of voting power in each of Magic Software, Matrix and Sapiens. As a result of our effective control in these investees as of December 31, 2019, we consolidated their financial results with ours throughout the period covered by the financial statements included in Item 18 of this annual report. Prior to our transition to reporting under IFRS, we would consolidate investees in which we held an equity interest only if we held a controlling interest in those companies. Under IFRS 10, we may consolidate entities in which we have effective control. For further information, please see Note 2(3) to our consolidated financial statements included in Item 18 of this annual report.

Although it is our board of directors’ strategy to maintain effective control over our directly held investees, if we are unable to continue maintaining effective control over one or more of our public subsidiaries as a result of equity issuances to third parties that are unaffiliated with us or otherwise, we would cease to consolidate the operating results of those subsidiaries, based on relevant accounting guidelines. This, in turn, could result in significant fluctuations of our consolidated operating results.

Risks Related to our Intellectual Property

We may be liable to our clients for damages caused by a violation of intellectual property rights, the disclosure of other confidential information, including personally identifiable information, system failures, errors or unsatisfactory performance of services, and our insurance policies may not be sufficient to cover these damages.

We often have access to, and are required to collect and store, sensitive or confidential client information, including personally identifiable information. Some of our client agreements do not limit our potential liability for breaches of confidentiality, infringement indemnity and certain other matters. Furthermore, breaches of confidentiality may entitle the aggrieved party to equitable remedies, including injunctive relief. If any person, including any of our employees and subcontractors, penetrates our network security or misappropriates sensitive or confidential client information, including personally identifiable information, we could be subject to significant liability from our clients or from our clients’ customers for breaching contractual confidentiality provisions or privacy laws. Despite measures we take to protect the intellectual property and other confidential information or personally identifiable information of our clients, unauthorized parties, including our employees and subcontractors, may attempt to misappropriate certain intellectual property rights that are proprietary to our clients or otherwise breach our clients’ confidences. Unauthorized disclosure of sensitive or confidential client information, including personally identifiable information, or a violation of intellectual property rights, whether through employee misconduct, breach of our computer systems, systems failure or otherwise, may subject us to liabilities, damage our reputation and cause us to lose clients.

Many of our contracts involve projects that are critical to the operations of our clients' businesses and provide benefits to our clients that may be difficult to quantify. Any failure in a client's system or any breach of security could result in a claim for substantial damages against us, regardless of our responsibility for such failure. Furthermore, any errors by our employees in the performance of services for a client, or poor execution of such services, could result in a client terminating our engagement and seeking damages from us.

In addition, while we have taken steps to protect the confidential information that we have access to, including confidential information we may obtain through usage of our cloud-based services, our security measures may be breached. If a cyber-attack or other security incident were to result in unauthorized access to or modification of our customers' data or our own data or our IT systems or in disruption of the services we provide to our customers, or if our products or services are perceived as having security vulnerabilities, we could suffer significant damage to our business and reputation.

Although we attempt to limit our contractual liability for consequential damages in rendering our services, these limitations on liability may not apply in all circumstances, may be unenforceable in some cases, or may be insufficient to protect us from liability for damages. There may be instances when liabilities for damages are greater than the insurance coverage we hold and we will have to internalize those losses, damages and liabilities not covered by our insurance.

Assertions by third parties of infringement or other violation by us of their intellectual property rights could result in significant costs and substantially harm our business and results of operations.

The software industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patents and other intellectual property rights. In particular, leading companies in the software industry own large numbers of patents, copyrights, trademarks and trade secrets, which they may use to assert claims against us. From time to time, third parties, including certain of these leading companies, may assert patent, copyright, trademark or other intellectual property claims against us, our customers and partners, and those from whom we license technology and intellectual property.

Although we believe that our products and services do not infringe upon the intellectual property rights of third parties, we cannot assure you that third parties will not assert infringement or misappropriation claims against us with respect to current or future products or services, or that any such assertions will not require us to enter into royalty arrangements or result in costly litigation, or result in us being unable to use certain intellectual property. We cannot assure you that we are not infringing or otherwise violating any third-party intellectual property rights. Infringement assertions from third parties may involve patent holding companies or other patent owners who have no relevant product revenues, and therefore our own issued and pending patents may provide little or no deterrence to these patent owners in bringing intellectual property rights claims against us.

Any intellectual property infringement or misappropriation claim or assertion against us, our customers or partners, and those from whom we license technology and intellectual property could have a material adverse effect on our business, financial condition, reputation and competitive position regardless of the validity or outcome. If we are forced to defend against any infringement or misappropriation claims, whether they are with or without merit, are settled out of court, or are determined in our favor, we may be required to expend significant time and financial resources on the defense of such claims. Furthermore, an adverse outcome of a dispute may require us to pay damages, potentially including treble damages and attorneys' fees, if we are found to have willfully infringed on a party's intellectual property; cease making, licensing or using our products or services that are alleged to infringe or misappropriate the intellectual property of others; expend additional development resources to redesign our products or services; enter into potentially unfavorable royalty or license agreements in order to obtain the right to use necessary technologies or works; and to indemnify our partners, customers, and other third parties. Royalty or licensing agreements, if required or desirable, may be unavailable on terms acceptable to us, or at all, and may require significant royalty payments and other expenditures. Any of these events could seriously harm our business, results of operations and financial condition. In addition, any lawsuits regarding intellectual property rights, regardless of their success, could be expensive to resolve and divert the time and attention of our management and technical personnel.

Although we apply measures to protect our intellectual property rights and our source code, there can be no assurance that the measures that we employ to do so will be successful.

In accordance with industry practice, since we generally do not maintain registered patents on our software solutions technologies, we rely on a combination of trade secret and copyright and intellectual property laws and confidentiality, non-disclosure and assignment-of-inventions agreements to protect our proprietary technology. We believe that due to the dynamic nature of the computer and software industries, copyright protection is less significant than factors such as the knowledge and experience of our management and personnel, the frequency of product enhancements and the timeliness and quality of our support services. We seek to protect the source code of our products as trade secret information and as unpublished copyright works. We also rely on security and copy protection features in our proprietary software. We distribute our products under software license agreements that grant customers a personal, non-transferable license to use our products and contain terms and conditions prohibiting the unauthorized reproduction or transfer of our products. In addition, while we attempt to protect trade secrets and other proprietary information through non-disclosure agreements with employees, consultants and distributors, not all of our employees have signed invention assignment agreements. Although we intend to protect our rights vigorously, there can be no assurance that these measures will be successful. Our failure to protect our rights, or the improper use of our products by others without licensing them from us could have a material adverse effect on our results of operations and financial condition.

We and our customers rely on technology and intellectual property of third parties, the loss of which could limit the functionality of our products and disrupt our business.

We use technology and intellectual property licensed from unaffiliated third parties in certain of our products, and we may license additional third-party technology and intellectual property in the future. Any errors or defects in this third-party technology and intellectual property could result in errors that could harm our brand and business. In addition, licensed technology and intellectual property may not continue to be available on commercially reasonable terms, or at all. The loss of the right to license and distribute this third-party technology could limit the functionality of our products and might require us to redesign our products.

Further, although we believe that there are currently adequate replacements for the third-party technology and intellectual property we presently use and distribute, the loss of our right to use any of this technology and intellectual property could result in delays in producing or delivering affected products until equivalent technology or intellectual property is identified, licensed or otherwise procured, and integrated. Our business would be disrupted if any technology and intellectual property we license from others or functional equivalents of this software were either no longer available to us or no longer offered to us on commercially reasonable terms. In either case, we would be required either to attempt to redesign our products to function with technology and intellectual property available from other parties or to develop these components ourselves, which would result in increased costs and could result in delays in product sales and the release of new product offerings. Alternatively, we might be forced to limit the features available in affected products. Any of these results could harm our business and impact our results of operations.

Some of our services and technologies may use “open source” software, which may restrict how we use or distribute our services or require that we release the source code of certain products subject to those licenses.

Some of our services and technologies may incorporate software licensed under so-called “open source” licenses, including, but not limited to, the GNU General Public License and the GNU Lesser General Public License. In addition to risks related to license requirements, usage of open source software can lead to greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or controls on origin of the software. Additionally, open source licenses typically require that source code subject to the license be made available to the public and that any modifications or derivative works to open source software continue to be licensed under open source licenses. These open source licenses typically mandate that proprietary software, when combined in specific ways with open source software, become subject to the open source license. If we combine our proprietary software with open source software, we could be required to release the source code of our proprietary software.

We take steps to ensure that our proprietary software is not combined with, and does not incorporate, open source software in ways that would require our proprietary software to be subject to an open source license. However, few courts have interpreted open source licenses, and the manner in which these licenses may be interpreted and enforced is therefore subject to some uncertainty. Additionally, we rely on multiple software programmers to design our proprietary technologies, and although we take steps to prevent our programmers from including open source software in the technologies and software code that they design, write and modify, we do not exercise complete control over the development efforts of our programmers and we cannot be certain that our programmers have not incorporated open source software into our proprietary products and technologies or that they will not do so in the future. In the event that portions of our proprietary technology are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our technologies, or otherwise be limited in the licensing of our technologies, each of which could reduce or eliminate the value of our services and technologies and materially and adversely affect our business, results of operations and prospects.

We rely upon technology and intellectual property licensed from unaffiliated third parties in certain of our products, which raises certain potential problems for us.

We use technology and intellectual property licensed from unaffiliated third parties in certain of our products, and we may license additional third-party technology and intellectual property in the future. Any errors or defects in this third-party technology and intellectual property could result in errors that could harm our brand and business. In addition, licensed technology and intellectual property may not continue to be available on commercially reasonable terms, or at all. The loss of the right to license and distribute this third-party technology could limit the functionality of our products and might require us to redesign our products.

Although we believe that there are currently adequate replacements for the third-party technology and intellectual property we presently use and distribute, the loss of our right to use any of this technology and intellectual property could result in delays in producing or delivering affected products until equivalent technology or intellectual property is identified, licensed or otherwise procured, and integrated. Our business would be disrupted if any technology and intellectual property we license from others or functional equivalents of this software were either no longer available to us or no longer offered to us on commercially reasonable terms. In either case, we would be required either to attempt to redesign our products to function with technology and intellectual property available from other parties or to develop these components ourselves, which would result in increased costs and could result in delays in product sales and the release of new product offerings. Alternatively, we might be forced to limit the features available in affected products. Any of these results could harm our business and impact our results of operations.

We could be required to provide the source code of our products to our customers.

Some of our customers have the right to require the source code of our products to be deposited into a source code escrow. Under certain circumstances, our source code could be released to our customers. The conditions triggering the release of our source code vary by customer. A release of our source code would give our customers access to our trade secrets and other proprietary and confidential information, which could harm our business, results of operations and financial condition. A few of our customers have the right to use the source code of some of our products based on the license agreements signed with such clients (mostly with respect to older versions of our solutions). Although such use is limited to specific matters and cases, these clients are exposed to some of our trade secrets and other proprietary and confidential information, which could harm us.

Significant disruptions of our information technology systems or breaches of our data security could adversely affect our business.

A significant invasion, interruption, destruction or breakdown of our information technology, or IT, systems and/or infrastructure by persons with authorized or unauthorized access could negatively impact our business and operations. We could also experience business interruption, information theft and/or reputational damage from cyber-attacks, which may compromise our systems and lead to data leakage internally. Both data that has been inputted into our main IT platform, which covers records of transactions, financial data and other data reflected in our results of operations, as well as data related to our proprietary rights (such as research and development, and other intellectual property-related data), are subject to material cyber security risks. Our IT systems have been, and are expected to continue to be, the target of malware, ransomware and other cyber-attacks. To date, we are not aware that we have experienced any loss of, or disruption to, material information as a result of any such malware or cyber-attack.

We have invested in advanced detection, prevention and proactive systems and processes to reduce these risks. Based on independent audits, we believe that our level of protection is in keeping with the industry standards of peer technology companies. We also maintain a disaster recovery solution, as a means of assuring that a breach or cyber-attack does not necessarily cause the loss of our information. We furthermore review our protections and remedial measures periodically in order to ensure that they are adequate. To date, we have not been subject to cyber-attacks or other cyber incidents which, individually or in the aggregate, resulted in a material impact to our operations or financial condition.

Despite these protective systems and remedial measures, techniques used to obtain unauthorized access are constantly changing, are becoming increasingly more sophisticated and often are not recognized until after an exploitation of information has occurred. We may be unable to anticipate these techniques or implement sufficient preventative measures, and we therefore cannot assure you that our preventative measures will be successful in preventing compromise and/or disruption of our information technology systems and related data. We furthermore cannot be certain that our remedial measures will fully mitigate the adverse financial consequences of any cyber-attack or incident.

Risks Related to our Traded Securities

There is limited trading volume for our ADSs and ordinary shares, which reduces liquidity for our shareholders, and may furthermore cause the stock price to be volatile, all of which may lead to losses by investors.

There has historically been limited trading volume for our ADSs and ordinary shares, respectively, both on the NASDAQ Global Select Market and the TASE, such that trading has still not reached the level that enables shareholders to freely sell their shares in substantial quantities on an ongoing basis and thereby readily achieve liquidity for their investment. As a further result of the limited volume, our ordinary shares have experienced significant market price volatility in the past and may experience significant market price and volume fluctuations in the future, in response to factors such as announcements of developments related to our investee businesses, announcements by competitors of our investees, quarterly fluctuations in our financial results and general conditions in the industry in which we through our investees compete.

The market price of our ordinary shares and ADSs may be volatile and you may not be able to resell your shares at or above the price you paid, or at all.

The stock market in general has experienced during recent years extreme price and volume fluctuations. The market prices of securities of technology companies have been extremely volatile and have experienced fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. These broad market fluctuations have affected and are expected to continue to affect the market price of our ordinary shares and ADSs.

The high and low closing market price of our ordinary shares traded on the Tel Aviv Stock Exchange, or the TASE, under the symbol “FORTY,” and the high and low closing market price of our ADSs traded on the NASDAQ Global Select Market under the symbol “FORTY,” during each of the last five years, are summarized in the table below:

Year	NASDAQ		Tel Aviv Stock Exchange*			
	In USDS		In NIS		In USDS	
	High	Low	High	Low	High	Low
2020(**)	89.00	36.75	310.00	148.90	89.16	39.79
2019	73.68	35.64	258.00	135.00	74.20	36.08
2018	44.95	32.57	156.40	117.70	43.65	33.72
2017	44.20	35.52	162.10	128.00	42.07	35.49
2016	42.17	23.55	162.70	93.79	42.18	23.61
2015	35.00	20.52	135.20	82.36	35.31	20.98

(*) The U.S. dollar price of our ordinary shares on the Tel Aviv Stock Exchange was determined by dividing the closing price of an ordinary share in NIS on the relevant date by the representative exchange rate of the NIS against the U.S. dollar as reported by the Bank of Israel on the same date.

(**) From January 1, 2020 through June 19, 2020

The market price of our ordinary shares and ADSs may fluctuate substantially due to a variety of factors, including:

- any actual or anticipated fluctuations in our or our competitors’ quarterly revenues and operating results;
- industry trends and changes;
- changes in expectations as to our future financial performance, including financial estimates by securities analysts and investors;
- public announcements concerning us or our competitors;
- results of integrating investments and acquisitions;
- the introduction or market acceptance of new service offerings by us or our competitors;
- changes in product pricing policies by us or our competitors;
- public announcements concerning distribution of dividends and payment of dividends;
- the public’s response to our press releases, our other public announcements and our filings with the Securities and Exchange Commission and the Israeli Securities Authority;
- changes in accounting principles;
- sales of our shares by existing shareholders;
- the loss of any of our key personnel;
- other events or factors in any of the markets in which we operate, including those resulting from war, incidents of terrorism, natural disasters or responses to such events; and
- general trends of the stock markets.

In addition, global and local economic, political, market and industry conditions and military conflicts and in particular, those specifically related to the State of Israel, may affect the market price of our ordinary shares and ADSs.

Significant fluctuations in our annual and quarterly results, which make it difficult for investors to make reliable period-to-period comparisons, may also contribute to volatility in the market price of our ordinary shares and American Depositary Shares.

Our quarterly and annual revenues, gross profit, net income and results of operations have fluctuated significantly in the past, and we expect them to continue to fluctuate significantly in the future. The following events may cause fluctuations:

- general global economic conditions;
- global success/lack of success in containing the coronavirus pandemic;
- acquisitions and dispositions;
- the size, time and recognition of revenue from significant contracts;
- timing of product releases or enhancements;
- timing of contracts;
- timing of completion of specified milestones and delays in implementation;
- changes in the proportion of service and license revenues;
- price and product competition;
- market acceptance of our new products, applications and services;
- increases in selling and marketing expenses, as well as other operating expenses;
- currency fluctuations; and
- consolidation of our customers.

A substantial portion of our expenses, including most product development and selling and marketing expenses must be incurred in advance of when revenue is generated. If our projected revenue does not meet our expectations, we are likely to experience an even larger shortfall in our operating profit relative to our expectations. The gross margins of our individual subsidiaries vary both among themselves and over time. As a result, changes in the revenue mix from these subsidiaries may affect our quarterly operating results. In addition, we may derive a significant portion of our net income from the sale of our investments or the sale of our proprietary software technology. These events do not occur on a regular basis and their timing is difficult to predict. As a result, we believe that period-to-period comparisons of our historical results of operations are not necessarily meaningful and that you should not rely on them as an indication for future performance. Also, it is possible that our quarterly and annual results of operations may be below the expectations of public market analysts and investors. If this happens, the prices of our ordinary shares and ADSs will likely decrease.

The market prices of our ordinary share and ADSs may be adversely affected if the market prices of our publicly traded investees decrease.

A significant portion of our assets is comprised of equity securities of directly held publicly traded companies. Our publicly traded investees are currently Matrix, Sapiens and Magic Software. The share prices of these publicly traded companies have been extremely volatile, and have been subject to fluctuations due to market conditions and other factors which are often unrelated to operating results and which are beyond our control. Fluctuations in the market price and valuations of our holdings in these companies may affect the market's valuation of the price of our ordinary shares and ADSs and may also thereby impact our results of operations. If the value of our assets decreases significantly as a result of a decrease in the value of our interest in our publicly traded investees, our business, operating results and financial condition may be materially and adversely affected and the market price of our ordinary shares and ADSs may also fall as a result.

Our securities are traded on more than one market and this may result in price variations.

Formula's ordinary shares are traded on the TASE and our ADSs are traded on the NASDAQ Global Select Market. Trading in our ordinary shares and ADSs on these markets takes place in different currencies (dollars on the NASDAQ Global Select Market and NIS on the TASE), and at different times (resulting from different time zones, different weekly trading days and different public holidays in the United States and Israel). The trading prices of our ordinary shares and ADSs on these two markets may differ due to these and other factors (see the risk factor titled "The market price of our ordinary shares and American Depositary Shares may be volatile and you may not be able to resell your shares at or above the price you paid, or at all" above for an example thereof). On the other hand, any decrease in the trading price of our ordinary shares or ADSs, as applicable, on one of these markets could likely affect—and cause a decrease in—the trading price on the other market.

Our largest shareholder, Asseco Poland S.A., can significantly influence the outcome of matters that require shareholder approval.

Asseco Poland S.A., or Asseco, our largest shareholder, currently owns approximately 25.6% of our outstanding share capital (compared to 25.35% as of May 15, 2019) and is furthermore party to a shareholders' agreement with our Chief Executive Officer, under which agreement Asseco has been granted an irrevocable proxy to vote 1,817,973 of our ordinary shares owned by our Chief Executive Officer. As a result, Asseco has effective voting power over an aggregate of 37.5% (compared to 38.2% as of May 15, 2019) of our outstanding ordinary shares (which excludes shares that we have repurchased that lack voting rights and shares subject to restrictions that are voted in proportion to the votes of our other shares). Therefore, Asseco can significantly influence the outcome of those matters requiring shareholder approval, including the election of directors and approval of significant corporate transactions. This voting power may have the effect of delaying or preventing a change in control which may otherwise be favorable to our minority shareholders. In addition, potential conflicts of interest may arise in the event that we or any of our investees enters into any agreements or transactions with affiliates of Asseco. Although Israeli law imposes certain procedures (including the requirement to obtain shareholder approval, which in certain cases includes a "majority of the minority") for approval of certain related party transactions, we cannot assure you that these procedures will eliminate the possible detrimental effects of these conflicts of interest. If certain transactions are not approved in accordance with required procedures under applicable Israeli law, these transactions may be void or voidable.

If we are unable to maintain effective internal control over financial reporting in accordance with Sections 302 and 404(a) of the Sarbanes-Oxley Act of 2002, the reliability of our financial statements may be questioned and our share price may suffer.

The Sarbanes-Oxley Act of 2002 imposes certain duties on us and on our executives and directors. To comply with this statute, we are required to document and test our internal control over financial reporting, our management is required to assess and issue a report concerning our internal control over financial reporting and our independent registered public accounting firm must issue an attestation report on our internal control procedures. Our efforts to comply with these requirements have resulted in increased general and administrative expenses and a diversion of management time and attention, and we expect these efforts to require the continued commitment of significant resources. We may identify material weaknesses or significant deficiencies in our assessments of our internal control over financial reporting. Failure to maintain effective internal control over financial reporting could result in investigation or sanctions by regulatory authorities, and could adversely affect our operating results, investor confidence in our reported financial information and the market price of our ordinary shares and ADSs.

Risks Related to Operations in Israel and Other Geographic Locations

Political, economic, and military conditions in Israel could negatively impact our business.

We are incorporated under the laws of, and our headquarters and principal research and development facilities are located in, the State of Israel, and approximately 60% and 62% of our consolidated revenues in 2018 and 2019, respectively, were generated from the Israeli market. As a result, we are directly influenced by the political, economic and military conditions affecting Israel. Several countries still restrict business with Israel and with companies doing business in Israel. These political, economic and military conditions in Israel—if adverse—as well as the foregoing business restrictions, could have a material adverse effect on our business, financial condition, results of operations and future growth.

Conflicts in North Africa and the Middle East, including in Syria, which borders Israel, have resulted in continued political uncertainty and violence in the region. Efforts to improve Israel's relationship with the Palestinian Authority have failed to result in a permanent solution, and there have been numerous periods of hostility in recent years during which Hamas, a terrorist group that controls the Gaza Strip, has attacked Israel with rockets. In addition, Iran continues to take a hostile stance towards Israel, having proceeded with development of a nuclear program and having promised the destruction of Israel periodically. Such instability may affect the economy, could negatively affect business conditions and, therefore, could adversely affect our operations. To date, these matters have not had any material effect on our business and results of operations; however, the regional security situation and worldwide perceptions of it are outside our control and there can be no assurance that these matters will not negatively affect our business, financial condition and results of operations in the future.

Many of our employees (including executive officers) in Israel are obligated to perform military reserve duty, currently consisting of approximately 30 days of service annually (or more for reserves officers or non-officers with certain expertise). Additionally, these employees are subject to being called to active duty at any time upon the outbreak of hostilities. While we have operated effectively under these requirements, no assessment can be made as to the full impact of these requirements on our business or work force and no prediction can be made as to the effect on us of any expansion of these obligations.

Our business may be materially affected by changes to fiscal and tax policies. Potentially negative or unexpected tax consequences of these policies, or the uncertainty surrounding their potential effects, could adversely affect our results of operations and share price.

As a multinational Group, we are subject to income taxes, withholding taxes and indirect taxes in numerous jurisdictions worldwide. Significant judgment and management attention and resources are required in evaluating our tax positions and our worldwide provision for taxes. In the ordinary course of business, there are many activities and transactions for which the ultimate tax determination is uncertain. In addition, our tax obligations and effective tax rates could be adversely affected by changes in the relevant tax, accounting, and other laws, regulations, principles and interpretations. This may include recognizing tax losses or lower than anticipated earnings in jurisdictions where we have lower statutory rates and higher than anticipated earnings in jurisdictions where we have higher statutory rates, changes in foreign currency exchange rates, or changes in the valuation of our deferred tax assets and liabilities.

We may be audited in various jurisdictions, and such jurisdictions may assess additional taxes against us. If we experience unfavorable results from one or more such tax audits, there could be an adverse effect on our tax rate and therefore on our net income. Although we believe our tax estimates are reasonable, the final determination of any tax audits or litigation could be materially different from our historical tax provisions and accruals, which could have a material adverse effect on our operating results or cash flows in the period or periods for which a determination is made. Additionally, we and our subsidiaries are subject to transfer pricing rules and regulations, including those relating to the flow of funds between each of us and our respective affiliates, which are designed to ensure that appropriate levels of income are reported in each jurisdiction in which we operate.

The tax benefits that will be available to certain of our Israeli subsidiaries and our Israeli affiliate will require us to continue to meet various conditions and may be terminated or reduced in the future, which could increase our costs and taxes.

Some of our Israeli subsidiaries derive and expect to continue to derive significant benefits from various programs, including Israeli tax benefits relating to our "Preferred Technology Enterprise", or PTE programs. To be eligible for tax benefits as a Preferred Technology Enterprise, these Israeli subsidiaries must continue to meet certain conditions. If they do not meet the conditions stipulated in the Israeli Law for the Encouragement of Capital Investments, 5719-1959, or the Investment Law and the regulations promulgated thereunder, as amended, for the PTE, any of the associated tax benefits may be cancelled and they would be required to repay the amount of such benefits, in whole or in part, including interest and consumer price index, or CPI, linkage (or other monetary penalties). Further, in the future these tax benefits may be reduced or discontinued. While we believe that certain of our Israeli subsidiaries have met and continue to meet the conditions that entitle them to previously-obtained Israeli tax benefits, there can be no assurance that the Israeli Tax Authority will agree.

The Israeli government grants that one of Sapiens Israeli subsidiaries has received require us to meet several conditions and restrict our ability to manufacture products and transfer know-how developed using such grants outside of Israel and require us to satisfy specified conditions.

One of Sapiens' Israeli subsidiaries received grants in the past from the government of Israel through the National Technological Innovation Authority, or the Innovation Authority (formerly operating as Office of the Chief Scientist of the Ministry of Economy of the State of Israel, or the OCS), for the financing of a portion of its research and development expenditures in Israel with respect to Sapiens legacy technology. In consideration for receiving grants from the Innovation Authority, we are obligated to pay the Innovation Authority royalties from the revenues generated from the sale of products (and related services) developed (in whole or in part) using the Innovation Authority funds, in an amount that is up to 100% to 150% of the aggregate amount of the total grants that we received from the Innovation Authority, plus annual interest for grants received after January 1, 1999. We must fully and originally own any intellectual property developed using the Innovation Authority grants and any right derived therefrom unless transfer thereof is approved in accordance with the provisions of the Israeli Encouragement of Research, Development and Technological Innovation Law, 5744-1984, or the Innovation Law (formerly known as the Encouragement of Industrial Research and Development Law, 5744-1984, or the Research Law), and related regulations.

When a company develops know-how, technology or products using grants provided by the Innovation Authority, the terms of these grants and the Innovation Law restrict the transfer of such know-how, and the transfer of manufacturing or manufacturing rights of such products, technologies or know-how outside of Israel. Even after the repayment of such grants in full, we will remain subject to the restrictions set forth under the Innovation Law, including:

- Transfer of know-how outside of Israel. Any transfer of the know-how that was developed with the funding of the Innovation Authority, outside of Israel, requires prior approval of the Innovation Authority, and the payment of a redemption fee.
- Local manufacturing obligation. The terms of the grants under the Innovation Law require that the manufacturing of products resulting from Innovation Authority-funded programs be carried out in Israel, unless a prior written approval of the Innovation Authority is obtained (except for a transfer of up to 10% of the production rights, for which a notification to the Innovation Authority is sufficient).
- Certain reporting obligations. We, as any recipient of a grant or a benefit under the Innovation Law, are required to file reports on the progress of activities for which the grant was provided as well as on our revenues from know-how and products funded by the Innovation Authority. In addition, we are required to notify the Innovation Authority of certain events detailed in the Innovation Law.

Therefore, if aspects of our technologies are deemed to have been developed with Innovation Authority funding, the discretionary approval of an Innovation Authority committee would be required for any transfer to third parties outside of Israel of know-how or manufacturing or manufacturing rights related to those aspects of such technologies. We may not receive those approvals. Furthermore, the Innovation Authority may impose certain conditions on any arrangement under which it permits us to transfer technology or development out of Israel.

The transfer of Innovation Authority-supported technology or know-how outside of Israel may involve the payment of significant amounts, depending upon the value of the transferred technology or know-how, the amount of Innovation Authority support, the time of completion of the Innovation Authority-supported research project and other factors. Furthermore, the consideration available to our shareholders in a transaction involving the transfer outside of Israel of technology or know-how developed with Innovation Authority funding (such as a merger or similar transaction) may be reduced by any amounts that we are required to pay to the Innovation Authority.

We received grants from the Innovation Authority prior to an extensive amendment to the Research Law that came into effect as of January 1, 2016, or the Amendment, which may also affect the terms of existing grants. The Amendment provides for an interim transition period (which has not yet expired), after which time our grants will be subject to terms of the Amendment. Under the Research Law, as amended by the Amendment, the Innovation Authority is provided with a power to modify the terms of existing grants. Such changes, if introduced by the Innovation Authority in the future, may impact the terms governing our grants.

Our international operations expose us to risks associated with fluctuations in foreign currency exchange rates that could adversely affect our business.

Due to our extensive operations and sales in Israel, most of our revenues and expenses from our IT services are denominated in NIS. For financial reporting purposes, we translate all non-U.S. dollar denominated transactions into dollars in accordance with IFRS. Therefore, we are exposed to the risk that a devaluation of the NIS relative to the dollar will reduce our revenue growth rate in dollar terms. On the other hand, a significant portion of our revenues from proprietary software products and related services is currently denominated in other currencies, particularly the Euro, Japanese Yen, British Pound, India Rupee, or INR, and Polish Zloty, or PLN, while a substantial portion of our expenses relating to the proprietary software products and related services, principally salaries and related personnel expenses, is denominated in NIS. As a result, the depreciation of the Euro, Japanese Yen, British Pound, INR and PLN relative to the U.S. dollar reduces our dollar recorded revenues from sales of our proprietary software products and related services that are denominated in those currencies and thereby harms our results of operations. In addition, the appreciation of the NIS relative to the dollar increases the dollar-recorded value of expenses that we incur in NIS in respect of such proprietary software products sales, and, therefore, could adversely affect our results of operations and harm our competitive position in the markets. In 2018 and 2019, the NIS appreciated by 0.1% and 0.9%, respectively, relative to the dollar (in each case, based on the change in the average annual representative exchange rate reported by the Bank of Israel for that year compared to the year that preceded it). Inflation in Israel further increases the dollar cost of our NIS-based operating expenses and adversely impacts the profits that we realize from our proprietary software products sales. There was minimal inflation in Israel during the years ended December 31, 2018 and 2019, at rates of 0.8% and 0.6%, respectively.

In certain locations, we have engaged and may continue in the future to engage in currency-hedging transactions intended to reduce the effect of fluctuations in foreign currency exchange rates on our financial position and results of operations. However, there can be no assurance that any such hedging transactions will materially reduce the effect of fluctuation in foreign currency exchange rates on such results. In addition, if for any reason exchange or price controls or other restrictions on the conversion of foreign currencies were imposed, our financial position and results of operations could be adversely affected. For additional information relating to the exchange rates between different relevant currencies, see “Item 5. Operating and Financial Review and Prospects—Overview—Our Functional and Reporting Currency.”

As we continue to expand our business in emerging markets, such as India, we face increasing challenges that could adversely impact our results of operations, reputation and business.

One-third of Sapiens’ employees are currently located in India. Our significant presence in India, in particular Sapiens’ Research & Development personnel and its personnel for the delivery of its professional services, poses a number of challenges. These challenges are related to more volatile economic conditions, poor protection of intellectual property, inadequate protection against crime (including counterfeiting, corruption and fraud), lack of due process, and inadvertent breaches of local laws or regulations. In addition, local business practices may be inconsistent with international regulatory requirements, such as anti-corruption and anti-bribery laws and regulations (including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act) to which we are subject. It is possible that some of our employees, subcontractors, agents or partners may violate such legal and regulatory requirements, which may expose us to criminal or civil enforcement actions, including penalties and suspension or disqualification from U.S. federal procurement contracting. If we fail to comply with such legal and regulatory requirements, our business and reputation may be harmed.

Conducting business in India involves unique challenges, including potential political instability; threats of terrorism; the transparency, consistency and effectiveness of business regulation; corruption; the protection of intellectual property; and the availability of sufficient qualified local personnel. Any of these or other challenges associated with operating in India may adversely affect our business or operations. Terrorist activity in India and Pakistan has contributed to tensions between those countries and our operations in India may be adversely affected by future political and other events in the region.

It may be difficult to serve process and enforce judgments against our directors and officers in the United States or in Israel.

We are organized under the laws of the State of Israel. All of our executive officers and directors are nonresidents of the United States, and a substantial portion of our assets and the assets of these persons are located outside of the United States. Therefore, it may be difficult to:

- effect service of process within the United States on us or any of our executive officers or directors;
- enforce court judgments obtained in the United States including those predicated upon the civil liability provisions of the United States federal securities laws, against us or against any of our executive officers or directors, in the United States or Israel; and
- bring an original action in an Israeli court against us or against any of our executive officers or directors to enforce liabilities based upon the United States federal securities laws.

Israeli courts may refuse to hear a claim based on an alleged violation of U.S. securities laws reasoning that Israel is not the most appropriate forum in which to bring such a claim. In addition, even if an Israeli court agrees to hear a claim, it may determine that Israeli law and not U.S. law is applicable to the claim. If U.S. law is found to be applicable, the content of applicable U.S. law must be proven as a fact by expert witnesses, which can be a time consuming and costly process. Certain matters of procedure will also be governed by Israeli law. There is little binding case law in Israel that addresses the matters described above. As a result of the difficulty associated with enforcing a judgment against us in Israel, an investor may not be able to collect any damages awarded by either a U.S. or foreign court.

Provisions of Israeli law may delay, prevent or make difficult an acquisition of us, which could prevent a change of control and therefore depress the price of our shares.

The Israeli Companies Law, 5759-1999, or the Companies Law, regulates mergers and requires that tender offers for acquisitions of shares above specified thresholds be approved via special shareholder approvals. The Companies Law furthermore requires shareholder approvals for transactions involving directors, officers or significant shareholders and regulates other matters that may be relevant to these types of transactions. Furthermore, Israeli tax considerations may make potential transactions unappealing to us or to some of our shareholders. These provisions of Israeli corporate and tax law may have the effect of delaying, preventing or complicating a merger with, or other acquisition of, us. This could cause our ordinary shares to trade at prices below the price for which third parties might be willing to pay to gain control of us. Third parties who are otherwise willing to pay a premium over prevailing market prices to gain control of us may be unable or unwilling to do so because of these provisions of Israeli law. Asseco’s control of a significant percentage of our outstanding ordinary shares may also discourage potential acquirers from paying a premium to our shareholders pursuant to a change of control transaction. Please see the risk factor above titled “Our largest shareholder, Asseco Poland S.A., can significantly influence the outcome of matters that require shareholder approval.”

Your rights and responsibilities as a shareholder are governed by Israeli law and differ in some respects from the rights and responsibilities of shareholders under U.S. law.

We are incorporated under Israeli law. The rights and responsibilities of holders of our ordinary shares are governed by our memorandum of association, amended and restated articles of association, which we sometimes refer to as our articles, and Israeli law. These rights and responsibilities differ in some respects from the rights and responsibilities of shareholders in typical U.S. corporations. In particular, a shareholder of an Israeli company has a duty to act in good faith in exercising the rights thereof and fulfilling the obligations thereof toward the company and other shareholders and to refrain from abusing the power thereof in the company, including, among other things, in voting at the general meeting of shareholders on certain matters. Israeli law provides that these duties are applicable in shareholder votes at the general meeting with respect to, among other things, amendments to a company's articles of association, increases in a company's authorized share capital, mergers and acquisitions and transactions involving interests of officers, directors or other interested parties which require the shareholders' approval. In addition, a controlling shareholder of an Israeli company or a shareholder who knows that he or she possesses the power to determine the outcome of a vote at a meeting of our shareholders, or who has, by virtue of the company's articles of association, the power to appoint or prevent the appointment of an office holder in the company, or any other power with respect to the company, has a duty of fairness toward the company. The Companies Law does not establish criteria for determining whether or not a shareholder has acted in good faith.

We may have difficulty protecting our interests as a shareholder of Sapiens, which is a Cayman Islands company.

Following the completion of the migration of its legal jurisdiction to the Cayman Islands in August 2018, Sapiens' corporate affairs are governed by its memorandum of association, or the Memorandum, its articles of association, or the Articles, the Companies Law (2016 Revision) of the Cayman Islands, or the Cayman Companies Law, and the common law of the Cayman Islands. Our rights as a shareholder of Sapiens are not as clearly established under statutes or judicial precedent in the Cayman Islands as in jurisdictions in the United States. Therefore, we may have more difficulty in protecting our interests than would shareholders of a corporation incorporated in a jurisdiction in the United States, due to the comparatively less developed nature of Cayman Islands law in this area.

The Cayman Companies Law permits mergers and consolidations between Cayman Islands companies and between Cayman Islands companies and non-Cayman Islands companies. Dissenting shareholders have the right to be paid the fair value of their shares (which, if not agreed between the parties, will be determined by the Cayman Islands court) if they follow the required procedures, subject to certain exceptions. Court approval is not required for a merger or consolidation which is effected in compliance with these statutory procedures.

In addition, there are statutory provisions that facilitate the reconstruction and amalgamation of companies, provided that the arrangement is approved by a majority in number of each class of shareholders and creditors with whom the arrangement is to be made, and who must in addition represent three-fourths in value of each such class of shareholders or creditors, as the case may be, that are present and voting either in person or by proxy at a meeting convened for that purpose. The convening of the meeting and subsequently the arrangement must be sanctioned by the Grand Court of the Cayman Islands. A dissenting shareholder has the right to express to the court the view that the transaction ought not to be approved.

When a takeover offer is made and accepted by holders of 90.0% of the shares within four months, the offeror may, within a two-month period, require the holders of the remaining shares to transfer such shares on the terms of the offer. An objection can be made to the Grand Court of the Cayman Islands but this is unlikely to succeed unless there is evidence of fraud, bad faith or collusion.

If the arrangement and reconstruction is thus approved, the dissenting shareholder would have no rights comparable to appraisal rights, which would otherwise ordinarily be available to dissenting shareholders of a corporation incorporated in a jurisdiction in the United States, providing rights to receive payment in cash for the judicially determined value of the shares. This may make it more difficult for you to assess the value of any consideration you may receive in a merger or consolidation or to require that the offeror give you additional consideration if you believe the consideration offered is insufficient.

Copies of Sapiens' Memorandum and Articles, which serve as exhibits to its 2019 annual report, were annexed as Appendix A to the proxy statement for Sapiens' 2017 annual general meeting of shareholders, which was appended as Exhibit 99.1 to Sapiens' Report of Foreign Private Issuer on Form 6-K furnished to the SEC on October 26, 2017. A table comparing certain Curacao law provisions to Cayman Islands law provisions was annexed as Appendix B to that same proxy statement.

Sapiens' home jurisdiction, the Cayman Islands, has been added by the European Council to the EU's list of non-cooperative jurisdictions for tax purposes, commonly referred to as the 'EU blacklist'. This status, if not removed, may have an adverse impact upon Sapiens reputation and, potentially, their financial condition and results of our activities.

In February 2020, the Cayman Islands was added to a list of non-cooperative jurisdictions for tax purposes, commonly referred to as the 'EU blacklist'. It is commonly believed that the reason for the inclusion of the Cayman Islands in that list was due to its having missed the EU's deadline (end of 2019) for the introduction of legislation for the registration of private funds domiciled in the Cayman Islands (the legislation was introduced in the last quarter of 2019, but did not formally become law until early February 2020).

While the Cayman Islands government already announced that it has begun talks with EU officials to return the Cayman Islands to its previous status as soon as possible, i.e. by October 2020, we cannot assure you that this will be the case. The reputational harm associated with Sapiens being a Cayman Islands entity could potentially have an adverse impact on its financial condition and results of operations if that status continues for an extended period of time.

As a foreign private issuer whose ADSs are listed on the NASDAQ Global Select Market, we may follow certain home country corporate governance practices instead of certain NASDAQ requirements.

As a foreign private issuer whose ADSs are listed on the NASDAQ Global Select Market, we are permitted to follow certain home country corporate governance practices instead of certain requirements of the Listing Rules of the NASDAQ Stock Market. A foreign private issuer that elects to follow a home country practice instead of such requirements must submit to NASDAQ in advance a written statement from independent counsel in such issuer's home country certifying that the issuer's practices are not prohibited by the home country's laws. In addition, a foreign private issuer must disclose in its annual reports filed with the SEC or on its website, each such requirement that it does not follow and describe the home country practice followed by the issuer in lieu of any such requirement. In keeping with these leniencies, we have elected to follow home country practice with regard to, among other things, composition of our board of directors, director nomination procedure, compensation of officers, quorum at shareholders' meetings and timing of our annual shareholders' meetings. We have furthermore elected to follow our home country law, in lieu of those rules of the NASDAQ Stock Market that require that we obtain shareholder approval for certain dilutive events, such as for the establishment or amendment of certain equity based compensation plans, an issuance that will result in a change of control of the company, certain transactions other than a public offering involving issuances of a 20% or more interest in the company and certain acquisitions of the stock or assets of another company. Accordingly, our shareholders and ADS holders may not be afforded the same protection as provided under NASDAQ's corporate governance rules.

Our U.S. shareholders may suffer adverse tax consequences if we are classified as a passive foreign investment company or as a "controlled foreign corporation".

Generally, if for any taxable year 75% or more of our gross income is passive income, or at least 50% of the average quarterly value of our assets (which may be measured in part by the market value of our ordinary shares, which is subject to change) are held for the production of, or produce, passive income, we would be characterized as a passive foreign investment company, or PFIC, for U.S. federal income tax purposes under the Code. Based on our gross income and gross assets, and the nature of our business, we believe that we were not classified as a PFIC for the taxable year ended December 31, 2019. Because PFIC status is determined annually based on our income, assets and activities for the entire taxable year, it is not possible to determine whether we will be characterized as a PFIC for the taxable year ending December 31, 2020, or for any subsequent year, until we finalize our financial statements for that year. Furthermore, because the value of our gross assets is likely to be determined in large part by reference to our market capitalization, a decline in the value of our ordinary shares may result in our becoming a PFIC. Accordingly, there can be no assurance that we will not be considered a PFIC for any taxable year. Our characterization as a PFIC could result in material adverse tax consequences for you if you are a U.S. investor, including having gains realized on the sale of our ordinary shares treated as ordinary income, rather than a capital gain, the loss of the preferential rate applicable to dividends received on our ordinary shares by individuals who are U.S. holders, and having interest charges apply to distributions by us and the proceeds of share sales. Certain elections exist that may alleviate some of the adverse consequences of PFIC status and would result in an alternative treatment (such as mark-to-market treatment) of our ordinary shares. Prospective U.S. investors should consult their own tax advisers regarding the potential application of the PFIC rules to them. Prospective U.S. investors should refer to "Item 10.E. Taxation—U.S. Federal Income Tax Considerations" for discussion of additional U.S. income tax considerations applicable to them based on our treatment as a PFIC.

Certain U.S. holders of our ordinary shares may suffer adverse tax consequences if we or any of our non-U.S. subsidiaries are characterized as a “controlled foreign corporation”, or a CFC, under Section 957(a) of the Code. A non-U.S. corporation is considered a CFC if more than fifty percent of the voting power or the total value of the shares is owned, or is considered to be owned, by U.S. shareholders who each own shares representing ten percent or more of the voting or total value of the shares of such non-U.S. corporation, who refer to as 10% U.S. Shareholders. Generally, 10% U.S. Shareholders of a CFC are currently required to include in their gross income their pro-rata share of the CFC’s “Subpart F income”, a portion of the CFC’s earnings, to the extent the CFC holds certain U.S. property, and certain other new items under H.R. 1, originally known as the 2017 Tax Cuts and Jobs Act, or the TCJA. Such 10% U.S. Shareholders are subject to current U.S. federal income tax with respect to such items, even if the CFC has not made an actual distribution to such shareholders. “Subpart F income” includes, among other things, certain passive income (such as income from dividends, interests, royalties, rents and annuities or gain from the sale of property that produces such types of income) and certain sales and services income arising in connection with transactions between the CFC and a person related to the CFC. Certain changes to the CFC constructive ownership rules introduced by the TCJA may cause one or more of our non-U.S. subsidiaries to be treated as CFCs and may also impact our CFC status. This may result in negative U.S. federal income tax consequences for 10% U.S. Shareholders of our ordinary shares. The CFC rules are complex and therefore no assurances can be given that we are not or will not become a CFC. Certain changes to the CFC constructive ownership rules introduced by recent U.S. tax legislation could, under certain circumstances, cause us to be classified as a CFC. Current or prospective 10% U.S. Shareholders should consult their tax advisors regarding the U.S. tax consequences of acquiring, owning, or disposing our ordinary shares and the impact of the TCJA, especially the changes to the rules relating to CFCs.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Both our legal name and our commercial name are Formula Systems (1985) Ltd. We were incorporated under the laws of the State of Israel on April 2, 1985 and are subject to the Israeli Companies Law, 5759-1999. We maintain our principal executive offices at 5 Haplada Street, Or Yehuda 6021805, Israel and our telephone number is +972-3-5389487. Our agent in the United States is Corporation Service Company and its address is 2711 Centerville Road, Suite 400, Wilmington, DE 19808. Our Internet address is www.formulasystems.com. The information contained on that site is not a part of this annual report and is not incorporated by reference herein. The SEC maintains an Internet site, <http://www.sec.gov>, which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. The information on that website is not part of this annual report and is not incorporated by reference herein. Except as described elsewhere in this annual report, we have not had any important events in the development of our business since January 1, 2019.

In 1991, we completed the initial public offering of our ordinary shares on the TASE. In October 1997, we completed the listing of our ADSs on the NASDAQ Global Market. Since January 3, 2011, our ADSs have been listed on the NASDAQ Global Select Market.

Capital Expenditures and Divestitures

Since our inception, we have acquired effective controlling interests, and have invested, in companies which are engaged in the IT solutions and services business. We, together with our investees, are known as the Formula Group.

We have adopted a strategy of seeking to create positive economic impact and long-term value for our investors and the companies we invest in. We believe that this strategy provides us with capital to support the growth of our interest in our remaining subsidiaries, as well as provide us the opportunity to pursue new acquisitions of, and investments in, other businesses, particularly businesses offering products, technologies and services that are complementary to ours and are suitable for integration into our business, thereby increasing value for our shareholders (and ADS holders). We expect to continue to develop and enhance the products, services and solutions of our investees, and to continue to pursue additional acquisitions of, or investments in, companies that provide IT services and proprietary software solutions.

Our principal investment and divestiture activities since the start of our 2017 fiscal year are described below. For additional information concerning our related financing activities since the start of our 2017 fiscal year, see “Item 5. Operating and Financial Review and Prospects— B. Liquidity and Capital Resources— Sources of Financing.”

Changes in our percentage ownership of Sapiens. As of January 1, 2017, our percentage interest in Sapiens was 48.9%. During the last three years, mainly due to exercises of options by employees of Sapiens, our direct interest in Sapiens’ outstanding common shares was diluted to 48.1% as of each of December 31, 2017 and 2018, and 47.9% as of December 31, 2019. Our interest in Sapiens’ common shares is currently 47.8%. Pursuant to our acquisitions of Sapiens common shares, we invested an aggregate of \$0.8 million in 2018 (there were no such purchases in 2017 or 2019). The sources of such funds have been our working capital, loans from financial institutions and our Series A Secured Debenture and Series A Convertible Debentures.

Changes in our percentage ownership of Magic Software. Our ownership interest in Magic Software was reduced from 47.3% as of January 1, 2017 to 45.2% in July 2018 as a result of Magic Software's private placement in which Magic Software issued 4,268,293 of its ordinary shares at a price of \$8.20 per share for total net consideration of \$34.6 million, net of issuance expenses. In that private placement, Formula was issued 1,117,734 ordinary shares for total consideration of \$9.2 million, with the remaining ordinary shares issued to certain Israeli institutional investors. Pursuant to our investments in Magic Software's ordinary shares, we also invested an aggregate of \$9.2 million in 2018. Pursuant to our acquisitions of Magic Software ordinary shares, we invested an aggregate of \$0.9 million in 2019 and \$0.8 million in 2020. Our interest in Magic Software's ordinary shares currently stands at 45.52% (compared to 45.34% as of December 31, 2019). The sources of such funds have been our working capital and our Series A and Series C Secured Debenture financings.

Changes in our percentage ownership of Matrix. As of January 1, 2017, our percentage interest in Matrix was 50.0%. During the last three years, mainly due to exercises of options by employees of Matrix, our direct interest in Matrix's outstanding share capital was diluted to 49.5%, 49.2% and 48.9% as of December 31, 2017, 2018 and 2019, respectively. Our interest in Matrix's outstanding share capital is currently 49.0%. Pursuant to our acquisitions of Matrix shares, we invested an aggregate of \$0.1 million in 2018 and \$0.9 million in 2020. There were no such purchases in 2017 or 2019. The sources of such funds have been our working capital.

Acquisition by Formula:

Acquisition of Ofek Aerial Photography. In March 2020, Formula completed the acquisition of an 80% share interest of Ofek Aerial Photography, or Ofek, and also received an option to acquire the remaining 20% of the equity in the future, for total consideration of approximately NIS 27.7 million. Ofek is one of the leading companies Israel in the fields of aerial and satellite mapping, geographic data collection and processing, and provides services in numerous geographic applications. Ofek employs approximately 100 employees, all situated at Ofek's headquarter in Natanya, Israel. Ofek and the sellers hold mutual call and put options, respectively, for the remaining 20% interest in Ofek, exercisable for 36 months following the third year anniversary of the transaction (April 30, 2020 is considered the date of the transaction for purposes of that provision). For further information, please see Note 25 to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Michpal. In January 2017, Formula directly acquired all of the share capital of Michpal, an Israeli-based company that develops, sells and supports a proprietary on-premises payroll software solution for processing traditional payroll stubs to Israeli enterprise and payroll service providers. Formula paid a purchase price of \$22.1 million. For further information, please see Note 4(i) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Sapiens:

Acquisition of sum.cumo. In February 2020, Sapiens acquired sum.cumo, a German-based technology provider that offers digital, consumer-centric solutions mainly to the insurance sector, for a purchase price of \$22.9 million in cash. An additional \$1.8 million was paid to sum.cumo's senior executives as part of an existing agreement between sum.cumo and their former shareholders. In addition, Sapiens issued 173,003 restricted shares units worth approximately \$4.4 million to sum.cumo's senior management, for which vesting is subject to performance criteria. Sum.cumo's senior executives may be entitled to future payments of up to \$2.2 million that are subject to both earn out-based and retention specific criteria over the next four years. For further information, please see Note 25 to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Cálculo. In September 2019, Sapiens acquired Cálculo, a leading vendor of insurance consulting and managed services, and a core solution to the Spanish market. Cálculo's team of insurance system experts (one of the largest in Spain) and solid customer base are expected to help us to continue Sapiens' global expansion by entering the large Iberian market. Sapiens paid approximately \$5.8 million in the acquisition, subject to adjustment, and about \$1.7 million was subject to earn out-based specific criteria and continued employment of founders. For further information, please see Note 4(ii)(a) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Adaptik. In March 2018, Sapiens acquired Adaptik, a New Jersey company based in Pennsylvania engaged in the development of software solutions for P&C insurers, including policy administration, rating, billing, customer management, task management and product design. The total purchase price was approximately \$18.2 million in cash (of which \$18.0 million was paid in March 2018 and \$0.2 million will be paid in March 2022) and about \$3.7 million (of which \$1.3 million was paid during 2019) is subject to earn out-based specific criteria relating to achievements of revenue targets over three years (2018-2020). Such payments are subject to continued employment and therefore were not included in the purchase price. For further information, please see Note 4(ii)(b) to our consolidated financial statements included in Item 18 of this annual report.

This acquisition better positioned Sapiens to provide North American P&C carriers with an enhanced and complete platform, which has improved Sapiens' competitive position and enabled Sapiens to increase its market share in the North American insurance market. The acquisition of Adaptik together with the acquisition of StoneRiver (in February 2017) created synergy with Sapiens' strong capabilities, and enable Sapiens to offer a truly modern, comprehensive property and casualty digital insurance platform to the U.S. market. Sapiens now offers an innovative P&C digital insurance platform that combines three powerful core components: Sapiens PolicyPro for Property & Casualty (formerly called Adaptik Policy), Sapiens BillingPro for Property & Casualty (formerly known as Adaptik Billing) and Sapiens ClaimsPro for Property & Casualty (formerly called StoneRiver Stream Claims), accompanied by Sapiens' existing solutions for data and analytics, digital engagement and distribution, and the cloud. For further information, please see Note 4(ii)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of KnowledgePrice.com. On December 27, 2017, Sapiens acquired KnowledgePrice.com, a Latvian company that specializes in digital insurance services and consulting. This acquired entity will join Sapiens' Digital Division, which focuses on digital and business intelligence services and solutions, including portal and digital distribution offerings to customers worldwide. Sapiens' acquisition of KnowledgePrice involved the addition of 50 digital insurance technology experts, including innovative portal services. KnowledgePrice has extensive expertise and long-term experience with open technologies, agile methodologies and best practices surrounding digital insurance and the deployment of portals. The total purchase price was approximately €5.8 million out of which €3.1 million was paid at closing and €0.3 million in January 2018, with the remainder subject to (i) earn-outs based on the revenues and profitability targets of KnowledgePrice.com over three years (2018-2020) following the closing, valued at €1.4 million at the acquisition date (of which Sapiens paid \$0.1 million during 2019) and (ii) €0.9 million (of which Sapiens paid \$0.6 million during 2019) related to a retention payment subject to continued employment. For further information, please see Note 4(ii)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of StoneRiver. In February 2017, Sapiens acquired StoneRiver, a U.S Denver, Colorado- based provider of a wide range of technology solutions and services to insurance carriers, agents, and broker-dealers, whose product groups encompass P&C solutions, Life solutions, workers compensation, and reinsurance solutions for all major business lines. The acquisition will enable Sapiens to expand the range of solutions and services that it offers to the North American insurance industry and to further accelerate its growing market footprint in the U.S. P&C space. Sapiens paid approximately \$101.4 million in cash, subject to certain adjustments based on working capital, transaction expenses, unpaid debt and certain litigation matters. Sapiens-related acquisition costs of \$1.3 million are presented in general and administrative expenses. For further information, please see Note 4(ii)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Matrix:

Acquisition of Techtop Ltd. In April 2019, Matrix purchased the net assets of Techtop Ltd.'s, or TechTop, (meeting the definition of a business) for a cash consideration of NIS 17.1 million (approximately \$4.8 million). TechTop is a leasing Israeli supplier of professional sound and systems. As part of the purchase price allocation, the excess of the purchase price paid over the value of net assets acquired in the amount of NIS 8.6 million (approximately \$2.4 million) was allocated to goodwill. For further information, please see Note 4(iv)(a) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of MedaTech Ltd. In February 2019, Matrix acquired 100% of the share capital of MedaTech Ltd, an Israeli company, for cash consideration of approximately NIS 85 million (approximately \$23.5 million). MedaTech is Israel's leading business partner of Priority ERP, with over 1,000 customers in a variety of verticals. In April 2019, Matrix acquired additional 25% of the issued and outstanding share capital of Medatech Systems Inc., or Medatech Systems, a subsidiary of Medatech Technologies, for NIS 5.2 million (approximately \$1.4 million). As a result of the acquisition, Medatech Technologies' interest in the issued and outstanding share capital of Medatech Systems increased to 75%. Matrix and the seller both hold mutual options to purchase and sell (respectively) 5% of the remaining share capital of Medatech Systems at the end of the second-year anniversary following the acquisition. For further information, please see Note 4(iv)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Dana Engineering Ltd. In February 2019, Matrix acquired 80% of the share capital of Dana Engineering Ltd., an Israeli company, for cash consideration of approximately NIS 52.0 million (approximately \$14.4 million). Matrix and the seller hold mutual call and put options, respectively, for the remaining 20% interest in Dana Engineering, which may be exercised following the second-year anniversary of the acquisition. Dana Engineering provides project management services in the field of national infrastructure. For further information, please see Note 4(iv)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Noah Technologies Ltd. In November 2018, Matrix acquired 100% of the share capital of Noah Technologies Ltd an Israeli based company, for cash consideration of approximately NIS 6.0 million (approximately \$1.7 million). In addition, the seller may be entitled to a performance-based payment capped at NIS 4.0 million (approximately \$1.1 million), estimated on the date of the transaction at NIS 3.1 million (approximately \$0.8 million), relating to achievement of certain profitability targets for the years 2019-2021. Noah Technologies Ltd specializes in providing engineering solutions, computerized catalogs and IT professional services. For further information, please see Note 4(iv)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Integrity Software 2011 Ltd. In July 2018, Matrix acquired 65% of the share capital of Integrity Software 2011 Ltd., an Israeli based company, for cash consideration of approximately NIS 9.0 million (approximately \$2.5 million). In addition, the seller may be entitled to a performance-based payment capped at NIS 4.0 million (approximately \$1.1 million), estimated on the date of the transaction at NIS 0.8 million (approximately \$0.2 million), relating to achievement of certain profitability targets for the years 2019-2021. Matrix and the seller hold mutual options to purchase and sell (respectively) 10% of the remaining share capital of Integrity. Integrity Software specializes in providing software solutions to the enterprise sector in Israel in the fields of software security, IT infrastructure and virtualization. For further information, please see Note 4(iv)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Cambium (2014) Ltd. In July 2018, Matrix acquired 55% of the share capital of Cambium (2014) Ltd. for NIS 3.1 million in cash (approximately \$0.9 million). Matrix and the seller hold mutual options to purchase and sell (respectively) 15% of the remaining share capital of Cambium. For further information, please see Note 4(iv)(f) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Pleasant Valley Business Solutions, LLC. In March 2018 Matrix acquired 100% of the share capital of Pleasant Valley Business Solutions, or PVBS, a U.S. company, for cash consideration of approximately \$7.6 million. In addition, the seller may be entitled to receive performance-based payments of up to \$6.5 million, estimated on the date of the transaction at \$2.8 million, relating to the achievement of profitability targets over three years (2018-2020). PVBS is engaged in the implementation and assimilation of ERP systems for U.S government suppliers. For further information, please see Note 4(iv)(g) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Alius Corp. In January 2018, Matrix acquired 50.1% of the share capital of Alius consulting group, a U.S based company headquartered in New York, for approximately \$3.2 million in cash, plus an additional \$3.0 million to be paid in two years. Under the terms of the acquisition, Matrix and the seller held mutual options to purchase and sell (respectively) the remaining shares within two years following the closing date under the agreement. In November 2018, Matrix acquired the remaining 49.9% of the share capital of Alius for an additional and final consideration of \$13.8 million. Alius is a global consulting financial firm that provides advisory services in the area of regulatory, risk and compliance in the U.S financial markets. For further information, please see Note 4(iv)(h) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Magic Software:

Acquisition of Infinigy Solutions LLC. In October 2019, Magic Software acquired an additional 30% of the share capital of Infinigy Solutions LLC, or Infinigy, increasing its share capital interest from 70% to 100%, for total cash consideration of \$4.4 million, which was paid upon closing. Infinigy is a U.S.-based services company focused on expanding the development and implementation of technical solutions which deliver design-driven turnkey solutions, combining Architecture and Engineering, or A&E design project management and general contracting competencies, across the wireless communications industry. For further information, please see Note 4(iii)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of NetEffects Inc. In July 2019, Magic Software acquired all of the share capital of NetEffects Inc, a U.S.-based services company engaged in IT staffing and recruiting services, for total consideration of \$12.5 million, of which \$9.4 million was paid upon closing and the remaining \$3.1 million will be paid in three installments following the first, second and third year anniversaries of the acquisition. For further information, please see Note 4(iii)(a) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of PowWow Inc. In April 2019, Magic Software acquired all of the share capital of PowWow Inc, a U.S.-based company and the creator of SmartUX™, a leading Low-Code development platform for mobilizing and modernizing enterprise applications, for total consideration of \$8.4 million. Total consideration includes an estimated deferred consideration of \$2.0 million contingent upon PowWow meeting various revenue targets over three years (2020-2022). For further information, please see Note 4(iii)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of OnTarget Group Inc. In February 2019, Magic Software acquired all of the share capital of OnTarget Group Inc, a U.S.-based services company, which specializes in outsourcing of software development services, for total consideration of \$12.5 million. Total consideration consists of \$6.0 million paid upon closing plus an additional deferred payment amount that is contingent upon OnTarget meeting future operating results over four years (2019-2022). For further information, please see Note 4(iii)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Futurewave Systems Inc. In late December 2017, Magic Software acquired a 100% share interest in Futurewave Systems, Inc, a U.S.-based full-service provider of consulting and outsourcing solutions for IT personnel, for total consideration of \$3.0 million. For further information, please see Note 4(iii)(v) to our consolidated financial statements included in Item 18 of this annual report.

Additional Acquisitions by Magic Software in 2017-2018: During each of the years ended December 31, 2017 and 2018, Magic Software completed several additional acquisitions for total cash consideration of approximately \$1.1 million, \$0.6 million, respectively. These acquisitions generally enhance our technologies, product and services offerings, but the companies acquired are not material to our consolidated results of operations, either individually or in the aggregate. For further information, please see Note 4(iii)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Michpal Micro Computers (1983) Ltd:

Acquisition of Liram Financial Software Ltd. In May 2020, Michpal completed the acquisition of 70% of the share capital of Liram Financial Software Ltd., or Liram, an Israeli provider of proprietary integrated specialized management systems in the field of financial accounting, taxation and compliance, for accounting professionals (accountants and tax consultants), bookkeepers, controllers, and CFOs, giving its clients, for more than 35 years, complete confidence in their actions and decisions. Liram's solutions include specialized financial software solutions for preparation and reporting of financial statements, tax declarations, single-entry and double-entry bookkeeping, fixed asset management and depreciation calculations (under the brand name Ram-Nihul) etc. Total cash consideration of amounted to NIS 15.3 million (approximately \$4.3 million).

In recent months, Liram has launched its "RamPlus 360" platform, which is a modular platform offering a wide range of Liram's software solutions under one integrated working environment (on-premise or online). The new platform has already proven its efficacy during the COVID-19 crisis by enabling financial professionals to continue their work offsite and provide crucial real-time and personalized service to their clients even during the COVID-19 lockdown period, while saving time and preventing errors. This acquisition completed by Michpal is an additional strategic step towards the expansion of Michpal's operations in the field of payroll, human resources and financial management and compliance

Acquisition of Unique Software Industries Ltd. In November 2019, Michpal completed the acquisition of Unique Software Industries Ltd., or Unique, for up-front consideration of approximately NIS 49 million (approximately \$14.0 million), as well as up to an additional NIS 12 million (approximately \$3.5 million) that is subject to defined performance goals. Unique is a software development and services company that has provided integrated solutions in the field of payroll for more than 30 years, including pay-stubs, pension services management, education funds management, and software solutions for managing employee attendance. We believe that Unique's activities are synergetic and complementary to our operations in the field of payroll, into which we entered less than 36 months ago. We believe that this acquisition will allow us to expand our operations in these fields, while also broadening Unique's operations by capitalizing on our assets and transactional capabilities.

Acquisition of Effective Solutions Ltd. In November 2018, Michpal acquired an 80% share interest in Effective Solutions Ltd, an Israeli-based service provider of consulting in the fields of operational cost savings and procurement, as well as salary control and monitoring. The aggregate purchase price for the 80% interest was NIS 24 million (approximately \$6.5 million) in cash. In addition, Michpal and the seller hold mutual call and put options, respectively, for the remaining 20% interest in Effective Solutions estimated at NIS 3.0 million (approximately \$0.8 million) as of the acquisition date. For further information, please see Note 4(v)(b) to our consolidated financial statements included in Item 18 of this annual report.

B. Business Overview

General

We are a global information technology holding company that is principally engaged through our directly held investees in providing software consulting services and computer-based business solutions, and in developing proprietary software products. We deliver our solutions in over 50 countries worldwide to customers with complex IT services needs, including a number of "Fortune 1000" companies.

Except for providing our investees with our management, technical expertise and marketing experience to help them create a consecutive positive economic impact and long-term value, and direct their overall strategy through our active involvement, we do not conduct independent operations at our parent company level. Following our transition to IFRS during 2016, we consolidate the results of all of the entities in which Formula holds an equity interest, other than our equity investee TSG.

We operate through our subsidiaries— Matrix, Sapiens, Magic Software, Michpal, Insync and Ofek Aerial Photograph— and through our equity investee TSG. The following is a description of the areas of our business activity:

IT Services

We design and implement IT solutions and software systems which improve the productivity of our customers' existing IT assets, enable them to effectively manage their operations and reduce their business risks in the face of changing business environments. In delivering our IT services, we at times use proprietary software developed by members of the Formula Group. We provide our IT services across the full system development life cycle, including definition of business requirements, developing customized software, implementing software and modifying it based on the customer's needs, system analysis, technical specifications, coding, testing, training, implementation and maintenance. We perform our projects on-site or at our own facilities.

Proprietary Software Solutions

We design, develop and market proprietary software solutions for sale in selected niche markets worldwide. We regularly seek opportunities to invest in or acquire companies with attractive proprietary software solutions under development which we believe to have market potential. All of our investments and acquisitions in this area have been in companies with products beyond the prototype stage. In addition, from time to time, we selectively invest in companies with proven technology where we believe we can leverage our experience to enhance product positioning and increase market penetration. We provide our management and technical and financial expertise, marketing experience and financial resources to help bring these products to market. We also assist the members of our group to form teaming agreements with strategic partners to develop a presence in international markets and to raise debt and capital.

The Formula Group

Formula is the parent company of investees, which, as noted above, we refer to collectively (together with Formula) as the Formula Group. As of December 31, 2019, we held 90% of the shares of InSync, a 48.9% interest in Matrix, a 47.9% interest in Sapiens, a 45.34% interest in Magic Software, a 50% interest in TSG through our equity holdings, and the entire share capital of Michpal. We have effective control of each of the companies in the Formula Group other than TSG for purposes of consolidation under IFRS 10. We provide all our investees with our management, technical and financial expertise, marketing experience to help them create a positive economic impact and long-term value.

We direct the overall strategy of our investees. While our investees each have independent management, we monitor their growth through our active involvement in the following matters:

- strategic planning;
- marketing policies;
- senior management recruitment;
- investment and budget policy;
- financing policies; and
- support the process of raising debt and capital.

We promote the synergy and cooperation among our investees by encouraging the following:

- transfer of technology and expertise;
- leveling of human resources demand;
- combining skills for specific projects;
- formation of critical mass for large projects; and
- marketing and selling the Formula Group's products and services to its collective customer base.

We, through our investees, offer a wide range of integrated software solutions and IT professional services, such as implementation and integration projects of computing and software, outsourcing, software project management, software development, IT managed services, operating a network of high-tech training and instruction centers, providing software testing and QA, depending on specific needs of the customer and depending on the subject expertise necessary on a case by case basis, and design, develop and market proprietary software solutions for sale in selected niche markets, both in Israel and worldwide. Formula's Chief Executive Officer and Chief Financial Officer serve as the Chief Executive Officer and Chief Financial Officer, respectively, of Magic Software as well.

Our Subsidiaries

Matrix

Matrix IT Ltd. is Israel's leading IT services company as demonstrated in recent research reports of the Israeli IT market, published by the research companies IDC and STKI. Matrix employs approximately 10,340 software, hardware, integration, engineering and training personnel, which provide advanced IT services to hundreds of customers in the Israeli and the U.S markets. Matrix executes some of the largest IT projects in Israel. It develops and implements leading technologies, software solutions and products. Matrix provides infrastructure and consulting services, outsourcing, offshore, near-shore, training and assimilation services. Matrix represents and markets leading software vendors. Among its customers are most of the leading Israeli organizations and companies in the industry, retail, banking and finances, education and academe, Hi-tech and ISVs, telecom, defense, health and the government/public sectors. Matrix is traded on the Tel Aviv Stock Exchange.

The solutions, services and products supplied by Matrix are designed to improve Matrix's customers' competitive capabilities, by providing a response to their unique IT needs in all levels of their operations.

Areas of Operation

Matrix operates through its directly and indirectly held subsidiaries in the following principal areas:

- Information Technologies (IT) software solutions and services, consulting & management in Israel.
- IT software solutions and services in the United States.
- Computer infrastructure and integration solutions.
- Software product marketing and support.
- Training and integration.

Information Technologies (IT) software solutions and services, consulting & management in Israel

The software solutions and services in Israel provided by Matrix consist mainly of providing tailored software solutions and upgrading and expanding mainly existing large-scale software systems. These services include, among others, developing customized software, adapting software to the customer's specific needs, implementing software and modifying it based on the customer's needs, outsourcing, software project management, software testing and QA and integrating all or part of the above elements. Furthermore the activity in this segment includes project management consulting services and multi-disciplinary operational and engineering consulting services, including supervision of complex engineering projects, all according to client specific needs as the scope of work invested in each element varies from one customer to the other. In 2019 under this line of business Matrix recorded revenues of approximately NIS 2,263 million (approximately \$635.3 million), compared to NIS 1,923 million (approximately \$534.9 million) in 2018, an increase of approximately 17.7% when measured in NIS. Operating income in 2019 was approximately NIS 127.4 million (approximately \$35.8 million), compared to NIS 102.2 million in 2018 (approximately \$28.4 million), an increase of approximately 24.7% when measured in NIS. In 2019, activity in software solutions and value-added services in Israel accounted for approximately 63% of Matrix's revenues and approximately 50% of its operating income.

Information Technologies (IT) Software solutions and services in the United States

Matrix provides solutions and expert services mainly in the area of governance risk and compliance, or GRC, including activities in the following areas: risk management, fraud management and prevention of fraud, anti-money laundering, trade surveillance and regulatory compliance security in these areas all through its subsidiary Matrix-IFS. Matrix also provides solutions and technological services in the areas of portals, BI (Business Intelligence), DBA (Database Administration), CRM (Customer Relations Management) and EIM (Enterprise Information Management). This sector also includes dedicated solutions for the GovCon Government contracting market, IT help desk services for healthcare and software distribution services, in particular for IBM and Microsoft. In 2019, under this line of business, Matrix recorded revenues of approximately NIS 384.0 million (approximately \$107.8 million), compared to NIS 396.9 million (approximately \$110.4 million) in 2018, a decrease of approximately 3.3% when measured in NIS. Operating income in 2019 was approximately NIS 59.5 million (approximately \$16.7 million), compared to NIS 53.7 million (approximately \$14.9 million) in 2018, an increase of approximately 10.8% when measured in NIS. In 2019, activity in the U.S. accounted for approximately 11.0% of Matrix's revenues and for approximately 23% of its operating income, because of higher operating gross margin in the U.S.

Computer infrastructure and integration solutions

Matrix activities in this area consist of: (i) providing computer and telecommunication infrastructure solutions; (ii) selling and marketing computer equipment, licenses and peripherals to enterprises together with services; and (iii) selling and marketing cloud based solutions (under the "CloudZone" division) and services relating to databases and "big data" (under the "DataZone" division). Amongst Matrix infrastructure and integration solutions included are solutions of IBM, Oracle Red Hat, Dell-Boomi and others. In 2019, under this line of business, Matrix recorded revenues of approximately NIS 601.9 million (approximately \$169.0 million), compared to NIS 529.7 million (approximately \$147.3 million) in 2018, an increase of approximately 13.6% when measured in NIS. Operating income in 2019 was approximately NIS 28.3 million (approximately \$7.9 million), compared to NIS 24.0 million (approximately \$6.7 million) in 2018, an increase of approximately 17.9% when measured in NIS. In 2019, activity in computer infrastructure and integration solutions accounted for approximately 17% of Matrix's revenues and for approximately 11% of its operating income.

Software product marketing and support

Matrix activities in this area include marketing and support for various software products (mainly originated outside of Israel) the principal of which are CRM, computer systems management infrastructures, web world content management, database and data warehouse mining, application integration, database and systems, data management and software development tools, and providing professional support for these products to customers, including marketing and upgrade maintenance of software products. In 2019, under this line of business, Matrix recorded revenues of approximately NIS 183.8 million (approximately \$51.6 million), compared to NIS 154.5 million (approximately \$43.0 million) in 2018, an increase of approximately 19% when measured in NIS. Operating income in 2019 was approximately NIS 21.7 million (approximately \$6.1 million), compared to NIS 22.5 million (approximately \$6.3 million) in 2018, a decrease of approximately 3.6% when measured in NIS. In 2019, activity in software product marketing and support accounted for approximately 5% of Matrix's revenues and approximately 9% of its operating income.

Training and integration

Matrix's activities in this area consist of operating a network of training centers which provide advanced courses for high-tech professionals, courses for developers and professional training, and soft skills and management training, and providing training and instructions with respect to computer systems. In 2019, under this line of business, Matrix recorded revenues of approximately NIS 163.8 million (approximately \$46.0 million), compared to NIS 163.7 million (approximately \$45.5 million) in 2018. Operating income in 2019 was approximately NIS 17.9 million (approximately \$5.0 million), compared to NIS 18.1 million (approximately \$5.0 million) in 2018. In 2019, activity in training and integration accounted for approximately 4% of Matrix's revenues and for approximately 11% of its operating income.

Matrix provides solutions, services and products primarily to the following market sectors (or verticals): banking and finance, high-tech and startups, industry and retail, government and the public sector, defense, transportation, healthcare, and education and academia.

Matrix offers to each market sector a broad range of solutions and services, customized for the specific needs of that sector. Matrix operates dedicated departments, each of which specializes in a particular sector. Each such department supplies customers in that sector with a products and services offering providing a response to most of its IT requirements, based on an in-depth business understanding of the challenges which are typical to that sector. Matrix established a separate division for each particular market sector, which manages the operations relating to that sector.

Specialization in the various sectors is reflected in the applications, professional and marketing aspects of each sector. Accordingly, the professional and marketing infrastructure required to support each market sector is developed to address such sector's specific needs.

In addition to the five sector-based areas of operations, Matrix operates three horizontal divisions providing specialist services for all of the different sectors of operations as follows:

- Expertise centers – Matrix operates approximately 20 “expertise centers” (“Centers of Excellence”), in areas such as: Cloud Computing, Internet of Things (IOT), Digital, User Experience, Mobility (Mobile Technology), Analytical BI and Big Data, DevOps, Service Oriented Architecture (SOA), Customer Relations Management (CRM), Enterprise Resource Planning (ERP), eXtended Relationship Management (XRM), Open Source, Security & Cyber, Machine Learning and Artificial Intelligence. These expertise centers are based on business vertical concept, which is targeted to yield significant added value to the company’s customers, including: group of professionals that are focused and have expertise in the related technologies, hands-on experience and expertise in the related technologies, methodologies, and best practices; and strategic management consulting center that provides customers with diverse consultation services on topics such as organization, strategy, complex project management in areas such as environmental planning, transportation and chain of supply, business development and technological development.
- Matrix Global - Quality assurance and related professional services under an offshore/“nearshore” model.
- Management/engineering consulting services - Comprehensive management and engineering consulting services, from the stage of adoption of strategy through the stages of implementation and effecting of changes, including project management of complex projects, including engineering projects, engineering supervisory projects of a wide scope, and projects in the fields of planning and environmental, and transportation, as well as multiple-field engineering advisory services and advisory and implementation in the field of management of supply chain and management of operational logistics.

In the context of its offshore/“nearshore” activities, Matrix conducts IT-related activities, including content development, quality assurance, maintenance, customer call center services indexing and related activities that are performed in a specific region or country where such activities can be conducted most inexpensively. Matrix offers its enterprise customers these types of solutions, whether via its “nearshore” Talpiot project, via its offshore solutions that are based on its development centers in Bulgaria and Macedonia or via back-office and call center services through Babcom Centers Ltd. (a company located in the Galilee, housing thousands of educated and skillful men and women interested in developing a career near their homes). Periods of economic cautiousness (such as the present time) provide an added incentive for these types of inexpensive economic solutions. This trend is likely to expand Matrix’s operations in these areas in the context of its “Matrix Global” activities.

Matrix’s customers include large and medium size enterprises in Israel, including commercial banks, loan and mortgage banks, telecommunications services providers, cellular operators, credit card companies, leasing companies, insurance companies, security agencies, hi-tech companies and startups, the Israeli Defense Forces and government ministries and public agencies and media and publishing entities. The majority of Matrix’s customers in the software solutions and value-added services business segment in Israel have a business relationship with it for more than ten years. 33% of Matrix’s customers in the software solutions and value-added services business segment in Israel operate in the financial, banking and insurance sector, 19% in the industry, retail and hi-tech sector, 14% in the government sector, 11% in the defense sector, and the remaining 23% in other business sectors.

Sapiens

Overview

Sapiens International Corporation N.V. is a leading global provider of software solutions for the insurance industry. Sapiens’ extensive expertise is reflected in its innovative software platforms, suites, solutions and services for property & casualty (P&C); reinsurance; life, pension & annuity (L&A); financial & compliance (F&C); workers’ compensation (WC); and financial markets. Sapiens offers a full digital suite that provides an end-to-end, holistic and seamless digital experience for carriers, agents, customers and assorted insurance personnel, across multiple devices and technologies. Sapiens’ offerings enable its customers to effectively manage their core business functions – including policy administration, claims and billing – and they support insurers during their digital transformation journeys. Sapiens’ portfolio also covers underwriting, illustration and electronic application.

Sapiens supplies decision management solutions tailored to a variety of financial services providers, so business users across verticals can quickly deploy business logic and comply with policies and regulations throughout their organizations.

Sapiens’ platforms possess modern, modular architecture and are digital-driven. They empower customers to respond to the rapidly changing insurance market and frequent regulatory changes, while improving the efficiency of their core operations. These process enhancements increase revenue and reduce costs.

2019 was a year of double-digit growth and acquisitions for Sapiens, while we also invested in building the foundation for further expansion in 2020 and beyond.

In February 2020, Sapiens acquired sum.cumo, a German-based technology provider that offers disruptive, digital, innovative and consumer-centric solutions mainly to the insurance sector. Sapiens aims to expand its footprint by offering Sapiens' complete product and services portfolio in the DACH region (Germany, Switzerland and Austria), alongside sum.cumo's offerings. sum.cumo's experts in consulting, user experience, marketing and technology enable the region's insurers to launch successful eCommerce environments.

As described below, in October of 2019, Sapiens acquired Cálculo, a leading vendor of insurance consulting and managed services, and a core solution to the Spanish market. Cálculo was established in 1966 and possesses over 150 insurance experts and 25 insurance company customers in Spain. Cálculo's team of experts, one of the largest core insurance system teams in Spain, and impressive customer base that includes several blue-chip companies, will help Sapiens continue its global expansion by facilitating its entry into the large Iberian market.

In February 2019, Sapiens announced a complete rebranding that highlights its evolution to a unified global provider of insurance software solutions. The new brand identity marks Sapiens' growth into a one-stop shop for insurance software solutions. Sapiens renamed its entire product portfolio and changed the look-and-feel and contents of all its marketing collateral and launched a new website. Sapiens' master brand architecture and descriptive solution names quickly communicate Sapiens' offerings' main functions and frame Sapiens as a unified company (following the acquisitions described further above in this Item 4 under "A. History and Development of the Company— Capital Expenditures and Divestitures"). The updated look features Sapiens' human-to-human (H2H) approach, reflecting the long-term partnerships it has with customers and employees, and the entirely new marketing communications collateral it developed.

In February 2018, Sapiens acquired Adaptik, a Pennsylvania-based firm that offers P&C insurers policy administration and billing capabilities for commercial, personal, specialty and workers' compensation lines of business. The acquisition was another step in Sapiens' journey to offer the U.S. insurance market a modern, modular, fully integrated property & casualty insurance platform.

In February 2017, Sapiens acquired StoneRiver, a U.S. based company that offered a rich product portfolio comprised of claims, billing, rating, underwriting, illustration, reinsurance and F&C solutions for all major insurance business lines, across both P&C and L&A. StoneRiver's comprehensive set of solutions complements Sapiens' offerings and has helped Sapiens accelerate its growth in the U.S. market, as well as globally.

The acquisition of StoneRiver and then Adaptik created synergy with Sapiens' strong capabilities and enable Sapiens to offer a truly modern, comprehensive property & casualty digital insurance platform to the U.S. market. Sapiens possesses an innovative P&C digital insurance platform that combines three powerful core components: Sapiens PolicyPro for Property & Casualty; Sapiens BillingPro for Property & Casualty; and Sapiens ClaimsPro for Property & Casualty, accompanied by Sapiens' existing solutions for data and analytics, digital engagement and distribution, and the cloud.

In December 2017, Sapiens expanded its Digital capabilities through the acquisition of KnowledgePrice.com (KnowledgePrice), a technology specialist with expertise in digital insurance services and consulting. Privately-held KnowledgePrice employed digital insurance technology experts and supplied services to leading insurance providers in the UK and Europe. KnowledgePrice personnel joined the Sapiens Digital division and now staff a Sapiens center for excellence for digital engagement services.

Sapiens' expanded Digital division, which focuses on enabling Sapiens' customers to deliver on the future of user and customer expectations, creates innovative offerings and provides full support during customers' digital journeys.

Sapiens' enhanced managed services offerings and cloud deployment have been adopted by several major customers and are expected to continue growing in the coming years. By allowing Sapiens to manage a substantial part of their ongoing IT operations, customers can focus on their core insurance competency and business.

Sapiens Software Solutions

Sapiens' software portfolio is comprised of:

- **Property & Casualty** – a comprehensive software platform, suite and solutions supporting a broad range of business lines, including personal, commercial and specialty lines, as well as reinsurance and workers' compensation (see below).

Our portfolio includes Sapiens Platform for Property & Casualty (which is comprised of core, data and digital solutions) and two core suites: Sapiens CoreSuite for Property & Casualty (for North America) and Sapiens IDITSuite for Property & Casualty (for EMEA and APAC). The core suites are offered as a full suite, or insurers can choose standalone components: policy, billing and claims. Sapiens CoreSuite is based on technology acquired from Adaptik and StoneRiver, while the Sapiens IDITSuite technology evolved from our previous Sapiens IDIT offering. Smaller, more agile insurance providers can choose Sapiens Stingray for Property & Casualty in North America and e-Tica in Iberia.

- **Life, Pension & Annuities** – a comprehensive software platform, suite and complementary solutions for the management of a diversified range of products for life, pension & annuities. Our portfolio includes the Sapiens Platform for Life, Pension & Annuities; Sapiens CoreSuite for Life, Pension & Annuities; Sapiens UnderwritingPro for Life & Annuities; Sapiens ApplicationPro for Life & Annuities; Sapiens IllustrationPro for Life & Annuities; and Sapiens ConsolidationMaster for Life & Pension.
- **Digital** – Sapiens DigitalSuite offers an end-to-end, holistic and seamless digital experience for insurance customers, agents, brokers, risk managers, customer groups and third-party service providers. The suite is pre-integrated with Sapiens’ core suites and other industry-leading core systems. Comprised of innovative digital solutions and content libraries to facilitate diverse customer journeys, DigitalSuite includes Sapiens AgentConnect and Sapiens CustomerConnect, our portal solutions. As part of our digital offering, Sapiens offers the following data products: Sapiens Intelligence, an analytics platform that drives analytics adoption across the organization with compelling, insightful dashboards and apps; Sapiens IntelligencePro, a comprehensive BI solution with pre-configured reports, dashboards and scorecards; and Sapiens Advanced Analytics, which uses AI and Machine Learning to generate actionable insights based on different models across the insurance value chain.
- **Reinsurance** – complete reinsurance software solutions for full financial control and auditing support. Our portfolio includes: Sapiens ReinsuranceMaster, Sapiens ReinsurancePro and Sapiens Reinsurance GO.
- **Workers’ Compensation** – Sapiens workers’ compensation offerings handle comprehensive policy/billing and claims needs. Our solution portfolio includes Sapiens Platform for Workers’ Compensation, Sapiens CoreSuite for Workers’ Compensation, Sapiens PolicyPro for Workers’ Compensation and Sapiens ClaimsPro for Workers’ Compensation. Providers looking to preserve greater agility may select Sapiens GO for Workers’ Compensation, which is comprised of Sapiens PolicyGo for Workers’ Compensation, Sapiens ClaimsGo for Workers’ Compensation and Sapiens Connect for Workers’ Compensation.
- **Financial & Compliance** – we offer financial & compliance solutions comprised of both annual statement and insurance accounting software. This software includes Sapiens FinancialPro, Sapiens Financial GO, Sapiens StatementPro, Sapiens CheckPro and Sapiens Reporting Tools.
- **Decision Management** – Sapiens Decision is an enterprise-scale platform that enables institutions and “citizen developers” across verticals to centrally author, store and manage all organizational business logic. Organizations use it to track, verify and ensure that every decision is based on the most up-to-date rules and policies. Our Decision management products are offered across verticals (including commercial banking, investment banking, mortgage banking, insurance – for both P&C and life, government, etc.).
- **Technology-Based** – tailor-made solutions (unrelated to the insurance or financial services market) based on our Sapiens eMerge platform, which provides end-to-end, modular business solutions, ensuring rapid time to market.

Services

Sapiens’ services modernize and automate processes for insurance providers and financial institutions around the globe, helping to create greater organizational efficiencies, reduce costs and provide a better end user experience. They can be divided into three main categories: **program delivery**, **business services** and **managed services** (various methodologies are applied across the categories).

Program delivery includes:

- Project and program management
- Training
- Testing
- Migration
- Implementation and integration

Business services are comprised of:

- Business transformation – planning and strategy, business process evaluation, training and change management
- Digital transformation – business model and processes transformation, and data management consolidation, as well as data migration
- User acceptance testing (UAT)
- System integration

Managed services include:

- Hosting services
- Application and system management
- Ongoing production support

Sapiens has partnered with Microsoft Azure to offer its policy administration systems and accompanying services over private and public (single tenant) clouds. The company maintains an agnostic approach that also utilizes Amazon Web Services (AWS). Sapiens' cloud deployment includes full infrastructure for operations, plus the option of choosing cloud-related managed services delivered by Sapiens' experienced professional services team.

Methodologies:

Sapiens offers various delivery methodologies, including Waterfall and Agile (and a combination of the two). We also provide delivery tools and delivery performance indicators.

Built on a solid foundation of insurance domain expertise, proven technology and a history of successful deployments, our organization assists clients in identifying and eliminating IT barriers to achieve business objectives.

Sapiens' Marketplace and its Needs

Sapiens' Target Markets

Sapiens operates in a large market undergoing significant transformation. According to the Gartner report, "Forecast: Enterprise IT Spending for the Insurance Market, Worldwide, 2017-2023, 3Q19 Update" (a market statistics research report by Gartner, a research and consulting firm, written by Rajesh Narayan and Rika Narisawa that was published on November 6, 2019, and which we refer to herein as the "Gartner report"), Gartner forecasted global insurance market IT spending to grow by 4.4% in 2019 and to reach \$225 billion in U.S. dollars. This industry is predicted to reach nearly \$265 billion by 2023, growing at a 4.2% compound annual growth rate (CAGR) from 2018 through 2023. This growth will be driven by an increase in IT services spending and software spending at CAGRs of 5.3% and 10%, respectively, according to the Gartner Report.

Gartner forecasts total insurance IT spending on software in 2020 will be \$53 billion (software includes application software {analytics and business intelligence, back office/ERP and supply chain, front office/CRM, collaboration}; infrastructure software {application development and middleware, information management, storage management software, and system and network management}; and vertical/industry-specific applications).

Sapiens believes that our current total addressable market for core insurance software solutions and the accompanied point solutions is approximately \$40 billion, which we expect will grow as a result of insurance carriers' and financial institutions' need to address, via modern software solutions from external providers, the operational challenges presented by the inefficiency of their legacy core systems. Legacy systems reflect technical and functional limitations that adversely impact carriers' ability to swiftly launch new, innovative products that satisfy their customers' changing needs and preferences.

By slowing down carriers' business and geographic expansion, legacy systems create operational inefficiencies that result in increased business risk and financial costs. They are also a barrier for the adoption of digital capabilities, due to their inability to communicate and interact with innovative digital solutions. Today's insurance providers are looking for more than just the traditional core capabilities. They seek insurance platforms with a wider range of capabilities, including full digitalization.

Sapiens' customers are operating in a constantly evolving regulatory environment. Sometimes their legacy systems simply do not support new regulatory requirements, which puts insurance providers at risk of costly non-compliance. There is also a strong trend of shifting attention to the end-customer experience and activities, with a focus on digital operations. Many insurers are currently unable to provide the type of quality digital experience that their customers are already enjoying across most other verticals and customer satisfaction is only one of the many recognized benefits of going digital. This can only be supported via increased usage of data for decision-making, risk analysis, customer evaluation and rating, which requires a streamlined data flow and easy access to information from multiple sources.

We believe these challenges will accelerate the shift from spending on legacy systems to new vendor software solutions. It is also Sapiens' view that these challenges are too difficult to overcome via in-house systems and the majority of insurers will turn to external software vendors, such as Sapiens.

Property & Casualty Market

Property & casualty insurance protects policyholders against a range of losses on items of value. P&C insurance includes the **personal segment**, which is insurance coverage for individuals, with products such as motor, home, personal property and travel; the **commercial segment**, covering aspects of commercial activity, such as commercial property, car fleets and professional liability; and **specialty lines**, covering unique domains, such as marine, art and credit insurance. This market also includes workers' compensation for market carriers, administrators and state funds.

During the past few years, the P&C market has been characterized by a fast rate of digital adoption. New business and technology models are adopted rapidly, to launch innovative business offerings. This requires advanced software solutions, both on the core layer, which needs to be flexible and open, and with the variety of digital tools addressing customer experience needs.

Life, Pension & Annuity Markets

Life, pension & annuity providers offer their customers a wide range of products for long-term savings, protection, pension and insurance. They assist policyholders with financial planning through life insurance, medical and investment products. Their products can be classified into several areas, primarily investment and savings, risk and protection, pension and health-related products. These products can be targeted to individuals, as well as group- and employee-benefit types of products.

The products in this field are long-term in nature. When insurance providers consider purchasing new platforms from Sapiens, the decision is typically slower and involves multiple decision-makers throughout the organization.

Digital Market

Insurance carriers risk losing their customers if they do not provide the type of digital experience that all of us have come to expect from the retailers and service providers we interact with daily. Additionally, agents, brokers and other channel and service providers require a powerful digital ecosystem to capably carry out their crucial tasks.

It is not enough to simply provide a portal to offer today's consumers the online presence they demand, or to work with an isolated analytics system to parse data. A big step up is needed via an all-encompassing digital approach featuring integrated components functioning at their highest levels and complementing each other.

Reinsurance Market

Reinsurance is insurance that is purchased by an insurance company (ceded reinsurance) from another insurance company (assumed reinsurance) as a means of risk management. The reinsurer and the insurer enter into a reinsurance agreement, which details the conditions upon which the reinsurer would pay the insurer's losses. The reinsurer is paid a reinsurance premium by the insurer and the insurer issues insurance policies to its own policyholders. The insurer must maintain an accurate system of records to track its reinsurance contracts and treaties, to avoid claims leakage.

Workers' Compensation

Workers' compensation is one of the largest lines of business in the P&C industry in North America. But future profitability is getting harder to maintain, with medical and indemnity costs per lost time claim increasing at rates greater than inflation. Insurance organizations require technology solutions that can adapt quickly to business and market conditions, offering high levels of accuracy and efficiency.

Financial & Compliance Market

Financial professionals face overwhelming challenges as they struggle to satisfy ever-changing regulatory requirements, while meeting the demands of managerial reporting. The move towards globalization has introduced new currencies, and CEOs need more performance data for strategic decision-making. Organizations require one partner to optimize efficiencies with solutions that can be implemented quickly.

Decision Management Market

Increasing competition, regulatory burden, customer experience expectations and the proliferation of digital and product innovation requirements have necessitated a shift in thinking and approach among organizations across verticals. By replacing conventional policy and process management with the discipline known as “decision management,” financial institutions are bridging the gap between business and IT, by enabling business users to rapidly frame requirements in formal business models that can be easily understood by all stakeholders.

The decision management processes affect overall corporate performance, including its impact on customers and competitors. Decision management systems are a key performance component of every financial services organization, as they help the organization define, avoid and hedge financial risk.

Needs of our Target Markets

Large insurance and financial organizations must constantly invest in their IT systems to respond to key market drivers. They require the ability to:

- Satisfy today’s sophisticated, tech-savvy and demanding end-customers – who demand the type of instant, personalized service they enjoy from Netflix or Amazon – via digitalization and innovative initiatives, providing a stronger customer experience and engagement.
- Use advanced technologies, such as artificial intelligence (AI) and machine learning, to facilitate, improve and automate traditional insurance processes.
- Provide innovative business models, based on technology capabilities and digital operation (such as portals, web-based acquisition processes, advanced analytics, customer engagement platforms and data sources – including wearables, the Internet of Things and robo-advice.
- Respond to complex and evolving regulatory standards (past and current standards include Solvency II, IFRS 17, Dodd-Frank legislation, GDPR, etc.)
- Support internal customers’ growth and operations. This includes reducing the time to market of new products, expanding into new geographies, reducing costs and streamlining operations.
- Rapidly launch new products and propositions to the market, within a short timeframe and using existing, pre-defined capabilities.

Specific Needs of the Insurance Market

The insurance market is a large, complex and highly regulated environment. Insurance carriers operate in a super-competitive and quickly evolving ecosystem, which necessitates differentiating their value propositions. Additionally, providers operate under a rigid regulatory regime that demands fast compliance. The insurance market is going through a rapid evolution process, driven by new technologies, complex ecosystems, digital capabilities and new business models, all enabled by new technologies.

To efficiently manage their operations, insurance carriers require IT platforms that enable rapid introduction of changes via configurable, user-driven activities, integration with internal and external systems, control and auditing of employees’ work, support for omni-channel distribution and clear visibility into the carrier’s business operations, through streamlining and intelligent usage of data.

To compete in the rapidly changing environment, and win the competition for end customers, insurance carriers require a coherent digital proposition, allowing them to better interact with their customers in a digital and omni-channel manner. They are increasingly using robotics, predictive analytics, AI and machine learning to automate processes and obtain stronger business insights. The cloud can also be utilized for improved operations and scale.

Insurance carriers are experiencing substantial operational challenges due to the inefficiency of their legacy policy administration systems and their lack of digitalization. These legacy systems, which include both technical and functional limitations, acutely impact carriers’ ability to cope with growing challenges, such as the need for innovation, the shift of power to the consumer, and the dynamic and constantly changing regulatory environment.

We believe the following are key considerations for insurance carriers that are considering upgrading their legacy systems:

- **Dynamic business environment with constantly changing regulations** – insurance carriers still use outdated legacy systems that are costly and time-consuming to modify or upgrade. This has prevented them from innovating and growing. Carriers who use legacy systems may find it difficult to modify existing products, introduce new products and reach untapped market segments. Frequently changing global regulatory requirements necessitate specialized data and business rules, which makes change implementation particularly challenging.
- **Change in end-consumers' behavior and the shift of power to consumers** – insurance carriers must rapidly adapt to the shifting needs and behaviors of consumers, including the types and terms of insurance products offered, and how consumers access information. Insurance providers require systems with integration capability and support for multi-channel distribution, so they can reach their clients' customers and partners using multiple methods, including social media, across devices.
- **A need to improve operational efficiency and reduce total cost of ownership** – Sapiens believes that a significant percentage of insurance carriers are still using inefficient and outdated processes that do not automate operations and workflows, and thus do not offer efficient process management. Many of these processes likely have high error rates. Additionally, the ongoing maintenance of legacy systems is expensive and technically difficult. A specialized IT staff with the requisite skills and experience needed to maintain these systems is difficult to find and then eventually replace. Insurers seek systems that are modern, digital, automated, efficient and easy to maintain, and can lower costs over the long term.
- **Increasing global and multi-national operation** – a rising number of insurers are accelerating their growth initiatives through global acquisitions. These insurers seek a single provider who can deliver solutions that will be used across markets, combining the support of local regulatory requirements and specific customer needs, while driving a generic corporate business approach and strategy across the globe, reducing costs and overhead.
- **Exploring new business models and innovative propositions** – carriers are increasingly looking to: join innovative ecosystems; adopt and use new technologies, and partner with insurtechs; bring modern and differentiating propositions to the market; reduce cost; enhance and speed customer engagement; and improve their business parameters and KPIs.
- **Going digital** – digitalization holds significant potential for insurers, but only if they manage to efficiently digitalize their operations, support multi-channel distribution and ensure that agents and customers are able to access real-time, accurate data at any time and from anywhere – across devices.

Business Decision Management Market Needs

Many large organizations, particularly in the financial services market, must comply with complex regulations. They operate in highly competitive markets that require quick responses. Business logic drives most of the financial services transactions and is the backbone of an organization's policies and strategies, and its ability to successfully operate.

To achieve efficiency, business owners must assume ownership of the business logic and possess the ability to define and modify it, standardize it and reuse it across the organization. Business logic is defined today by business owners and compliance officers, but IT departments translate the requirements into code. This process raises several key challenges: the result does not always accurately reflect the business requirements; the new requirements might conflict with, or override, previous requirements; and the entire process is not fully audited. These gaps often create an inefficient and risk-exposed organization.

Sapiens' Software Solutions

Overview

Sapiens is a leading global provider of software solutions for the insurance industry. By enabling our insurance and financial services customers to digitize their business and be more agile in the face of changing business environments, we help them take advantage of powerful current trends – such as artificial intelligence, drones, machine learning, virtual assistants, etc. – while simultaneously reducing IT costs.

Sapiens offers its insurance customers a range of packaged software solutions that are:

- **Digital** – revealing their history and anticipating their future needs, while facilitating easy engagement across preferred interaction channels and multiple devices.
- **Data-driven** – based on set of data analysis tools, from data-warehouse and reporting, through business intelligence and analytics, to predictive and advanced analytics – so our customers can become a data-driven operation.
- **Highly automated** – by using various technologies, from decision to robotics, we improve efficiency and offer agile customer engagement.
- **Comprehensive and functionally-rich** – support for insurance standards, regulations and processes, by providing field-proven functionality and best practices.
- **Customizable & configurable** – easily matches our customers' specific business requirements. Our flexible architecture and configurable structure allow quick functionality augmentation that permits our platform to be used across different markets, unique business requirements and regulatory regimes. We utilize our knowledge and extensive insurance best practices and feature business-led configuration.
- **Open architecture and insurtech ecosystem** – provides easy integration to any external application under any technology, allowing streamlined connectivity to all satellite applications. This enhances the digital experience and omni-channel distribution, while maintaining total platform independence and system reliability. Easy interaction with various insurtech companies providing point-solutions that can be consumed by our platforms is enabled.
- **Component-based and scalable** – allows our customers to deploy platforms and solutions in a phased and modular approach, reducing risk and harm to the business, while supporting the growth plans and cost efficiency of the organization.

Our packaged software solutions enable:

- **Rapid deployment of new insurance products** – via configurable software, which creates a competitive advantage in all the insurance markets we serve.
- **Improvement of operational efficiency and reduction of risk** – full insurance process automation, with configurable workflows, audit and control, streamlined insurance practices, and simple integration and maintenance.
- **Reduction of overhead for IT maintenance** – easy-to-integrate solutions with flexible and modern architecture, resulting in lower costs for ongoing maintenance, modifications, additions and integration.
- **Enhanced omni-channel distribution and focus on the customers** – event-driven architecture, a proactive client management approach, rapid access to all levels of data, and a holistic view of clients and distributors.
- **Cloud-first as a preferred deployment model** – with the flexibility to also provide an on-premise deployment.
- **Support for digitalization** –insurers and financial services institutions who manage to efficiently digitalize their operations, support omni-channel distribution and ensure that agents and customers are able to access real-time, accurate data at any time and from anywhere – including tablets and mobile devices – will unlock massive potential.
- **Managed services** – offering our customers access to a long-term engagement by providing comprehensive support for their daily IT operations, while allowing them to focus on their business KPIs.

Sapiens Property & Casualty Solutions

Sapiens Platform for Property & Casualty

The Sapiens Platform for Property & Casualty is an end-to-end, cloud-based platform with advanced digital capabilities. It can be implemented as a pre-integrated platform, or as standalone modules. The platform addresses all P&C carrier needs across all lines of business and distribution channels, offering a wealth of digital features. It is comprised of core (policy, billing and claims), data (advanced analytics) and digital (a full suite) solutions.

Sapiens offers two core suites, based on region:

Sapiens CoreSuite for Property & Casualty (North America)

Sapiens CoreSuite for Property & Casualty is comprised of three fully integrated, core components that can also be deployed stand-alone: Sapiens PolicyPro, Sapiens BillingPro and Sapiens ClaimsPro.

CoreSuite is pre-integrated with additional components that can be selected, including business intelligence, reinsurance and portal solutions (customer and agent), as well as various interfaces.

This modular, automated, highly customizable suite offers a single platform for personal, commercial and specialty lines of business (LoBs). This increases organizational efficiency by reducing manual effort, generates competitive advantages and saves costs.

Sapiens IDITSuite for Property & Casualty (EMEA & APAC)

The Sapiens IDITSuite for Property & Casualty is a component-based, standalone software solution suite that offers policy, billing and claims and forms the core of the Sapiens Platform for Property & Casualty. IDITSuite supports all end-to-end core operations and processes for the non-life P&C market from inception, to renewal and claims. This pre-integrated, fully digital suite offers customer and agent portals, business intelligence and more. IDITSuite enables insurers to expand their offerings by testing new lines of business, products and services using our flexible product factory.

The suite is modular and can integrate with your ecosystem's components. Sapiens IDITSuite for Property & Casualty includes multiple lines of business in one policy for multiple insured objects and assets. It can support corporate agreements and master policy structures. IDITSuite is designed with growth and change in mind, with extensive multi-company, multi-branding, multi-currency and multi-lingual capabilities. The IDITSuite management system is built on open technology and can be used across devices.

Sapiens Policy Administration Solutions

The Sapiens' policy solutions for property & casualty come pre-integrated with the core system. They are easily integrated with existing and external systems and applications. The solutions manage the end-to-end policy administration lifecycle of an insurance contract, from initial quote, through rating and policy issuance. They also feature a complete range of policy issuance and amendment capabilities. Agents, underwriters and customers use the solutions to quote, issue and administer policies. The offerings provide comprehensive policy lifecycle support for all P&C lines of business.

Sapiens Billing Solutions

The Sapiens' billing solution for P&C enables carriers, MGAs and brokers to manage the full lifecycle of premium services, taxes and fees, along with commission billing, collection and disbursements. P&C carriers can integrate with third-party systems and data repositories, enjoy best-in-class usability and automate processes throughout the billing lifecycle.

Sapiens Claims Solutions

Sapiens' claims solutions for property & casualty provide simplified management and automated control of claims management handling and the settlement process. They offer intelligent, rules-driven workflow with effective claim assignment, ensuring faster cycle times, as well as rules-driven automatic claims payment.

Sapiens Stingray for Property & Casualty

Sapiens Stingray for Property & Casualty is a complete solution with quick implementation for all P&C insurance lines, providing a complete core processing solution right out of the box. Its modular software components are designed with flexibility in mind. This solution is customizable and well-suited for tiers 4-5.

e-Tica Solution for Property & Casualty (Spain)

The e-Tica solution for Property & Casualty empowers insurance companies with a product engine, as well as policy, billing, claims and reinsurance capabilities. A fourth-generation solution, e-Tica supports all core operations and processes for the P&C market, and supports bank assurance, brokers and direct insurance.

The suite is modular, flexible and customizable through module workshops. Additionally, main features include connectivity (simple integration with other applications), robustness (based on an infrastructure of leading, consolidated tools in the market), cloud-based (platform is deployed today in the cloud and on premise), web technology (developed with JEE technology and open standards), easy evolution (scalable technology and deployment in multiple configurations) and accessibility (from any place, any time).

e-Tica ecosystem is being enhanced through new features in micro services technology, like group policy management and injury agreements.

P&C Digital Offerings

The Sapiens DigitalSuite offers an end-to-end, holistic and seamless digital experience for P&C customers, agents, brokers, customer groups and third-party service providers. The suite is pre-integrated with Sapiens' P&C core and is comprised of digital engagement and digital enablement components. The suite is cloud-based.

Sapiens Life, Pension & Annuity Solutions

Sapiens Platform for Life, Pension & Annuities

The Sapiens Platform for Life, Pension & Annuities is a modern, digital insurance platform that includes core, data and digital solutions. With the ability to deploy its offerings as a complete platform, or as standalone modules, Sapiens can address life providers' needs across all their lines of business and distribution channels. Our mature platform is cloud and API-based, and features a strong core and advanced analytics, as well as data enablement and full digital engagement capabilities.

Sapiens CoreSuite for Life, Pension & Annuities

Sapiens CoreSuite for Life, Pension & Annuities is designed to provide excellence in the administration of insurance business, facilitate digital transformation and fast time-to-value for digital strategies, and create greater efficiency via legacy consolidation. It offers insurers:

- A single platform for individual and group business
- Transformation, enablement and execution for digital strategies
- Greater efficiency via improved automation, user experience and system consolidation

Single Platform

The Sapiens CoreSuite software suite supports the end-to-end administration of group and individual life, annuities, pension and investment business – in a single system. The suite offers a 360-degree view of the customer from their policy administration system, across all distribution channels and communication streams.

Existing System Consolidation

Many insurers still use systems developed decades ago that cannot support today's regulatory changes, digital marketplace and demanding customers. Too many manual processes can lead to errors that impact customer experience. Our unique conversion approach reduces the risks involved in migrating from existing legacy systems.

Sapiens UnderwritingPro for Life, Pension & Annuities

Sapiens UnderwritingPro for Life, Pension & Annuities is a web-based solution for automated underwriting and new business case management that is part of Sapiens' core suite. It speeds new business processes for insurance carriers and their channels, offering an intuitive user interface with critical updates and task assignments provided on a real-time dashboard. Sapiens UnderwritingPro enables underwriters and case managers to work on multiple cases simultaneously.

Sapiens ApplicationPro for Life & Annuities

Sapiens ApplicationPro for Life & Annuities is web-based insurance application software that provides carriers with the choice of a standalone eApplication system, or a more comprehensive solution that seamlessly integrates with Sapiens IllustrationPro for Life & Annuities and Sapiens UnderwritingPro for Life & Annuities. Sapiens ApplicationPro is robust electronic application software that helps carriers address critical business drivers, such as decreasing time-to-issue and reducing policy acquisition costs, all in an extremely intuitive and easy-to-use package.

Sapiens IllustrationPro for Life & Annuities

Sapiens IllustrationPro for Life & Annuities is a point-of-sale solution, offering responsive product illustrations from any location in an electronic environment, with internet and desktop support. ACORD®-compliant, it offers straight-through processing, from point-of-sale to application e-submission, supported by a needs analysis suite. IllustrationPro explains complex products in a compelling way. Its powerful calculation engines handle the most complex product illustrations, including the appropriate historical and hypothetical references.

Sapiens ConsolidationMaster for Life & Pension

Sapiens ConsolidationMaster is a purpose-built, end-to-end, legacy, portfolio-focused system with a unique migration methodology that deals with “dirty” data. The solution has over 500 product templates capable of supporting the compliant administration of legacy products in any language and regulatory jurisdiction. ConsolidationMaster is designed to significantly cut the costs that are commonly associated with legacy platforms.

Digital Transformation

Sapiens CoreSuite features full pre-integration to the Sapiens DigitalSuite and digital capabilities have been enhanced via adaptors. This facilitates digital transformation and fast time-to-value for digital strategies. It enables life carriers to become engaged, agile organizations with increased sales opportunities. By integrating CoreSuite with our advanced analytics solution and data warehouse, we can quickly generate actionable insights, self-service business intelligence and data discovery capabilities, across all mobile devices (and in the cloud).

Sapiens Digital Offerings

Sapiens DigitalSuite offers an end-to-end, holistic and seamless digital experience for customers, agents, brokers, risk managers, customer groups and third-party service providers. The suite is pre-integrated with Sapiens’ core solutions, and other industry-leading core systems, and can be easily integrated with existing systems. Our DigitalSuite is comprised of innovative digital solutions and content libraries to facilitate diverse customer journeys, including our rich portal content: Sapiens AgentConnect and Sapiens CustomerConnect.

Sapiens DigitalSuite was designed to enable our carrier customers to deliver on the future of user and customer expectations. DigitalSuite is an offering that can react to market changes, support flexible interaction with dynamic APIs and offer a modern user experience. Our DigitalSuite features component-based architecture, built on modern technologies and customer-centric design.

As part of our digital offering, Sapiens offers our data products, which include: Sapiens Intelligence, an analytics platform that drives analytics adoption across the organization with compelling, insightful dashboards and apps; and Sapiens Advanced Analytics, using AI and machine learning, generates actionable insights based on different models across the insurance value chain. All digital offerings are entirely supported in the cloud.

Sapiens Digital API Layer

This highly scalable layer facilitates an open-communication, API-based platform that enables carriers to interact with insurtech companies, ecosystem technology providers and business partners. By enabling seamless interaction with any service under any technology, Sapiens’ open architecture ensures that providers will easily choose the building blocks they need. They will be able to seamlessly integrate all elements within their insurance ecosystem, to succeed today and prepare for the future.

Sapiens Digital Studio

Sapiens DigitalStudio – which features journey builders, journey analytics (available Q4 2020), an API composition engine and deployment management capabilities – enables business users to create and maintain digital journeys. This component empowers insurers with agility and fast time to market, based on its “one click deploy” functionality. Insurers can easily define new APIs on the fly, with full versioning capabilities and an extendable UI components library.

Sapiens PartnerHub

Sapiens is a global organization with over three decades of extensive experience in insurance innovation and technology. We seek out and identify the most relevant, advanced and innovative technology solutions for the insurance market. We connect third-party technology and insurtech solutions to our Sapiens PartnerHub, from where we make their offerings available to insurers for their own use, and for the use of their customers.

Sapiens Reinsurance Solutions

Sapiens ReinsuranceMaster

Sapiens ReinsuranceMaster is a comprehensive business and accounting system, providing a superior solution for all types of reinsurance contracts – treaty and facultative, and proportional and non-proportional. It enables insurers of all sizes to manage their entire range of reinsurance contracts and activities for all lines of business, including rich accounting functionality and reporting capabilities.

Our reinsurance solution enables full and flexible control of reinsurance processes, with built-in automation of contracts, calculations and processes. By incorporating fully automated functions adapted conveniently for your business procedures, Sapiens Reinsurance provides flexible and total financial control of your reinsurance processes, including complete support for all auditing requirements and statutory compliance.

Sapiens ReinsurancePro

Sapiens ReinsurancePro is an efficient reinsurance administration system, supporting all types of reinsurance processing, regardless of volume, in one comprehensive and powerful reinsurance system. The system produces Schedule F automatically. Our solution enables insurance companies to manage and automate the underwriting and administration of reinsurance, including treaty and facultative, ceded, assumed and retroceded reinsurance.

Sapiens Reinsurance GO

Sapiens Reinsurance GO is designed to meet the ceded reinsurance processing needs of property & casualty providers, from calculating premium and claim cessions, to producing the data required for Schedule F. Sapiens Reinsurance GO consolidates reinsurance accounting and cash management into one area. It automatically attaches and calculates ceded premium, commissions, losses, reserves and LAE, and allocates ceded transactions to reinsurers.

Sapiens Workers' Compensation Offerings

Sapiens Platform for Workers' Compensation

Sapiens Platform for Workers' Compensation includes the Sapiens CoreSuite for Workers' Compensation, Sapiens Connect for Worker's Connection (a portal solution) and Sapiens IntelligencePro (business intelligence).

Sapiens CoreSuite for Workers' Compensation

Sapiens CoreSuite for Workers' Compensation offers larger carriers, administrators and state funds the technology solutions that enable them to adapt quickly to business and market conditions, offering high levels of accuracy and efficiency. The suite provides broad functionality throughout the entire insurance lifecycle for workers' compensation, via a core suite, as well as policy, claims and intelligence modules that can be deployed individually, or as an integrated solution. This suite can be purchased as an integrated offering, or standalone components: Sapiens PolicyPro and Sapiens ClaimsPro.

Sapiens GO for Workers' Compensation

Sapiens GO for Workers' Compensation was developed specifically for carriers, managing general agents (MGAs), self-insurance funds and third-party administrators. Sapiens GO can deliver a turnkey solution in just 120 days. With its streamlined user interface and advanced business features, the suite addresses critical objectives. This suite can be purchased as an integrated offering, or standalone components: Sapiens PolicyGO and Sapiens ClaimsGO for Workers' Compensation.

Sapiens Financial & Compliance Solutions

Sapiens FinancialPro

Sapiens FinancialPro is accounting software designed for insurers to meet their unique requirements for cash, statutory and GAAP reporting, well as unique allocation and consolidation needs. It handles multi-basis accounting and inter-company transactions, and facilitates the speed and accuracy of financial reporting. Sapiens insurance experts assist carriers in collecting and reporting information they need to expedite all regulatory processes.

Sapiens Financial GO

Sapiens Financial GO offers small- and mid-sized insurers a competitive edge in today's marketplace, because it is developed and supported by highly experienced insurance experts. The solution is designed to meet insurers' specific requirements for cash, statutory and GAAP reporting, as well as unique allocation and consolidation needs. Sapiens Financial GO manages and presents data to help insurance managers make informed decisions.

Sapiens StatementPro

Sapiens StatementPro makes statement preparation faster and simpler by offering one-click navigation between statements, pages and form validations (cross-checks) to the pages they reference. Intuitive workflow and helpful wizards lead users effortlessly through each step, transforming the filing process and offering one-step filing. Additionally, Sapiens offers Sapiens CheckPro and Sapiens reporting tools.

Sapiens Business Decision Management Solutions

Sapiens Decision is a complete decision management platform that places software development in the hands of the business domain, creating "citizen developers," and enforces business logic across all enterprise applications. Decision effectively addresses the complexity of determining and then translating business logic – data, business rules and machine learning used to make business decisions – into operational code. The business side of the organization can model, validate, test and simulate the business logic required for all new processes using Sapiens Decision. The process takes days or weeks, instead of months or years. A rigorous, structured approach ensures accuracy, efficiency and consistency during modeling. The models may then be automatically generated and deployed as code into automated DevOps environments, ensuring that the software is fully aligned with the organization's business needs.

We are currently focusing on the development and marketing of Sapiens Decision in the financial services market in North America and Western Europe, and we are building best practices where the scale and complexity of operations requires enterprise-grade technology that can easily be adapted as policies and business strategies rapidly evolve. We developed and market Sapiens Decision for several verticals, including the insurance industry, and leverage our industry knowledge and close relationships with our existing customers and partners. Decision targets multiple markets:

Sapiens Decision for Consumer & Commercial Banking

Sapiens Decision for Consumer & Commercial Banking addresses the cost of change. It enables banks to efficiently adapt their operations to the demands of digital transformation, changing regulations, customer demands and increasing competition, using model-driven development (MDD). With the MDD approach, Sapiens Decision for Consumer & Commercial Banking enables businesspeople to define business logic in easily understood models.

Sapiens Decision for Investment Banking

With Sapiens Decision for Investment Banking, the investment bank's business domain is actively involved in the design, implementation, analysis, testing and optimization of decisions. The process takes days or weeks, instead of months or years. It enforces business logic across all enterprise applications.

Sapiens Decision for Mortgage Banking

Sapiens Decision for Mortgage Banking enables mortgage institutions to overcome obstacles and empowers them to achieve improved business control, governance and efficiency.

Sapiens Decision for Insurance

Sapiens Decision for Insurance enables insurers to efficiently adapt their business operations to the demands of digital transformation, changing regulations, customer demands and increasing competition. It is currently used by a top-tier, P&C insurance company to implement process automation and effect digital transformation.

Sapiens Decision for Government

Sapiens Decision for Government provides the capability to automate manual processes, alleviates gaps coming from different roles and interpretations, and creates fully validated policy artifacts in a format that other roles in the organization can understand.

Technology-Based Solutions

Sapiens eMerge

Sapiens eMerge is a rules-based, model-driven architecture that enables the creation of tailor-made, mission-critical core enterprise applications with little or no coding. Our technology is intended to allow customers to meet complex and unique requirements using a robust development platform. For example, we perform proxy porting for our customers in an efficient, cost effective manner with Sapiens eMerge.

Sapiens' Global Services

As noted previously, the Sapiens Service Suite is comprised of three main pillars: **program delivery**, **business services** and **managed services**, as well as our various methodologies (which are applied across the first three pillars).

Program delivery includes:

- Project and program management
- Core development and implementation
- Integration
- Deployment
- Testing

Business transformation services are comprised of:

- Business transformation – planning and strategy, business process evaluation, training and change management
- Digital transformation – business model and processes transformation, plus data management consolidation and data migration
- User acceptance testing (UAT)
- System integration

Managed services include:

- Hosting services
- Application and system management
- Ongoing production support

Sapiens' services modernize and automate processes for insurance providers and financial institutions around the globe, helping to create greater organizational efficiencies, reduce costs and provide a better end-user experience. Built on a solid foundation of insurance domain expertise, proven technology and a heritage of successful deployments, we assist clients in identifying and eliminating IT barriers to achieve business objectives.

Benefits include:

- **Project delivery experience** – more than 35 years of field-proven project delivery of core system solutions, based on best practices and accumulated experience
- **System integration** – we help our customers deploy modern solutions, while expertly integrating these solutions with their legacy environments that must be supported
- **Global presence** – insurance and technology domain experts are located close to our customers to provide professional services

Sapiens' implementation teams assist customers in building implementation plans, integrating our software solutions with their existing systems, and deploying specific requirements unique to each customer and installation. Sapiens' business services include API integration management and business intelligence (BI) and advanced analytics consolidation. Our managed services offer ongoing production support and a 24/7 help desk.

Sapiens' service teams possess strong technology skills and industry expertise. The level of service and business understanding they provide contributes to the long-term success of our customers. This helps us develop strategic relationships with our customers, enhances information exchange and deepens our understanding of the needs of companies within the industry.

Through our service teams, we provide a wide scope of services and consultancy around our core solutions, both in the initial project implementation stage, as well as ongoing additional services. Many of our customers also use our services and expertise to assist them with various aspects of daily maintenance, ongoing system administration and the addition of new solution enhancements.

Such services include:

- Adding new lines of business and functional coverage to existing solutions running in production
- Ongoing support services for managing and administering the solutions
- Creating new functionalities, per specific requirements of our customers
- Assisting with compliance for new regulations and legal requirements

In addition, most of Sapiens' clients elect to enter into an ongoing maintenance and support contract with us. The terms of such a contract are usually twelve months and are renewed every year. A maintenance contract entitles the customer to technology upgrades (when made generally available) and technical support. We also offer introductory and advanced classes and training programs available at our offices and customer sites.

Sapiens partners with several system integration and consulting firms to achieve scalable, cost-effective implementations for its customers. Sapiens has developed an efficient, repeatable methodology that is closely aligned with the unique capabilities of its solutions.

Global company – Sapiens' 500 customers and 3,300 (approximately) employees are located in 27 countries around the world. Sapiens has five major development, delivery and support centers in Israel, U.S., India, Poland and the UK. Sapiens' "think global, act local" approach is based on having experts in close proximity to Sapiens customers, to establish and maintain strong relationships, and provide fast support when necessary.

Proven management team – Sapiens' management team has extensive experience in the insurance and financial services industries, and we have been able to achieve our business and development objectives to date. Management has also been successful in retaining key personnel from the companies we acquired, enabling us to benefit from their experience and knowledge of the acquired products and technology. Our management team possesses a variety of skills in product development, business development, sales, marketing, technology and finance, as well as a unique knowledge of the financial services industry. We have maximized contributions from our hard-working, talented and innovative employees.

Competitive Landscape

Sapiens is focused on serving insurers. The market for core software solutions for the insurance industry is highly competitive and characterized by rapidly changing technologies, evolving industry standards and customer requirements, and frequent innovation. In addition, we offer a business decision management platform, mainly to financial services organizations.

Competitive Landscape for our Insurance Software Solutions

Sapiens' competitors in the insurance software solutions market differ from us based on size, geography and lines of business. Some of our competitors offer a full suite, while others offer only one module; some operate in specific (domestic) geographies, while others operate on a global basis. And delivery models vary, with some competitors keeping delivery in-house, using IT outsourcing (ITO), or business process outsourcing (BPO).

The insurance software solutions market is highly competitive and demanding. Maintaining a leading position is challenging because it requires:

- Development of new core insurance solutions, which necessitates a heavy R&D investment and in-depth knowledge of complex insurance environments
- Technology innovation to attract new customers, with rapid, technology-driven changes in the insurance business model and new propositions coming
- A global presence and the ability to support global insurance operations
- Ability to manage multiple partnerships, due to the changing landscape of insurers' ecosystems
- Extensive knowledge of regulatory requirements and how to fulfill them (they can be burdensome and require specific IT solutions)
- Continued support and development of the solutions entails a critical mass of customers that support an ongoing R&D investment
- Know-how of insurance system requirements and an ability to bridge between new systems and legacy technologies
- Enabling mission-critical operations that require experience, domain expertise and proven delivery capabilities to ensure success

The complex requirements of this market create a high barrier to entry for new players. As for existing players, these requirements have led to a marked increase in M&A transactions in the insurance software solutions sector, since small, local vendors have not been able to sustain growth without continuing to fund their R&D departments and following the globalization trend of their customers.

We believe Sapiens is well-positioned to leverage its modern solutions, customer base and global presence to compete in this market and meet its challenges. In addition, our accumulated experience and expert teams allow us to provide a comprehensive response to the IT challenges of this market.

Different types of competitors include:

- Global software providers with their own IP
- Local/domestic software vendors with their own IP, operating in a designated geographic market and/or within a designated segment of the insurance industry
- BPO providers who offer end-to-end outsourcing of insurance carriers' business, including core software administration (although BPO providers want to buy comprehensive software platforms to serve as part of the BPO proposition from vendors and may seek to purchase our solutions for this purpose)
- Internal IT departments, who often prefer to develop solutions in-house
- New insurtech companies with niche solutions

Sapiens differentiates itself from its competitors via the following key factors:

- We offer innovative and modern software solutions, with rich functionality and advanced, intuitive user interfaces
- Sapiens uses model-driven architecture that allows rapid deployment of the system, while reducing total cost of ownership
- Our solutions are built using an architecture that allows customers to implement the full solution or components, and readily integrate the solution or individual components into their existing IT landscape
- Strong and global partnership program, with established IT players and new insurtech companies, to ensure linkage to innovative technologies and new business models, as well as ongoing work to embed innovation into Sapiens platforms
- We recognize technology trends and invest in adjusting our solutions to keep pace with today's frenetic evolutions
- We are able to fund R&D investment and maintain the competitive advantage of our products, due to our large and growing customer base and financial stability
- Our delivery methodology is based on extensive insurance industry experience and cooperation with large insurance companies globally. Our track record over the past few years in developing a strong offshore development center is also a significant parameter in differentiating our abilities in the services space
- We leverage our proven track record of successful delivery to help our customers deploy our modern solutions, while integrating with their legacy environment (when that legacy environment must remain supported)

Competitive Landscape for Business Decision Management Solutions

Sapiens Decision is a pioneer in this disruptive market landscape. Since the introduction of our innovative approach to enterprise architecture to the market, we have identified only a small number of potential competitors.

We differentiate ourselves from our potential competitors through the following key factors:

- We believe that Sapiens Decision is the only solution (that is currently generally available and already in production) that offers a true separation of the business logic in a decision management system for large enterprises
- Sapiens Decision is unique in its proven ability to support complex environments, with a full audit trail and governance that is crucial for large financial services organizations
- We understand complex environments where Decision is deployed, due to our experience delivering complex, mission-critical solutions

Sales and Marketing

Sapiens' main sales channel is direct sales, with a small portion of partner sales. Our sales team is dispersed across our regional offices in North America, the United Kingdom, Belgium, France, Israel, Australia, India, Poland and the Nordics. Following the acquisitions of Cálculo and sum.cumo, we will now also have regional offices in Spain and Germany. The direct sales force is geared to large organizations within the insurance and financial services industry.

In 2019, Sapiens continued to significantly invest in its target regions – North America, the UK, Europe and South Africa – and in its sales, presales, domain experts and marketing teams. We anticipate that our sales team will leverage their proximity to customers and prospective clients to drive more business, and offer our services across our target markets.

Our account managers were focused on building ongoing relationships with existing customers during the past year, to maintain a high level of customer satisfaction and identify up-selling opportunities within these organizations. We believe that a high level of post-contract customer support is important to our continued success.

As part of our sales process, we typically sell a package that includes a license, implementation, customization and integration services, and training services. All of our clients for whom we have deployed our solutions elect to enter into an ongoing maintenance and support contract with us. We aim to expand our distribution model to include more channel partners and system integrators, but we intend to maintain the direct sales model as our prime distribution channel.

We attend major industry trade shows to improve our visibility and our market recognition. Additionally, we host client conferences– such as our annual Sapiens Summit/Client Conference, which took place in North Atlanta, U.S. in September 2016; in Lisbon, Portugal in October 2017; in San Antonio, Texas, U.S. in 2018; and in Phoenix, Arizona and Rome, Italy in 2019. We continue investing in our web presence and digital marketing activities to generate leads and enhance our brand recognition. Sapiens maintains a blog channel (“Sapiens Spotlight”) and we also invest in our working relationships and advisory services within the global industry-analyst community.

We work together with standards providers – such as ACORD and MISMO– to further enrich our offerings and provide our customers with comprehensive and innovative solutions that address the entire breadth of their business needs.

Magic Software

Magic Software is a global provider of: (i) proprietary application development and business process integration platforms; (ii) selected packaged vertical software solutions; as well as (iii) software services and Information Technologies, or IT, outsourcing software services. Magic Software's software technology is used by customers to develop, deploy and integrate on-premise, mobile and cloud-based business applications quickly and cost effectively. In addition, its technology enables enterprises to accelerate the process of delivering business solutions that meet current and future needs and allow customers to dramatically improve their business performance and return on investment. With respect to software services and IT outsourcing services, Magic Software offers a vast portfolio of professional services in the areas of infrastructure design and delivery, application development, technology consulting planning and implementation services, integration projects, project management, software testing and quality assurance, engineering consulting (including supervision of engineering projects), support services, cloud computing for deployment of highly available and massively-scalable applications and API's and supplemental outsourcing services, all according to the specific needs of the customer, and in accordance with the professional expertise required in each case. In addition, Magic Software offers a variety of proprietary comprehensive packaged software solutions through certain of our subsidiaries for (i) enterprise-wide and fully integrated medical platform (“Clicks”), specializing in the design and management of patient-file oriented software solutions for managed care and large-scale health care providers. This platform aims to allow providers to securely access an individual's electronic health record at the point of care, and it organizes and proactively delivers information with potentially real time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers; (ii) enterprise management systems for both hubs and traditional air cargo ground handling operations from physical handling and cargo documentation through customs, seamless electronic data interchange, or EDI communications, dangerous goods, special handling, track and trace, security to billing (“Hermes”); (iii) enterprise human capital management, or HCM, solutions, to facilitate the collection, analysis and interpretation of quality data about people, their jobs and their performance, to enhance HCM decision making (“HR Pulse”); (iv) revenue management and monetization solutions in mobile, wireline, broadband and mobile virtual network operator/enabler, or MVNO/E (“Leap”); and (v) comprehensive systems for managing broadcast channels in the area of TV broadcast management through cloud-based on-demand service or on-premise solutions;

Based on its technological capabilities, Magic Software's software solutions enable customers to respond to rapidly-evolving market needs and regulatory changes, while improving the efficiency of their core operations. Magic Software have approximately 2,640 employees and operate through a network of over 3,000 independent software vendors, or ISVs, who we refer to as Magic Software Providers, or MSPs, and hundreds of system integrators, distributors, resellers, and consulting and OEM partners. Thousands of enterprises in approximately 50 countries use our products and services.

Magic Software's application development and business process integration platforms consist of:

- **Magic xpa** – a proprietary application platform for developing and deploying business applications.
- **AppBuilder** – a proprietary application platform for building, deploying, and maintaining high-end, mainframe-grade business applications.
- **Magic xpi** – a proprietary platform for application integration.
- **Magic xpc** – hybrid integration platform as a service (iPaaS).
- **Magic SmartUX** - a proprietary low-code enterprise mobile development application platform for citizen to professional developers to rapidly design, build, analyze, and run cross-platform mobile business applications.
- **FactoryEye** - a proprietary high performance, low-code, flexible, hybrid platform for manufacturers based on existing infrastructure enabling real-time virtualizations of all production data and advanced analytics (based on machine learning) for improved productivity and competitive advantage.

These software solutions enable Magic Software's customers to improve their business performance and return on investment by supporting cost-effective and rapid delivery integration of business applications, systems and databases. Using Magic Software's products and its specialists, enterprises and MSPs can achieve fast time-to-market by rapidly building integrated solutions and deploy them in multiple environments while leveraging existing IT resources. In addition, Magic Software's software solutions are scalable and platform-agnostic, enabling our customers to build software applications by specifying their business logic requirements in a high-level language rather than in computer code, and to benefit from seamless platform upgrades and cross-platform functionality without the need to re-write their applications. Magic Software's platforms also support the development of mobile applications that can be deployed on a variety of mobile devices, and in a cloud environment. In addition, Magic Software continuously evolve its platforms to include the latest technologies to meet the demands of our customers and the markets in which they operate.

Magic Software sell its platforms and software services globally through a broad channel network, including our own direct sales representatives and offices, independent country distributors, MSPs that use our technology to develop and sell solutions to their customers, and system integrators. Magic Software also offers software maintenance, support, training and consulting services to supplement with its products, thus aiding in the successful implementation of Magic xpa, AppBuilder, Magic xpi, Magic xpc, Magic Smart UX and FactoryEye projects, and assuring successful operation of the platforms once installed.

Magic Software's vertical packaged software solutions include:

- **Clicks** – a proprietary comprehensive core software solution for medical record information management system, used in the design and management of patient-files for managed care and large-scale healthcare providers. The platform is connected to each provider's clinical, administrative and financial data base system, residing at the provider's central computer, and allows immediate analysis of complex data with potentially real-time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers.
- **Leap™** – a proprietary comprehensive core software solution for Business Support Systems, or BSS, including convergent charging, billing, customer management, policy control, mobile money and payment software solutions for the telecommunications, content, Machine to Machine/Internet of Things or M2M/IoT, payment and other industries.
- **Hermes Solution** – Hermes Air Cargo Management System is a proprietary, state-of-the-art, packaged software solution for managing air cargo ground handling. Our Hermes Solution covers all aspects of cargo handling, from physical handling and cargo documentation through customs, seamless EDI communications, dangerous goods and special handling, tracking and tracing, security and billing. Customers benefit through faster processing and more accurate billing, reporting and ultimately enhanced revenue. the system also features the Hermes Business Intelligence (HBI) solution, adding unprecedented data analysis capabilities and management-decision support tools. The Hermes Solution is delivered on a licensed or fully hosted basis.
- **HR Pulse** – A customizable single-tenant SaaS tool that helps organizations to monitor employee performance, progress and potential through a menu of templates that can create new HCM solutions, complement existing processes, and/or integrate with legacy HR systems already in use by organizations.
- **MBS Solution** – a proprietary comprehensive core system for TV broadcast management for use in managing broadcast channels.

In addition, Magic Software provides on an increasingly global basis a broad range of advanced software professional services and IT outsourcing services in the areas of infrastructure design and delivery, end-to-end application development, technology planning and implementation services, as well as outsourcing services to a wide variety of companies, including Fortune 1000 companies. The technical personnel Magic Software provides generally supplement in-house capabilities of our customers. Magic Software have extensive and proven experience with virtually all types of telecom infrastructure technologies in wireless and wire-line as well as in the areas of infrastructure design and delivery, application development, project management, technology planning and implementation services.

Magic Software has substantial experience in end-to-end development of high-end software solutions, beginning with collection and analysis of system requirements, continuing with architecture specifications and setup, to software implementation, component integration and testing. From concept to implementation, from application of the ideas of startups requiring the early development of an application or a device, to somewhat larger, more established enterprises, vendors or system houses who need our team of experts to take full responsibility for the development of their systems and products. With its ability to draw on its pool of resources, comprised of hundreds of highly trained, skilled, educated and flexible engineers, Magic Software adhere to timelines and budget and work in full transparency with our customers every step of the way to create a tailor-made and cost-effective solution to answer our customers' unique needs.

Magic Software IT services subsidiaries consist of:

- Coretech Consulting Group LLC
- Fusion Solutions LLC
- Xsell Resources Inc.
- AllStates Consulting Services LLC
- Futurewave Systems, Inc.
- NetEffects, Inc.
- CommIT Group
- Comblack Ltd
- Infinigy Solutions
- Shavit Software Ltd.
- OnTarget Group Inc

We have obtained trademark registrations for SmartUX® in the United States and for Magic® in the United States, Canada, Israel, the Netherlands (Benelux), Switzerland, Thailand and the United Kingdom. All other trademarks and trade names appearing in this annual report are owned by their respective holders.

In late December 2017, Magic Software acquired a 100% equity interest in Futurewave Systems, Inc., a U.S. based full-service provider of consulting and outsourcing solutions for IT personnel, for a total consideration of \$3.0 million.

On February 28, 2019, Magic Software acquired a 100% equity interest in OnTarget Group Inc., a U.S. based full-services provider of software development services, for a total consideration of \$ 12.5 of which \$ 6.0 was paid upon closing and the remaining amount constitutes a contingent payment depending on the future operating results achieved by OnTarget between 2019 and 2022.

On April 1, 2019 Magic Software acquired a 100% equity interest in PowWow Inc, creator of SmartUX™, a leading Low-Code development platform for mobilizing and modernizing enterprise business applications, for a total consideration of \$8.4 million, out of which \$2 million constitutes a contingent payment depending on the future revenues achieved by PowWow between 2020 and 2023.

On June 30, 2019, we acquired a 100% equity interest in NetEffects Inc, a U.S. based full-services company, specializes in IT staffing and recruiting, for a total consideration of \$ 12.5, of which \$ 9.4 was paid upon closing and the remaining \$ 3.1 will be paid in three installments following the first, second and third year anniversary.

Throughout its history, Magic Software has traditionally maintained two major lines of products, one is its application development platform, which today is known as Magic xpa Application Platform, an evolution of its original metadata-based development platform; and the second is our application integration platform, Magic xpi Integration Platform, originally introduced in 2003 under the name iBOLT. In December 2011, Magic Software acquired the AppBuilder development platform of BluePhoenix Solutions Ltd., a leading provider of value-driven legacy IT modernization solutions. AppBuilder is a comprehensive application development infrastructure used by many Fortune 1000 enterprises around the world. This enterprise application development environment is a powerful, model-driven tool that enables development teams to build, deploy, and maintain large-scale, custom-built business applications. On April 2019, Magic Software acquired the SmartUX development platform of PowWow Inc., a leading Low-Code enterprise mobile development application platform for citizen to professional developers to rapidly design, build, analyze, and run cross-platform mobile business applications.

Partnerships and Alliances:

We continue with Magic Software to build on our existing strategic partnerships that include Oracle, JD Edwards, SAP, Salesforce.com, Microsoft, IBM and SugarCRM to enhance our mobile, integration and cloud offerings.

In September 2013, Magic Software initiated a technology partnership with GigaSpaces Technologies, a pioneer provider of In-Memory Computing technology for deployment, management and scaling of mission-critical applications. By combining our technologies, we assist our customers in becoming cloud-ready and enjoying the benefits of high performance, scalability and availability that can be achieved with in-memory computing technology, all with a seamless migration effort and virtually no learning curve. Since the announcement, we have implemented IMDG architecture in our Magic xpi Integration Platform.

In October 2013, Magic Software partnered with Sugar CRM, a growing cloud and on-premise CRM ecosystem, and Sage, a popular provider of ERP and other business systems to small and medium business, enabling us to provide pre-built connectors for quick and reliable integration with these applications.

In July 2015, Magic Software was recognized as “Salesforce Ecosystem Champion of the Year for France” for the Magic xpi Integration Platform with its pre-built and certified Salesforce adapter. In giving this award, Salesforce said their “growth is possible through the commitment to exceptional solutions and customer satisfaction provided by Salesforce partners like Magic Software.”

Also, in July 2015, Magic Software’s Valinor subsidiary was recognized as the 2015 Microsoft Country Partner of the Year for Israel. The Microsoft Country Partner of the Year Awards honor partners at the country level that have demonstrated business excellence in delivering Microsoft solutions to multiple customers over the past year. This award recognizes Valinor as succeeding in effective engagement with its local Microsoft office while showcasing innovation and business impact, driving customer satisfaction, and winning new customers.

In 2016, Magic Software received the SugarCRM’s global ISV Partner Award for best engagement and teaming with fellow partners across the SugarCRM partner ecosystem.

In March 2017, Magic Software became a certified technology partner in the Technology Alliance Program for ServiceMax, a GE Digital company, the leader in cloud-based field service management solutions. As a result of this partnership, we launched a prebuilt, certified ServiceMax connector for Magic Software’s Magic xpi integration platform. This dedicated connector enables real-time business process integration between ServiceMax and other enterprise software, such as ERP systems, enabling ServiceMax customers to streamline field service processes, eliminate duplicate data entry, and increase productivity.

In March 2018, following an extension of Magic Software’s partnership with Salesforce, we included new features in Magic Software’s Magic xpi 4.7 to make the integration between Salesforce and other systems even easier. By collaborating with Salesforce, we are significantly expanding Magic Software’s partners’ network and maximizing our service offering to customers around the world, enabling them to better serve their customers via all channels by connecting to back-office ERP and finance applications, and streamlining business processes across numerous applications. Magic Software reached the status of Salesforce Premier ISV partner, showing our high competence expert level, ensuring that all of our customers enterprise software is faultlessly integrated.

Magic Software is an Oracle Platinum Partner holding an Oracle Validated Integration status, a SAP Channel Gold Partner holding SAP Certified Integration status, an IBM Server Proven, and a SYSPRO business partner, among others. Magic Software appears on the Salesforce AppExchange and are a featured partner on SugarCRM’s Sugar Exchange, marketplaces for apps provided by partners. We continue to update and strengthen Magic Software’s relationships with these major IT partners by attending partner events and by updating and certifying our Magic xpi connectors for each specific ecosystem.

In December 2018 Magic Software achieved Microsoft Gold Competency and have maintained this elite status since then. Gold Competency is Microsoft's highest level of partner certification reserved for the top one percent of Microsoft elite partners worldwide who have demonstrated expertise and proven skills with a particular Microsoft technology or service. In addition to that, we earned the Co-Sell Ready Status as a member in the Microsoft One Commercial Partner (OCP) Program, Magic xpi, which maps data, automates business processes and connects apps, databases, APIs with built-in Microsoft connectors, and Magic xpc, a 100% cloud-native, microservices-based integration platform are available on the Microsoft AppSource app store and are listed on the Microsoft Azure Marketplace.

In May 2020, Magic Software's subsidiary CommIT Group, achieved AmazonAWS SaaS Competency status. AWS SaaS Competency is designated to help customers find top AWS consulting partners with deep specialization and experience in designing and building software-as-a-service solutions on AWS. Organizations are interested in software that is easy to use, implement, and operate. They are looking to reduce time-to-value and obtain access to innovative product features and flexible software procurement on a consumption or contractual basis. AWS SaaS Competency Partners follow Amazon Web Services (AWS) best practices for designing and building SaaS solutions through their professional services practices. To qualify for the AWS SaaS Competency designation, organizations have undergone rigorous technical validation by AWS Partner Solutions Architects and demonstrated proven customer success. In recent years, Comm-IT has successfully led, developed and produced many SaaS solutions on AWS for companies across many business sectors, including high-tech and startups, industrial and retail, and insurance and finance. Comm-IT's unique, flexible R&D model, which provides complete flexibility in determining the mix of experts, allows for full control of budgets and schedules throughout the development project. In this framework, we accompany our clients in their digital journey and in their entry into the SaaS world, providing design and build services for application environments or migration services for applications from existing models to cloud SaaS models. These processes require software architecture, construction, and software development from both Digital and SaaS, all of which take into account performance aspects, information security, scalability, infrastructure monitoring, customer experience and billing. Achieving AWS SaaS Competency status allows us to expand our business offering and even accompany the organizational change for customers who are in the process of transitioning to SaaS.

Magic Software's Industry Overview

In recent years, the number of available enterprise applications has grown significantly which has led information system complexity within many organizations to a level that has obstructed business progress and evolution, reduced business agility and led to significantly higher costs. We believe this complexity will continue to increase in the future. Although it is not unusual for organizations to operate multiple applications, systems and platforms that were created utilizing disparate programming languages, the complexity of these environments typically reduces an organization's operating flexibility, hinders decision-making processes and leads to costly inefficiencies and redundancies. When organizations seek to swiftly change, update and upgrade IT assets to support new business processes or to cope with changes in business and regulatory environments, they often find that the introduction and integration of new or upgraded business applications is more complex than expected, requires significant implementation resources, takes a long time to implement and is costly. The proliferation of smartphones and mobile platforms necessitates device-independent and future-proof business solutions for fast, simple, and cost-effective mobile deployment. In addition, new cloud computing technologies present enterprises with an opportunity to realize greater agility and meaningful cost savings to businesses, creating a growing need for further changes to enterprises' IT applications and systems.

The pace of digital transformation is also accelerating at companies all around the world. Customers are increasingly demanding an all-digital experience from the companies they do business with. They seek instant gratification through real-time updates or instant customer service without having to talk to or wait for other human beings. Employees are also pushing for a more digital experience in their workplaces. The confluence of these internal and external forces is causing companies of all sizes to put digital transformation goals at the top of the agenda. It is becoming clearer that companies will need to embrace and prioritize the creation of a digital operating environment to gain a competitive edge and be able to recruit and maintain a talented employee base.

Manual coding and application development is a complex and time-consuming process with an end result that is not guaranteed. The process requires constant iteration as bugs are discovered and new features are integrated. In addition, the communication gap and general disconnect between developers and end-users are critical shortcomings of manual coding that results in business applications that are less than ideally designed. Many of these problems can be addressed by low-code and no-code development platforms. The enterprise application development software market consists of several application development sub-segments and includes large dominant players such as IBM, Microsoft, Oracle, Salesforce, HP, CA Technologies and Compuware as well as a large number of highly specialized vendors, with focused capabilities for specific vertical markets. Huge backlogs of enterprise app development work and growing demand for apps coupled with shortage and expense of skilled programmers, is increasingly leading enterprises to turn to low-code/no-code application development platforms that democratize the development process and give business users the ability to develop applications themselves with minimal or no assistance from IT. Through the adoption of business applications, these business users are increasingly looking for ways to automate manual workflows and become more efficient and effective by reallocating their time to solving more complex business problems. Even IT resources and developers are using low-code development tools to increase their development speed and reduce backlog, a growing market for low-code/no-code development platforms.

Although the market for low-code development platforms is not new by any means, it has certainly started to gain more traction over the past couple of years and is expected to continue its strong growth due to continued demand for applications and a shortage of skilled developers. Low-code development is a natural evolution of rising abstraction levels in application development, which will eventually lead to viable cross-enterprise, highly scalable citizen development and composition of applications. According to the Low-Code Development Platform Market Research Report published by Prescient & Strategic Intelligence in August 2019, the market for low-code development platforms was valued at \$5.6 billion in 2018 and is expected to grow at a 45% compound annual growth rate to \$52.3 billion in 2024. Based on Gartner's, Magic Quadrant for Enterprise Low Code Application Platforms, 8 August 2019, by 2024 low-code application platforms will be responsible for more than 65 percent of all application development activity and three-quarters of large enterprises will be using at least four low-code development tools for both IT application development and citizen development initiatives. Forrester, in their Q1 2019 report on low-code platforms expects low-code market to represent \$21 billion in spending by 2022. The increasing need of digitalization and maturity of agile DevOps practices are expected to enhance the use of low-code development platform market across the globe. Web application is considered as a face of an organization and by using the low-code development platform organizations can roll out user-defined web-based applications quickly. Instead of writing the programming language for the development of web-based applications, employees with less development experience can also create sophisticated applications. For those who has relevant experience, this platform can ease out the daily work chores and can even help them create more custom web-based applications by integrating already existing digital ecosystems. North America has the presence of several prominent market players delivering low-code development platform and services to all end users in the region. The US and Canada both have strong economic conditions and are expected to be major contributors to the growth of the low-code development platform market. The geographical presence, significant research and development (R&D) activities, partnerships, and acquisitions and mergers are the major factors for the deployment of low-code development platform and services.

The IT services segment of the market is comprised of a broad array of specific segments such as infrastructure design and delivery, application development, technology consulting planning and implementation services, support services and supplemental outsourcing services. In addition, IT professional services include quality assurance, product engineering services and process consulting. The IT services segment is also undergoing a profound transition, with some key trends that have accelerated recently. Growing demand for mobile and cloud-based applications as well as Big Data solutions also entails more complex IT development and integration projects which management and implementation require a higher level of expertise. In addition, the typical software-based projects of IT consulting have been gradually shifting towards software and technology-driven solutions that can be embedded into clients' systems, providing ongoing engagement services. This transition has been accentuated by an underlying change in IT services sourcing processes: the need for a faster go-to-market process as well as constrained resources in IT departments is resulting in greater influence by specific business units on the purchasing decision as opposed to the traditional sourcing process. The traditional outsourcing business model of capacity on demand is also transitioning towards a model of capability on demand. Information technology service buyers are increasingly looking at outcome-driven managed services with a tighter integration between software, service and infrastructure.

We have identified the following trends that are relevant to the markets Magic Software operates in:

- **Increasingly complex business integration:** In recent years, enterprises operate multiple applications and platforms, using various programming languages, resulting in complex enterprise information systems. Such systems and the ability to swiftly change, update, and upgrade them to support new business processes are crucial to the enterprise's ability to cope with changes in the business, economic and regulatory environment. However, the introduction and integration of new business applications is complex, requires significant time and human resources and entails significant and often unpredicted costs. Therefore, enterprises are in need of solutions that will facilitate the rapid and seamless deployment of business applications.
- **Reusing IT assets/enterprise applications:** In an increasingly dynamic technology, business and economic environment, organizations face mounting pressure to continue to leverage their large IT investments in enterprise applications, such as ERP and CRM, while increasing their ability to change business processes and support new ones. Tools to support lightweight yet rapid, iterative and modular development methodologies, reusable architectures and application life-cycle management are primary drivers for spending on application development worldwide.
- **Enterprise mobility:** With the proliferation of smartphones and mobile platforms that support enterprise mobility, enterprise users now expect instant access to real-time information, a rich user experience, seamless integration with various enterprise systems and support to multiple mobile devices. As such, enterprises need to be able to develop device-independent and robust business solutions for fast and cost-effective mobile deployment.

- **Cloud, Platform-as-a-Service and Software-as-a-Service:** Cloud, Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) are each becoming a well-established phenomenon in some areas of enterprise IT. Cloud-hosted applications continue to grow as alternatives to internally managed systems as they deliver greater agility and meaningful cost savings to businesses. In addition, fast time-to-deployment, low cost-of-entry, and adoption of pay-as-you-go models drive growing adoption of SaaS applications. In turn, SaaS applications enable the rapid construction, deployment and management of some custom-built applications accessed as a service in the cloud. With more SaaS deployments, the need for integration tools that bridge the cloud apps with on-premise application increases.
- **Big Data:** The amount of digital information that is being generated by enterprises each year, across a number of diverse data sources and formats, is growing rapidly. Enterprises are required to retain, process and analyze data to attain meaningful insights and gain competitive advantages, and therefore require versatile and flexible tools in order to quickly and reliably process these increasingly large amounts of data.
- **IT Consulting:** The typical software-based projects of IT consulting have been gradually shifting towards software and technology-driven solutions that can be embedded into clients' systems, providing ongoing engagement services.
- **Sourcing processes:** The need for a faster go-to-market process as well as constrained resources in IT departments is resulting in greater influence by specific business units on the purchasing decision as opposed to the traditional sourcing process. The traditional outsourcing business model of capacity on demand is also transitioning towards a model of capability on demand. Information technology service buyers are increasingly looking at outcome-driven managed services with a tighter integration between software, service and infrastructure.
- **Mobility & IT skills shortage:** Growth in mobility skills demand is outpacing organizations' ability to keep up, resulting in mobile strategists facing a skills shortage across the entire mobility ecosystem, with mobile application development skills in greatest demand. Poor availability of skilled staff is driving mobile strategists to outsource many functions across the mobility ecosystem, including application development and testing services. The increasing mobility skills gap will force mobile strategists to use a multifaceted application development and delivery approach.

Magic Software's Software Solutions

Magic Software's software solutions enable enterprises to accelerate the planning, development, deployment and integration of on-premise, mobile and cloud business applications that can be rapidly customized to meet current and future needs. Its software solutions and complementary professional services empower customers to dramatically improve their business performance and return on investment by enabling the cost-effective and rapid delivery, integration and mobilization of business applications, systems and databases. Its technology and solutions are especially in demand when time-to-market considerations are critical, budgets are tight, and integration is required with multiple platforms or applications, databases or existing systems and business processes, as well as for RIA and SaaS applications. Its technology also provides the option to deploy our software capabilities in the cloud, hosted in a web services cloud computing environment. We believe these capabilities provide organizations with a faster deployment path and lower total cost of ownership. Magic Software's technology also allows developers to stage multiple applications before going live in production.

Development communities are facing high complexity, cost and extended pay-back periods in order to deliver cloud, RIAs, mobile and SaaS applications. Magic xpa, AppBuilder, Magic SmartUX, Magic xpi and Magic xpc provide MSPs with the ability to rapidly build integrated applications in a more productive manner, deploy them in multiple modes and architectures as needed, lower IT maintenance costs and speed time-to-market. Magic Software's solutions are comprehensive and industry proven. These technologies can be applied to the entire software development market, from the implementation of micro-vertical solutions, through tactical application modernization and process automation solutions, to enterprise spanning service-oriented architecture, or SOA, migrations and composite applications initiatives. Unlike most competing platforms, Magic Software offers a coherent and unified toolset based on the same proven metadata driven and rules-based declarative technology. Its low-code, metadata platforms consist of pre-compiled and pre-written technical and administrative functions, which are essentially ready-made business application coding that enables developers to bypass the intensive technical code-writing stage of application development and integration, concentrate on building the correct logic for their apps and move quickly and efficiently to deployment. Through the use of metadata-driven platforms such as Magic xpa, AppBuilder, Magic SmartUX, Magic xpi and Magic xpc, software vendors and enterprise customers can experience unprecedented cost savings through fast and easy implementation and reduced project risk.

Magic Software's software technology solutions include application platforms for developing and deploying specialized and high-end large-scale business applications and integration platforms that allow the integration and interoperability of diverse solutions, applications and systems in a quick and efficient manner. These solutions enable our customers to improve their business performance and return on investment by supporting the affordable and rapid delivery and integration of business applications, systems and databases. Using our software solutions, enterprises and ISVs can accelerate time-to-market by rapidly building integrated solutions, deploying them in multiple environments while leveraging existing IT resources. In addition, our solutions are scalable and platform-agnostic, enabling our customers to build solutions by specifying their business logic requirements in a commonly used language rather than in computer code, and to benefit from seamless platform upgrades and cross-platform functionality without the need to re-write applications. Its technology also enables future-proof protection and supports current market trends such as the development of mobile applications that can be deployed on a variety of smartphones and tablets, and cloud environments. In addition, we also offer a variety of vertical-targeted products that are focused on the needs and requirements of specific growing markets. Certain of these products were developed utilizing our application development platform.

Magic Software sells its solutions globally through its own direct sales representatives and offices and through a broad sales distribution network, including independent country distributors, independent service vendors that use our technology to develop and sell solutions to their customers, and system integrators. Magic Software also offers software maintenance, support, training, and consulting services in connection with our products, thus aiding the successful implementation of projects and assuring successful operation of the platforms once installed. We sell our integration solutions to customers using specific popular software applications, such as SAP, Salesforce.com, IBM i (AS/400), Oracle JD Edwards, Microsoft SharePoint, Microsoft Dynamics, SugarCRM and other eco-systems. As such, we enjoy a well-diversified client base across geographies and industries including oil & gas companies, telecommunications groups, financial institutions, healthcare providers, industrial companies, public institutions and international agencies.

The underlying principles and purpose of our technology are to provide:

- **Simplicity** – the use of code-free/low code development tools instead of hard coding and multiple programming languages to solve critical and complex challenges;
- **Business focus** – the use of pre-compiled business logic and components eliminates repetitive, low level technical and coding tasks;
- **Comprehensiveness** – the use of a comprehensive development and deployment platform offers a full end-to-end development, deployment and integration capability;
- **Automation of mundane tasks** – to accelerate development and maintenance and reduce risk; and
- **Interoperability** – to support business logic across multiple hardware and software platforms, operating systems and geographies.

We offer three complementary application platforms that address the wide spectrum of composite applications, Magic xpa, Magic SmartUX and AppBuilder. Our Magic xpi integration platform and Magic xpc iPaaS solution delivers fast and simple integration and orchestration of business processes and applications. We gained over 350 new customers in 2019 operating in a wide variety of industries, including financial services, life sciences, government, telecommunications, energy and manufacturing.

Magic xpa Application Platform

Magic xpa Application Platform, our metadata driven application platform, provides a simple, low code and cost-effective development and deployment environment that lets organizations and MSPs quickly create user-friendly, enterprise-grade, multi-channel mobile and desktop business app that employ the latest advanced functionalities and technologies. The Magic xpa Application Platform, formerly named uniPaaS, was first released in 2008 and is an evolution of our original eDeveloper product, a graphical, rules-based and event-driven framework that offered a pre-compiled engine for database business tasks and a wide variety of generic runtime services and functions which was released in 2001.

We have continually enhanced our Magic xpa application platform to respond to major market trends such as the growing demand for cloud-based offerings including Rich Internet Applications (RIA), mobile applications and SaaS. Accordingly, we have added new functionalities and extensions to our application platform, with the objective of enabling the development of RIA, SaaS, mobile and cloud-enabled applications. SaaS is a business and technical model for delivering software applications, similar to a phone or cable TV model, in which the software applications are installed and hosted in dedicated data centers and users subscribe to these centers and use the applications over an internet connection. This model requires the ability to deliver RIA. Magic xpa is a comprehensive RIA platform. It uses a single development paradigm that handles all ends of the application development and deployment process including client and server partitioning and the inter-communicating layers.

Magic xpa offers customers the power to choose how they deploy their applications, whether full client or web; on-premise or on-demand; in the cloud or behind the corporate firewall; software or mobile or SaaS; global or local. Our Magic xpa Application Platform complies with event driven and service oriented architectural principles. By offering technology transparency, this product allows customers to focus on their business requirements rather than technological means. The Magic xpa single development paradigm significantly reduces the time and costs associated with the development and deployment of cloud-based applications, including RIAs, mobile and SaaS. In addition, application owners can leverage their initial investment when moving from full client mode to cloud mode, and modify these choices as the situation requires. Enterprises can use cloud-based Magic xpa applications in a SaaS model and still maintain their databases in the privacy of their own data centers. It also supports most hardware and operating system environments such as Windows, Unix, Linux and AS/400, as well as multiple databases and is interoperable with .NET and Java technologies.

Magic xpa can be applied to the full range of software development, from the implementation of micro-vertical solutions, through tactical application modernization and process automation solutions, to enterprise spanning SOA migrations and composite applications initiatives. Unlike most competing platforms, we offer a coherent and unified toolset based on the same proven metadata driven and rules based declarative technology, resulting in increased cost savings through fast and easy implementation and reduced project risk.

Magic xpa enables organizations to differentiate themselves from their competition through software-enabled digital transformation. With our platform, organizations can rapidly and easily design, build and implement powerful, enterprise-grade custom applications through our intuitive, visual interface, with little or no coding required. Our Solution ensures that applications developed on our platform can be immediately and natively deployed across a full range of mobile and desktop devices with no additional customization, including desktop web browsers, tablets and mobile phones. We also enable organizations to easily modify and enhance applications and automatically disseminate these updates across device types to ensure that all users benefit from the most up-to-date functionality.

Key benefits of our platform include:

- **Powerful applications to solve critical and complex challenges.** At the core of our platform is an advanced engine that enables the modeling, modification and management of complex processes and business rules. Our heritage provides us with this differentiated understanding of complex processes, and we have incorporated that expertise into our platform to enable the development of powerful applications. Organizations have used our platform to launch new business lines, build large procurement systems, manage retail store layouts, conduct predictive maintenance on field equipment and manage trading platforms, among a range of other use cases.
- **Rapid and simple innovation through our powerful platform.** Our platform employs a low-code, intuitive, visual interface and pre-built development modules that reduce the time required to build powerful and unique applications. Our platform automates the creation of forms, data flows, records, reports and other software elements that would otherwise need to be manually coded or configured. This functionality greatly reduces the iterative development process, allowing for real-time application optimization and ultimately shortening the time from idea to deployment. In turn, organizations can better leverage scarce and costly developer talent to accomplish more digital transformation objectives.
- **Build once, deploy everywhere.** Our technology allows developers to build an application once and use it everywhere with the consistency of experience and optimal performance levels that users expect. Applications developed on our platform can be immediately and natively deployed across a full range of mobile and desktop devices with no additional customization, including desktop web browsers, tablets and mobile phones.
- **Deployment flexibility to serve customer needs.** Our platform can be installed in any cloud or on-premises, with organizations able to access the same functionality and data sources in all cases. Our flexible deployment model also preserves a seamless path to future cloud deployments for organizations initially choosing on-premises for their most sensitive workloads.

Our approach to digital transformation goes beyond simply enabling organizations to build custom applications fast. We empower decision makers to reimagine their products, services, processes and customer interactions with software by removing much of the complexity and many of the challenges associated with traditional approaches to software development. Because we make application development easy, organizations can build specific and competitively differentiated functionality into applications to deliver enhanced user experiences and streamlined business operations.

In February 2018, Magic Software released Magic xpa 3.3 with a more seamless and easier integration with Java, similar to the already existing integration with .NET, making the Magic xpa platform even more robust. Along with that, Magic Software provided a new WS provider mechanism, built on Apache Axis2, enhancing our current WCF based capabilities.

In April 2018 and for the third consecutive year, Magic Software's Magic xpa application development platform gained top market share in license sales in the Japanese market. According to the "Market Research for Next Generation Extra-Rapid Development Tools in 2018" published by MIC Research Institute Ltd., the Magic xpa Application Platform grew 2% achieving a 41% share of the Japanese market.

In August 2018, Magic Software released Magic xpa 4.0 with its new Angular-based Web application framework that provides developers and Angular developers with the power to develop device-agnostic and feature-packed Web applications. Magic xpa 4.0 decouples the business logic from the presentation of the apps providing developers with the flexibility to use the Angular open-source platform with industry-standard state-of-the-art technologies, including HTML5, CSS, and JavaScript for designer-quality screens, while benefiting from the productivity, security, and scalability capabilities provided by our low-code development platform.

In addition, Magic Software further modernized its Integrated Development Environment (IDE) by moving toward a full-fledged Visual Studio-based studio, offering our users an even more intuitive and user-friendly experience.

Magic Software 2019 roadmap includes the release of a 64-bit edition of Magic xpa, featuring a full 64-bit runtime engine for Windows and Linux.

During 2018, Magic xpa was listed in Gartner's Market Guide for Application Platforms report. In addition, Magic xpa was listed in the Forrester Wave™ for Mobile Low-Code Development Platforms.

AppBuilder Application Platform

AppBuilder, a platform we acquired in December 2011, is a proprietary development environment used for managing, maintaining and reusing complicated applications needed by large businesses. It provides the infrastructure for enterprises worldwide, across several industries, with applications running millions of transactions daily on legacy systems. Enterprises using AppBuilder can build, deploy and maintain large-scale custom-built business applications for years without being dependent on any particular technology. The AppBuilder deployment environments include IBM mainframe, Unix, Linux and Windows. AppBuilder is intended to increase productivity and agility in the creation and deployment of enterprise class computing.

AppBuilder follows the 4GL development paradigm to help enterprises focus on the business needs and definition and overlook technical hurdles. AppBuilder developers define the business roles and prior to deployment the code is generated from the development environment to the required run time environment. Several large MSPs have utilized AppBuilder to build state of the art applications that are deployed through many large customers.

AppBuilder implements a model driven architecture approach to application development. It provides the ability to design an application at the business modeling level and generate forward to an application. AppBuilder has a platform-independent, business-rules language that enables generation to multiple platforms. It is possible to generate the client part of an application as Java and the server part as COBOL. As businesses change, the server part can be generated as Java without changing the application logic. Only a simple configuration option needs to be changed.

AppBuilder contains everything a development environment needs to create any type of simple or complex business application with platform-independent functionality, including:

- System administration security controls for scope and permissions;
- Migration, testing, and deployment functions;
- Architecture-independent development;
- An integrated toolset for designing, developing, and deploying applications;
- Object-based components managed from host, server, or client repositories;
- Support for Java/J2EE, COBOL, C#, and C programming languages;
- An efficient, cross-platform code generation facility;
- Ready-to-use business logic and libraries;
- A remote prepare facility for mainframe development;
- Multiple language user interface support; and
- DBCS support.

Magic xpi Integration Platform

Magic Software's Magic xpi integration platform (an evolution of its original and formerly branded iBOLT platform, launched in 2003) is a graphical, wizard-based code-free solution delivering fast and simple integration and orchestration of business processes and applications. Magic xpi allows businesses to more easily view, access, and leverage their mission-critical information, delivering true enterprise application integration, or EAI, business process management, or BPM, and SOA infrastructure. Increasing the usability and life span of existing legacy and other IT systems, Magic xpi allows fast EAI, development and customization of diverse applications, systems and databases, assuring rapid return on invested capital and time-to-market, increased profitability and customer satisfaction.

Magic xpi allows the integration and interoperability of diverse solutions, including legacy applications, in a quick and efficient manner. In January 2010, we released Magic xpi 3.2 and since then we have continued to develop the Magic xpi channel. We entered into agreements with additional system integrators, consultancies and service providers, who acquired Magic xpi skills and offer Magic xpi licenses and related services to their customers. We also offer special editions of Magic xpi with optimized and certified connectors for specific enterprise application vendor ecosystems, such as SAP, Oracle JD Edwards, Microsoft SharePoint and Salesforce.com. These special editions contain specific features and pricing tailored for these market sectors.

Magic Software's heritage as a veteran player in the integration market provides it with a differentiated understanding and ability to automate complex processes, and Magic Software has incorporated that expertise into our platform to enable the development of powerful business software. Magic xpi can leverage a complete stack of automation technologies, applying the right automation approach for each specific use case.

Key benefits of our platform include:

- **Business Process Management.** At the core of our platform is an advanced engine that enables the modeling, modification and management of complex processes. This engine enables orchestration of any business workflow.
- **Decision Rules.** Appian includes a declarative environment for defining and executing business logic or rules. These rules can be highly complex and can be applied within the Appian platform to many use cases, ranging from automated decision making to user experience personalization.
- **Seamless integration with existing systems and data.** In contrast to typical enterprise software, our platform does not require that data reside within it in order to enable robust data analysis and cross-department and cross-application insight. Our platform seamlessly integrates with many of the most popular enterprise software applications and data repositories and can be used within many legacy environments. For example, organizations frequently use our platform to extend the life and enhance the functionality of legacy systems of record, such as those used for enterprise resource planning, human capital management and customer relationship management, by building new applications that enhance the functionality of those systems and by leveraging the data within those systems to further optimize and automate operations.
- **Deployment flexibility to serve customer needs.** Our platform can be installed in any cloud or on-premises, with organizations able to access the same functionality and data sources in all cases. Our flexible deployment model also preserves a seamless path to future cloud deployments for organizations initially choosing on-premises for their most sensitive workloads.

In the aggregate, these core capabilities enable Magic to automate and govern end-to-end processes. Magic complements these automation technologies with related features like process reporting, analytics and management, which make it simple for organizations to quickly improve and upgrade their automations as business needs change.

In March 2017, Magic Software released Magic xpi version 4.6 with enhancements including a New ServiceMax connector for quick and easy connectivity with ServiceMax, a New OData client connector for easy connectivity to ecosystems exposing services via this open standardized protocol, a SAP Business One connector verified for SAP Business One HANA and support for additional services and new and improved functionalities to our existing MS Dynamics CRM connector.

In August 2017, Magic Software Magic xpi integration platform was recognized by the analyst firm Ovum as a well-positioned integration platform that is a good option for small-and medium-size enterprises. In addition, Magic xpi was listed in 2017 in 10 Gartner reports including three Market Guides for Application Integration Platforms, HIP-Enabling Technologies and IoT Integration.

In March 2018, Magic Software released Magic xpi version 4.7 with a new OData Provider connector, Active Directory Federation Services (ADFS) support for the SharePoint Online (MOSS) connector, ability to write new connectors based on Magic xpa Application Platform's runtime technology and multiple features to improve programming productivity, such as visual indicators of data flow status and an enhanced monitor to provide an even more accurate bird's eye view of all running projects.

In October 2018, Magic Software announced that Magic xpi Integration Platform 4 achieved SAP-certified integration with SAP S/4HANA, enabling our customers to optimize business processes through automation across leading ERP, CRM, finance, and other enterprise systems using a single platform.

In February 2019, Magic Software released Magic xpi version 4.9 with a new REST client connector, ODATA connector enhancements, inherent UPSERT support in the data mapper, and built-in cloud support.

In August 2019, Magic Software released Magic xpi version 4.11, enabling access to remote connectors residing at another site, without the need for a VPN (aka 'Local Agent' capability). In addition, in the beginning of 2020 we released the major released Magic xpi 4.12, which includes 64-bit support for our Run-Time engine as-well as integration with one of the industry's API management solutions suites. During 2019, we also released additional features pursuant to customer requests.

In 2020, Magic Software plan to enhance the above Local Agent capability with more functionality, add additional connectors (e.g., OPC for manufacturing) and invest more resources in the overall product stability. In addition, we plan to continue to expand our product offering with additional features, per customer requests.

Powerful applications to solve critical and complex challenges. At the core of Magic Software's platform is an advanced engine that enables the modeling, modification and management of complex processes and business rules. Magic Software heritage as a business process management, or BPM, company provides it with this differentiated understanding of complex processes, and Magic Software has incorporated that expertise into its platform to enable the development of powerful applications. Organizations have used its platform to launch new business lines and build large procurement systems.

Magic xpc Integration Platform

In November 2017, Magic Software announced the expansion of our integration offering with the launch of Magic xpc, a hybrid integration platform as a service (IPaaS), which enable customers to accelerate digital transformation on the cloud, on-premises or on both.

Magic xpc is powered by its out-of-the-box integration connectors for mainstream business applications, databases, protocols and tools for building custom integrations. Magic's iPaaS platform was built using node.JS and docker technology. Magic xpc users can monitor their integration flows and create and manage alerts from a single interface. Built on top of open-source components with no cloud vendor lock-in, Magic xpc is available on both public and private cloud platforms including, Amazon Web Services, Azure, and Google Cloud.

Magic SmartUX

Magic SmartUX, a platform Magic Software acquired in April 2019, is a low-code development platform for mobilizing and modernizing enterprise business application designed for citizen to professional developers to rapidly design, build, analyze, and run cross-platform mobile business applications.

The Magic SmartUX platform addresses the three biggest challenges enterprises are facing in the road to Digital Transformation:

- Multi-platform: end client devices are abundant and diverse, we provide an omni-channel solution.
- Many Systems of Record: over the years enterprise adopted (home grown and third party) solutions that scattered the business flow over many different system, Magic SmartUX enable the enterprise to expose complex business flows to modern technology with now changes and overhead to the existing working applications.
- Talent Gap: Mobile and integration are the hardest skillsets for IT orgs to find, with the Magic SmartUX platform addressing Citizens Developers, we allow any intern tech savvy individual to deliver complex and robust Mobile business application.

FactoryEye

On May 2019 Magic Software launched the releases of FactoryEye, a proprietary high performance, low-code, flexible, hybrid platform built specially for manufacturers based on existing infrastructure enabling real-time virtualizations of all production data and advanced analytics (based on machine learning) for improved productivity and competitive advantage. Magic Software has hundreds of manufacturing customers, and drew on over 35 years of manufacturing experience to develop FactoryEye. The product's intuitive and user-friendly dashboards empower manufacturers by providing all the analysis they need in order to make faster and smarter decisions based on real time data and analytics. This translates into improved productivity, faster delivery times, and better control over the manufacturing processes, leading to increased customer satisfaction and higher profit margins. FactoryEye offers dozens of prebuilt connectors to a range of enterprise applications and MRP systems, such as SAP, JD Edwards, and Infor, as well as MES, CRM, and PLM systems.

The addition of FactoryEye to our software portfolio allows us to provide to Magic Software new and existing manufacturing clients, with a comprehensive Industry 4.0 solution and aligns with our strategy of enhancing our portfolio with enterprise grade technologies. It also complements our recent acquisition of the low code platform SmartUX for cross platform application. Combining acquisitions with ongoing enhancements to core products enables us to further accelerate our growth by becoming a strong player in the digital transformation and Industry 4.0 revolutions.

Since its launch, Magic Software made a targeted effort to reach mid-sized manufacturers who are looking to improve the efficiency of their factories. Our goal is to position FactoryEye as a solution that offers more than mere factory floor visibility through IIoT connectivity, while remaining more cost effective and customizable than offerings from "Tier 1" companies. To that end, We have created a new website for FactoryEye which will launch by the end of the first half of 2020, as well as blogs, whitepapers, e-books and email campaigns to spread awareness of this new offering and benefits for mid-sized manufacturers.

In addition, we continue to market Magic Software's application and integration products. These products continue to provide value and convenience for our customers as low code options to integrate their disparate systems.

Vertical software solutions

Clicks™

Magic Software Roshtov subsidiary has approximately three decades of proven experience based on its proprietary comprehensive core software solution for medical record information management systems, using in the design and management of patient-file for managed care and large-scale healthcare providers. The platform, which can be tailor-made to the specific needs of the healthcare provider, is connected to the clinical, administrative and financial data base system, residing at the provider's central computer, and allows immediate analysis of complex data with potentially real-time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers.

All of our clients that buy or subscribe to our Clicks software solution also enter into software support agreements with us for maintenance and support of their medical record management systems. In addition to immediate software support in the event of problems, these agreements allow clients to access new releases covered by support agreements. In addition, each client has 12-hour access, six days a week (6 hours on Friday) to the applicable call-center support teams.

We employ a team of 30 research and development specialists that together with our clients create a future where the health care system works to improve the well-being of individuals and communities. Roshtov's proven ability to innovate has led to what we believe to be an industry leading architectures and a breadth and depth of solutions and services.

There are four healthcare service providers in Israel, of which, Maccabi Healthcare Services and Clalit, which are the two largest healthcare providers in Israel accounting for 77% of the Israeli market, have been our customers since the early 1990's.

Leap™

Our FTS subsidiary has over 20 years of BSS experience, based on dozens of projects delivered to customers worldwide. We implement revenue management and monetization solutions in mobile, wireline, broadband, MVNO/E, payments, e-commerce, M2M / Internet of Things, mobile money, cable, cloud and content markets under the brand name of Leap™. Our Leap™ solutions lower the total cost of ownership (TCO) for telecom, content and payment service providers.

FTS works with telecommunications, content and payment service providers globally to help them manage complex transactions and relationships with greater flexibility and independence. Analyzing transactions from a business standpoint, FTS offers end-to-end and add-on telecom billing, charging, policy control and payments solutions to customers worldwide, and services both growing and major providers.

FTS targets mid to lower level tier service providers, supporting their BSS needs with end-to-end, turnkey billing and other BSS projects. In addition, FTS offers upper-tiers of service providers with BSS and monetization solutions for specific needs, including policy control and charging solutions, M2M billing, billing for content services, MVNE/MVNO billing, mobile money software solutions, payment and mobile financial services solutions and others.

Our Leap™ offering is comprised of:

Leap™ BCCF (Business Control and Charging Function) – a proprietary packaged software solution which serves as the underlying foundation of our Leap™ products and solutions. Leap BCCF enables service providers to handle the aspects of event processing, from defining the system’s business logic, through importing events and formatting, to charging and executing business rules. With Leap BCCF, new services are deployed on the fly, and strategic business rules are formulated more easily, ensuring real-time responses to both service and customer-related events and providing a baseline for policy control.

Leap™ Billing 6.3 – a convergent charging, billing and customer care solution that realizes substantial reductions in OPEX and CAPEX while increasing customer satisfaction and retention. Leap Billing software’s flexibility and ease of use enables the service providers’ billing platform to work more at the speed of marketing by offering new marketing plans or services in a rapid time-to-market.

Leap™ Policy Control - Leap Policy Control is an integrated charging and policy control solution (a full PCC solution based on PCRF & online/offline charging). Compliant with the 3GPP’s Diameter policy control standard, Leap Policy Control provides traffic and subscriber management strategies. Leap Policy Control gives operators the power to monitor usage in real time and, using fully configurable business rules, define how they manage network resources, applications, and subscribers – in real time – while generating revenue from personalized mobile applications, content and services. Leap Policy Control can be implemented as a stand-alone solution or as part of a larger BSS project implementation.

FTS Express™ - FTS express™ is an all-in-one software appliance for online charging, billing, AAA, balance management, customer care, policy control and interconnect, designed for entry-level operations of MVNOs, LTE, VoIP, ISP, broadband, IPTV and more.

The following is a sample of the monetization solutions offered by FTS:

- End-to-end, turnkey billing and customer care solutions;
- Convergent, online charging and billing;
- Policy control and charging;
- MVNO/E billing;
- Billing for content;
- Interconnect billing;
- M2M / IoT billing;
- Broadband and multi-play billing;
- Mobile money solutions;
- E-commerce and M-commerce solutions;
- Payments and mobile payments solutions;
- Smart revenue sharing and partner management solutions; and
- Billing service bureau.

FTS’s solutions are delivered via cloud, on-premises or in a fully managed-services mode and are backed by our Israel and Bulgaria-based experienced professional services support team.

HR Pulse

Now in its 10th release, HR Pulse is a proprietary platform that creates and customizes software applications for HCM, with the goal to combine technology with effective processes, to facilitate the collection, analysis and interpretation of quality data about people, their jobs and their performance, to enhance HCM decision making, resulting in increased organizational efficiency and effectiveness. HR Pulse addresses four distinct functional areas with the ability to also work as one consolidated system:

- Performance and goal management;
- Development management;
- Talent management and succession planning; and
- Compensation and merit review.

Our offering includes customizable “out of the box” HCM SaaS Solutions, such as Pilat Frist and Pilat Professional, that provides a menu of templates that can be used to affordably and expeditiously create customized HCM solutions for companies. The HR Pulse platform promotes the building and implementation of solutions that address broader business challenges as well. Such offerings include 360-degree feedback, employee surveys, leadership and management development, coaching and job evaluation.

Hermes

Hermes has been developing and evolving cargo management systems for the air cargo industry since 2002. Hermes Air Cargo Management System is a proprietary, state-of-the-art, packaged software solution for managing air cargo ground handling. Our Hermes Solution covers all aspects of cargo handling, from physical handling and cargo documentation through customs, seamless EDI communications, dangerous goods and special handling, tracking and tracing, security and billing. Over the last 10 years Hermes systems have been implemented in over 70 terminals on five continents, providing efficient and accurate handling of more than 5 million tons of freight annually. Customers benefit through faster processing and more accurate billing, reporting and ultimately enhanced revenue. Customers include independent ground handlers, airlines with a cargo arm, hubs belonging to an individual airline or those catering to a number of airlines transiting cargo to additional destinations. The Hermes Solution is delivered on a licensed or fully hosted basis.

Hermes Value Proposition

Hermes systems are built with the specific needs of air cargo handlers and airlines in mind and are amongst the most versatile and sophisticated around. Hermes Solutions are focused on maximizing customer profits by streamlining ground handling processes and employing built-in best practices to reduce handling errors. Hermes team of cargo experts carry out a full business analysis, listen to our customers’ requirements, suggest additional functionality and work with them to deliver an air cargo management solution that is streamlined around their processes and customized to their needs. Hermes works with everyone from smaller cargo handlers to large airlines all over the world and counts Menzies Aviation, WFS (FRA), Luxair, Etihad Airport Services and Frankfurt Cargo Services among their customers.

Magic Software Product Development

Magic Software place considerable emphasis on research and development in order to improve and expand the functionality of our technologies and to develop new applications. We believe that our future success depends upon our ability to maintain our technological leadership, to enhance our existing products and to introduce new commercially viable products addressing the needs of our customers on a timely basis. We also intend to support emerging technologies as they are introduced in the same way we have supported new technologies in the past. We will continue to devote a significant portion of our resources to research and development. We believe that internal development of our technology is the most effective means of achieving our strategic objective of providing an extensive, integrated and feature-rich development technology. For significant version release see “Magic’s Software Solutions” discussed above.

Product Related Services

Professional Services. Magic Software offer fee-based consulting services in connection with installation assurance, application audits and performance enhancement, application migration and application prototyping and design. Consulting services are aimed at generating both additional revenues and ensuring successful implementation of Magic xpa, Appbuilder, Magic xpi Magic xpc, SmartUX and FactoryEye projects through knowledge transfer. As part of management efforts to focus on license sales, our goal is to provide such activities as a complementary service to our customers and partners. We believe that the availability of effective consulting services is an important factor in achieving widespread market acceptance.

Services are offered as separately purchased add-on packages or as part of an overall software development and deployment technology framework. Over the last several years, we have built upon our established global presence to form business alliances with our MSPs that use our technology to develop solutions for their customers, and distributors to deliver successful solutions in focused market sectors.

Maintenance. We offer our customers annual maintenance contracts providing for unspecified upgrades and new versions and enhancements for our products on a when-and-if-available basis for an annual fee.

Customer Support. We believe that a high level of customer support is important to the successful marketing and sale of our products. Our in-house technical support group provides training and post-sale support. We believe that effective technical support during product evaluation as well as after the sale has substantially contributed to product acceptance and customer satisfaction and will continue to do so in the future.

We offer online support systems for our MSPs and end users, providing them with the ability to instantaneously enter, confirm and track support requests through the Internet. These systems support MSPs and end-users worldwide. As part of this online support, we offer Support Knowledge Base tools providing the full range of technical notes and other documentation including technical papers, product information, and answers to most common customer queries and known issues that have already been reported.

Training. We conduct formal and organized training on our development tools and packaged software solutions. We develop courses, pertaining to our principal products and provide trainer and student guidebooks. Course materials are available both in traditional, classroom courses and as web-based training modules, which can be downloaded and studied at the student's own pace and location. The courses and course materials are designed to accelerate the learning process, using an intensive technical curriculum in an atmosphere conducive to productive training.

IT Services

Background

Our IT services offerings consist of a variety of professional services that can be grouped into integration and other IT services. Our integration services include:

- **Infrastructure analysis, design and delivery** - management of complex, tailor-made projects and telecom infrastructure projects in wireless and wire-line as well as IT consulting services, mainly for the defense and public sectors.
- **Technology consulting and implementation services** - planning and execution of end-to-end, large-scale, complex solutions in networking, cyber security, command & control and high performance transaction systems.
- **Application development** - We specialize in end-to-end projects that feature an array of technologies, from development and implementation of concepts for startups to overall responsibility for the development of systems for large enterprises. Our development services include development of on-premise, mobile and cloud applications as well as Embedded and real time software development.

With more than 1,700 experts and hundreds of projects gone live in a variety of advanced technologies in the U.S., Europe and Israel, we have developed significant expertise and accumulated vast experience in integration projects. Such projects are typically more complex and require a high level of industry knowledge and highly skilled professionals. Our integration expertise, as well as our global reach allows us to deliver comprehensive, value added services to our customers. Our IT services customers include major global telecoms, OEMs and engineering, furnish and installation service companies.

Strategic Consulting and Outsourcing Services

Magic Software provides a broad range of IT consulting services in the areas of infrastructure design and delivery, application development, technology planning and implementation services, cloud computing, as well as supplemental outsourcing services. Our wholly-owned subsidiaries, Fusion Solutions LLC, Xsell Resources Inc., Allstates Consulting Services LLC, Futurewave Systems, Inc., NetEffects, Inc, OnTarget Group, Inc, the Comm-IT Group, Infinigy Solutions LLC., Comblack Ltd. and Shavit Software (2009) Ltd. provide advanced IT consulting and outsourcing services to a wide variety of companies including Fortune 1000 companies. Our technical personnel generally supplement the in-house capabilities of our customers. Our approach is to make available a broad range of technical personnel to meet the requirements of our customers rather than focusing on specific specialized areas. We have extensive knowledge of and have worked with virtually all types of wireless and wireline telecom infrastructure technologies as well as in the areas of infrastructure design and delivery, application development, project management, technology planning and implementation services. Our consulting partners come from a wide range of industries, including finance, insurance, government, health care, logistics, manufacturing, media, retail and telecommunications. With an experienced team of recruiters in the telecom and IT areas and with a substantial and a growing database of telecom talent, we can rapidly respond to a wide range of requirements with well qualified candidates. Our customer list includes major global telecoms, OEMs and engineering, furnish and installation service companies. We have built long-term relationships with our customers by providing expert telecom talent. We provide individual consultants for contract and contract-to-hire assignments as well as candidates for full time placement. In addition, we configure teams of technical consultants for assigned projects at our customers' sites.

Michpal

Michpal, an Israeli registered company, is a developer of proprietary, on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprises and payroll service providers. Michpal also developed several complementary modules such as attendance reporting, which are sold to its customers for additional fees. As of December 31, 2019, Michpal group serves more than 8,000 customers, most of which are long-term customers.

As part of its payroll software solution Michpal allows the preparation of employee paychecks, pay statements, supporting journals, summaries, and management reports and supports monthly and year-end regulatory and legislative payroll tax statements and other forms such as payroll social and income taxes, to its clients and their employees. In addition, Michpal enables its clients to connect to certain major enterprise resource planning, or ERP, applications with a certified connector

In January 2018, Michpal released its new product and a new service line – “Michpal Pension” and “Michpal PensionPlus”, respectively, which led to a 25% increase in revenues of Michpal year over year. These solutions enable all Israeli employers to digitally report their employees’ pension fund payments to their respective pension funds as required by Israeli law (this requirement took effect on February 1, 2018 for employers who employ more than 21 employees and on February 1, 2019 for employers who employ more than 10 employees).

In November 2018, Michpal expanded its business through the acquisition of an 80% share interest in Effective Solutions Ltd., an Israeli company that provides consulting services in the fields of operational cost savings and procurement, as well as salary control and monitoring. The two companies have launched, in November 2018, a new service called ‘Michpal YEDA’, adopted by more than 50% of Michpal’s customers, which allows clients to consult with team of experienced professionals, including employment attorneys and HR experts, with respect to payroll, labor, pensions, social security and employee income tax matters.

In January 2019, Michpal launched a supplement service line, “Michpal 360”, specially tailored for payroll service providers, allowing them to offer their clients to digitally report their employees’ pension fund payments to their respective pension funds as required by law.

In November 2019 Michpal completed its second acquisition acquiring all of the share capital of Unique Software Industries, an Israeli software development and services company, which during its 30 years of operations, has provided integrated solutions in the field of payroll, including pay-stubs, pension services management, education funds management, and software solutions for managing employee attendance. The acquisition constituted an additional strategic move towards the expansion of our operations in the field of payroll and human resources management in which we currently engage primarily through the Michpal group. Following the acquisition of Unique, we started operating in the complementary field of outsourced payroll services, in which we were not active and will allow us to penetrate the field of services bureaus, by way of expanding our present customer base.

In May 2020, Michpal completed the acquisition of 70% of the share capital of Liram Finance Software Ltd, a provider of proprietary integrated specialized management systems in the field of financial accounting, taxation and compliance, for accounting professionals (accountants and tax consultants), bookkeepers, controllers, and CFOs, giving its clients, for more than 35 years, complete confidence in their actions and decisions. Liram’s solutions include specialized financial software solutions for preparation and reporting of financial statements, tax declarations, single-entry and double-entry bookkeeping, fixed asset management and depreciation calculations (under the brand name Ram-Nihul).

During the recent months, Liram has launched its “RamPlus 360” platform, which is a modular platform offering a wide range of Liram’s software solutions under one integrated working environment (on-premise or online). The new platform has already proven its efficacy during the COVID-19 crisis by enabling financial professionals to continue their work offsite and provide crucial real-time and personalized service to their clients even during the COVID-19 lockdown period, while saving time and preventing errors. We Believe that the acquisition of Liram is a strategic step towards the expansion of Michpal’s operations in the field of payroll, human resources and financial management and compliance.

InSync

InSync is a US based national supplier of employees to Vendor Management Systems (VMS) Workforce Management Program accounts. InSync specializes in providing professionals in the following areas: Accounting and Finance, Administrative, Customer Service, Clinical, Scientific and Healthcare, Engineering, Manufacturing and Operations, Human Resources, IT Technology, LI/MFG, and Marketing and Sales. With an experienced team of IT recruiters, InSync can rapidly respond to a wide range of requirements with well-qualified candidates. InSync currently supports more than 30 VMS program customers with employees in over 40 states.

Our Affiliated Company

TSG

TSG is a global high technology company engaged in high-end technical solutions for protecting the safety of national borders, improving data gathering mechanisms, and enhancing communications channels for military, homeland security and civilian organizations.

TSG operates primarily in the defense and homeland security arenas. The nature of military and homeland security actions in recent years, including low intensity conflicts and ongoing terrorist activities, as well as budgetary pressures to focus on leaner but more technically advanced forces, have caused a shift in the defense and homeland security priorities for many of TSG's major customers. As a result, TSG believes there is a continued demand in the areas of command, control, communications, computer and intelligence (C4I) systems, intelligence, surveillance and reconnaissance (ISR) systems, intelligence gathering systems, border and perimeter security systems, cyber-defense systems. There is also a continuing demand for cost effective logistic support and training and simulation services. TSG believes that its synergistic approach of finding solutions that combine elements of its various activities positions it to meet evolving customer requirements in many of these areas.

TSG tailors and adapts its technologies, integration skills, market knowledge and operationally-proven systems to each customer's individual requirements in both existing and new platforms. By upgrading existing platforms with advanced technologies, TSG provides customers with cost-effective solutions, and its customers are able to improve their technological and operational capabilities within limited budgets.

TSG markets its systems and products either as a prime contractor or as a subcontractor to various governments and defense and homeland security contractors worldwide. In Israel, TSG sells its defense, intelligence and homeland security systems and products mainly to the IMOD, which procures all equipment for the Israeli Defense Force (IDF).

TSG's offerings include:

Command & Control Solutions

TSG offers sophisticated and innovative command and control solutions that support military and civilian sectors on land, air and sea. TSG provides a variety of Command & Control solutions ranging from strategic battlefield management to tactical and special operations forces. TSG systems cover all echelons of management, from national and regional levels down to the operational and tactical levels. Its systems are field proven and used by military forces, security services and public safety organizations worldwide.

Intelligence, Surveillance and Knowledge Management Solutions

TSG Intelligence solutions for security agencies and defense forces meet the demand for accurate and timely intelligence, based on multiple sources and sensors. TSG unique technologies cover the entire life-cycle of intelligence from acquisition to fusion, analysis, distribution, target management and more. TSG's Knowledge Management solutions provide public sector bodies with the capacity to effectively manage their organizational data, support decision making and follow-up.

Telecommunication & IT Management Solutions

TSG has extensive experience in developing and integrating telecommunications and IT solutions and tools such as Operations Support Systems (OSS), Contact Centers, Back Office Optimization and Value-Added Services (VAS) that are tailored to meet the requirements of multiple applications. Leveraging deep know-how in telecommunications, TSG provides wide-ranging offering suitable for public and private sector organizations.

Cyber Security Solutions & Services:

TSG provides cutting-edge security services and solutions to government and private sectors including secure critical infrastructure and financial institutions in cyber space. TSG cyber solutions, Cyber Security Center (CSC), Security Training, Security Investigations and Security Engineering support the establishment of a safe, secure and reliable work environment and cover, among other things, Security Engineering, Digital Forensics, Computer emergency response teams (CERT), Mobile Security, and Training.

Homeland Security Solutions (HLS)

TSG's field proven homeland security solutions maximize safety and security while minimizing threats. TSG provide its clients with paramount technologies ranging from emergency management and Chemical, biological, radiological and nuclear defense (CBRN) systems, to rescue& special operations and smart and safe city solutions.

Supporting Tools:

TSG offers a variety of supporting system and solutions, providing dynamic and customizable field proven applications for in the following verticals:

- Facility Management
- Recording and Debriefing systems
- Trainers and Simulators
- Mapping Engines

Geographical Distribution of Revenues

The following table summarizes our consolidated revenues classified by geographic regions of our customers, for the periods indicated:

	Year ended December 31,	
	2018	2019
Israel	\$ 893,605	\$ 1,047,265
International:		
United States	418,148	462,803
Europe	141,316	145,564
Africa	13,726	15,336
Japan	11,053	14,925
Other (mainly Asia pacific)	15,140	15,222
Total	\$ 1,492,988	\$ 1,701,115

Competition

The markets for the IT products and services we offer are rapidly evolving, highly competitive and fragmented, and, in some cases, present only low barriers to entry, with frequent new product introductions, and mergers and acquisitions. Our ability to compete successfully in IT services markets depends on a number of factors, like breadth of service offerings, sales and marketing efforts, service, pricing, and quality and reliability of services. The principal competitive factors affecting the market for the proprietary software solutions include product performance and reliability, product functionality, availability of experienced personnel, price, ability to respond in a timely manner to changing customer needs, ease of use, training and quality of support.

We face competition, both in Israel and internationally, from a variety of companies, including companies with significantly greater resources than us who are likely to enjoy substantial competitive advantages, including:

- longer operating histories;
- greater financial, technical, marketing and other resources;
- greater name recognition;
- well-established relationships with our current and potential clients; and
- a broader range of products and services.

As a result, our competitors may be able to respond more quickly to new or emerging technologies or changes in customer requirements. They may also benefit from greater purchasing economies, offer more aggressive product and service pricing or devote greater resources to the promotion of their products and services. In addition, in the future, we may face further competition from new market entrants and possible alliances between existing competitors. We also face additional competition as we continue to penetrate international markets. As a result, we cannot assure you that the products and solutions we offer will compete successfully with those of our competitors. Furthermore, several software development centers worldwide offer software development services at much lower prices than we do. Due to the intense competition in the markets in which we operate, software products prices may fluctuate significantly. As a result, we may have to reduce the prices of our products.

Matrix's Competitive Landscape

Matrix's principal competitors in the domestic Israeli market are Israeli IT services companies and systems integrators, the largest of which are Hilan Ltd., Malam-Team, One-1, Taldor Computer Systems, Aman, the Elad Group, Yael, SQLink, Emet, LogOn, and HMS. In addition, in recent years, large accounting and advisory firms such as Deloitte and E&Y have expanded their service portfolio to include managed services and consulting in the fields of BI, Cybersecurity, ERP and CRM. We view these firms as direct competition, given that they already have a deep understanding of a particular client's business because of the accounting and auditing services they provide, and given the trust that they have developed with the client, which is an essential part of providing any services to a client. This international trend is as evident in Israel as it is in all major markets around the world. Matrix's competitors in the United States market include many companies that provide similar services to those of Matrix, as well as providers of offshore services which utilize low rates. In some cases, Matrix competes with IBM, Accenture and the large accounting and advisory accounting firms. Matrix's international competitors in the Israeli marketplace include Microsoft, IBM, HP, Oracle and CA. These international competitors often use local subcontractors to provide personnel for contracts performed in Israel. Most of these international entities are also business partners of Matrix. Competitors with respect to infrastructure solutions include HP, Lenovo and Dell. With respect to cloud services, competitors include All Cloud, DoIT, Google, Microsoft and Amazon Web Services. Matrix competitors with respect to training are the training centers of the Technion, IITC, HackerU, Ness Technologies, SQLink and Sela.

Sapiens' Competitive Landscape

Sapiens' competitors in the insurance software solutions market differ based on the size, geography and line of business in which it operates. Some of its competitors offer a full suite of services, while others only offer one module; some operate in specific (domestic) geographies, while others operate on a global basis. In addition, delivery models vary, with some competitors keeping delivery in-house, or using IT outsourcing (ITO) or business process outsourcing (BPO).

The complex requirements of this market create a high barrier to entry for new players. As for existing players, these requirements have led to a marked increase in M&A transactions in the insurance software solutions sector, since small, local vendors have not been able to sustain growth without continuing to fund their R&D departments and follow the globalization trend of their customers.

Examples of Sapiens' primary competitors in the insurance software solutions market are:

- Global software providers with their own IP;
- Local/domestic software vendors with their own IP, operating in a designated geographic market and/or within a designated segment of the insurance industry;
- BPO providers who offer end-to-end outsourcing of insurance carriers business, including core software administration (although BPO providers want to buy comprehensive software platforms to serve as part of the BPO proposition from vendors and may seek to purchase Sapiens' solutions for this purpose);
- Internal IT departments, who often prefer to develop solutions in-house; and
- New insurtech companies with niche solutions.

We differentiate Sapiens from its potential competitors in respect of the competitive landscape for insurance software solutions through the following key factors:

- Sapiens offers innovative and modern software solutions, with rich functionality and advanced, intuitive user interfaces.
- Sapiens uses model-driven architecture that allows rapid deployment of the system, while reducing total cost of ownership.

- Our solutions are built using an architecture that allows customers to implement the full solution or components, and readily integrate the solution or individual components into their existing IT landscape.
- Strong and global partnership program, with established IT players and new insurtech companies, ensures linkage to innovative technologies and new business models, as well as ongoing work to embed innovation into Sapiens platforms.
- We recognize technology trends and invest in adjusting our solutions to keep pace with today's frenetic evolutions.
- We are able to fund R&D investment and maintain the competitive advantage of our products, due to our large and growing customer base and financial stability.
- Our delivery methodology is based on extensive insurance industry experience and cooperation with large insurance companies globally. Our track record over the past few years in developing a strong off-shore development center is also a significant parameter in differentiating our abilities in the services space.
- We leverage our proven track record of successful delivery to help our customers deploy our modern solutions, while integrating with their legacy environment (when that legacy environment must remain supported).

With respect to Sapiens DECISION, we believe that Sapiens is considered a pioneer in its disruptive market landscape. Since the introduction of Sapiens' innovative approach to enterprise architecture to the market, Sapiens has identified only a small number of potential competitors.

We differentiate Sapiens from its potential competitors in respect of the competitive landscape for Business Decision Management Solutions through the following key factors:

- We believe that Sapiens Decision is the only solution (that is currently generally available and already in production) that offers a true separation of the business logic in a decision management system for large enterprises.
- Sapiens Decision is unique in its proven ability to support complex environments, with a full audit trail and governance that is crucial for large financial services organizations.
- We understand complex environments where Decision is deployed, due to our experience delivering complex, mission-critical solutions.

Magic Software's Competitive Landscape

The markets for Magic Software Enterprise Mobility Solution, and Magic xpa and Magic xpi platforms are characterized by rapidly changing technology, evolving industry standards, frequent new product introductions, mergers and acquisitions, and rapidly changing customer requirements. These markets are therefore highly competitive, and we expect competition to continue to intensify. The growth of the cloud adoption and mobile markets increases the competition in these areas. We constantly follow and analyze the market trends and our competitors in order to effectively compete in these markets and avoid losing market share to our direct competitors and other players.

With Magic xpa, we compete in the low-code application platform, SOA architecture and enterprise mobility markets. Among our current competitors are OutSystems, Appian, Mendix, Kony, Microsoft, and Pegasystems. With Magic xpi, we compete in the integration platform market. Among our current competitors are IBM, Informatica, TIBCO, MuleSoft, Jitterbit, Talend, Dell-Boomi, Scribe and Software AG.

More and more enterprises prefer to integrate their applications using integration platform as a service (iPaaS) technology and for this purpose we launched our new Magic xpc, a hybrid iPaaS solution.

There are several similar products in the market utilizing the model driven architecture, or MDA, approach utilized by AppBuilder. The market for this type of platform is highly competitive. Companies such as CA and IBM have tools that compete directly with AppBuilder. Furthermore, new development paradigms have become very popular in IT software development and developers today have many alternatives.

As our market grows, we expect that it will attract more highly specialized vendors as well as larger vendors that may continue to acquire or bundle their products more effectively. The principal competitive factors in our market include:

- platform features, reliability, performance and effectiveness;
- ease of use and speed;
- platform extensibility and ability to integrate with other technology infrastructures;
- deployment flexibility;
- robustness of professional services and customer support;
- price and total cost of ownership;
- strength of platform security and adherence to industry standards and certifications; and
- strength of sales and marketing efforts.

We believe we generally compete favorably with our competitors with respect to the features, security and performance of our platform, the ease of integration of our applications and the relatively low total cost of ownership of our applications. However, many of our competitors have substantially greater financial, technical and other resources, greater name recognition, larger sales and marketing budgets, broader distribution, more diversified product lines and larger and more mature intellectual property portfolios.

Our goal is to maintain our technological advantages, time to market and worldwide sales and distribution network. We believe that the principal competitive factors affecting the market for our products include developer productivity, rapid results, product functionality, performance, reliability, scalability, portability, interoperability, ease-of-use, demonstrable economic benefits for developers and users relative to cost, quality of customer support and documentation, ease of installation, vendor reputation and experience, financial stability as well as intuitive and out-of-the-box solutions to extend the capabilities of ERP, CRM and other application vendors for enterprise integration.

Michpal's Competitive Landscape

With respect to Michpal, the market in which it operates is very fragmented and among its current competitors in the Israeli market in which it operates are mainly Hilan, MalamTeam, Tamal, Synel, Oketz systems and others.

Our goal is to maintain our technological advantages, time to market and worldwide sales and distribution network. We believe that the principal competitive factors affecting the market for our products include developer productivity, rapid results, product functionality, performance, reliability, scalability, portability, interoperability, ease-of-use, demonstrable economic benefits for developers and users relative to cost, quality of customer support and documentation, ease of installation, vendor reputation and experience, financial stability as well as intuitive and out-of-the-box solutions to extend the capabilities to effectively manage their operations and reduce their business risks in the face of changing business environments.

Seasonality

Even though not significantly reflected in our financial results, traditionally, the first and third quarters of the fiscal year have tended to be slower quarters for some of our subsidiaries and our affiliated companies and the industries in which they operate. The first quarter usually reflects a decline following a highly active fourth quarter during which companies seek to complete transactions and projects and utilize budgets before the end of the fiscal year. The relatively slower third quarter reflects reduced activities during the summer months in many of the regions where our customers are located and also reflects the Jewish national holidays in Israel.

In addition, our quarterly results are also influenced by the number of working days in each period in Israel. For example, during the Jewish holidays period (typically at the end of the third quarter and beginning of the fourth quarter or at the end of the first quarter and beginning of the second quarter), when the number of working days is lower, we tend to see a decrease in our revenues which may impact our quarterly results. Following are the number of standard working hours in each quarter of 2019 and 2020, and the percentage of the annual number of working hours represented thereby, in the Israeli market, which accounts for approximately 62% of our annual revenues (these numbers do not take into account the reduction in working hours due to the outbreak of the coronavirus in 2020, which has limited the number of working hours at the end of the first quarter and start of the second quarter of 2020):

	<u>1st quarter</u>	<u>2nd quarter</u>	<u>3rd quarter</u>	<u>4th quarter</u>
2019	578.5	545	574	537.5
2020	569.5	536	564.5	555
2019	26%	24%	26%	24%
2020	26%	24%	25%	25%

In 2019, seasonality due to the Jewish holiday periods adversely impact the second and fourth quarters. In 2020, we expect seasonality due to the Jewish holiday periods to adversely impact the second and late third/ early fourth quarters (in addition to any adverse impact on working hours caused by the outbreak of the coronavirus at the end of the first quarter and start of the second quarter).

The following table presents our revenues allocation per quarter in 2018 and 2019 (in percentage):

	<u>1st quarter</u>	<u>2nd quarter</u>	<u>3rd quarter</u>	<u>4th quarter</u>
2018	25.0%	24.3%	24.3%	26.4%
2019	23%	24.3%	26.4%	26.3%

Raw Materials

Generally, we are not dependent on raw materials or on a single source of supply. We manage our inventory according to project requirements. In some projects, specific major subcontractors are designated by the customer. Raw materials used by us are generally available from a range of suppliers internationally, and the prices of such materials are generally not subject to significant volatility.

Further, although we believe that there are currently adequate replacements for the third-party technology that we presently use and distribute, the loss of our right to use any of this technology could result in delays in producing or delivering affected products until equivalent technology is identified, licensed or otherwise procured, and integrated. Our business would be disrupted if any third-party technology we license from others or functional equivalents of that technology were either no longer available to us or no longer offered to us on commercially reasonable terms. In either case, we would be required either to attempt to redesign our products to function with technology available from other parties or to develop these components ourselves, which would result in increased costs and could result in delays in product sales and the release of new product offerings. Alternatively, we might be forced to limit the features available in affected products. Any of these results could harm our business and impact our results of operations.

Software Development

The software industry is generally characterized by rapid technological developments, evolving industry standards and customer requirements, and frequent innovations. In order to maintain technological leadership, we engage in ongoing software development activity through our investees, aimed both at introducing new commercially viable products addressing the needs of our customers on a timely basis, as well as enhancing and customizing existing products and services. This effort includes introducing new supported programming languages and database management systems; improving functionality and flexibility; and enhancing ease of use. We work closely with current and potential end-users, our strategic partners and leaders in certain industry segments to identify market needs and define appropriate product enhancements and specifications.

Intellectual Property Rights

Sapiens holds one patent and one patent application relating to decision management technology used in the Sapiens Decision solution. In the first quarter of 2017, Sapiens acquired StoneRiver. The acquisition of StoneRiver included the acquisition of 25 registered trademarks, one issued patent and one patent application. In the first quarter of 2018 Sapiens acquired Adaptik. Adaptik owns two registered patents. In accordance with industry practice, we do not otherwise hold any patents and rely upon a combination of trade secret, copyright and trademark laws and non-disclosure agreements, to protect our proprietary know-how. Our proprietary technology incorporates processes, methods, algorithms and software that we believe are not easily copied. Despite these precautions, it may be possible for unauthorized third parties to copy aspects of our products or to obtain and use information that we regard as proprietary. We believe that because of the rapid pace of technological change in the industry generally, patent and copyright protection are less significant to our competitive position than factors such as the knowledge, ability and experience of our personnel, new product development and ongoing product maintenance and support.

With respect to our defense sector activities, the IMOD usually retains specific rights to technologies and inventions resulting from our performance under Israeli government contracts. This generally includes the right to disclose the information to third parties, including other defense contractors that may be our competitors. Consistent with common practice in the defense industry, a majority of TSG's revenues in 2017, 2018 and 2019 was dependent on products incorporating technology that a government customer may disclose to third parties. When the Israeli government funds research and development, it usually acquires rights to data and inventions. We often may retain a non-exclusive license for such inventions. The Israeli government usually is entitled to receive royalties on export sales in relation to sales resulting from government financed development. However, if only the product is purchased without development effort, we normally retain the principal rights to the technology. Subject to applicable law, regulations and contract requirements, TSG attempts to maintain its intellectual property rights and provide customers with the right to use the technology only for the specific project under contract

Regulatory Impact

The global financial services industry served in particular by Sapiens, Matrix and Magic Software is heavily subject to government and market regulation, which is constantly changing. Financial services companies must comply with regulations such as the Sarbanes-Oxley Act, Solvency II, Retail Distribution Review (known as RDR) in the United Kingdom, the European Union General Data Protection Regulation, or GDPR (enforceable as of May 25, 2018), in the EU, the CCPA, a statute that went into effect on January 1, 2020 in California (and similar privacy legislation in New York and elsewhere in the U.S.), the Dodd-Frank Act and other directives regarding transparency. In addition, many individual countries have increased supervision over local financial services companies. For example, in Europe, regulators have been very active, motivated by past financial crises and the need for pension restructuring. Distribution of insurance policies is being optimized with the increasing use of Bank Assurance (selling of insurance through a bank's established distribution channels), supermarkets and kiosks (insurance stands). Increased activity such as that in Europe would generally tend to have a positive impact on the demand for our software solutions and services; nevertheless, insurers are cautiously approaching spending increases, and while many companies have not taken proactive steps to replace their software solutions in recent years, many of them are now looking for innovative, modern replacements to meet the regulatory changes.

Matrix's and Magic Software's IT business is generally positively affected by regulatory reform and other regulatory changes with respect to banking, insurance and telecommunications in Israel, as such reforms and changes create demand for specific IT solutions, often in a set, short time frame. In particular, regulation on large financial institutions operating in the Israeli financial market is continuously increasing, as a means of reducing the risk associated with the activities of such financial institutions and increasing transparency and increases the demand for Matrix's and Magic Software's services offering for entities that become subject to such supervision. Banks' entry into the sphere of offering advice with respect to pension, insurance and other financial products has also generated demand for Matrix's IT solutions, given the increased supervision of the Israeli Securities Authority that is triggered by such activities, although the pace at which such demand has grown has been relatively slower. Enhanced disclosure requirements for banks and financial institutions in the Israeli market, such as those published with respect to the required capital liquidity of banks in Israel, have also been generating demand for new IT solutions that Matrix offers. Matrix's business is also affected by changes in regulations of the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority, the Commodity Futures Trading Commission, the National Futures Association, the Federal Energy Regulatory Commission, with respect to requirements relating to Know Your Customer, Customer Identification Programs, Anti-Money Laundering and Fraud Prevention.

In recent years, there has been greater focus on core banking issues, and today a number of banks are in the process of undergoing a gradual examination / replacement of the traditional core systems. The financial market is also facing significant changes and opportunities for the IT market in light of the Strum Reform and its implications for the banking market, credit card companies and other relevant players in the financial market. In the insurance industry, there is a delay in decision making based on the prolonged selling process of some of the companies, and in light of the worsening of the capital adequacy ratios and actuarial reserves that are required by regulators and which affect the profitability of the companies, their ability to distribute a dividend or allocate budgets for IT investments as in the past.

With respect to our defense sector activities, we operate under laws, regulations and administrative rules governing defense and other government contracts, mainly in Israel. Some of these carry major penalty provisions for non-compliance, including disqualification from participating in future contracts. In addition, our participation in governmental procurement processes in Israel, the United States and other countries is subject to specific regulations governing the conduct of the process of procuring defense and homeland security contracts.

Israeli Export Regulations. Israel’s defense export policy regulates the sale of a number of our systems and products, which are developed and marketed by our affiliated company TSG. Current Israeli policy encourages exports to approved customers of defense systems and products such as ours, as long as the export is consistent with Israeli government policy. Subject to certain exemptions, a license is required to initiate marketing activities. We also must receive a specific export license for defense related hardware, software and technology exported from Israel. Israeli law also regulates export of “dual use” items (items that are typically sold in the commercial market but that also may be used in the defense market).

Procurement Regulations. Solicitations for procurements by governmental purchasing agencies in Israel, the United States and other countries are governed by laws, regulations and procedures relating to procurement integrity, including avoiding conflicts of interest, corruption, human trafficking and conflict minerals in the procurement process. Such regulations also include provisions relating to information assurance and for the avoidance of counterfeit parts in the supply chain.

Civil Aviation Regulations. Several of the products sold by TSG for commercial aviation applications are subject to flight safety and airworthiness standards of the U.S. Federal Aviation Administration (FAA) and similar civil aviation authorities in Israel, Europe and other countries.

Buy-Back. As part of their standard contractual requirements for defense programs, several of our customers may include “buy-back” or “offset” provisions. These provisions are typically obligations to make, or to facilitate third parties to make, various specified transactions in the customer’s country, such as procurement of defense and commercial related products, investment in the local economy and transfer of know-how.

Magic Software’s business has not been impacted to a material extent by government regulations.

C. Organizational Structure

Formula is the parent company of the Formula Group.

The following table presents certain information regarding the control and ownership of our directly-held investments in subsidiaries and affiliates, as of June 25, 2020.

Subsidiaries and affiliate	Country of Incorporation	Percentage of Ownership
Matrix IT Ltd.	Israel	49.0%
Sapiens International Corporation N.V.	Cayman Islands	47.8%
Magic Software Enterprises Ltd.	Israel	45.5%
Michpal Micro Computers (1983) Ltd.	Israel	100.0%
TSG IT Advanced Systems Ltd.	Israel	50.0%
InSync Staffing Solutions, Inc.	Delaware	90.1%
Ofek Aerial Photography Ltd	Israel	80%

The common shares of Sapiens and the ordinary shares of Magic Software are traded on the NASDAQ Capital Market and the NASDAQ Global Select Market, respectively, and on the TASE, and the ordinary shares of Matrix are traded on the TASE.

D. Property, Plants and Equipment

Formula’s headquarters, as well as the headquarters and principal administrative, finance, sales, marketing and research and development office of Magic Software, are located in Or-Yehuda, Israel, a suburb of Tel Aviv. Magic Software leases its and our office space, constituting approximately 18,621 square feet, under a lease agreement entered in November 2019. The lease expires in June 2033, with an option by Magic Software to extend for an additional two 5-year term. In addition, Magic Software leases office space in the United States, Europe, Asia and South Africa. In 2019, Magic Software’s rent costs totaled \$3.0 million, in the aggregate, for all of its leased offices.

Matrix leases approximately 605,000 square feet of office space in various locations in Israel pursuant to leases of varying duration, including for a facility in Herzliya that serves as Matrix’s corporate headquarters. In addition, Matrix leases an aggregate of approximately 80,000 square feet of office space in locations outside of Israel, in the United States, Bulgaria, Macedonia, Hungary, India and the UK. The lease terms for the spaces that Matrix currently occupies are generally three to four years. In the year ended December 31, 2019, Matrix’s rent costs totaled NIS 22.2 million (approximately \$6.2 million), in the aggregate, for all of its leased offices.

Sapiens leases office space in Israel, the United States, India, Poland, South Africa, the United Kingdom, Latvia, China, Spain, Canada and Germany. The lease terms for the spaces that Sapiens currently occupies are generally five to eleven years. Based on Sapiens' current occupancy, it leases (except for owned real property, as indicated below) the following amount of space in the following locations: in Israel, approximately 166,205 square feet of office space; in the United States, approximately 88,395 square feet*; in India, approximately 162,841 square feet; in Poland, approximately 33,924 square feet; in South Africa, approximately 3,931 square feet; in the United Kingdom, approximately 12,554 square feet; in Latvia, approximately 11,401 square feet; in China, approximately 2,860 square feet; in Spain, approximately 12,128 square feet; in Canada, approximately 1,407 square feet; and, in Germany, approximately 32,283 square feet.

(*Of this office space in the U.S., 10,243 square feet constitutes owned real property.)

In 2019, Sapiens rent costs totaled \$9.4 million, in the aggregate, for all of its leased offices. Sapiens' corporate headquarters are located in Israel and its core research and development activities are performed at its offices across Israel. The lease at Sapiens headquarters in Holon, Israel is for a term in excess of three remaining years and Sapiens holds an option to extend the term for additional five years.

Michpal leases approximately 20,880 square feet of office space in various locations in Israel pursuant to leases of varying duration, including for a facility in Tel-Aviv that serves as Michpal's corporate headquarters. As of December 31, 2019. During the year ended December 31, 2019, Michpal's rent costs totaled \$0.3 million, in the aggregate, for its leased office space.

We believe that our properties are adequate for our present use of them. If in the future we require additional space to accommodate our growth, we believe that we will be able to obtain such additional space without difficulty and at commercially reasonable prices.

As described in "Subsidiary Commitments" in Item 5.B below, while our subsidiaries and our affiliated companies have incurred liens on leased vehicles, leased equipment and other assets in favor of leasing companies, neither Formula nor any subsidiary has encumbered the real property that it uses in its operations.

We furthermore believe that there are no environmental issues that encumber our use of our facilities.

ITEM 4A. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

Overview

We are a global software solutions and IT professional services holdings company that is principally engaged through our directly held investees in providing proprietary and non-proprietary software solutions and IT professional services, software product marketing and support, computer infrastructure and integration solutions and learning and integration. We deliver our solutions in over 50 countries worldwide to customers with complex IT services needs, including a number of "Fortune 1000" companies.

Since our inception, we have acquired effective controlling interests, and have invested, in companies which are engaged in the IT solutions and services business. We, together with our investees, are known as the Formula Group.

Other than in our joint control in TSG in which each of us and Israeli Aerospace Industries Ltd. holds 50% of its voting power, we currently have effective control under IFRS 10 in each of our other investees, Matrix, Sapiens, Magic Software, Michpal, Ofek Ariel Photography and InSync despite the lack of absolute majority of voting power in Matrix, Magic Software and Sapiens. As a result of our effective control in these investees as of December 31, 2019 and in accordance with IFRS 10, we consolidated their financial results with ours throughout the period covered by the financial statements included in Item 18 of this annual report. Prior to our transition to reporting under IFRS, we consolidated investees in which we held an equity interest only if we held a controlling interest in those companies. Under IFRS 10, we may consolidate entities in which we have effective control. For further information, please see Note 2(3) to our consolidated financial statements included in Item 18 of this annual report.

Except for providing our investees with our management, technical expertise and marketing experience to help them create a consecutive positive economic impact and long-term value and direct their overall strategy through our active involvement, we do not conduct independent operations at our parent company level. Our operating results are, and have been, directly influenced by the business operations of our subsidiaries and affiliated company.

Our consolidated financial statements for the years ended December 31, 2018 and 2019 are prepared in accordance with IFRS. For all periods up to and including the year ended December 31, 2015, we had historically prepared our financial statements in accordance with U.S GAAP. In order to comply with requirements of the SEC related to our transition to IFRS, we set the date of transition as January 1, 2015 and retrospectively applied IFRS as of that date and for the year ended December 31, 2015. We have presented herein consolidated statements of financial position that comply with IFRS applicable as of December 31, 2018 and 2019. Our consolidated statements of profit or loss presented herein in IFRS cover the years ended December 31, 2017, 2018 and 2019.

We recognize revenues in two categories: the delivery of software services and the delivery of proprietary software solutions and related services. All of our investees, recognize revenues from the delivery of software services, and most of them recognize revenues in both revenue categories. For ease of reference, we have separated our subsidiaries into these categories in accordance with the category in which each subsidiary has earned most of its revenues (although each type of revenue is nevertheless recorded according to actual revenue type, rather than based on strict, subsidiary-delineated categories).

Our functional and reporting currency

Until December 31, 2018, the currency of the primary economic environment in which our operations on a standalone basis were conducted was the dollar. Following an examination and reevaluation of the primary economic environment in which we currently operate and expects to continue operating and, taking into consideration the recent trends and our forward-looking business strategy, in accordance with the International Accounting Standard 21 (IAS 21), we concluded that the currency of the primary economic environment in which our operations on a standalone basis are currently conducted commencing January 1, 2019 is the NIS. Therefore, . The functional currencies applied by our investees which are consolidated in these financial statements are the currencies of the primary economic environment in which each one of them operates. We have elected to use the dollar as our reporting currency for all years presented since we believe that financial statements in U.S dollars provide more relevant information to our investors and users of the financial statements.

Assets, including fair value adjustments upon acquisition, and liabilities of an investee which is a foreign operation, are translated at the closing rate at each reporting date. Profit or loss items are translated at average exchange rates for all periods presented. The resulting translation differences are recognized in other comprehensive income (loss).

Intragroup loans for which settlement is neither planned nor likely to occur in the foreseeable future are, in substance, a part of the investment in the foreign operation and, accordingly, the exchange rate differences from these loans (net of the tax effect) are recorded in other comprehensive income (loss).

Upon the full or partial disposal of a foreign operation resulting in loss of control in the foreign operation, the cumulative gain (loss) from the foreign operation which had been recognized in other comprehensive income is transferred to profit or loss. Upon the partial disposal of a foreign operation which results in the retention of control in the subsidiary, the relative portion of the amount recognized in other comprehensive income is reattributed to non-controlling interests.

Transactions denominated in foreign currency are recorded upon initial recognition at the exchange rate at the date of the transaction. After initial recognition, monetary assets and liabilities denominated in foreign currency are translated at each reporting date into the functional currency at the exchange rate at that date. Exchange rate differences, other than those capitalized to qualifying assets or accounted for as hedging transactions in equity, are recognized in profit or loss. Non-monetary assets and liabilities denominated in foreign currency and measured at cost are translated at the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currency and measured at fair value are translated into the functional currency using the exchange rate prevailing at the date when the fair value was determined.

For those subsidiaries whose functional currency has been determined to be their local currency, assets and liabilities are translated at year-end exchange rates and statement of income items are translated at average exchange rates prevailing during the year. Such translation adjustments are recorded as a separate component of accumulated other comprehensive income (loss) in equity.

A. Operating Results

This section presents an analysis of our results of operations, on a comparative basis, for the years ended December 31, 2018 and 2019. We have omitted herein a comparative analysis of our results of operations for the years ended December 31, 2017 and 2018. In order to view that latter analysis, please see “Item 5. Operating and Financial Review and Prospects—A. Operating Results—Year Ended December 31, 2018 Compared to Year Ended December 31, 2017” in our Annual Report on Form 20-F for the year ended December 31, 2018, which we filed with the SEC on May 15, 2019, which analysis is incorporated by reference herein.

Year Ended December 31, 2019 Compared to Year Ended December 31, 2018

The following tables set forth certain data from our statement of profit or loss for the years ended December 31, 2018 and 2019, as well as such data as a percentage of our revenues for those years. The data has been derived from our audited consolidated financial statements included elsewhere in this annual report. The operating results for the below years should not be considered indicative of results for any future period. This information should be read in conjunction with the audited consolidated financial statements and notes thereto included in this annual report.

Statements of Profits or Loss
(U.S. dollars, in thousands)

	Year ended December 31,	
	2018	2019
Revenues	1,492,988	1,701,115
Cost of revenues	<u>1,159,676</u>	<u>1,315,066</u>
Gross profit	333,312	386,049
Research and development expenses, net	41,223	46,690
Selling, marketing, general and administrative expenses	<u>182,472</u>	<u>200,870</u>
Operating income	109,617	138,489
Financial expenses	(15,852)	(22,443)
Financial income	<u>7,562</u>	<u>3,791</u>
Pre-tax income before share of profits of companies accounted for at equity, net	101,327	119,837
Taxes on income	24,301	27,201
Share of profits of companies accounted for at equity, net	<u>369</u>	<u>1,787</u>
Net income	<u>\$ 77,395</u>	<u>\$ 94,423</u>
Attributable to:		
Equity holders of the Company	32,365	38,820
Non-controlling interests	<u>45,030</u>	<u>55,603</u>
	<u>\$ 77,395</u>	<u>94,423</u>

**Statement of Profits or Loss as a
Percentage of Revenues**

	Year ended December 31,	
	2018	2019
Revenues	100%	100%
Cost of revenues	<u>78%</u>	<u>77%</u>
Gross profit	22%	23%
Research and development expenses, net	3%	3%
Selling, marketing, general and administrative expenses	<u>12%</u>	<u>12%</u>
Operating income	7%	8%
Financial expenses	(21)%	(1)%
Financial income	1%	0%
Pre-tax income before share of profits of companies accounted for at equity, net	7%	7%
Taxes on income	2%	2%
Group's share of earnings of companies accounted for at equity, net	0%	0%
Net income	5%	6%
Attributable to:		
Equity holders of the Company	2%	2%
Non-controlling interests	3%	3%

Revenues. Revenues in 2019 increased by 14%, from \$1,493.0 million in 2018 to \$1,701.1 million in 2019. Revenues from the two categories of our operations were as follows: revenues from the delivery of software services increased by 14.6%, from \$1,123.0 million in 2018 to \$1,287 million in 2019, and revenues from the sale of our proprietary software products and related services increased by 11.9%, from \$370.0 million in 2018 to \$414.2 million in 2019.

Software Services Revenues

The increase in software services revenues was recorded across the following of our investees reporting under this revenue stream— Matrix, Magic Software, Insync and Michpal— and was primarily due to growth in their revenues as described below:

Matrix:

Matrix's revenues increased from NIS 3,168.0 million (approximately \$881.1 million) in 2018, to NIS 3,596.3 million (approximately \$1,009.7 million) in 2019, reflecting an increase of 13.5% when measured in NIS, Matrix's local currency (compared to 14.6% when measured in U.S dollars). The increase in Matrix's revenues reflected an increase in almost all of Matrix's principal areas of operations (excluding 3% decrease recorded in Matrix's Information Technologies (IT) Software solutions and services in the United States sector) and due to the inclusion for the first time of (i) Techtop Ltd. (consolidated as of April 1, 2019), (ii) Medatech Information Technologies Ltd. (consolidated as of March 1, 2020) and (iii) Dana Engineering Ltd. (consolidated as of February 1, 2019) for the full year. The increase was attributable to each of the following: an increase of 17.7% in Matrix's Information Technologies (IT) Software solutions and services in Israel from NIS 1,922.3 million (approximately \$534.9 million) in 2018 to NIS 2,262.8 million (approximately \$635.3 million) in 2019; an increase of 13.6% in Matrix's computer infrastructure and integration solutions from NIS 529.7 million (approximately \$147.3 million) in 2018 to NIS 601.9 million (approximately \$169.0 million) in 2019; and an increase of 19% in Matrix's software product marketing and support from NIS 154.5 million (approximately \$43.0 million) in 2018 to NIS 183.8 million (approximately \$51.6 million) in 2019. The increase was offset, in part, by a decrease of 3.2% in Matrix's Information Technologies (IT) Software solutions and services in the United States from NIS 396.9 million (approximately \$110.4 million) in 2018 to NIS 384.0 million (approximately \$107.8 million) in 2019.

The increase in Matrix's revenues was also due to the inclusion of the first full or partial year of the following entities' revenues in Matrix's revenues during 2019: (i) the first full year of Pleasant Valley Business Solutions, LLC (consolidated upon acquisition by Matrix as of March 2018); (ii) the first full year of Integrity Software 2011 Ltd. (consolidated upon acquisition by Matrix as of July 2018); (iii) the first full year of Cambium (2014) Ltd. (consolidated upon acquisition by Matrix as of July 2018); (iv) the first full year of Noah Technologies Ltd. (consolidated upon acquisition by Matrix as of November 2018); (v) the first partial year of Dana Engineering Ltd. (consolidated upon acquisition by Matrix as of February 2019); and (vi) the first partial year of MedaTech Ltd. (consolidated upon acquisition by Matrix as of March 2019).

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 16.6% from \$211.6 million in 2018 to \$246.7 million in 2019, primarily attributable to the inclusion of (i) NetEffects (consolidated as of July 1, 2019) and (ii) OnTarget Group Inc (consolidated as of March 1, 2019) for the full year in 2019.

InSync:

InSync's revenues decreased by 5.0% from \$34.6 million in 2018 to \$32.9 million in 2019.

Michpal:

Michpal's revenues increased by 9.3% from \$7.5 million in 2018 to \$8.2 million in 2019 attributable to core business growth.

Proprietary Software Products and Related Services Revenues

The increase in revenues from proprietary software products and related services was attributable in part to the inclusion, for the first time, for a full year in 2019 of Adaptik (consolidated as of March 2018) and for part of the year in 2019 of Cálculo (consolidated as of September 27, 2019), and to the following results involving Sapiens and Magic Software:

Sapiens:

Sapiens' revenues increased from \$289.7 million in 2018 to \$325.7 million in 2019, reflecting an increase of 12.4%. The net increase in revenues of approximately \$36.0 million for the year ended December 31, 2019 was attributable to core business growth, mainly in the P&C business, as well as additional revenues from acquired entities, which contributed \$4.8 million towards that increase, primarily from the acquisition of Cálculo, which was completed on September 27, 2019, and the acquisition of Adaptik, which was completed in March 2018 and the revenues from which were included for a full-year in 2019 (as opposed to 10 months in 2018).

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 8.4% from \$72.8 million in 2018 to \$78.9 million in 2019. The increase in Magic Software's revenues was primarily attributable to strong demand for Magic Software's Hermes Air Cargo Management System and for Magic xpi and FactoryEye integration platforms.

A breakdown of our overall revenues into (i) proprietary software products and related services revenues, and (ii) software services revenues for the years ended December 31, 2018 and 2019, the percentage those respective categories of revenues constituted out of our total revenues in those years, and the percentage change for each such category of revenues from 2018 to 2019, are provided in the below table:

Revenue category	Year ended December 31, 2018		Year-over Year change (\$ in thousands)	Year ended December 31, 2019	
	Revenues	Percentage		Revenues	Percentage
Proprietary software products and related services	370,027	24.78%	11.9%	414,173	24.35%
Software services	1,122,961	75.22%	14.6%	1,286,942	75.65%
Total	1,492,988	100%	13.9%	1,701,115	100%

Revenues by geographical region

The dollar amount of our revenues attributable to each of the geographical regions in which we conduct our operations for the years ended December 31, 2018 and 2019, respectively, were as follows:

	Year ended December 31,	
	2018	2019
Israel	\$ 893,605	\$ 1,047,265
International:		
United States	418,148	462,803
Europe	141,316	145,564
Africa	13,726	15,336
Japan	11,053	14,925
Other (mainly Asia pacific)	15,140	15,222
Total	\$ 1,492,988	\$ 1,701,115

Cost of Revenues. Cost of revenues consists primarily of wages, personnel expenses, other personnel-related expenses of software consultants, subcontractors and engineers, royalties and licenses payable to third parties, amortization of capitalized software, and hardware and other materials costs. Cost of revenues increased by 13.4% from \$1,159.7 million in 2018 to \$1,315.1 million in 2019. As a percentage of total revenues, costs of revenues in 2018 and 2019 were 77.8% and 77.3%, respectively.

Our proprietary software solutions and related services sales are generally characterized by a higher gross margin than sales of our software services. The cost of revenues for proprietary software solutions and related services increased from \$207.9 million in 2018 to \$225.4 million in 2019. As a percentage of our proprietary software solutions and related services revenues, costs of revenues for proprietary software solutions and related services decreased to 54.4% in 2019 compared to 56.2% in 2018.

The cost of revenues for software services increased from \$951.8 million in 2018 to \$1,089.6 million in 2019. As a percentage of software services revenues, costs of revenues for software services in 2018 and 2019 remained relatively stable at 84.7% in 2019 compared to 84.8% in 2018.

The increase in our cost of revenues in 2019 was attributable in part to the inclusion of the results (and, consequently, the cost of revenues) of the following entities in our consolidated results in 2019: (i) the first full year of Adaptik (consolidated upon acquisition by Sapiens as of March 2018); (ii) the first partial year of Cálculo (consolidated upon acquisition by Sapiens as of September 27, 2019); (iii) the first full year of Pleasant Valley Business Solutions, LLC (consolidated upon acquisition by Matrix as of March 2018); (iv) the first full year of Integrity Software 2011 Ltd. (consolidated upon acquisition by Matrix as of July 2018); (v) the first full year of Cambium (2014) Ltd. (consolidated upon acquisition by Matrix as of July 2018); (vi) the first full year of Noah Technologies Ltd. (consolidated upon acquisition by Matrix as of November 2018); (vii) the first partial year of Dana Engineering Ltd. (consolidated upon acquisition by Matrix as of February 2019); (viii) the first partial year of MedaTech Ltd. (consolidated upon acquisition by Matrix as of March 2019); (ix) the first partial year of PowWow Inc. (consolidated upon acquisition by Magic as of April 2019); (x) the first partial year of OnTarget Group Inc. (consolidated upon acquisition by Magic as of March 2019), (xi) the first partial year of NetEffects Inc. (consolidated upon acquisition by Magic as of July 2019); (xii) the first full year of Effective Solutions Ltd. (consolidated upon acquisition by Michpal as of November 2018); and (xiii) the first partial year of Unique Software Industries Ltd. (consolidated upon acquisition by Michpal as of November 2019).

The increase in our cost of revenues in 2019 was also attributable to the following increases involving Matrix, Sapiens and Magic Software:

Matrix:

Matrix's cost of revenues increased by 13.9%. When measured in NIS, Matrix's local currency, from NIS 2,703.0 million (approximately \$751.8 million in 2018) to NIS 3,078.4 million (approximately \$864.3 million) in 2019. The increase in absolute cost of revenues was related to the increase in Matrix's revenues during the year ended December 31, 2019 relative to the year ended December 31, 2018. The level of Matrix's cost of revenues as a percentage of its revenues has consistently increased in recent years from 84% in 2015 to 84.6% in 2016, 85.3% in each of 2017 and 2018 and to 85.6% in 2019 (when measured in NIS). The increase in Matrix's cost of revenues as a percentage of its revenues as recorded in U.S. dollars was primarily attributable to continual increases in employee salaries in Israel and in the U.S.

Sapiens:

Sapiens' cost of revenues increased by \$15.6 million, or 8.7%, to \$195.3 million for the year ended December 31, 2019, as compared to \$179.8 million for the year ended December 31, 2018 (when measured in accordance with IFRS). Cost of revenues decreased as a percentage of revenues during the year ended December 31, 2019, to 60.0% as compared to 62.0% during the year ended December 31, 2018. The increase in absolute cost of revenues of \$15.6 million was primarily attributable to Sapiens' need to support its overall organic core business growth, offset mainly by a decrease due to Sapiens' increase in its offshore operations, as well as its continuous implementation of cost-efficiency measures, which also reduced cost of revenues in 2019. The decrease in the cost of revenues as a percentage of Sapiens' revenues was primarily attributable to the foregoing increase in offshore activities and cost reduction program, each of which further contributed to Sapiens' cost efficiency.

Magic Software:

Magic Software's cost of revenues increased by 14.3% from \$195.6 million in 2018 to \$223.5 million in 2019. The increase in cost of revenues was primarily attributable to: (i) the inclusion of PowWow Inc. (consolidated upon acquisition by Magic as of April 2019), OnTarget Group Inc. (consolidated upon acquisition by Magic as of March 2019) and NetEffects Inc. (consolidated upon acquisition by Magic as of July 2019) for the full year; and (ii) an increase in professional services, consistent with the increase in Magic Software's revenues, mainly related to IT consulting services.

Cost of revenues for the years ended December 31, 2018 and 2019 include insignificant amounts of stock-based compensation.

Operating Expenses:

Research and Development Expenses, net. Research and development, or R&D, expenses consist primarily of wages and related expenses and, to a lesser degree, consulting fees that we pay to employees and independent contractors, respectively, engaged in research and development. Research and development expenses, net, consist of research and development expenses, gross, less capitalized software costs.

Research and development expenses, gross, increased from \$50.1 million in 2018 to \$56.7 million in 2019, mainly due to (i) Sapiens' investment in R&D during 2019, particularly in its P&C and Digital offerings, which increased Sapiens' R&D expenses from \$39.6 million in 2018 to \$43.0 million in 2019 (in each case, when measured in accordance with IFRS) and (ii) Magic Software's investment in R&D during 2019, particularly in its Magic SmartUX, Magic xpi and FactoryEye offerings. In 2019, we capitalized software costs of \$10.0 million, compared to \$8.9 million in 2018. Capitalization of software costs in 2018 and 2019 was attributable to our subsidiaries engaged in providing proprietary software solutions (i.e., Magic Software and certain of its subsidiaries, Sapiens and certain of its subsidiaries and Michpal). Research and development expenses, net, increased from \$41.2 million in 2018 to \$46.7 million in 2019, mainly due to the factors described above.

As a percentage of revenues, research and development expenses, net, 2.7% in 2019 compared to 2.8% in 2018. Research and development expenses for the years ended December 31, 2019 and 2018 include insignificant amounts of stock-based compensation.

Selling, Marketing General and Administrative Expenses. Selling, marketing, general and administrative, or SMG&A, expenses consist primarily of cost of salaries, severance and related expenses of sales, marketing, management and administrative employees, travel expenses, selling expenses, rent, utilities, communications expenses, expenses related to external consultants, depreciation, amortization and other expenses. Selling, marketing, general and administrative expenses increased from \$182.5 million in 2018 to \$200.9 million in 2019. As a percentage of revenues, SMG&A decreased from 12.2% in 2018 to 10.1% in 2019.

The increase in the cost of SMG&A was mainly attributable to the increase in Sapiens' cost of SMG&A from \$52.4 million in 2018 to \$54.1 million in 2019 (in each case, when measured in accordance with IFRS), reflective of Sapiens' recruitment of several executives, particularly in North America, as well as an increase in Magic Software's and Matrix's cost of SMG&A by \$8.6 million and \$5.9 million, respectively, in 2019 compared to 2018, reflective of Matrix and Magic increase in amortization expenses of intangible assets from \$9.5 million in 2018 to \$12.6 million in 2019.

Matrix:

Matrix's SMG&A expenses increased to \$73.9 million for the year ended December 31, 2019 compared to \$68.0 million for the year ended December 31, 2018, representing an increase of \$5.9 million. This increase was mainly attributable to: (a) amortization costs of intangible assets, which amounted to \$4.6 million in 2019 compared to \$3.1 million in 2018, as a result of the inclusion for: (i) the first full year of Pleasant Valley Business Solutions, LLC (consolidated upon acquisition by Matrix as of March 2018); (ii) the first full year of Integrity Software 2011 Ltd. (consolidated upon acquisition by Matrix as of July 2018); (iii) the first full year of Cambium (2014) Ltd. (consolidated upon acquisition by Matrix as of July 2018); (iv) the first full year of Noah Technologies Ltd. (consolidated upon acquisition by Matrix as of November 2018); (v) the first partial year of Dana Engineering Ltd. (consolidated upon acquisition by Matrix as of February 2019); and (vi) the first partial year of MedaTech Ltd. (consolidated upon acquisition by Matrix as of March 2019); (b) increase in employee stock-based compensation costs, which amounted to \$2.4 million compared to \$1.6 million in 2018, with the remaining increase recorded consistently with the increase in Matrix's revenues. As a percentage of revenues, Matrix's SMG&A expenses decreased from 7.7% in 2018 to 7.3% in 2019.

Sapiens:

Sapiens' SMG&A expenses, which are primarily comprised of compensation expense for employees and subcontractors, were \$54.1 million for the year ended December 31, 2019 compared to \$52.4 million for the year ended December 31, 2018 (in each case, when measured in accordance with IFRS), representing an increase of \$1.8 million. The increase was primarily reflective of Sapiens' recruitment of several executives, particularly in North America.

Magic Software:

Magic Software's SMG&A expenses increased to \$60.1 million for the year ended December 31, 2019 compared to \$51.4 million for the year ended December 31, 2018, representing an increase of \$8.6 million. This increase was mainly attributable to: (i) the inclusion of OnTarget Group Inc, PowWow Inc and NetEffects result of operation commencing on their acquisition date; and (ii) amortization costs of intangible assets, which amounted to \$8.0 million in 2019 compared to \$6.3 million in 2018, as a result of the inclusion of OnTarget Group Inc, PowWow Inc and NetEffects commencing on their acquisition date.

Selling, marketing general and administrative expenses for the years ended December 31, 2018 and 2019 include insignificant amounts of stock-based compensation.

Operating Income. Our operating income increased from \$109.6 million in 2018 to \$138.5 million in 2019. As a percentage of revenues, our operating income increased from 7.3% in 2018 to 8.1% in 2019. The increase in our operating income during the year ended December 31, 2019 relative to the year ended December 31, 2018 as an absolute amount was attributable to the various gross profit and operating expenses trends described above.

Financial Expenses, net. Financial expenses increased from \$15.9 million in 2018 to \$22.4 million in 2019. Financial expenses, net increased from \$8.3 million in 2018 to \$18.7 million in 2019. Financial expenses are influenced by various factors, including: our cash balances; loan balances; outstanding debentures; changes in liabilities related to business combinations; changes in the exchange rate of the NIS against the dollar; changes in the exchange rate of the dollar against the Euro; and changes in the Israeli consumer price index, or CPI.

The increase in net financial expenses in 2019 was primarily attributable to: (i) financial income of \$4.0 million recorded during the year ended December 31, 2018 with respect to the revaluation of Formula's Series A Secured Debentures, which are linked to the NIS, due to the appreciation of the US dollar relative to the NIS in 2018; (ii) a decrease in Magic Software financial income from \$0.1 million recorded during the year ended December 31, 2018 to an expense of \$1.8 million recorded during the year ended December 31, 2019 with respect to the revaluation of Magic Software's loan from a financial institution, which is linked to the NIS, primarily attributable to the depreciation of the US dollar relative to the NIS in 2019; (iii) an increase in Matrix financial expenses, net from \$4.5 million recorded during the year ended December 31, 2018 to \$9.0 million recorded during the year ended December 31, 2019 mainly with respect to (a) an increase of \$1.9 million recorded with respect to exchange rate differences resulted from devaluation of the US dollar relative to the NIS in 2019, (b) an increase in Matrix interest expenses related to short term and long term loans from banks and other financial institutions from NIS 15.0 million in 2018 (approximately \$4.2 million) to NIS 20.5 million in 2019 (approximately \$5.7 million) and (c) interest expenses recorded in 2019 with respect to IFRS 16, applied from January 1, 2019, in an amount of NIS 5.4 million (approximately \$1.5 million), offset by a decrease in Sapiens' net financial expenses to \$2.8 million for the year ended December 31, 2019 compared to financial expense of \$4.0 million in the year ended December 31, 2018, which was attributable to a decrease in the outstanding amount of Sapiens' Series B Debentures, which resulted in a decrease of \$0.4 million of interest expenses during 2019, and a further decrease of \$0.8 million that was attributable to a decrease in Sapiens' losses from hedging instruments and exchange rate differences during 2019, which contributed financial loss in amounts of \$1.1 million and \$0.3 million in 2018 and 2019, respectively.

Equity in gains of affiliated companies net. Our equity in gains of affiliated companies, net, increased from \$369,000 in 2018 to \$1,787,000 in 2019. Our equity in gains of affiliates in 2019 was attributable to TSG.

Taxes on Income. Taxes on income increased from \$24.3 million in 2018 to \$27.2 million in 2019. The increase in our expense from taxes on income was primarily attributable to Sapiens' recognition of a net tax on income of \$8.6 million in 2019, compared to \$5.0 million in 2018.

Net income attributable to non-controlling interests. Net income attributable to non-controlling interests includes the non-controlling interests held by other shareholders in our consolidated companies, which were not wholly owned by Formula during each of the periods indicated. Net income attributable to non-controlling interests increased from \$45.0 million in 2018 to \$55.6 million in 2019, mainly due to: (i) the increase in Sapiens' net income attributable to its shareholders, from \$13.9 million of net income attributable to its shareholders during the year ended December 31, 2018 to \$25.7 million of net income attributable to its shareholders during the year ended December 31, 2019; (ii) the increase in Matrix net income attributable to its shareholders from \$39.0 million recorded during the year ended December 31, 2018 to \$43.7 million recorded during the year ended December 31, 2019; and (iii) the increase in net income attributable to non-controlling interests recorded in Magic Software and Matrix, from \$9.6 million during 2018 to \$11.1 million during the year ended December 31, 2019.

Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with IFRS. The preparation of our financial statements required us, in certain circumstances, to make estimations, assumptions and judgments that affect the reporting amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities within the reporting period. We have based our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis of making judgments about the values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. More detailed descriptions of these policies are provided in Note 2 to our consolidated financial statements contained elsewhere in this annual report.

The significant accounting policies which we believe are the most critical to aid in fully understanding and evaluating our reported financial results include the following:

Consolidated financial statements:

The consolidated financial statements comprise the financial statements of companies that we controlled (subsidiaries). Control is achieved when we are exposed, or have rights, to variable returns from our involvement with the investee and have the ability to affect those returns through our power over the investee. Potential voting rights are considered when assessing whether an entity has control. The consolidation of the financial statements commences on the date on which control is obtained and ends when such control ceases. In a situation when we hold less than a majority of voting rights in a given entity, but it is sufficient to unilaterally direct the relevant activities of such entity, then the control is exercised. When assessing whether our voting rights are sufficient to give us power, we consider all facts and circumstances, including: the size of our holding of voting rights relative to the size and dispersion of other vote holders; our potential voting rights and other shareholders or parties; rights arising from other contractual arrangements; significant personal ties and any additional facts and circumstances that may indicate that we have, or do not have the ability to direct the relevant activities when decisions need to be made, inclusive of voting patterns observed at previous meetings of shareholders.

Our financial statements and the financial statements of our investees, after being adjusted to comply with IFRS, are prepared for the same reporting period and using consistent accounting treatment of similar transactions and economic activities. Any discrepancies in the applied accounting policies are eliminated by making appropriate adjustments. Significant intragroup balances and transactions and gains or losses resulting from intragroup transactions are eliminated in full in the consolidated financial statements.

Other than in our joint control in TSG in which each of us and Israeli Aerospace Industries Ltd. holds 50% of its voting power, we currently have effective control under IFRS 10 in each of our other investees, Matrix, Sapiens, Magic Software, Michpal, Ofek Ariel Photography and InSync despite the lack of absolute majority of voting power in Matrix, Magic Software and Sapiens. As a result of our effective control in these investees as of December 31, 2019 and in accordance with IFRS 10, we consolidated their financial results with ours throughout the period covered by the financial statements included in Item 18 of this annual report.

Business combinations and goodwill:

Business combinations are accounted for by applying the acquisition method. The cost of the acquisition is measured at the fair value of the consideration transferred on the acquisition date with the addition of non-controlling interests in the acquiree. In each business combination, we consider whether to measure the non-controlling interests in the acquiree based on their fair value on the acquisition date or at their proportionate share in the fair value of the acquiree's net identifiable assets.

Direct acquisition costs are carried to the statement of profit or loss as incurred.

In a business combination achieved in stages, equity interests in the acquiree that had been held by the acquirer prior to obtaining control are measured at the acquisition date fair value while recognizing a gain or loss resulting from the revaluation of the prior investment on the date of achieving control.

Contingent consideration is recognized at fair value on the acquisition date and classified as a financial asset or liability in accordance with IFRS 9, "Financial Instruments". Subsequent changes in the fair value of the contingent consideration are recognized in profit or loss. If the contingent consideration is classified as an equity instrument, it is measured at fair value on the acquisition date without subsequent remeasurement. Goodwill is initially measured at cost which represents the excess of the acquisition consideration and the amount of non-controlling interests over the net identifiable assets acquired and liabilities assumed. If the resulting amount is negative, the acquirer recognizes the resulting gain on the acquisition date without subsequent measurement.

Investment in joint arrangements:

Joint arrangements are arrangements in which we have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

i. Joint ventures:

In joint ventures the parties that have joint control of the arrangement have rights to the net assets of the arrangement. A joint venture is accounted for at equity

ii. Joint operations:

In joint operations the parties that have joint control of the arrangement have rights to the assets and obligations for the liabilities relating to the arrangement. We recognize in relation to our interest our share of the assets, liabilities, revenues and expenses of the joint operation.

Investments accounted for using the equity method:

Our investments in associates and joint ventures are accounted for using the equity method. Associates are companies in which we have significant influence over the financial and operating policies without having control. An investment in an associate is accounted for using the equity method.

Under the equity method, the investment in the associate or in the joint venture is presented at cost with the addition of post-acquisition changes in our share of net assets, including other comprehensive income of the associate or the joint venture. Gains and losses resulting from transactions between us and the associate or the joint venture are eliminated to the extent of the interest in the associate or in the joint venture.

Goodwill relating to the acquisition of an associate or a joint venture is presented as part of the investment in the associate or the joint venture, measured at cost and not systematically amortized. Goodwill is evaluated for impairment as part of the investment in the associate or in the joint venture as a whole.

Our financial statements and of the associate or joint venture are prepared as of the same dates and periods. The accounting policies applied in the financial statements of the associate or the joint venture are uniform and consistent with the policies applied in our financial statements.

Upon the acquisition of an associate or a joint venture achieved in stages when the former investment in the acquiree was accounted for pursuant to the provisions of IAS 9, we adopt the principles of IFRS 3 regarding business combinations achieved in stages. Consequently, equity interests in the acquiree that had been held by us prior to achieving significant influence or joint control are measured at fair value on the acquisition date and are included in the acquisition consideration while recognizing a gain or loss resulting from the fair value measurement.

The equity method is applied until the loss of significant influence in the associate or loss of joint control in the joint venture or classification as investment held for sale. On the date of loss of significant influence or joint control, we measure any remaining investment in the associate or the joint venture at fair value and recognize in profit or loss the difference between the fair value of any remaining investment plus any proceeds from the sale of the investment in the associate or the joint venture and the carrying amount of the investment on that date.

We recognize losses of an associate in amounts which exceed its equity to the extent of our investment in the associate plus any losses that we may incur as a result of a guarantee or other financial support provided in respect of the associate. For this purpose, the investment includes long-term receivables (such as loans granted) for which settlement is neither planned nor likely to occur in the foreseeable future.

The equity method is applied until the loss of significant influence in the associate or loss of joint control in the joint venture or classification as investment held for sale. We continue to apply the equity method even in cases where the investment in the associate becomes an investment in a joint venture and vice versa. We apply the provisions of IFRS 5 to the investment or a portion of the investment in the associate or the joint venture that is classified as held-for-sale. Any retained interest in this investment which is not classified as held-for-sale continues to be accounted for using the equity method.

On the date of loss of significant influence or joint control, we measure any remaining investment in the associate or the joint venture at fair value and recognizes in profit or loss the difference between the fair value of any remaining investment plus any proceeds from the sale of the investment in the associate or the joint venture and the carrying amount of the investment on that date.

Revenue Recognition

We derive our revenues primarily from the sale of information technology services which also include sale of: non-proprietary software products, including maintenance, integration and infrastructure, outsourcing, training and deployment. In addition, we generate revenues from licensing the rights to use our proprietary software, provision of related IT professional services (which may or may not be considered essential to the functionality of the software license), related maintenance and technical support, as well as implementation and post-implementation consulting services.

On January 1, 2018, we initially adopted IFRS 15, “Revenue from Contracts with Customers” (“the Standard”) issued by the IASB in May 2014. IFRS 15, supersedes IAS 11 ‘Construction Contracts’, IAS 18 ‘Revenue from contracts with customers’ and related Interpretations and applies to all revenue arising from contracts with customers, unless those contracts are in the scope of other standards. We elected to apply the provisions of the Standard using the modified retrospective method with the application of certain practical expedients and without restatement of comparative data. The accounting policy for revenue recognition that applied until December 31, 2017 is as follows:

Revenues are recognized in profit or loss when the revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to us, and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Revenues are measured at the fair value of the consideration less any trade discounts, volume rebates and returns.

The following are the specific revenue recognition criteria which must be met before we recognize revenue:

- i. Revenues from software solutions and services:
 - a) Revenues from contracts based on actual inputs. Revenues from master agreements based on actual inputs are recognized based on actual labor hours.
 - b) Outsourcing. These agreements are similar in nature to agreements that are based on actual labor hours. We allocate employees to projects that are generally managed by the customers at their charge based on the pricing of labor hours. Revenues are recognized based on actual labor hours.
- ii. Revenues from sales, distribution and support of software products:

We recognize revenues from the sale of software (i) only after the significant risks and rewards of ownership of the software have been transferred to the buyer for which a necessary condition is delivery of the software, either physically or electronically, or providing the right to use or permission to make copies of the software, (ii) we do not retain any continuing management involvement that is associated with ownership and does not retain the effective control of the sold software, (iii) the amount of revenues can be measured reliably, (iv) it is probable that the economic benefits associated with the transaction will flow to us, and (v) the costs incurred or to be incurred in respect of the transaction can be measured reliably. We report income on a gross basis since it acts as a principal and bears the risks and rewards derived from the transaction.

Revenue from third-party sales is recorded at a gross or net amount according to certain indicators. The application of these indicators for gross and net reporting of revenue depends on the relative facts and circumstances of each sale and requires significant judgment.

Revenues from sale agreements that do not provide a general right of return and consist of multiple elements such as hardware, service and support agreements are split into different accounting units which are separately recognized. An element only represents a separate accounting unit if and only if it has standalone value for the customer. Moreover, there should be reliable and objective evidence of the fair value of all the elements in the agreement or of the fair value of undelivered elements. Revenues from the various accounting units are recognized when the revenue recognition criteria are met with respect to all the elements of the accounting unit based on their specific type and only up to the amount of the consideration that is not contingent on completion or performance of the other elements in the contract.

Maintenance and support include annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for unspecified upgrades for new versions and enhancements on a when-and-if-available basis does not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered. Revenues from maintenance services are recognized on a straight-line basis at the relative portion of the maintenance contract that is determined for each reporting year. Revenues that have been received before the respective service has been provided are carried to deferred income. Maintenance and support revenue included in multiple element arrangements is deferred and recognized on a straight-line basis over the term of the maintenance and support agreement.

iii. Revenues from training and implementation services:

Revenues from trainings and implementations are recognized when providing the service. Revenues from training services in respect of courses conducted over a period of up to 3 months will be recognize over the period of the course. Revenues from training services in respect of courses ordered in advance and long-term or short term (for a period of up to a year) retraining courses months will be recognized over the period of the course. Revenues from projects which usually ordered by organizations, will be recognize under the actual inputs recognize using the basis hours actual invested in the project.

iv. Revenues from hardware products and infrastructure solutions:

Revenues from hardware products and infrastructure solutions are recognized after all the significant risks and rewards of ownership of the products have been transferred to the buyer. We do not retain any continuing management involvement that is associated with ownership and do not retain the effective control of the sold products, the amount of revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to us, and the costs incurred or to be incurred in respect of the transaction can be measured reliably.

The accounting policy for revenue recognition applied commencing from January 1, 2018, is as follows:

IFRS 15 establishes a five-step model to account for revenue arising from contracts with customers and requires entities to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model to contracts with their customers:

- Step 1: Identify the contract with a customer, including reference to contract combination and accounting for contract modifications.
- Step 2: Identify the separate performance obligations in the contract.
- Step 3: Determine the transaction price, including reference to variable consideration, significant financing components, non-cash consideration and any consideration payable to the customer.
- Step 4: Allocate the transaction price to the distinct performance obligations on a relative stand-alone selling price basis using observable information, if it is available, or using estimates and assessments.
- Step 5: Recognize revenue when a performance obligation is satisfied, either at a point in time or over time.

Under IFRS 15, revenues are recognized when control of the promised goods or services are transferred to the customers in an amount that reflects the consideration that we expect to receive in exchange for those goods or services.

We enter into contracts that can include various combinations of products and software, IT services and hardware, as detailed below, which are generally capable as being distinct from each other and accounted for as separate performance obligations.

For contracts with customers that contain multiple performance obligations, we account for each individual performance obligation separately, if they are distinct from each other. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis.

Stand-alone selling prices of software sales are typically estimated using the residual approach due to the lack of selling software licenses on a stand-alone basis. Stand-alone selling prices of software services are typically determined by considering several external and internal factors including but not limited to, observable transactions when these services are sold on a stand-alone basis.

The following is a description of principal activities from which we generate our revenues:

i. Sale of proprietary licenses without significant related services

In the event in which the sale of a proprietary license (perpetual or term-based) is distinct from other significant modification or implementation services, and thereby it constitutes a separate performance obligation, we consider whether this performance obligation in granting the license is to provide the customer with either:

- a right to access the entity's intellectual property in the form in which it exists throughout the licensing period; or

- a right to use the entity's intellectual property in the form in which it exists at the time of granting the license

The vast majority of licenses that we sell separately (thus representing a separate performance obligation) are intended to provide the customer with a right to use the intellectual property, which means that revenues from the sale of such licenses are recognized at the point in time at which control of the license is transferred to the customer.

We recognize revenue from software licensing transactions over time when we provide the customer a right to access our intellectual property throughout the license period.

ii. Sale of proprietary licenses with significant related services

We generally account for revenues from contracts that include the sale of proprietary licenses with significant related services (for example, modifications, implementation or customization to customer-specific specifications) as performance obligations satisfied over time. In such contracts we are normally committed to provide the customer with a functional IT system and the customer can only benefit from such functional system, being the final product that would normally be comprised of proprietary licenses and significant related services. We consider that a commitment to sell a license under such performance obligation does not satisfy the criteria of being distinct, because the transfer of the license is only part of a larger performance obligation. We recognize revenue from such contracts using cost-based input methods, which recognizes revenue and gross profit as the work is performed based on a ratio between actual costs incurred compared to the total estimated costs for the contract. This is because, in accordance with IFRS 15, revenues may be recognized over the course of transferring control of the supplied goods and services, as long as the entity's performance does not create an asset with an alternative use to the entity, and the entity has an enforceable right to payment for performance completed to date throughout the duration of the contract. Provisions for estimated losses on uncompleted contracts are made during the period in which such losses are first determined, in the amount of the estimated loss for the entire contract.

When appropriate, we also apply a practical expedient permitted under IFRS 15 whereby if we have a right to consideration from a customer in an amount that corresponds directly with the value to the customer of our performance completed to date (for example, a service contract in which an entity bills a fixed amount for each hour of service provided), we may recognize revenue in the amount it is entitled to invoice. Deferred revenues, which represent a contract liability, include unearned amounts received under maintenance and support (mainly) and amounts received from customers for which revenues have not yet been recognized.

iii. Maintenance services and warranties

Post-contract support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for an unspecified upgrade for new versions and enhancements on a when-and-if-available basis do not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered.

The accounting policy regarding the recognition of post-contract support remained unchanged after the adoption of IFRS 15, as such services, in principle, constitute a separate performance obligation where the customer consumes the benefits of goods and services as they are delivered by the provider, as a consequence of which revenues are recognized over time during the service performance period.

We consider the post-contract support performance obligation as a distinct performance obligation that is satisfied over time, and as such, it recognizes revenue for post-contract support on a straight-line basis over the period for which technical support is contractually agreed to be provided for the software, typically twelve (12) months.

In certain cases, we also provide a warranty for goods and services sold (i.e. extended warranties that the scope of which is broader than just an assurance to the customer that the product/service complies with agreed-upon specifications). We have ascertained that such warranties which we have granted meet the definition of service. The conclusion regarding the extended nature of a warranty is made whenever we contractually undertake to repair any errors in the delivered software within a strictly specified time limit and/or when such warranty is more extensive than the minimum required by law. Under IFRS 15, the fact of granting an extended warranty indicates that we actually provide an additional service. As such, we recognize an extended warranty as a separate performance obligation and allocates a portion of the transaction price to such service. In all cases where an extended warranty is accompanied by a maintenance service, which is even a broader category than an extended warranty itself, revenues are recognized over time because the customer consumes the benefits of such service as it is performed by the provider. If this is the case, we continue to allocate a portion of the transaction price to such maintenance service. Likewise, in cases where a warranty service is provided after the project completion and is not accompanied by any maintenance service, then a portion of the transaction price and analogically recognition of a portion of contract revenues will have to be deferred until the warranty service is actually fulfilled.

iv. Sale of third-party licenses and services

Third-party licenses and services include revenues from the sale of third-party licenses as well as from the provision of services which, due to technological or legal reasons, must be carried out by subcontractors (this applies to hardware and software maintenance and outsourcing services provided by their manufacturers). Revenues from the sale of third-party licenses are accounted for as sales of goods, which means that such revenues are recognized at the point in time at which control of the license is transferred to the customer. Concurrently, revenues from third-party services, including primarily third-party maintenance services, are recognized over time when such services are provided to the customer.

Whenever we are involved in the sale of third-party licenses or services, we will consider whether we act as a principal or an agent; however, in most cases the conclusion is that we are the main party required to satisfy a performance obligation, and, therefore, the resulting revenues are recognized in the gross amount of consideration.

v. Sale of hardware

Sale of hardware includes revenues from contracts with customers for the supply of infrastructure. In this category, revenues are recognized basically at the point in time at which control of the equipment is transferred. This does not apply to contracts in which the hardware is not delivered separately from services provided alongside, in such case the sale of hardware is part of a performance obligation involving the supply of a comprehensive system. However, such comprehensive projects are a rare practice in our operations, as the sale of hardware is predominantly performed on a distribution basis.

In the case of contracts that contain a component of providing a service or equipment, we consider whether such arrangements contain a lease component (i.e. whether we provide the right to control the use of the identified asset for a period of time in exchange for consideration). We have not identified any lease components within contracts concluded with customers.

vi. Variable consideration

In accordance with IFRS 15, if a contract consideration encompasses any amount that is variable, we shall estimate the amount of consideration to which it will be entitled in exchange for transferring promised goods or services to the customer, and shall include a portion or the whole amount of variable consideration in the transaction price but only to the extent that it is highly probable a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

We are party to a number of contracts which provide for penalties for non-performance or improper performance of contractual obligations. Any contractual penalties may therefore affect the consideration, which has been stated as a fixed amount in the contract, and make it subject to change due to such expected penalties. Therefore, as part of estimating the amount of consideration receivable under a contract, we have estimated the expected amount of consideration while taking into account the probability of paying such contractual penalties as well as other factors that might potentially affect the consideration. Apart from contractual penalties, there are no other material factors that may affect the amount of consideration (such as rebates or discounts), but in the event they were identified, they would also affect the amount of revenues the we would have recognized.

vii. Allocating the transaction price to performance obligations

We allocate the transaction price to each performance obligation (or distinct good or service) in an amount that depicts the amount of consideration to which we expect to be entitled in exchange for transferring the promised goods or services to the customer.

viii. Significant financing component

When contracts involve a significant financing component, we adjust the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provide the customer with a significant benefit of financing.

We have elected to apply the practical expedient allowed by IFRS 15 according to which it does not separate the financing component in transactions whose credit terms are less than one year and will recognize revenue in the amount of the consideration stated in the contract even if the customer pays for the goods or services subsequent to their receipt.

ix. Costs of contracts with customers

Costs of obtaining a contract

Costs of obtaining a contract are those incremental costs that we incur in order to obtain a contract with a customer that we would not have incurred if the contract had not been obtained. We recognize such costs as an asset if we expect to recover those costs. Such capitalized costs of obtaining a contract shall be amortized over the period when we satisfy the performance obligations arising from the contract. Amortization expenses related to costs of obtaining or fulfilling a contract are included in sales and marketing expenses in the consolidated statements of profit or loss.

We have elected to apply the practical expedient allowed by IFRS 15 according to which costs of obtaining a contract which are expected to be amortized for a period of less than twelve months are expensed to profit or loss as incurred.

Commissions to sales and marketing and certain management personnel that are paid based on their attainment of certain predetermined sales or profit goals, are considered as incremental costs of obtaining a contract with a customer, and as such they are deferred and amortized on a systematic basis, in consistent with the transfer of the related performance obligations to the customer. In accordance, sales commissions paid for initial contracts, which are not commensurate with additional commissions paid for renewal of such contracts, are capitalized and amortized over the expected period of benefit (including expected renewals periods). Sales commissions on initial contracts, which are commensurate with additional commissions paid for the renewal of such contracts, are capitalized and then amortized correspondingly to the recognized revenue of the related initial contracts (not including expected renewals periods). Sales commissions for renewal of such initial contracts are capitalized and then amortized on a straight-line basis over the related contractual renewal period. As a practical expedient, if the expected amortization period is one year or less, the commission fee is expensed as incurred.

Costs to fulfill a contract

Costs to fulfill a contract are the costs incurred in fulfilling a contract with a customer. We recognize such costs as an asset if they are not within the scope of another standard (for example, IAS 2 'Inventories', IAS 16 'Property, Plant and Equipment' or IAS 38 'Intangible Assets') and if those costs meet all of the following criteria:

- i) the costs relate directly to a contract or to an anticipated contract with a customer;
- ii) the costs generate or enhance our resources that will be used in satisfying (or in continuing to satisfy) performance obligations in the future; and
- iii) the costs are expected to be recovered.

Software Development Costs

Research expenditures incurred in the process of software development are recognized in profit or loss when incurred. An intangible asset arising from a software development project or from the development phase of an internal project is recognized if we can demonstrate: the technical feasibility of completing the intangible asset so that it will be available for use or sale; our intention to complete the intangible asset and use or sell it; the ability to use or sell the intangible asset; how the intangible asset will generate future economic benefits; the availability of adequate technical, financial and other resources to complete the intangible asset; and the ability to measure reliably the respective expenditure asset during its development. We establish technological feasibility upon completion of a detailed program design or working model.

Research and development costs incurred between completion of the detailed program design and the point at which the product is ready for general release, have been capitalized.

Capitalized software costs are measured at cost, less any accumulated amortization and any accumulated impairment losses on a product by product basis. Amortization of capitalized software costs begin when development is complete and the product is available for use. We consider a product to be available for use when we complete the internal validation of the product that is necessary to establish that the product meets its design specifications including functions, features, and technical performance requirements. Internal validation includes the completion of coding, documentation and testing that ensure bugs are reduced to a minimum. The internal validation of the product takes place a few weeks before the product is made available to the market. In certain instances, we enter into a short pre-release stage, during which the product is made available to a select number of customers as a beta program for their own review and familiarization. Subsequently, the release is made generally available to customers. Once a product is considered available for use, the capitalization of costs ceases and amortization of such costs to “cost of sales” begins.

Capitalized software costs are amortized on a product by product basis by the straight-line method over the estimated useful life of the software product (between 5-7 years).

Research and development costs incurred in the process of developing product enhancements are generally charged to expenses as incurred.

We assess the recoverability of our capitalized software costs on a regular basis by assessing the net realizable value of these intangible assets based on the estimated future gross revenues from each product reduced by the estimated future costs of completing and disposing of it, including the estimated costs of performing maintenance and customer support over its remaining economical useful life using internally generated projections of future revenues generated by the products, cost of completion of products and cost of delivery to customers over its remaining economical useful life. During the years ended December 31, 2017, 2018 and 2019, no such unrecoverable amounts were identified.

Other intangible assets

Separately acquired intangible assets are measured on initial recognition at cost including directly attributable costs. Intangible assets acquired in a business combination are measured at fair value at the acquisition date. Expenditures relating to internally generated intangible assets, excluding capitalized development costs, are recognized in profit or loss when incurred.

Intangible assets with a finite useful life are amortized over their useful life and reviewed for impairment whenever there is an indication that the asset may be impaired. The amortization period and the amortization method for an intangible asset are reviewed at least at each year end.

Other intangible assets are comprised mainly of customer-related intangible assets, backlogs, brand names, capitalized courses development costs, non-compete agreements and acquired technology and Patent, and are amortized over their useful lives using a method of amortization that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used up. The useful life of intangible assets is as follows:

	<u>Years</u>
Customer relationship and backlog	1-15
Acquired technology	2-8
Brand names and patents	5-10

Gains or losses arising from the derecognition of an intangible asset are determined as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in the statement of profit or loss.

The useful life of these assets is reviewed annually to determine whether their indefinite life assessment continues to be supportable. If the events and circumstances do not continue to support the assessment, the change in the useful life assessment from indefinite to finite is accounted for prospectively as a change in accounting estimate, and on that date the asset is tested for impairment. Commencing from that date, the asset is amortized systematically over its useful life.

Taxes on income:

Current or deferred taxes are recognized in profit or loss, except to the extent that they relate to items which are recognized in other comprehensive income or equity.

i. Current taxes:

The current tax liability is measured using the tax rates and tax laws that have been enacted or substantively enacted by the reporting date as well as adjustments required in connection with the tax liability in respect of previous years.

ii. Deferred taxes:

Deferred taxes are computed in respect of temporary differences between the carrying amounts in the financial statements and the amounts attributed for tax purposes. Deferred taxes are measured at the tax rate that is expected to apply when the asset is realized or the liability is settled, based on tax laws that have been enacted or substantively enacted by the reporting date. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is not probable that they will be utilized. Deductible carry forward losses and temporary differences for which deferred tax assets had not been recognized are reviewed at each reporting date and a respective deferred tax asset is recognized to the extent that their utilization is probable.

Taxes that would apply in the event of the disposal of investments in investees have not been taken into account in computing deferred taxes, as long as the disposal of the investments in investees is not probable in the foreseeable future. Also, deferred taxes that would apply in the event of distribution of earnings by investees as dividends have not been taken into account in computing deferred taxes, since the distribution of dividends does not involve an additional tax liability or since it is our policy not to initiate distribution of dividends from a subsidiary that would trigger an additional tax liability.

Taxes on income that relate to distributions of an equity instrument and to transaction costs of an equity transaction are accounted for pursuant to IAS 12.

Deferred taxes are offset if there is a legally enforceable right to offset a current tax asset against a current tax liability and the deferred taxes relate to the same taxpayer and the same taxation authority.

Impairment of non-financial assets:

We evaluate the need to record an impairment of non-financial assets (property, plant and equipment, capitalized software costs and other intangible assets, goodwill, investments in joint venture) whenever events or changes in circumstances indicate that the carrying amount is not recoverable.

If the carrying amount of non-financial assets exceeds their recoverable amount, the assets are reduced to their recoverable amount. The recoverable amount is the higher of fair value less costs of sale and value in use. In measuring value in use, the expected future cash flows are discounted using a pre-tax discount rate that reflects the risks specific to the asset. The recoverable amount of an asset that does not generate independent cash flows is determined for the cash-generating unit to which the asset belongs. Impairment losses are recognized in profit or loss.

An impairment loss of an asset, other than goodwill, is reversed only if there have been changes in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognized. Reversal of an impairment loss, as above, shall not be increased above the lower of the carrying amount that would have been determined (net of depreciation or amortization) had no impairment loss been recognized for the asset in prior years and its recoverable amount. The reversal of impairment loss of an asset presented at cost is recognized in profit or loss.

The following criteria are applied in assessing impairment of these specific assets:

i. Goodwill in respect of subsidiaries:

For the purpose of impairment testing, goodwill acquired in a business combination is allocated, at the acquisition date, to each of our cash-generating units that are expected to benefit from the synergies of the combination.

We review goodwill for impairment once a year, on December 31, or more frequently if events or changes in circumstances indicate that there is an impairment.

Goodwill is tested for impairment by assessing the recoverable amount of the cash-generating unit (or group of cash-generating units) to which the goodwill has been allocated. An impairment loss is recognized if the recoverable amount of the cash-generating unit (or group of cash-generating units) to which goodwill has been allocated is less than the carrying amount of the cash-generating unit (or group of cash-generating units). Any impairment loss is allocated first to goodwill. Impairment losses recognized for goodwill cannot be reversed in subsequent periods.

ii. Investment in associate or joint venture using the equity method:

After application of the equity method, we determine whether it is necessary to recognize any additional impairment loss with respect to the investment in associates or joint ventures. We determine at each reporting date whether there is an objective evidence that the carrying amount of the investment in the associate or the joint venture is impaired. The test of impairment is carried out with reference to the entire investment, including the goodwill attributed to the associate or the joint venture.

During the years ended December 31, 2018, 2017 and 2019, no impairment indicators were identified.

Financial instruments:

On January 1, 2018, we have initially adopted IFRS 9, “Financial Instruments” (“the Standard”). We elected to apply the provisions of the Standard retrospectively without restatement of comparative data. After examining the implications of implementing the new standard, its implementation did not have a material effect on our financial statements.

The accounting policy for financial instruments applied until December 31, 2017 is as follows:

A. Financial assets:

Financial assets within the scope of IAS 39 are initially recognized at fair value plus directly attributable transaction costs, except for financial assets measured at fair value through profit or loss in respect of which transaction costs are recorded in profit or loss. After initial recognition, the accounting treatment of financial assets is based on their classification as follows:

i. Financial assets at fair value through profit or loss:

This category includes financial assets held for trading and a dividend preference derivative in TSG (for a description of the TSG derivative, see Note 8 to our consolidated financial statements included in Item 18 of this annual report).

ii. Loans and receivables:

Loans and receivables are investments with fixed or determinable payments that are not quoted in an active market. After initial recognition, loans are measured based on their terms at amortized cost plus directly attributable transaction costs using the effective interest method and less any impairment losses. Short-term borrowings are measured based on their terms, normally at face value.

iii. Available-for-sale financial assets:

Available-for-sale financial assets are (non-derivative) financial assets that are designated as available for sale or are not classified in any of the three preceding categories. After initial recognition, available-for-sale financial assets are measured at fair value. Gains or losses from fair value adjustments, except for interest, exchange rate differences that relate to debt instruments and dividends from an equity instrument, are recognized in other comprehensive income. When the investment is disposed of or in case of impairment, the other comprehensive income (loss) is transferred to profit or loss.

B. Financial liabilities:

Financial liabilities are initially recognized at fair value. Loans and other liabilities measured at amortized cost are presented less direct transaction costs. After initial recognition, the accounting treatment of financial liabilities is based on their classification as follows:

i. Financial liabilities at amortized cost:

After initial recognition, loans and other liabilities are measured based on their terms at amortized cost less directly attributable transaction costs using the effective interest method.

ii. Financial liabilities at fair value through profit or loss:

Financial liabilities at fair value through profit or loss include financial liabilities classified as held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Derivatives, including separated embedded derivatives, are classified as held for trading unless they are designated as effective hedging instruments.

C. Offsetting financial instruments:

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

D. Compound financial instruments:

- i. Convertible debentures which contain both an equity component and a liability component are separated into two components. This separation is performed by first determining the liability component based on the fair value of an equivalent non-convertible liability. The value of the conversion component is determined to be the residual amount. Directly attributable transaction costs are apportioned between the equity component and the liability component based on the allocation of proceeds to the equity and liability components
- ii. Convertible debentures that are denominated in foreign currency contain two components: the conversion component and the debt component. The liability conversion component is initially recognized as a financial derivative at fair value. The balance is attributed to the debt component. Directly attributable transaction costs are allocated between the liability conversion component and the liability debt component based on the allocation of the proceeds to each component.

E. Embedded derivatives:

We assess the existence of an embedded derivative and whether it is required to be separated from a host contract when we first become party to the contract. Reassessment of the need to separate an embedded derivative only occurs if there is a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required.

F. Put option granted to non-controlling interests:

When we grant to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to us any benefits incidental to ownership of the equity instrument (i.e. we do not have a present ownership in the shares concerned), then at the end of each reporting period the non-controlling interests (to which a portion of net income attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in our equity, under "Additional paid-in capital".

We remeasure the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option. If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the option expires, the liability is settled and it is a portion of the investment in the subsidiary disposed of, without loss of control therein

If we have present ownership in the shares concerned, these non-controlling interests are accounted for as if they are held by us and changes in the amount of the liability are carried to profit or loss.

G. Derecognition of financial instruments:

i. Financial assets:

A financial asset is derecognized when the contractual rights to the cash flows from the financial asset expire or we have transferred its contractual rights to receive cash flows from the financial asset or assumes an obligation to pay the cash flows in full without material delay to a third party, and, in addition it has transferred substantially all the risks and rewards of the asset, or has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

A transaction involving factoring of accounts receivable and credit card vouchers is derecognized when the above-mentioned conditions are met.

If we transfer our rights to receive cash flows from an asset and neither transfer nor retains substantially all the risks and rewards of the asset nor transfers control of the asset, a new asset is recognized to the extent of our continuing involvement in the asset. When continuing involvement takes the form of guaranteeing the transferred asset, the extent of the continuing involvement is the lower of the original carrying amount of the asset and the maximum amount of consideration received that we could be required to repay. As of December 31, 2017, the Group has no open factoring transactions.

ii. Financial liabilities:

A financial liability is derecognized when it is extinguished, that is when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor (we) discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability.

H. Impairment of financial assets:

We assess at the end of each reporting period whether there is any objective evidence of impairment of a financial asset or group of financial assets as follows:

i. Financial assets carried at amortized cost:

Objective evidence of impairment exists when one or more events that have occurred after initial recognition of the asset have a negative impact on the estimated future cash flows. The amount of the loss recorded in profit or loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not yet been incurred) discounted at the financial asset's original effective interest rate. If the financial asset has a variable interest rate, the discount rate is the current effective interest rate. In a subsequent period, the amount of the impairment loss is reversed if the recovery of the asset can be related objectively to an event occurring after the impairment was recognized. The amount of the reversal, up to the amount of any previous impairment, is recorded in profit or loss.

ii. Available-for-sale financial assets:

For equity instruments classified as available-for-sale financial assets, evidence of impairment includes a significant or prolonged decline in the fair value of the asset below its cost and evaluation of changes in the technological, economic or legal environment or in the market in which the issuer of the instrument operates. The determination of a significant or prolonged impairment depends on the circumstances at each reporting date. In making such a determination, historical volatility in fair value is considered, as well as a decline in fair value of 20% or more, or a decline in fair value whose duration is six months or more. Where there is evidence of impairment, the cumulative loss recorded in other comprehensive income is reclassified to profit or loss. In subsequent periods, any reversal of the impairment loss is recognized in other comprehensive income.

During 2016 and 2017 we did not recognize an impairment charge over its investments in available-for-sale marketable securities.

The accounting policy for financial instruments applied commencing from January 1, 2018, is as follows:

A. Financial assets:

Financial assets within the scope of the Standard, are measured at the date of initial recognition at their fair value, plus transaction costs that can be directly attributed to the acquisition of the financial asset, except in the case of a financial asset measured at fair value through profit or loss, in respect of which, transaction costs are charged to profit or loss.

We classify and measure the debt instruments in its financial statements on the basis of the following criteria:

- our business model for the management of financial assets; and
- the contractual cash flow characteristics of the financial asset.

i. We measure debt instruments at amortized cost when:

Our business model is the holding of financial assets in order to collect contractual cash flows, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows, that are only principal and interest payments in respect of the amount of the principal, that has not yet been repaid. Subsequent to initial recognition, instruments in this group shall be presented at their cost at cost plus transaction costs directly using the amortized cost method. In addition, on the date of initial recognition, an entity may irrevocably designate a debt instrument at fair value through profit or loss, if such designation eliminates or significantly reduces inconsistencies in measurement or recognition, for example, if the related financial liabilities, are also measured at fair value through profit or loss.

ii. We measure debt instruments at fair value through other comprehensive income when:

Our business model is the holding of financial assets in order to collect contractual cash flows and the sale of the financial assets, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows that are only principal and interest payments in respect of the amount of the principal that has not yet been repaid. Subsequent to initial recognition, instruments in this group are measured at fair value. Gains or losses arising from adjustments to fair value, other than interest and exchange rate differentials, are recognized in other comprehensive income.

iii. We measure debt instruments at fair value through profit or loss when:

A financial asset which is a debt instrument does not meet the criteria for measurement at amortized cost or at fair value through other comprehensive income. After initial recognition, the financial asset is measured at fair value and gains or losses from fair value adjustments are recognized in profit or loss.

iv. Equity instruments and other financial assets held for trading:

Investments in equity instruments do not meet the above criteria and accordingly are measured at fair value through profit or loss. Other financial assets held for trading such as derivatives, including embedded derivatives separated from the host contract, are measured at fair value through profit or loss unless they are designated as effective hedging instruments. In respect of certain equity instruments that are not held for trading, on the date of initial recognition, we made an irrevocable election to present subsequent changes in fair value in other comprehensive income which changes would have otherwise been recorded in profit or loss. These changes will not be reclassified to profit or loss in the future, even when the investment is disposed of. Dividends from investments in equity instruments are recognized in profit or loss when the right to receive the dividends is established.

B. Impairment of financial assets:

We examine at each reporting date the provision for loss in respect of financial debt instruments that are not measured at fair value through profit or loss. We distinguish between two situations of recognition of a provision for loss:

- i. Debt instruments for which there has been no significant deterioration in the quality of their credit since the initial recognition or in cases where the credit risk is low – in this situation, the provision for loss recognized for this debt instrument will take into account expected credit losses in a period of 12 months after the reporting date;
- ii. Debt instruments whose credit quality has deteriorated significantly since their initial recognition and for which the credit risk is not low – in this situation, the provision for a loss to be recognized will take into account projected credit losses - over the remaining life of the instrument.

We have financial assets with short credit periods, such as customers, for which we apply the relief prescribed in the model. In other words, we measure the provision for loss in an amount equal to expected credit losses throughout the life of the instrument.

An impairment loss on debt instruments measured at amortized cost is recognized in profit or loss with a corresponding loss allowance that is offset from the carrying amount of the financial asset, whereas the impairment loss on debt instruments measured at fair value through other comprehensive income is recognized in profit or loss with a corresponding loss allowance that is recorded in other comprehensive income and not as a reduction of the carrying amount of the financial asset in the statement of financial position.

We apply the low credit risk simplification in the Standard, according to which we assume the debt instrument's credit risk has not increased significantly since initial recognition if on the reporting date it is determined that the instrument has a low credit risk, for example when the instrument has an external rating of "investment grade".

C. Derecognition of financial assets:

Our Group derecognizes a financial asset when and only when:

- i. The contractual rights to the cash flows from the financial asset expire; or
- ii. We transfer substantially all the risks and rewards deriving from the contractual rights to receive the cash flows from the financial asset or when some of the risks and rewards of transferring the financial asset remain with the entity but it may be said that we transferred control over the asset; or
- ii. We retain the contractual rights to receive the cash flows arising from the financial asset but assumes a contractual obligation to pay these cash flows in full to a third party, without material delay.

D. Financial liabilities:

- i. Financial liabilities measured at amortized cost

Financial liabilities are initially recognized at fair value less transaction costs that are directly attributable to the issue of the financial liability. After initial recognition, we measure all financial liabilities at amortized cost using the effective interest rate method, except for:

- Financial liabilities at fair value through profit or loss, such as derivatives;
- Financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies;
- Financial guarantee contracts;
- Contingent consideration recognized by an acquirer in a business combination as to which IFRS 3 applies.

- ii. Financial liabilities measured at fair value through profit or loss:

At initial recognition, we measure financial liabilities that are not measured at amortized cost at fair value. Transaction costs are recognized in profit or loss. After initial recognition, changes in fair value are recognized in profit or loss.

E. Derecognition of financial liabilities:

A financial liability is derecognized when it is extinguished, that is, when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability. When there is a modification in the terms of an existing financial liability, we evaluate whether the modification is substantial.

If the terms of an existing financial liability are substantially modified, such modification is accounted for as an extinguishment of the original liability and the recognition of a new liability. The difference between the carrying amounts of the above liabilities is recognized in profit or loss.

If the modification is not substantial, we recalculate the carrying amount of the liability by discounting the revised cash flows at the original effective interest rate and any resulting difference is recognized in profit or loss.

When evaluating whether the modification in the terms of an existing liability is substantial, we consider both quantitative and qualitative factors.

F. Offsetting financial instruments:

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

G. Put option granted to non-controlling interests:

When we grant to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to us any benefits incidental to ownership of the equity instrument (i.e. the we do not have a present ownership in the shares concerned) then at the end of each reporting period the non-controlling interests (to which a portion of net profit attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in our equity, under "Additional paid-in capital".

We remeasure the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option.

If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the put option expires, the liability is settled and a portion of the investment in the subsidiary disposed of, without loss of control therein.

If we have present ownership of the non-controlling interests, these non-controlling interests are accounted for as if they are held by us, and changes in the amount of the liability are carried to profit or loss.

Debentures:

We account for outstanding principal amount of debentures as long-term liability, in accordance with IFRS 9, with current maturities classified as a short-term liability. We identify and separate equity components contains in convertible debentures by first determining the liability component, in accordance with IAS 32, based on the fair value of an equivalent non-convertible liability. The conversion component valued is being determined to be the residual amount. Debt issuance costs are capitalized and reported as deferred financing costs, which are amortized over the life of the debentures using the effective interest rate method

Leases

As described in Note 2(30) to our consolidated financial statements included in Item 18 of this annual report regarding the initial adoption of IFRS 16, "Leases" ("the Standard"), we elected to apply the provisions of the Standard using the modified retrospective method (without restatement of comparative data).

The accounting policy for leases applied effective from January 1, 2019, is as follows:

We account for a contract as a lease when the contract terms convey the right to control the use of an identified asset for a period of time in exchange for consideration.

i. We as lessee:

For leases in which we are the lessee, we recognize on the commencement date of the lease a right-of-use asset and a lease liability, excluding leases whose term is up to twelve months and leases for which the underlying asset is of low value. For these excluded leases, we have elected to recognize the lease payments as an expense in profit or loss on a straight-line basis over the lease term. In measuring the lease liability, we have elected to apply the practical expedient in the Standard and does not separate the lease components from the non-lease components (such as management and maintenance services, etc.) included in a single contract.

On the commencement date, the lease liability includes all unpaid lease payments discounted at the interest rate implicit in the lease, if that rate can be readily determined, or otherwise using our incremental borrowing rate. After the commencement date, we measure the lease liability using the effective interest rate method.

On the commencement date, the right-of-use asset is recognized in an amount equal to the lease liability plus lease payments already made on or before the commencement date and initial direct costs incurred. The right-of-use asset is measured applying the cost model and depreciated over the shorter of its useful life and the lease term.

Following are the amortization periods of the right-of-use assets by class of underlying asset:

	<u>Years</u>	<u>Mainly</u>
Land	2-26	3-7
Motor vehicles	2-5	2

We test for impairment of the right-of-use asset whenever there are indications of impairment pursuant to the provisions of IAS 36.

ii. Variable lease payments that depend on an index:

On the commencement date, we use the index rate prevailing on the commencement date to calculate the future lease payments.

For leases in which we are the lessee, the aggregate changes in future lease payments resulting from a change in the index are discounted (without a change in the discount rate applicable to the lease liability) and recorded as an adjustment of the lease liability and the right-of-use asset, only when there is a change in the cash flows resulting from the change in the index (that is, when the adjustment to the lease payments takes effect).

iii. Variable lease payments that depend on an index:

Variable lease payments that do not depend on an index or interest rate but are based on performance or usage are recognized as an expense as incurred when we are the lessee, and are recognized as income as earned when we are the lessor.

iv. Lease extension and termination options:

A non-cancelable lease term includes both the periods covered by an option to extend the lease when it is reasonably certain that the extension option will be exercised and the periods covered by a lease termination option when it is reasonably certain that the termination option will not be exercised.

In the event of any change in the expected exercise of the lease extension option or in the expected non-exercise of the lease termination option, we remeasure the lease liability based on the revised lease term using a revised discount rate as of the date of the change in expectations. The total change is recognized in the carrying amount of the right-of-use asset until it is reduced to zero, and any further reductions are recognized in profit or loss.

v. Lease modifications:

If a lease modification does not reduce the scope of the lease and does not result in a separate lease, we remeasure the lease liability based on the modified lease terms using a revised discount rate as of the modification date and records the change in the lease liability as an adjustment to the right-of-use asset.

If a lease modification reduces the scope of the lease, we recognize a gain or loss arising from the partial or full reduction of the carrying amount of the right-of-use asset and the lease liability. We subsequently remeasure the carrying amount of the lease liability according to the revised lease terms, at the revised discount rate as of the modification date and records the change in the lease liability as an adjustment to the right-of-use asset.

The accounting policy for leases applied until December 31, 2018, is as follows:

The criteria for classifying leases as finance or operating leases depend on the substance of the agreements and are made at the inception of the lease in accordance with the following principles as set out in IAS 17.

The Group as lessee:

i. Finance leases:

A lease that transfers substantially all the risks and rewards incidental to ownership of the leased asset to us is classified as a finance lease. At the commencement of the lease term, the leased asset is measured at the lower of the fair value of the leased asset or the present value of the minimum lease payments.

The leased asset is depreciated over the shorter of its useful life and the lease term.

ii. Operating leases:

Leases in which substantially all the risks and rewards of ownership of the leased asset are not transferred to us are classified as operating leases. Lease payments are recognized as an expense in profit or loss on a straight-line basis over the lease term.

Disclosure of new standards in the period prior to their adoption

1. Amendments to IFRS 10 and IAS 28 regarding sale or transfer of assets between an investor and its associate or joint venture:

In September 2014, the IASB issued amendments to IFRS 10 and IAS 28 (which we refer to as the Amendments) regarding the accounting treatment of the sale or transfer of assets (an asset, a group of assets or a subsidiary) between an investor and its associate or joint venture. According to the Amendments, when an investor loses control of a subsidiary or a group of assets that are not a business in a transaction with its associate or joint venture, the gain will be partially eliminated such that the gain to be recognized is the gain from the sale to the other investors in the associate or joint venture. According to the Amendments, if the remaining rights held by the investor represent a financial asset as defined in IFRS 9, the gain will be recognized in full. If the transaction with an associate or joint venture involves loss of control of a subsidiary or a group of assets that are a business, the gain will be recognized in full. The Amendments are to be applied prospectively. A mandatory effective date has not yet been determined by the IASB, but early adoption is permitted.

2. IFRS 3, "Business Combinations":

In October 2018, the IASB issued an amendment to the definition of a "business" in IFRS 3, "Business Combinations" ("the Amendment"). The Amendment is intended to assist entities in determining whether a transaction should be accounted for as a business combination or as an acquisition of an asset.

The Amendment consists of the following

- i. Clarification that to meet the definition of a business, an integrated set of activities and assets must include, as a minimum, an input and a substantive process that together significantly contribute to the ability to create output.
- ii. Removal of the reference to the assessment whether market participants are capable of acquiring the business and continuing to operate it and produce outputs by integrating the business with their own inputs and processes.
- iii. Introduction of additional guidance and examples to assist entities in assessing whether the acquired processes are substantive.
- iv. Narrowing the definitions of “outputs” and “business” by focusing on goods and services provided to customers.
- v. Introducing an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business.

The Amendment is to be applied prospectively to all business combinations and asset acquisitions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020, with earlier application permitted.

3. Amendments to IFRS 9, IFRS 7 and IAS 39:

In September 2019, the IASB published an amendment to IFRS 9, “Financial Instruments”, IFRS 7, “Financial Instruments: Disclosures” and IAS 39, “Financial Instruments: Recognition and Measurement”, or the Amendment. In view of global regulatory changes, numerous countries have considered introducing a reform in the benchmark Interbank Offered Rates, or IBORs (LIBOR, the London Interbank Offered Rate, being one of the most common examples) and switching to a risk-free interest rate alternative, or an RFR, which extensively relies on data of specific transactions. The IBOR reform leads to uncertainty regarding the dates and amounts to be attributed to future cash flows relating to both hedging instruments and hedged items that rely on existing IBORs.

According to the existing accounting guidance of IFRS 9 and IAS 39, entities that have entered into the above hedges are facing uncertainty as a result of the IBOR reform which is likely to affect their ability to continue meeting the effective hedging requirements underlying existing transactions as well as the hedging requirements of future transactions. In order to resolve this uncertainty, the IASB issued the Amendment to offer transitional reliefs for entities that apply IBOR-based hedge accounting. The Amendment represents phase one in the reform that will include additional amendments in the future.

The Amendment also permits certain reliefs in applying the hedge accounting effectiveness tests during the period of transition from IBORs to RFRs. These reliefs assume that the benchmark interest underlying the hedge will not change as a result of the expected interest reform. The reliefs will be effective indefinitely, until the occurrence of one of the events specified in the Amendment. The Amendment also requires entities to provide specific disclosures of the application of any reliefs.

The Amendment is to be applied retrospectively for annual periods beginning on or after January 1, 2020. Early adoption is permitted. We believe that the adoption of the Amendment will not have an effect on our consolidated financial statements since our subsidiaries do not enter into substantial IBOR-based hedges.

4. Amendments to IAS 1, “Presentation of Financial Statements:

In January 2020, the IASB issued several amendments to IAS 1, “Presentation of Financial Statements,” or the Amendments, in order to clarify the criteria for determining the classification of liabilities as current or non-current.

The Amendments include the following clarifications:

- Clarification of the definition of the right to defer settlement of a liability;
- Clarification that only the rights an entity has at the end of the reporting period can determine whether it has the right to defer settlement of the liability;
- Clarification of the means that can be used to settle a liability other than by transfer of cash (such as by transfer of equity instruments).

The Amendments are to be applied retrospectively effective for annual periods beginning on or after January 1, 2022, with earlier application permitted. We estimate that the Amendments will not have a material effect on our financial statements.

Impact of Inflation and Currency Fluctuations on Results of Operations

Our financial statements are stated in U.S. dollars. However, most of our revenues and expenses from our software services revenue line are denominated in NIS and a substantial portion of our revenues and costs from our proprietary software products and related services revenue line are incurred in other currencies, particularly NIS, Euros, Japanese yen, Indian rupee and the British pound. We also maintain substantial non-U.S. dollar balances of assets, including cash, accounts receivable, and liabilities, including accounts payable, debentures and debt to financial institutions. Therefore, fluctuations in the value of the currencies in which we do business relative to the U.S. dollar may adversely affect our business, results of operations and financial condition. For financial reporting purposes, we translate all non-U.S. dollar denominated transactions into dollars using the average exchange rate over the period during which the transactions occur, in accordance with IFRS. Therefore, we are exposed to the risk that the devaluation of the NIS relative to the U.S. dollar may reduce the revenue growth rate and profitability for our software services in dollar terms. The average of the daily representative exchange rates of the NIS to the dollar in 2018 and 2019, as reported by the Bank of Israel, was NIS 3.5949 per US\$1 and NIS 3.5643 per US\$1, respectively. Consequently, this trend slightly increased the dollar value of our NIS- based revenues and profitability for our Israeli software services in 2019 relative to 2018. On the other hand, a significant portion of our revenues from proprietary software products and related services is currently mainly denominated in U.S. dollars, Euros, Japanese yen, Indian rupee and the British pound, whereas a substantial portion of our expenses relating to those products, principally salaries and related personnel expenses, are denominated in NIS. As a result, the devaluation of the Euro, Japanese yen, Indian rupee and the British pound relative to the U.S. dollar (in which our financial results are reported) reduces the revenue growth rate and profitability for our proprietary software products and related services in dollar terms, thereby adversely affecting our operating results. From the perspective of expenses (and contrary to the trend involving software services), the devaluation of the NIS relative to the dollar, decreases the relative value, in U.S. dollars, of the NIS-denominated operating costs related to our proprietary software product revenues. That, therefore, increases our profitability and partially compensates for the negative effect that this movement has on our revenues and our profitability from our software services.

Since most of our expenses are incurred in NIS, the dollar cost of our operations also rises as a result of any increase in the rate of inflation in Israel, to the extent that such inflation is not offset, or is only offset on a lagging basis, by the devaluation (if any) of the NIS against the dollar during a relevant period of time. The average Israeli rate of inflation on an annual basis amounted to 0.4%, 0.8% and 0.6% for the years ended December 31, 2017, 2018 and 2019, respectively. In 2017 and 2019, the NIS appreciated relative to the U.S. dollar, whereas in 2018 the NIS devaluated against the dollar (in each case, based on the average of the daily representative exchange rates). Therefore, in 2017 and 2019, inflation and the appreciation of the NIS relative to the dollar combined to increase the cost of our operations. In 2018, the depreciation of the NIS relative to the dollar reduced the dollar cost of our operations, despite the increase that would have otherwise been caused by the rise in inflation in Israel.

An increase in the rate of inflation in Israel may also have a material adverse effect on our financial results by increasing our operational expenses, as certain of our operating lease and rent agreements are denominated in NIS and are generally linked to the Israeli CPI, so to the extent that the Israeli CPI rises, so will our operational expenses.

Though, to date, we have not engaged in significant currency hedging transactions, we do periodically engage in certain economic hedging in order to help protect against fluctuation in foreign currency exchange rates. Instruments that we use to manage currency exchange risks may include foreign currency forward contracts. The purpose of our foreign currency hedging activities is to reduce our exposure, from the perspective of our profitability, to the risks that arise from the adverse impact that exchange rates bear on our revenues and expenses that are denominated in non-U.S. currencies. Instruments are used selectively to manage risks, but there can be no assurance that we will be fully protected against material foreign currency fluctuations. We do not use these instruments for speculative or trading purposes. In the future, we may enter into more or larger currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the NIS, Euro, Japanese yen or British pound against the dollar, and from increases in the Israeli inflation rate. However, we cannot assure you that these measures will adequately protect us from the adverse effects of those fluctuations.

Following is a summary of the most relevant monetary indicators for the reported periods:

For the year ended December 31,	Inflation rate in Israel %	Devaluation (appreciation) of NIS against the US\$* %	Devaluation (appreciation) of Euro against the US\$* %
2017	0.4	(9.8)	(12.2)
2018	0.8	8.1	4.6
2019	0.6	(7.7)	2.0

*Reflects the change in the daily exchange rate from the start of such year until the end of such year rather than the change in the average daily exchange rate over the course of that year relative to the previous year.

Effective Corporate Tax Rates in Israel

Tax regulations have a material impact on our business, particularly in Israel where we have our headquarters. The following is a summary of some of the current tax law applicable to companies in Israel, with special reference to its effect on us. The following also contains a discussion of specified Israeli tax consequences to our shareholders and government programs benefiting us. To the extent that the discussion is based on tax legislation that has not been subject to judicial or administrative interpretation, there can be no assurance that the views expressed in the discussion will be accepted by the tax authorities in question. The discussion is not intended, and should not be construed, as legal or professional tax advice and is not exhaustive of all possible tax considerations.

Corporate Tax

Generally, Israeli companies are subject to corporate tax on their taxable income. As of 2018 the corporate tax rate is 23%. However, the effective tax rate payable by a company that derives income from an AE, BE, PFE or a PTE, in each case, as defined and further discussed below, may be considerably lower. See “Law for the Encouragement of Capital Investments” in this Item 5.A below. In addition, Israeli companies are currently subject to regular corporate tax rate on their capital gains.

Besides being subject to the general corporate tax rules in Israel, certain of our Israeli subsidiaries have also, from time to time, applied for and received certain grants and tax benefits from, and participate in, programs sponsored by the Government of Israel, as described below.

Taxation of Non-Israeli Subsidiaries Held by an Israeli Parent Company

Non-Israeli subsidiaries of an Israeli parent company are generally subject to tax in their countries of residence under tax laws applicable to them in such countries. Such subsidiaries could also be subject to Israeli corporate tax on their income if they were to be managed and controlled from Israel. In such case, double taxation could ensue unless an applicable tax treaty provides applicable rules for relief from double taxation or such relief is available under internal law.

An Israeli parent company may also be required to include in its income on a current basis, as a deemed dividend, certain income derived by its subsidiaries under the Israeli Controlled Foreign Corporation rules, or CFC, regardless of whether such income is distributed or not. Under these rules, a non-Israeli subsidiary is considered to be a CFC, if, among other things, (i) a majority of the subsidiary's means of control are held by Israeli residents, (ii) most of its revenues or income is passive (such as interest, dividends, royalties, rental income or income from capital gains) and (iii) such income is taxed at a rate that does not exceed 15%. An Israeli parent company that is subject to Israeli taxes on such deemed dividend income, may generally receive a credit for foreign taxes paid by its subsidiaries in their country of residence and for deemed foreign taxes to be withheld upon the actual distribution of such income.

Law for the Encouragement of Industry (Taxes), 5729-1969

The Law for the Encouragement of Industry (Taxes), 5729-1969 (the “**Industry Encouragement Law**”) provides several tax benefits for an “Industrial Company.” Pursuant to the Industry Encouragement Law, a company qualifies as an Industrial Company if it is an Israeli resident company which was incorporated in Israel and at least 90% of its income in any tax year (other than income from certain government loans) is generated from an “Industrial Enterprise” that it owns and is located in Israel or in the “Area,” in accordance with the definition under Section 3A of the Israeli Income Tax Ordinance (New Version) 1961, or the Ordinance. An “Industrial Enterprise” is defined as an enterprise whose major activity, in a given tax year, is industrial production.

An Industrial Company is entitled to certain tax benefits, including:

- amortization of the cost of the purchases of patents, or the right to use a patent or know-how used for the development or promotion of the Industrial Enterprise, over an eight-year period commencing on the year in which such rights were first exercised;
- the right to elect, under certain conditions, to file a consolidated tax return together with Israeli Industrial Companies controlled by it; and
- the expenses related to a public offering are deductible in equal amounts over three years beginning from the year of the offering.

Eligibility for benefits under the Industry Encouragement Law is not subject to receipt of prior approval from any governmental authority.

We believe that certain of our Israeli subsidiaries and affiliate currently qualify as Industrial Companies within the definition under the Industry Encouragement Law. We cannot assure you that they will continue to qualify as Industrial Companies or that the benefits described above will be available in the future.

Law for the Encouragement of Capital Investments, 5719-1959

The Law for the Encouragement of Capital Investments, 5719-1959, or the Investment Law, provides certain incentives for capital investments in a production facility (or other eligible assets). Generally, an investment program that is implemented in accordance with the provisions of the Investment Law, referred to as an Approved Enterprise, or AE, a Benefitted Enterprise, or BE, or a Preferred Enterprise, or PFE, or a Preferred Technological Enterprise, or PTE, or a Special Preferred Technological Enterprise, or SPFE is entitled to benefits as discussed below. These benefits may include cash grants from the Israeli government and tax benefits, based upon, among other things, the geographic location in Israel of the facility in which the investment is made. In order to qualify for these incentives, an AE, BE, PFE, PTE or SPFE is required to comply with the requirements of the Investment Law.

The Investment Law has been amended several times over the recent years, with the three most significant changes effective as of April 1, 2005 (referred to as the 2005 Amendment), as of January 1, 2011 (referred to as the 2011 Amendment) and as of January 1, 2017 (referred to as the 2017 Amendment). Pursuant to the 2005 Amendment, tax benefits granted in accordance with the provisions of the Investment Law prior to its revision by the 2005 Amendment remain in force but any benefits granted subsequently are subject to the provisions of the amended Investment Law. Similarly, the 2011 Amendment introduced new benefits instead of the benefits granted in accordance with the provisions of the Investment Law prior to the 2011 Amendment. However, companies entitled to benefits under the Investment Law as in effect up to January 1, 2011 were entitled to choose to continue to enjoy such benefits, provided that certain conditions are met, or elect instead, irrevocably, to forego such benefits and elect the benefits of the 2011 Amendment. The 2017 Amendment introduces new benefits for Technological Enterprises, alongside the existing tax benefits.

Tax benefits under the 2011 Amendment that became effective on January 1, 2011.

The 2011 Amendment canceled the availability of the benefits granted in accordance with the provisions of the Investment Law prior to 2011 and, instead, introduced new benefits for income generated by a “Preferred Company” through its PFE (as such terms are defined in the Investment Law) as of January 1, 2011. A Preferred Company is defined as either (i) a company incorporated in Israel which is not wholly owned by a governmental entity or (ii) a limited partnership that (a) was registered under the Israeli Partnerships Ordinance and (b) all of its limited partners are companies incorporated in Israel, but not all of them are governmental entities; which has, among other things, PFE status and is controlled and managed from Israel. Pursuant to the 2011 Amendment, a Preferred Company is entitled to a reduced corporate tax rate of 15% with respect to its preferred income, or PFI, attributed to its PFE in 2011 and 2012, unless the PFE is located in a certain development zone, in which case the rate will be 10%. Such corporate tax rate was reduced to 12.5% and 7%, respectively, in 2013 and was increased to 16% and 9%, respectively, in 2014 until 2016. Pursuant to the 2017 Amendment, in 2017 and thereafter, the corporate tax rate for a PFE that is located in a specified development zone was decreased to 7.5%, while the reduced corporate tax rate for other development zones remains 16%. Income derived by a Preferred Company from a Special PFE (as such term is defined in the Investment Law) would be entitled, during a benefits period of 10 years, to further reduced tax rates of 8%, or 5% if the Special PFE is located in a certain development zone. As of January 1, 2017, the definition for Special PFE includes less stringent conditions.

The classification of income generated from the provision of usage rights in know-how or software that were developed in a PFE, as well as royalty income received with respect to such usage, is subject, as PFE income, to the issuance of a pre-ruling from the Israel Tax Authority that stipulates that such income is associated with the productive activity of the PFE in Israel.

Dividends paid out of PFI attributed to a PFE or to a Special PFE are generally subject to withholding tax at source at the rate of 20% or such lower rate as may be provided in an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). However, if such dividends are paid to an Israeli company, no tax is required to be withheld (although, if such dividends are subsequently distributed to individuals or a non-Israeli company, withholding tax at a rate of 20% or such lower rate as may be provided in an applicable tax treaty will apply). From 2017 to 2019, dividends paid out of PFI attributed to a PFE, directly to a foreign parent company, were subject to withholding tax at source at the rate of 5% (temporary provisions).

The 2011 Amendment also provided transitional provisions to address companies already enjoying current benefits under the Investment Law. These transitional provisions provide, among other things, that unless an irrevocable request is made to apply the provisions of the Investment Law as amended in 2011 with respect to income to be derived as of January 1, 2011: (i) the terms and benefits included in any certificate of approval that was granted to an AE, which chose to receive grants, before the 2011 Amendment became effective, will remain subject to the provisions of the Investment Law as in effect on the date of such approval, and subject to certain conditions; and (ii) the terms and benefits included in any certificate of approval that was granted to an AE, that had participated in an alternative benefits program, before the 2011 Amendment became effective, will remain subject to the provisions of the Investment Law as in effect on the date of such approval, provided that certain conditions are met.

In 2011, Magic and one of its Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subject to the amended tax rate of 16% for the tax years 2011-2016.

In 2015, certain of Sapiens’ Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subject to the amended tax rate of 16% for the tax years 2014-2016.

New Tax benefits under the 2017 Amendment that became effective on January 1, 2017

The 2017 Amendment was enacted as part of the Economic Efficiency Law that was published on December 29, 2016, and is effective as of January 1, 2017. The 2017 Amendment provides new tax benefits for two types of Technology Enterprises, as described below, and is in addition to the other existing tax beneficial programs under the Investment Law.

The 2017 Amendment provides that a technology company satisfying certain conditions will qualify as a PTE, and will thereby enjoy a reduced corporate tax rate of 12% on income that qualifies as Preferred Technology Income, or PTI, as defined in the Investment Law. The tax rate is further reduced to 7.5% for a PTE located in development zone A. In addition, a Preferred Technology Company will enjoy a reduced corporate tax rate of 12% on capital gain derived from the sale of certain Benefited Intangible Assets (as defined in the Investment Law) to a related foreign company if the Benefited Intangible Assets were acquired from a foreign company on or after January 1, 2017 for at least NIS 200 million, and the sale receives prior approval from the National Authority for Technological Innovation (previously known as the Israeli Office of the Chief Scientist) (referred to as IIA).

The 2017 Amendment further provides that a technology company satisfying certain conditions will qualify as a Special PTE (an enterprise for which, among others, total consolidated revenues of its parent company and all subsidiaries is at least NIS 10 billion) and will thereby enjoy a reduced corporate tax rate of 6% on PTI regardless of the company's geographic location within Israel. In addition, a Special PTE will enjoy a reduced corporate tax rate of 6% on capital gain derived from the sale of certain "Benefited Intangible Assets" to a related foreign company if the Benefited Intangible Assets were either developed by the Special Preferred Technology Enterprise or acquired from a foreign company on or after January 1, 2017, and the sale received prior approval from IIA. A Special PTE that acquires Benefited Intangible Assets from a foreign company for more than NIS 500 million will be eligible for these benefits for at least ten years, subject to certain approvals as specified in the Investment Law.

Dividends distributed by a PTE or a Special PTE, paid out of PTI, are generally subject to withholding tax at source at the rate of 20% or such lower rate as may be provided in an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). However, if such dividends are paid to an Israeli company, no tax is required to be withheld (although, if such dividends are subsequently distributed from such Israeli company to individuals or a non-Israeli company, withholding tax at a rate of 20% or such lower rate as may be provided in an applicable tax treaty will apply). If such dividends are distributed to a foreign company that holds solely or together with other foreign companies 90% or more in the Israeli company and other conditions are met, the withholding tax rate will be 4% (or a lower rate under a tax treaty, if applicable, subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate).

We examined the impact of the 2017 Amendment and the degree to which we will qualify as a PTE or Special PTE, and the amount of PTI that we may have, or other benefits that we may receive, from the 2017 Amendment. Beginning in 2017, part of the Group's taxable income in Israel is entitled to a preferred 12% tax rate under the 2017 Amendment.

Tax Benefits for Research and Development

Israeli tax law allows, under certain conditions, a tax deduction for research and development expenditures, including capital expenditures, for the year in which they are incurred. Such expenditures must relate to scientific research and development projects, and must be approved by the relevant Israeli government ministry, determined by the field of research. Furthermore, the research and development must be for the promotion of the company's business and carried out by or on behalf of the company seeking such tax deduction. However, the amount of such deductible expenses is reduced by the sum of any funds received through government grants for the finance of such scientific research and development projects. Expenditures not so approved by the relevant Israeli government ministry, but otherwise qualifying for deduction, are deductible over a three-year period.

B. Liquidity and Capital Resources

Since inception, we have financed our growth and business primarily through cash provided by operations and through public debt and equity offerings, as well as through private and public debt and equity offerings of our subsidiaries. In addition, we finance our business operations through short-term and long-term loans and borrowings available under our credit facilities.

Current Outlook

We had cash and cash equivalents and short-term investments (including marketable securities) of \$295.3 million and \$405.2 million as of December 31, 2018 and 2019, respectively. At December 31, 2018 and 2019, we had indebtedness to banks and others, including debentures, of \$381.4 million and \$494.1 million, respectively, of which \$127.0 million and \$156.7 million were current liabilities and \$254.4 million and \$337.4 million were long-term liabilities as of those respective dates. Included in the balance of our indebtedness to banks and others as of December 31, 2019, Formula standalone had indebtedness of \$12.8 million outstanding to an Israeli institutional investor, and \$50.7 million and \$86.2 million, in the aggregate, outstanding under Formula's secured debentures (Series A and Series C, respectively) which Formula sold in public offerings in Israel in September 2015 and March 2019, in each case, as described below.

We had cash and cash equivalents that were held outside of Israel and that would have been subject to income taxes if distributed as a dividend as of December 31, 2018 and 2019 in amounts of \$50.8 million and \$54.4 million, respectively.

Sources of Financing

Institutional Investor Loan

In January 2014, Formula received an NIS 200 million loan (approximately \$57.6 million) from a leading Israeli institutional investor. The loan is secured by certain of the shares of each of our publicly held subsidiary and affiliated companies. The loan's average duration from inception is approximately four years (paid over a period of six years, with the first payment made in January 2016) and carries a fixed annual interest rate of 5.5%.

Under the terms of the loan with the Israeli institutional investor, Formula has undertaken to maintain the following financial covenants, as they will be expressed in its financial statements:

1. Formula's equity shall not be lower than \$160 million at all times.
2. The ratio of Formula's equity to total assets will not be less than 20%.
3. The ratio of Formula's total financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.5 to 1.
4. The ratio of Formula's total financial debts less cash, short-term deposits and short-term marketable securities to the total assets will not exceed 30%.
5. Formula's liabilities to banks and other financial institutions in its stand-alone balance sheet shall not be higher than NIS 700 million (approximately \$186.8 million).
6. Formula will not create any pledge on all or part of its property and assets in favor of any third party and will not provide any guarantee to secure any third party's debts as they are today and as they will be without the financial institution's consent.
7. Formula will not sell and/or transfer all or part of its assets to others in any manner whatsoever without the financial institution's advance written consent, unless it is done in the ordinary course of business.

In January 2020, meeting all the above-mentioned financial covenants, we repaid the last and final installment of our loan, pursuant to which the credit agreement was fully matured, and the related collaterals were released.

Israeli Debenture Offerings

September 2015 Public Offering

In September 2015, Formula consummated a public offering of debentures in Israel. The two series of debentures issued by Formula in the public offering consisted of one series of debentures—the Series A Secured Debentures—that is secured by liens on the shares of Formula's subsidiaries (Matrix, Sapiens and Magic Software), and a second series—the Series B Convertible Debentures—that was convertible into ordinary shares of Formula. Both series of debentures were listed for trading only on the TASE.

In the public offering, Formula issued and sold a total amount of NIS 227,260,000 (\$58.2 million) par value of the debentures, which were subdivided into the following respective amounts of Series A Secured Debentures and Series B Convertible Debentures that were subject to the following terms:

- NIS 102,260,000 (\$26.3 million) par value of Series A Secured Debentures were sold, which bear interest on the unpaid principal at a fixed annual rate equal to 2.8% (which may vary based on the credit rating of the debentures), which is paid on a semi-annual basis through July 2024. The principal is payable in eight equal annual installments beginning in July 2017 and ending in July 2024. The interest rate varies based on the credit rating of the Series A Secured Debentures. The net proceeds received by Formula from the issuance of the Series A Secured Debentures in September 2015 amounted to \$25.9 million (net of issuance expenses).
- NIS 125,000,000 (\$31.9 million) par value of Series B Convertible Debentures were sold at a price per debenture unit (each unit comprised of NIS 1,000 par value of debentures) of NIS 1,020. The Series B Convertible Debentures bore interest at a fixed annual rate equal to 2.74% (which was subject to adjustment based on the credit rating of the debentures). Interest was payable in one payment upon maturity of the Series B Convertible Debentures on March 26, 2019 (at which time the accrued interest constituted 10% of the principal amount of the debentures, in the aggregate). The Series B Convertible Debentures were convertible into Formula's ordinary shares at a rate of NIS 157 (\$40.03) par value of Series B Convertible Debentures per one share. The conversion rate was subject to adjustment for the issuance of bonus shares, rights and dividends. The principal amount of and interest on the Series B Convertible Debentures was subject to adjustment based on changes in the exchange rate between the NIS and the U.S. dollar relative to the exchange rate on September 8, 2015. The net proceeds received by Formula from the issuance of Series B Convertible Debentures amounted to \$32.1 million (net of issuance expenses).

The gross proceeds received by Formula from the issuance of all debentures in September 2015 were approximately NIS 229.8 million (\$58.6 million), in the aggregate.

As a result of conversions that were effected during 2018 and 2019, prior to the maturity of the Series B Convertible Debentures in March 2019, holders of Series B Convertible Debentures converted an aggregate principal (par value) amount of NIS 80.5 million (of which NIS 231,700,000 were converted in 2018) into 545,485 ordinary shares, (of which 1,556 ordinary shares were issued in 2018), constituting 3.57% of Formula's issued and outstanding share capital (following those conversions). The remaining outstanding Series B Convertible Debentures matured on March 26, 2019, and the remaining outstanding principal of NIS 44.5 million (\$11.4 million) and interest on those debentures of \$1.1 million were paid on that date. No Series B Convertible Debentures are outstanding as of the date of this annual report.

January 2018 Private Placement

On January 31, 2018, Formula consummated a private placement to qualified investors in Israel, of an additional, aggregate NIS 150 million par value of Series A Secured Debentures at a price of NIS 1,034.7 for each NIS 1,000 principal amount. The aggregate gross proceeds totaled NIS 155.2 million (approximately \$45.6 million), excluding issuance costs of \$0.2 million. As a result of the private placement, the total outstanding principal amount of the Series A Secured Debentures increased to approximately NIS 239.5 million (approximately \$69.1 million) as of that time. The terms of the Series A Secured Debentures sold in the private placement are identical in all respects to those of the Series A Secured Debentures sold in Formula's September 2015 public offering.

March 2019 Public Offering

On March 31, 2019, Formula consummated a public offering in Israel of a new series of secured debentures—Series C Secured Debentures—in an aggregate NIS 300.0 million par value amount, at a price of NIS 1,000 for each unit of NIS 1,000 principal amount. The aggregate gross proceeds from the public offering totaled NIS 300.0 million (approximately \$82.6 million) excluding issuance costs of \$0.9 million. The Series C Secured Debentures are secured by liens on the shares of Formula's subsidiaries and are listed for trading only on the TASE. Each Series C Debenture unit bears interest at a fixed annual rate equal to 2.29%, which interest will be paid out on a semi-annual basis. The principal amount of the Series C Debentures will be payable by Formula in seven annual installments from December 1, 2020 through December 1, 2026, the first five of which will each constitute 11% of the principal, and the final two of which will each constitute 22.5% of the principal.

As a result of the public offering and following the retirement of the remaining Series B Convertible Debentures, the total principal amount of all debentures—including Series A Secured Debentures and Series C Secured Debentures—issued by Formula that remain outstanding as of March 31, 2019 constituted NIS 505.3 million (approximately \$139.1 million). The terms of the Series C Secured Debentures sold in the March 2019 public offering are substantially similar to those of the Series A Secured Debentures sold in Formula's September 2015 public offering and January 2018 private placement.

General Terms of Outstanding Debentures

The Series A Secured Debentures and Series C Secured Debentures contain, in addition to standard terms and obligations, the following obligations on our part:

- a negative pledge, subject to certain exceptions;
- a covenant not to distribute dividends unless: (i) shareholders' equity (not including minority interests) is at least \$290 million (for the Series C Secured Debentures) or \$250 million (for the Series A Secured Debentures); (ii) Formula's consolidated net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) does not exceed 50% (for the Series C Secured Debentures) or 65% (for the Series A Secured Debentures) of net CAP (which is defined as financial indebtedness, net, plus shareholders equity); (iii) the amount of the distributions (including, in the case of the Series C Secured Debentures, any previous distribution starting from January 1, 2016) does not exceed that aggregated amount of the profit accrued for 2015 and 75% of profits accrued from January 1, 2016 until the distribution; (iv) no event of default shall have occurred; and (v) no material breach of obligations under the debentures shall have occurred; and
- Financial covenants, including: (i) the equity attributable to the shareholders of Formula, as reported in Formula's annual or quarterly financial statements, will not be less than \$160 million (for the Series A Secured Debentures) or \$215 million (for the Series C Secured Debentures); (ii) Formula's consolidated net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) shall not exceed 65% of net CAP (which is defined as financial indebtedness, net, plus shareholders equity); (iii) for the Series C Secured Debentures, Formula's consolidated net financial indebtedness shall not exceed five times EBITDA (which is defined as the consolidated net profit plus taxes, net financing expenses, depreciation and amortization and without expenses for employee stock option, expenses for transactions and on-time income/expenses); and (iv) at all times, Formula's cash balance will not be less than the annual interest payment (compounded) for the unpaid principal amount of the Series C Secured Debentures or the Series A Convertible Debentures (as applicable).

We have agreed to standard events of default under the Series A Secured Debentures and Series C Secured Debentures, together with the following additional events of default due to any of the following:

- cross default, excluding following an immediate repayment initiated in relation to the other series of debentures or other indebtedness (other than non-recourse debt) over NIS 75 million (\$21.6 million);
- suspension of trading of the debentures on the TASE over a period of 60 days;
- failure to have the debentures rated over a period of 60 days;
- if the rating of the debentures is less than BBB- by Standard and Poors Maalot or equivalent rating of other rating agencies;
- if there is a change in control without consent of the rating agency;
- if Formula fails to provide additional security when the loan-to-value of the securities securing the Series A Secured Debentures or Series C Secured Debentures (as applicable) falls below the required ratio;
- the existence of a real concern that Formula will not meet its material undertakings towards the debenture holders;
- the inclusion in Formula's financial statements of a note regarding the existence of significant doubt as to Formula's ability to continue as a going concern;
- breach of Formula's undertakings regarding the issuance of additional debentures;
- Formula's failure to continue to control any of its subsidiaries; and
- failure to comply with the negative pledge covenant.

Subsidiary and Affiliate Financing Activities

From time to time, our subsidiaries and affiliated companies also maintain credit facilities with banks and other financial institutions and issue debt instruments such as debentures in accordance with their cash requirements. These credit facilities and debentures include, inter alia, certain standard events of defaults related to our subsidiaries' operations, which restrict their ability to: (i) undergo a change of control, (ii) distribute dividends, (iii) incur debt or apply a floating charge on their assets, or (iv) undergo an asset sale or other change that would result in a fundamental change in their operations. The subsidiaries' and affiliated companies' indebtedness also requires that they comply with certain financial covenants, including maintenance of certain financial ratios related to their shareholders' equity, total rate of debt and liabilities, minimum outstanding balance of total cash and short-term investments and operating results that are customary for companies of their comparable size and the risk. Some of our subsidiaries' assets are pledged to the lender banks and debenture holders. If we or any of our subsidiaries do not meet the covenants specified in our credit agreements or indentures (or equivalent agreement with the debenture holders), and a waiver with respect to the fulfillment of such covenants has not been received from the lender bank or representative of the debenture holders, the lender bank or debenture holders (via the action of their representative) may foreclose on the pledged assets to satisfy a debt.

Currently, Matrix, Sapiens, Magic Software and Formula have such material credit facilities and/or debentures outstanding. The long-term debt obligations of Matrix bear fixed interest at an average annual rate of 2.06%-3.6% and floating interest at a rate of LIBOR + 2.2%. The long-term debt obligations of Magic Software bear fixed interest at an annual rate of 2.6%-3.0% and floating interest at a rate of PRIME + 0.2%-PRIME + 0.8%. The long-term debt obligations of Sapiens bear fixed interest at an annual rate of 3.37%. These credit facilities and/or debentures expire over a period of time that ranges from one to seven years.

As of December 31, 2019, Matrix had aggregate short-term obligations to banks and others of NIS 362.9 million (approximately \$105.0 million) and aggregate long-term obligations to banks of NIS 506.8 million (approximately \$146.6 million) under its credit facilities. As of December 31, 2019, Magic Software had aggregate short-term obligations to banks and others of \$7.1 million and aggregate long-term obligations to banks and others of \$15.5 million under its credit facilities.

In November 2016, Magic Software obtained an NIS 120 million (approximately \$31.4 million) loan linked to the NIS from an Israeli institution. Magic Software intended to use the proceeds from this loan for its general corporate purposes, which may include the funding of its working capital needs and the funding of potential acquisitions. The principal amount of the loan is payable in seven equal annual payments with the final payment due on November 2, 2023 and bears a fixed interest rate of 2.60% per annum, payable in two semi-annually payments. The loan, which may be prepaid under certain circumstances, is subject to various financial covenants, which mainly consist of the following:

1. Magic Software equity will not be lower than \$100 million (one hundred million U.S. dollars) at all times.
2. Magic Software cash and cash equivalent and marketable securities available for sales will not be less than \$10 million (ten million U.S. dollars).
3. The ratio of Magic Software total financial debts to total assets will not exceed 50%.
4. The ratio of Magic Software total financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.25 to 1.
5. Magic Software will not create any pledge on all of its property and assets in favor of any third party without the financial institution's consent

In September 2017, Sapiens issued NIS 280 million (approximately \$78.3 million, net of \$0.96 million of debt discount and issuance costs) principal amount of Series B unsecured, non-convertible debentures, in a public offering and private placement in Israel. Proceeds of such offering were utilized to repay the entire outstanding loan amount (including accrued interest) under a \$40 million credit agreement to which Sapiens had been party with HSBC Bank USA, National Association as financing for Sapiens' acquisition of StoneRiver. The outstanding principal amount of the Sapiens Series B debentures is linked to the US dollar and bears interest at an annual rate of 3.37%, to be paid on a semi-annual basis (on January 1 and July 1 of 2018 through 2025, with one final interest payment on January 1, 2026). The principal of the Sapiens Series B debentures is payable in eight equal annual payments beginning on January 1, 2019, with the final payment due on January 1, 2026. The first two installments, in amounts of \$9.9 million each, were paid on January 1, 2019 and 2020.

In June 2020, Sapiens issued additional Series B Debentures in an aggregate principle amount of NIS 210 million (approximately \$60.4 million) through a public offering in Israel. The gross proceeds received for the issuance of Sapiens' Series B Debentures in June 2020 were NIS 210.8 million (approximately \$60.6 million), out of which approximately NIS 3.0 million was attributed to interest that is payable (approximately \$0.9 million). Debt discount of NIS 2.2 million (approximately \$0.6 million) and issuance costs of NIS 2.3 million (approximately \$0.7 million) were allocated to Sapiens' Series B Debentures and are amortized as financial expenses over the remaining term of the Series B Debentures due in 2026.

In the deed of trust entered into by Sapiens with the trustee for the holders of its Series B debentures, Sapiens undertook to maintain a number of conditions and limitations on the manner in which it can operate its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on its assets, or undergo an asset sale or other change that results in a fundamental change in its operations. The deed of trust also requires Sapiens to comply with certain financial covenants, including maintenance of a minimum shareholders' equity level and a maximum ratio of financial indebtedness to shareholders' equity, at levels that are customary for companies of comparable size. The deed of trust furthermore provides for an upwards adjustment in the interest rate payable under the debentures in the event that the debentures' rating is downgraded below a certain level. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of the debentures (below BBB-) could result in the acceleration of Sapiens' obligation to repay the debentures.

We believe that our current cash reserves, together with cash that may be distributed to us from the ongoing operations of our subsidiaries and any credit that we may choose to draw upon that is available under our (and our subsidiaries' and affiliated company's) existing credit facilities should be sufficient for our present working capital requirements for at least the next 12 months at our current level of operations. We may consider in the future additional equity issuances, debt issuances or borrowings from banks if necessary to meet cash needs for our growth, including if needed to consummate one or more acquisitions for consideration consisting of all or a substantial portion of our available cash. Should we require additional financing in the future, we cannot assure you that such financing will be available on favorable terms or at all.

On December 31, 2019, Formula reported publicly to the TASE and Israeli Securities Authority that Midroog (established in affiliation with the worldwide rating company, Moody's Corporation which maintains a 51% share capital interest), had upgraded its credit rating from A1+.il (issued on January 2019) to Aa3.il with stable outlook for Formula's current series of secured debentures (Series A Secured Debentures and Series C Secured Debentures) that are traded on the TASE and for Formula as an issuer.

On March 10, 2019, Formula reported publicly to the TASE and Israeli Securities Authority that Standard & Poor's Maalot, or S&P (a subsidiary of S&P Global), had issued a credit rating of iIAA- for the new Series C Secured Debentures, for an aggregate principal amount of up to NIS 300.0 million (par value) that was subsequently issued and sold on March 31, 2019. That credit rating echoes the credit rating (iIAA-) for Formula's other current series of secured debentures (Series A Secured Debentures) that are traded on the TASE. S&P's credit rating for Formula as an issuer remained iA+/stable as of that report. The credit ratings are based on a number of factors and considerations.

In connection with Sapiens' offering of its Series B Debentures, Sapiens received from S&P a corporate credit rating and a rating for the Series B Debentures, which S&P affirmed, as of June 2020, July 2019 and 2018, as iA+, with stable outlook.

As of the date of the financial statements included in this annual report, each of Formula, Sapiens, Magic Software and Matrix were in compliance with each of their respective financial covenants.

Cash Provided by Operating Activities

Cash flow provided by our operating activities increased from \$82.6 million in 2018 to \$196.1 million in 2019.

Net cash provided by operating activities in 2019 consisted primarily of the cash generated by our subsidiaries' ongoing operating activities and of net income stemming therefrom, as adjusted for non-cash activity, including changes in operating assets and liabilities. The material upwards adjustments in cash flow reflecting non-cash activity included adjustments due to: (i) depreciation and amortization of capitalized research and development assets, other intangible assets (mainly customer relations), property, plants and equipment and operating right-of-use assets in an aggregate amount of \$86.9 million; (ii) a decrease in trade receivables in an amount of \$16.3 million; (iii) a decrease in other current and long-term accounts receivable in an amount of \$12.7 million; (iv) an increase in other accounts payable and employees and payroll accrual and in deferred revenues in an aggregate amount of \$11.6 million; (v) changes in value of short-term and long term loans from banks and others and deposits in an amount of \$5.6 million; (vi) stock based compensation expenses in an amount of \$3.9 million; and (vii) an increase in liabilities in respect of business combinations in an amount of \$0.5 million. Material downwards adjustments in cash flow for non-cash activity, including changes in operating assets and liabilities, consisted of adjustments of: (i) an increase in trade payables in an amount of \$18.0 million; (ii) change in deferred taxes net in an amount of \$13.2 million; (iii) changes in value of debentures, net in an amount of \$2.1 million; (iii) share of profits of companies accounted for at equity in an amount of \$1.8 million; and (iv) an increase in inventory of \$0.9 million.

Cash flow provided by operating activities in 2019 was primarily comprised of NIS 263.4 million (approximately \$74.0 million) provided by Matrix, \$74.0 million provided by Sapiens, \$49.7 million provided by Magic Software and approximately \$6.2 million provided by Insync and Michpal, offset by \$7.8 million used by Formula.

Net cash provided by operating activities in 2018 consisted primarily of the cash generated by our subsidiaries' ongoing operating activities and of net income stemming therefrom, as adjusted for non-cash activity, including changes in operating assets and liabilities. The material upwards adjustments in cash flow reflecting non-cash activity included adjustments due to: (i) depreciation and amortization of capitalized research and development assets, other intangible assets (mainly customer relations) and property, plants and equipment, in an aggregate amount of \$48.7 million; (ii) an increase in trade payables and in other accounts payable and employees and payroll accrual, in an aggregate amount of \$32.7 million; (iii) stock-based compensation expenses, in an amount of \$4.0 million; (iv) an increase in deferred revenues, in an amount of \$3.0 million; (v) an increase in liabilities in respect of business combinations, in an amount of \$0.7 million; and (vi) an increase in employees benefit liabilities, in an amount of \$0.6 million. Material downwards adjustments in cash flow for non-cash activity, including changes in operating assets and liabilities, consisted of adjustments of: (a) an increase in trade receivables in an amount of \$66.1 million; (b) an increase in other current and long-term accounts receivable, in an amount of \$5.8 million; (c) change in deferred taxes, net, in an amount of \$5.7 million; (d) change in value of debentures, in an amount of \$3.0 million; (e) change in value of short-term and long term loans from banks and others and deposits, net, in an amount of \$2.3 million; (f) an increase in inventories, in an amount of \$1.0 million; and (g) share of profit of companies accounted for at equity, net, in an amount of \$0.4 million.

Cash flow provided by operating activities in 2018 was primarily comprised of NIS 124.5 million (approximately \$37.2 million) provided by Matrix, \$27.7 million provided by Sapiens, \$24.1 million provided by Magic Software and approximately \$1.1 million provided by Insync, Michpal and Effective Solutions, offset by \$7.5 million used by Formula.

Cash Provided by Financing Activities

Cash provided by financing activities was \$6.0 million in 2019 compared to \$41.0 million in 2018, mainly reflecting the cumulative effect of the following financing-related transactions that occurred over the course of those years:

Year Ended December 31, 2019

In March 2019, Magic Software declared a dividend distribution to its shareholders of \$0.15 per share (or \$7.3 million in the aggregate), which was paid in March 2019, of which \$4.0 million was paid to non-controlling interests.

In August 2019, Magic Software declared a dividend distribution to its shareholders of \$0.156 per share (or \$7.6 million in the aggregate), which was paid in September 2019, of which \$4.2 million was paid to non-controlling interests.

In August 2019, Sapiens declared a cash dividend to its shareholders of \$0.22 per share (or approximately \$11.0 million, in the aggregate), which was paid in September 2019, of which \$5.7 million was paid to non-controlling interests.

In March 2019, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 31.0 million (approximately \$8.5 million), of which \$4.4 million was paid to non-controlling interests.

In June 2019, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 27.3 million (approximately \$7.6 million), of which \$3.9 million was paid to non-controlling interests.

In August 2019, Matrix declared a cash dividend to its shareholders in an aggregate amount of NIS 26.7 million (approximately \$7.6 million), which was paid in September 2019, of which \$3.9 million was paid to non-controlling interests.

In November 2019, Matrix declared a cash dividend to its shareholders in an aggregate amount of NIS 31.0 million (approximately \$8.9 million), of which \$4.6 million was paid to non-controlling interests.

In addition, net cash provided by financing activities in 2019 was attributable to: (i) the issuance of Formula's Series C Secured Debentures in an amount of NIS 300.0 million (approximately \$82.6 million) excluding issuance costs of \$0.9 million, in a public offering in March 2019; (ii) an increase in short-term bank credit, net in an amount of \$49.1 million, (iii) Receipt of long-term loans in an amount of \$73.8 million and (iv) exercise of employees' stock options in subsidiaries in an amount of \$1.0 million, offset in part by (a) repayment of long-term loans from banks and others in an amount of \$75.5 million; (b) dividend to Formula's shareholders in an amount of \$13.0 million; (c) dividends paid to redeemable non-controlling interests in subsidiaries in an amount of \$7.2 million; (d) repayment of obligations under debentures in an aggregate amount of \$30.8 million; (e) repayment of lease liabilities in an amount of \$34.5 million; and (f) cash paid in conjunction with exercise of put option by non-controlling interests in an amount of \$6.5 million.

Year Ended December 31, 2018

In February 2018, Magic Software declared a dividend distribution to its shareholders of \$0.13 per share (or \$5.8 million in the aggregate), which was paid in March 2018, of which \$3.1 million was paid to non-controlling interests.

In August 2018, Magic Software declared a dividend distribution to its shareholders of \$0.155 per share (or \$7.6 million in the aggregate), which was paid in September 2018, of which \$4.1 million was paid to non-controlling interests.

In September 2018, Sapiens declared a cash dividend to its shareholders of \$0.20 per share (or \$10.0 million, in the aggregate), which was paid in October 2018, of which \$5.2 million was paid to non-controlling interests.

In March 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 29.6 million (approximately \$8.5 million), of which \$4.3 million was paid to non-controlling interests.

In June 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 25.9 million (approximately \$7.2 million), of which \$3.6 million was paid to non-controlling interests.

In September 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 24.7 million (approximately \$6.8 million), of which \$3.5 million was paid to non-controlling interests.

In December 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 22.2 million (approximately \$5.9 million), of which \$3.0 million was paid to non-controlling interests.

In December 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in January 2019. The aggregate amount distributed by Formula was approximately \$5.0 million.

In addition, net cash provided by financing activities in 2018 was attributable to: (i) the issuance of Formula's additional Series A Secured Debentures in an amount of NIS 155.2 million (approximately \$45.6 million), excluding issuance costs of \$0.2 million, in a private placement in January 2018; (ii) receipt of long term loans in an amount of \$83.5 million; (iii) the issuance of Magic's ordinary shares in a private placement in July 2018 in an amount of \$25.4 million and (iv) exercise of employees' stock options in subsidiaries in an amount of \$1.2 million, offset in part by (i) repayment of long term loans from banks and others in an amount of \$42.9 million; (ii) a decrease in short-term bank credit, net in an amount of \$20.7 million; (iii) repayment of obligations under debentures in an aggregate amount of \$9.4 million; (iv) dividends paid to non-controlling interests in indirect subsidiaries in an amount of \$7.3 million; and (v) cash paid to purchase non-controlling interests in an amount of \$2.0 million.

Cash Used in Investing Activities

Net cash used in our investing activities was \$108.2 million in 2019, compared to \$90.5 million in 2018.

Net cash used in investing activities in 2019 was attributable to: (i) expenditures (net of cash acquired) with respect to business acquisitions in an aggregate amount of \$52.5 million; (ii) purchase of property and equipment in an amount of \$22.4 million; (iii) capitalization of software development and other costs in an amount of \$9.8 million; (iv) payments to former shareholders of consolidated companies in an amount of \$1.0 million; and (v) payments in conjunction with deferred payments and contingent liabilities related to business combinations in an amount of \$8.3 million. This cash use was offset in part by the following cash amounts provided by investing activities in 2019: (a) proceeds from maturity and sale of marketable securities, net in an amount of \$3.4 million; (b) change in short-term and long-term deposits, net in an amount of \$8.2 million; and (c) proceeds from sale of property and equipment in an amount of \$1.7 million.

Net cash used in investing activities in 2018 was attributable to: (i) expenditures (net of cash acquired) with respect to business acquisitions in an aggregate amount of \$49.1 million; (ii) changes in short-term deposits, net in an amount of \$17.3 million, (iii) purchase of property and equipment in an amount of \$11.6 million; (iv) capitalization of software development and other costs in an amount of \$8.8 million; and (v) cash paid in conjunction with deferred payments and contingent liabilities related to business combinations in an amount of \$8.3 million. This cash use was offset in part by the following cash amounts provided by investing activities in 2018: (a) proceeds from maturity and sale of marketable securities, net in an amount of \$4.0 million; and (b) proceeds from sale of property, plants and equipment in an amount of \$0.4 million.

Company Commitments

In January 2014, Formula agreed to the terms of a NIS 200 million loan (approximately \$57.6 million) that was extended to us by a leading Israeli institutional investor. The loan is secured by certain of the shares of each of our publicly held subsidiaries and affiliated company. The loan's average duration is approximately four years (paid over a period of 6 years) and carries a fixed annual interest rate of 5.5%. The loan was fully repaid in January 2020. The terms of the loan are further described above under "Sources of Financing— Institutional Investor Loan" in this Item 5.B ("Liquidity and Capital Resources").

In September 2015, Formula consummated a public offering in Israel of its Series A Secured Debentures and Series B Convertible Debentures. The debentures were listed for trading only on the TASE. In the public offering, Formula issued and sold a total amount of NIS 227,260,000 (\$57.8 million) par value of the debentures, which were subdivided into Series A Secured Debentures and Series B Convertible Debentures. In January 2018, Formula issued and sold an additional NIS 150 million par value of Series A Secured Debentures for aggregate gross proceeds totaling NIS 155.2 million (approximately \$45.6 million), excluding issuance costs of \$0.2 million. In March 2019, Formula issued and sold an aggregate NIS 300 million par value amount of Series C Secured Debentures for aggregate gross proceeds of NIS 300.0 million (approximately \$82.6 million) excluding issuance costs of \$0.9 million. No Series B Convertible Debentures remain outstanding as of the date of this annual report. For a description of the amounts outstanding under these debenture series and the related covenants and restrictions to which we are subject, please see "Israeli Debenture Offerings" above in this Item 5.B ("Liquidity and Capital Resources").

We do not have material commitments for capital expenditures by Formula as of December 31, 2018 or as of the date of this annual report.

We have entered into an undertaking to indemnify our office holders in specified limited categories of events and in specified amounts, subject to certain limitations. For more information, see “Item 7. Major Shareholders and Related Party Transactions—Related Party Transactions—Indemnification of Office Holders.”

Subsidiary Commitments

Our subsidiaries do not have any material commitments for capital expenditures as of December 31, 2019 or as of the date of this annual report.

As alluded to above (see “Sources of Financing—Subsidiary and Affiliate Financing Activities” in this Item 5.B (“Liquidity and Capital Resources”)), the loan agreements, debentures and indentures to which we are party contain a number of conditions and limitations on the way in which we (Matrix, Sapiens, Magic Software and Formula) can operate our businesses, including limitations on our ability to raise debt and sell or acquire assets not in normal business activity. For example, Matrix’s loan agreement includes a negative pledge with respect to Matrix’s assets, as well as limitations on Matrix’s ability to provide guarantees to third parties and sell or transfer its assets. Matrix’s loan agreements also contain various covenants which require it to maintain certain financial ratios related to shareholders’ equity and operating results that are customary for companies of comparable size.

Our subsidiaries and affiliate as of December 31, 2019 have provided bank guarantees aggregating to approximately \$36.0 million as security for the performance of various contracts with customers. If our subsidiaries and affiliates were to breach certain terms of such contracts, the customers could demand that the banks providing the guarantees pay amounts claimed to be due.

Our subsidiaries and affiliate as of December 31, 2019 have also provided additional bank guarantees aggregating to \$7.5 million as security for rent to be paid for their offices. If our subsidiary and affiliate were to breach certain terms of their leases, the lessors could demand that the banks providing the guarantees pay amounts claimed to be due.

Pursuant to the credit agreement and the Series A Secured Debentures and Series C Secured Debentures described above, liens have been incurred over a certain portion of our investment in outstanding shares of Matrix, Sapiens and Magic Software, in respect of the amounts shown in the table below:

	As of December 31, 2019		
	(in U.S. dollars)		
	Financial institution credit agreement^(*)	Formula’s Series A Secured Debentures	Formula’s Series C Secured Debentures
Matrix ordinary shares, par value NIS 1.0 per share	1,569,098	4,128,865	6,031,761
Magic Software ordinary shares, par value NIS 0.1 per share	760,323	5,825,681	2,411,474
Sapiens common shares, par value €0.01 per share	511,920	1,260,266	2,957,590

^(*) In January 2020, after meeting all financial covenants related to the loan, we repaid the last and final installment of our loan, pursuant to which the credit agreement was fully matured, and the related collaterals were released.

We and IAI have granted TSG, our jointly controlled affiliate, in equal share, a guarantee of NIS 40 million (approximately \$11.6 million) as security against TSG’s bank credit line and bank guarantees issued by TSG for the performance of various contracts with its customers.

C. Research and Development, Patents and Licenses, etc.

The net amounts that we spent on research and development activities in 2018 and 2019 were \$41.2 million and \$46.7 million, respectively. For more information about our research and development activities, see “Item 4. Information on the Company—Business Overview— Software Development.”

For information concerning our intellectual property rights, see “Item 4. Information on the Company— Business Overview— Intellectual Property Rights.”

D. Trend Information

For trend information, please see the discussion in Item 4. “Information on the Company— Business Overview” and Item 5. “Operating and Financial Review and Prospects— Results of Operations.”

E. Off-Balance Sheet Arrangements

We are not a party to any off-balance sheet arrangements. In addition, we have no unconsolidated special purpose financing or partnership entities that are likely to create material contingent obligations.

F. Tabular Disclosure of Contractual Obligations

The following table summarizes our contractual obligations and commitments as of December 31, 2019.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 Years	More than 5 years
(U.S. dollars, in thousands)					
Long-term debt obligations (1)	301,329	129,902	104,088	39,972	27,367
Lease obligations	127,869	35,797	37,464	25,824	28,784
Liabilities in respect of the acquisitions of operations	22,547	7,557	14,990	-	-
Debentures	458,380	62,349	120,652	115,275	160,104
Liability to the Innovation Authority (2)	223	223	-	-	-
Uncertainties in income taxes (3)	9,396	-	-	-	-
Accrued severance payments, net (4)	14,977	-	-	-	-
Total	<u>934,721</u>	<u>235,828</u>	<u>277,194</u>	<u>181,071</u>	<u>216,255</u>

(1) Includes interest.

(2) Does not include contingent liabilities to the Innovation Authority of approximately \$6.1 million as described in Note 20(e) to our consolidated financial statements contained elsewhere in this annual report.

(3) Payment of uncertain tax benefits would result from settlements with taxation authorities. Due to the difficulty in determining the timing of settlements, this information is not included in the above table. We do not expect to make any significant payments for these uncertain tax positions within the next 12 months.

(4) Accrued severance payments, net relate to accrued severance obligations and notice obligations mainly to our Israeli employees as required under Israeli labor law or personal employment agreements. We are legally required to pay severance upon certain circumstances, primarily upon termination of employment by our company, retirement or death of the respective employee. Our liability for all of our Israeli employees is fully provided for by monthly deposits with insurance policies and by an accrual.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. Directors and Senior Management

The following table sets forth information about our directors and senior management as of April 30, 2018.

Name	Age	Position	Expiration of Current Term of Directorship/Office
Guy Bernstein	52	Chief Executive Officer	December 31, 2019*
Asaf Berenstin	42	Chief Financial Officer	No formal arrangement regarding expiration of term of office
Maya Solomon-Ella	42	Chief Operational Officer	No formal arrangement regarding expiration of term of office
Marek Panek	50	Chairman of the Board of Directors	2020 annual shareholders meeting
Rafal Kozlowski	46	Director	2020 annual shareholders meeting
Ohad Melnik ^{(1) (3)}	49	Director	2020 annual shareholders meeting
Eli Zamir ^{(1) (2) (3)}	51	External director	January 2022
Iris Yahal ^{(1) (2) (3)}	58	External director	January 2022

* Mr. Bernstein is currently negotiating a renewed employment agreement with our company.

(1) Serves on the audit committee of our board of directors.

(2) Serves as an external director under the Companies Law. See “Item 6. Directors, Senior Management and Employees—Board Practices—External Directors under the Companies Law; Audit Committee; Internal Auditor; Approval of Certain Transactions under the Companies Law,” below.

(3) Serves on the compensation committee of our board of directors.

Guy Bernstein has served as our Chief Executive Officer since January 2008. Mr. Bernstein served as a member of our board of directors from November 2006 to December 2008. Mr. Bernstein served as a director of Emblaze Ltd., or Emblaze, our former controlling shareholder and a publicly-traded company listed on the London Stock Exchange, from April 2004 until February 2011. From December 2006 to November 2010, Mr. Bernstein also served as chief executive officer of Emblaze, and, prior thereto, from April 2004 to December 2006, as the chief financial officer of Emblaze. Mr. Bernstein serves as the chairman of the board of directors of each of Matrix and Sapiens and as chief executive officer and director of Magic Software, where he served as the chief financial and operations officer from 1999 until 2004, when he joined Emblaze. He joined Magic Software from Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global, where he served as senior manager from 1994 to 1997. Mr. Bernstein also serves as a director of Michpal Micro Computers (1983) Ltd., a director at TSG IT Advanced Systems Ltd., and is a director at InSync staffing, all of them are subsidiaries of Formula Systems Mr. Bernstein holds a B.A. degree in accounting and economics from College of Management and is a certified public accountant in Israel.

Asaf Berenstin has served as our Chief Financial Officer since November 2011. Mr. Berenstin also serves as the Chief Financial Officer of our subsidiary, Magic Software, since April 2010. Prior to such time, beginning in August 2008, Mr. Berenstin served as Magic Software’s corporate controller. Mr. Berenstin also serves as a director of Michpal Micro Computers (1983) Ltd., a director at TSG IT Advanced Systems Ltd., and is a director at InSync staffing, all of them are subsidiaries of Formula Systems. Prior to joining our company, Mr. Berenstin served as a controller at Gilat Satellite Networks Ltd. (NASDAQ: GILT), commencing in July 2007. From October 2003 to July 2007, Mr. Berenstin practiced as a certified public accountant at Kesselman & Kesselman, a member of PriceWaterhouseCoopers. Mr. Berenstin holds a B.A. degree in accounting and economics and an M.B.A. degree, both from Tel-Aviv University, and is a certified public accountant (CPA) in Israel.

Maya Solomon-Ella has served as our Chief Operational Officer since September 2016. In her last position Maya served as the Transaction Support leader in Ernst& Young Israel (Tel-Aviv branch). Maya served in Ernst & Young 13 years, three of which were with the Assurance Services team (Hi Tech) and 10 of which have been spent in the Transaction Advisory Services (TAS) group. Since joining the TAS group at Ernst & Young, Ms. Solomon-Ella has been involved in M&A transactions across the globe. Ms. Solomon-Ella holds a B.A. degree in Economics-Accounting from Bar Ilan University and is a Certified Public Accountant (CPA) in Israel.

Marek Panek has served as one of our directors since November 2010. Since January 2007 he has been the Executive Board Member of Asseco Poland S.A. and he is responsible for supervising the Capital Group Development Division and the EU Projects Office. Mr. Panek also holds and has held several other positions at Asseco and its affiliates, including Executive Board Member in Asseco International, a.s. (since October 2017), Supervisory Board Member of Asseco Central Europe, a.s. (since September 2011), Member of Board of Directors of Asseco Denmark (since March 2011) and Peak Consulting Group ApS (since January 2016), Supervisory Board Member of Asseco Lietuva UAB (since June 2011), Chairman of GSTN Consulting Sp. z o.o. (since November 2017), Supervisory Board Member of Asseco Innovation Fund Sp. z o.o. (since December 2018) and Chairman of the Supervisory Board of Nextbank Software (since March 2019). Mr. Panek first joined Asseco in 1995, having served in the following positions for the following periods of time: Marketing Specialist (from September 1995 to September 1996); Marketing Director (from October 1996 to March 2003); Sales and Marketing Director (from April 2003 to March 2004); and Member of the Board, Sales and Marketing Director (from March 2004 to January 2007). Prior to joining Asseco, Mr. Panek was employed at the ZE Gantel Sp. z o.o. from 1993 to 1995. Mr. Panek graduated from the Faculty of Mechanical Engineering and Aeronautics of the Rzeszów University of Technology in 1994, having been awarded a master's degree in engineering.

Rafal Kozlowski has served as one of our directors since August 2012. Since June 2012, Mr. Kozlowski has served as Vice President of the Management Board and Chief Financial Officer of Asseco. Mr. Kozlowski is also a member of the Asseco Group Board of Directors. From May 2008 to May 2012, Mr. Kozlowski served as Vice President of Asseco South Eastern Europe S.A. responsible for the company's financial management. Mr. Kozlowski was directly involved in the acquisitions of companies incorporated within the holding of Asseco South Eastern Europe, as well as in the holding's IPO process at the Warsaw Stock Exchange. From 1996 to 1998, he served as Financial Director at Delta Software, and subsequently, from 1998 to 2003 as Senior Manager at Veraudyt. In the years 2004-2006, he was Head of Treasury Department at Softbank S.A. where he was delegated to act as Vice President of Finance at the company's subsidiary Sawan S.A. From 2007 through June 2009, he served as Director of Controlling and Investment Division at Asseco Poland S.A. Mr. Kozlowski graduated of the University of Warsaw, obtaining Master's degree at the Faculty of Organization and Management in 1998. He completed the Project Management Program organized by PMI in 2004, the International Accounting Standards Program organized by Ernst & Young Academy of Business in the years 2005-2006 and the Emerging CFO: Strategic Financial Leadership Program by Stanford GSB in 2019.

Ohad Melnik was elected to our board of directors in January 2019. Mr. Melnik has served as the director of the payment methods department and the finance compliance department of IFOREX International Group since 2004. From 2002 through 2004, Mr. Melnik served as the security officer and logistic planner of Danagis Ltd. In addition, from 2008 through 2015, Mr. Melnik served as a director of Peninsula Group Ltd. From 2012 through 2015, Mr. Melnik served as a director of Jerusalem Technology Investments Ltd. Mr. Melnik holds a B.A. degree in business administration and an M.B.A. degree (cum laude) from the College of Management. Mr. Melnik also graduated from the Executive MS Finance Program of the Baruch College, City University of New York (with Honors).

Eli Zamir has served as one of our external directors, as a member of our audit committee since April 2013 and a member of our compensation committee since July 2013. Mr. Zamir currently serves as an independent financial advisor. From 2019 Mr. Zamir serves as a director of AI Conversation Systems Ltd. From 2007 to December 2014 Mr. Zamir served as the CEO of Invest Pro Ltd., a private investment firm. From 1995 to 2002, Mr. Zamir served as a portfolio manager and from 2002 to 2007 Mr. Zamir served as the CEO of an underwriter. Until 2014, Mr. Zamir served as a director of Synopsis Ltd., a public company listed on the TASE. Mr. Zamir holds a B.A. degree in accounting and finance from Tel-Aviv University and an M.B.A. degree, from Ben Gurion University.

Iris Yahal has served as one of our external directors, the chairperson of our audit committee since April 2013 and a member of our compensation committee since July 2013. Ms. Yahal has also served as an external director and chairperson of the audit committee of AI CONVERSATION SYSTEMS LTD. (TASE: AICS) Previously known as Formula Vision Technologies, Ltd. (TASE: FTV) since 2017. Ms. Yahal is an independent strategic transaction advisor for various software, renewable energy, infrastructure and biotech companies since 2007. From 1995 through 2007, Ms. Yahal served as Chief Financial Officer of BluePhoenix Solutions Ltd., a public company listed on the NASDAQ Global Market and the TASE. In addition, from 1999 through 2007 Ms. Yahal served as a director of BluePhoenix Solutions and each of its international subsidiaries. From 1991 until 1996, Ms. Yahal served as a controller at Argotech Ltd. which, at that time, was a wholly owned subsidiary of our company, operating as a start-up incubator. Prior to 1991, Ms. Yahal worked as an auditor with Wallenstein and Co., a public accounting firm. Ms. Yahal holds a B.A. degree in accounting and statistics and an M.B.A degree in business administration, both from Tel- Aviv University and is a certified public accountant in Israel

Arrangements for the Election of Directors; Family Relationships

Asseco is our largest shareholder, holding 25.6% of our outstanding share capital and voting rights to approximately 37.5% of our outstanding share capital (each of which excludes shares that we have repurchased that lack voting rights and shares subject to restrictions that are voted in proportion to the votes of our other shares). Asseco has significant influence over the election of the members of our board of directors (other than our external directors). Other than as described immediately above, there are no arrangements or understandings with major shareholders, customers, suppliers or others pursuant to which any of our directors or members of senior management were selected as such.

Mr. Guy Bernstein and Mr. Asaf Berenstin are first cousins. Other than such relationship, there are no family relationships among our executive officers and directors.

B. Compensation

Aggregate Compensation Paid to Directors and Executive Officers

Formula paid to its directors and executive officers, consisting of the individuals listed above in the table under “—Directors and Senior Management”, direct remuneration and provided related benefits of approximately \$2.6 million, in the aggregate, with respect to 2019. This aggregate compensation amount includes amounts set aside or accrued to provide pension, retirement or similar post-employment benefits, which themselves totaled \$0.7 in 2019. This aggregate compensation amount furthermore includes expenses recorded with respect to equity-based compensation in a total amount of \$0.3 million for 2019.

The above aggregate compensation amount does not, however, include the following:

- expenses, including business travel, professional and business association dues and expenses, for which Formula reimburses its officers; and
- other fringe benefits that companies in Israel commonly reimburse or pay to their officers,

as amounts incurred for such expenses and benefits in 2019 were paid in reimbursement of activities carried out by our directors and executive officers for strict business purposes in carrying out their duties on behalf of Formula and were therefore not compensatory in nature.

The above aggregate compensation amount includes payment of directors’ fees. Formula compensates its external directors and other directors in accordance with the regulations promulgated under the Companies Law.

Summary Compensation Table

For so long as we qualify as a foreign private issuer, we are not required to comply with the executive compensation disclosure requirements applicable to U.S. domestic companies, including the requirement to disclose information concerning the amount and type of compensation paid to our chief executive officer, chief financial officer and the three other most highly compensated executive officers on an individual basis. Nevertheless, regulations promulgated under the Companies Law require us to disclose the annual compensation of our five most highly compensated office holders (as defined in the Companies Law) on an individual basis. Under the Companies Law regulations, this disclosure is required to be included in the annual proxy statement for our annual meeting of shareholders, which we furnish to the SEC under cover of a Report of Foreign Private Issuer on Form 6-K. Because of that disclosure requirement under Israeli law, we are also including that information in this annual report, pursuant to the disclosure requirements of Form 20-F.

The table below reflects the compensation paid to our five most highly compensated office holders (each of whom is a member of our management) during or with respect to the year ended December 31, 2019. All amounts reported in the table reflect the cost to the Company, as recognized in our financial statements for the year ended December 31, 2019.

Compensation of Management⁽¹⁾

Name and Position ^{(2), (3)}	Salary (\$)	Benefits And Perquisites (\$)	Variable Compensation (\$)	Equity Based Compensation (\$) ⁽⁵⁾
Guy Bernstein – CEO	512	(4)	(6)	-
Asaf Berenstin – CFO	(3)	(3)	50	67
Maya Solomon-Ella – COO	134	34	35	189

- (1) All amounts reported in the table are in terms of cost to Formula, as recorded in Formula’s financial statements. We have two office holders who are members of management who are compensated by Formula (CEO and COO). For disclosure concerning compensation paid by us to our remaining four most highly compensated office holders (all of whom are directors), please see the table under “Compensation of Directors” below.
- (2) The executive officers listed in the table are full-time employees or consultants of Formula. Cash compensation amounts denominated in currencies other than the U.S. dollar were converted into U.S. dollars at the average conversion rate for 2018.
- (3) Our Chief Financial Officer, Asaf Berenstin, also serves as the chief financial officer of Magic Software. Pursuant to an agreement between Magic Software and Formula, Mr. Berenstin allocates 40%-50% of his time to Formula. Because he is not compensated by Formula, Mr. Berenstin is not listed in this table. However, Formula recognized an expense of \$67,000 in 2019 with respect to restricted shares granted to Mr. Berenstin and granted Mr. Berenstin a variable compensation in the amount of \$50,000.
- (4) Amounts reported in this column include benefits and perquisites, including those mandated by applicable law. Such benefits and perquisites may include, to the extent applicable to the executive officer, payments, contributions and/or allocations for savings funds, pension, severance, vacation, car or car allowance, medical insurances and benefits, risk insurances (e.g., life, disability, accident), convalescence pay, payments for social security, tax gross-up payments and other benefits and perquisites consistent with our guidelines.
- (5) Amounts reported in this column represent the expense recorded in our financial statements for the year ended December 31, 2019 with respect to equity-based compensation. Assumptions and key variables used in the calculation of such amounts are described in Note 17(b) to our consolidated financial statements, contained elsewhere in this annual report.
- (6) Under his service agreement with us, our chief executive officer, is entitled to an annual bonus in an amount equal to 3.3% of our net profit (including capital gains) after tax. An advance of 70% of the estimated bonus with respect to each year is paid over the course of the year, divided into quarterly installments, which is estimated based on our quarterly financial statements and is subject to final adjustment at the end of the year.

Compensation of Directors

The following table sets forth information with respect to compensation of our directors (none of whom serves as an employee of our company) during fiscal year 2019. The fees to the directors were paid by Formula.

Name and Principal Position	Total Fees Earned or Paid in Cash (\$)⁽¹⁾
Marek Panek - Chairman	37,000
Rafal Kozlowski - Director	37,000
Ohad Melnick - Director	41,000
Eli Zamir - External Director	41,000
Iris Yahal- External Director	61,000

(1) All amounts reported in the table are in terms of cost to Formula, as recorded in Formula's financial statements.

Option Grants to, and Service Agreement with, Chief Executive Officer

In March 2012, concurrently with the amendment and extension of our Chief Executive Officer's service agreement, we approved a grant of options to him, exercisable for 1,122,782 ordinary shares of Formula as long as the Chief Executive Officer is (i) a director of Formula and/or (ii) a director of each of the directly held subsidiaries of Formula; provided that if he fails to meet the foregoing requirement (A) due to the request of the board of directors of either Formula or any of its directly held subsidiaries (other than a request which is based on actions or omissions by the Chief Executive Officer that would constitute "cause" under his service agreement with Formula), (B) because the Chief Executive Officer is prohibited under the governing law or charter documents of the relevant company or the stock exchange rules and regulations applicable to such company from being a director of such company (other than due to his actions or omissions) or (C) notwithstanding the Chief Executive Officer's willingness to be so appointed (but provided that neither (A) nor (B) applies); then, in each of (A), (B) and (C), the Chief Executive Officer will be deemed to have complied with clauses (i) or (ii) above. The options vest, i.e., our redemption right with respect to the options and the underlying ordinary shares issuable upon exercise lapses, in equal quarterly installments over an eight-year period that commenced in March 2012 and concludes in December 2019. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested options and/or restricted shares will immediately become vested. The exercise price of the options is NIS 0.01 per share. In accordance with the terms of the option grant, the shares issuable upon exercise of the option will be deposited with a trustee and our Chief Executive Officer will not be permitted to vote or dispose of them until the shares are released from the trust, as described in the grant letter.

In June 2013, all 1,122,782 options were exercised into ordinary shares. Such ordinary shares have been deposited with a trustee and, pursuant to the terms of our 2011 Plan and the option agreement with respect to such options, our chief executive officer is not permitted to vote or dispose of them until the shares are released from the trust. All shares participate in dividends and have the right to vote, however for so long as the shares are held by the trustee (even if they have vested) the voting rights may only be exercised by the trustee. In accordance with the guidelines of our 2011 Share Incentive Plan for so long as the shares underlying any grant under the plan are being held by the trustee they will be voted by the trustee in the same proportion as the results of the other shares voting in the shareholder meeting. Only those shares for which the vesting period has expired may be collected from the trustee. On August 3, 2017 and August 22, 2017 Asseco sold 2,356,605 and 589,151, respectively, Formula ordinary shares, representing 20% of our outstanding share capital, to 11 Israeli financial institutions and to our Chief Executive Officer, respectively, in privately negotiated sales transactions. The sale resulted in a decrease of Asseco's equity interest in Formula from 46.3% to 26.3% and its loss of control of Formula. In accordance with Mr. Guy Bernstein's share-based award plan, that loss of control in the Company resulted in the immediate acceleration of all his unvested shares, which amounted to 350,869 as of such date. As of April 30, 2020, all 1,122,782 shares were fully vested, although they remained in the trust.

Under his service agreement with us, Mr. Guy Bernstein, as our Chief Executive Officer, is entitled to a monthly salary, as well as an annual bonus in an amount equal to 3.3% of our net profit (including capital gains) after tax. An advance of 70% of the estimated bonus with respect to each year is paid over the course of the year, divided into quarterly installments, which is estimated based on our quarterly financial statements and is subject to final adjustment at the end of the year.

Restricted Share Grants to Chief Financial Officer

In November 2014, our board of directors awarded our Chief Financial Officer, Asaf Berenstin, 10,000 restricted shares under the 2011 Plan, or the Restricted Shares. The Restricted Shares vest on a quarterly basis over a four-year period, which commenced on November 13, 2014 and concludes on November 13, 2018, provided that during such time the Chief Financial Officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates. If the Chief Financial Officer fails to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute “cause” under his grant agreement with Formula), then, he will be deemed to have complied with clauses (i) or (ii) above. If a change of control of the Company occurs, then all unvested Restricted Shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and amounted to \$239,000 (\$23.9 per share). As a result of Asseco’s sale of Formula ordinary shares representing 20% of our outstanding share capital in August 2018, as described above, Asseco lost control of Formula. In accordance with Mr. Berenstin’s share-based award plan, such loss of control resulted in the immediate acceleration of all his unvested Restricted Shares, which amounted to 3,125 as of that date. As of March 31, 2020, all 10,000 Restricted Shares awarded to Mr. Berenstin are fully vested, although they remain in the trust.

In August 2017, our board of directors awarded our Chief Financial Officer, Asaf Berenstin, 10,000 additional restricted shares under the 2011 Plan. These additional restricted shares vest on a quarterly basis over a three-year period, which commenced on August 17, 2017 and concludes on August 16, 2020, provided that during such time the Chief Financial Officer continues to serve as (i) an officer of the Company and/or (ii) an officer in one of our directly held affiliates. If he fails to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute “cause” under his grant agreement with Formula); then, the Chief Financial Officer will be deemed to have complied with clauses (i) or (ii) above. Notwithstanding the foregoing, if a change of control of Formula occurs, then all unvested additional restricted shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and amounted to \$371,000 (\$37.11 per share). In June 2020, Mr. Berenstin sold in the open market 9,167 of the shares granted to him under this grant. As of June 25, 2020, 833 restricted shares still remain in the trust.

Restricted Share Grants to Chief Operational Officer

In November 2018, our board of directors awarded our Chief Operational Officer, Maya Solomon, 10,000 restricted shares under the 2011 Plan. These additional restricted shares vest on an annual basis over a four-year period, which commenced on November 19, 2018 and concludes on November 18, 2022, provided that during such time the Chief Operational Officer continues to serve as (i) an officer of the Company and/or (ii) an officer in one of our directly held affiliates (we refer to this as the Service Condition). In the event that the Service Condition is no longer satisfied, the granted restricted shares that have not yet vested will terminate automatically and the unvested portion of the granted restricted shares will be returned to the Company within 90 days after the first day after the Service Condition is no longer satisfied, while all granted restricted shares that have vested will be transferrable to our Chief Operational Officer over a 90-day period after the last day on which the Service Condition is satisfied, unless the failure of the Service Condition to be satisfied was due to circumstances that would revoke the right to severance payments under Section 17 of the Israeli Severance Payments Law, 1963, in which case all granted restricted shares, whether or not they have vested, will automatically terminate. The total fair value of the grant was calculated based on the Formula share price on the grant date and amounted to \$382,150 (\$38.21 per share). As of June 25, 2020, all 10,000 additional restricted shares were deposited with the trustee of which 2,500 have vested.

For a description of our 2008 Share Option Plan and 2011 Share Incentive Plan pursuant to which options or share awards may be granted from time to time to our directors, executive officers, employees and consultants, see “Item 6.E. Share Ownership— Arrangements Involving the Issuance or Grant of Equity Awards” below.

C. Board Practices

Pursuant to our amended and restated articles of association, or our articles, directors are generally elected at the annual general meeting of shareholders by a vote of the holders of a majority of the voting power represented at the meeting. Our existing board of directors may also appoint a new director to the board, assuming that the then-authorized size of the board, as last approved by our shareholders, exceeds the number of directors then serving on the board, whether due to a resignation or otherwise, in which case the newly appointed director holds office until the next annual general meeting of shareholders immediately following such appointment. Our board is currently comprised of five persons, of which each of Ohad Melnik, Eli Zamir and Iris Yahal has been determined by the board to be independent within the meaning of the Listing Rules of the NASDAQ Stock Market (or the NASDAQ listing rules), on which our ADSs are listed for trading. Mr. Zamir and Ms. Yahal serve as our external directors, as mandated under Israeli law, and are therefore subject to additional criteria to help ensure their independence. See “External Directors Under the Companies Law” below. Each of our directors, except for the external directors, holds office until the next annual general meeting of shareholders and may then be re-elected. Our officers are appointed by our board of directors.

Under the Companies Law, a person who lacks the necessary qualifications and the ability to devote an appropriate amount of time to the performance of his or her duties as a director shall not be appointed director of a publicly traded company. While determining a person's compliance with such provisions, the company's special requirements and its scope of business shall be taken into consideration. Where the agenda of a shareholders meeting of a publicly traded company includes the appointment of directors, each director nominee should submit a declaration to the company confirming that he or she has the necessary qualifications and that he or she is able to devote an appropriate amount of time to performance of his or her duties as a director. In the declaration, the director nominee should specify his or her qualifications and confirm that the restrictions set out in the Companies Law do not apply.

Under the Companies Law, if a director ceases to comply with any of the requirements provided in the Companies Law, such director must immediately notify the company, and his or her term of service shall terminate on the date of the notice.

External Directors Under the Companies Law

Under the Companies Law, companies incorporated under the laws of Israel whose shares have been offered to the public in or outside of Israel, are required to appoint at least two external directors. This law provides that a person may not be appointed as an external director if the person is a relative of the controlling shareholder of the company or if that person or his or her relative, partner, employer, another person to whom he or she was directly or indirectly subject, or any entity under the person's control, has, as of the date of the person's appointment to serve as external director, or had, during the two years preceding that date: (a) any affiliation or other disqualifying relationship with the company, with any person or entity controlling the company or a relative of such person, or with any entity controlled by or under common control with the company; or (b) in the case of a company with no shareholder holding 25% or more of its voting rights, had at the date of appointment as an external director, any affiliation or other disqualifying relationship with a person then serving as chairman of the board or chief executive officer, a holder of 5% or more of the issued share capital or voting power in the company or the most senior financial officer. The term "affiliation" and the similar types of prohibited relationships include:

- an employment relationship;
- a business or professional relationship, even if not maintained on a regular basis (but excluding a *de minimis* level relationship);
- control; and
- service as an office holder.

The term "office holder" is defined under the Israeli Companies Law as a general manager (i.e., chief executive officer), chief business manager, deputy general manager, vice general manager, any other person assuming the responsibilities of any of these positions regardless of that person's title, a director and any other manager directly subordinate to the general manager.

No person may serve as an external director if the person's position or other business activities create, or may create, a conflict of interest with the person's responsibilities as an external director or may otherwise interfere with the person's ability to serve as an external director or if the person is an employee of the Israel Securities Authority or of an Israeli stock exchange. A person may furthermore not continue to serve as an external director if he or she received, during his or her tenure as an external director, direct or indirect compensation from the company including amounts paid pursuant to indemnification or exculpation contracts or commitments and insurance coverage for his or her service as an external director, other than as permitted by the Israeli Companies Law and the regulations promulgated thereunder. If, at the time of election of an external director, all other directors who are not the company's controlling persons or their relatives are of the same gender, the external director to be elected must be of the other gender. A director of one company may not be appointed as an external director of another company if a director of the other company is acting as an external director of the first company at such time.

External directors are elected by a majority vote at a shareholders' meeting, provided that either:

- such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a conflict of interest (referred to under the Companies Law as a "personal interest") in the election of the external director (other than a personal interest not deriving from a relationship with a controlling shareholder) that are voted at the meeting, excluding abstentions, to which we refer as a disinterested majority, or
- the total number of shares voted by non-controlling shareholders and by shareholders who do not have a personal interest in the election of the external director against the election of the external director does not exceed two percent (2%) of the aggregate voting rights in the company.

According to regulations promulgated under the Israeli Companies Law, a person may be appointed as an external director only if he or she has professional qualifications or if he or she has accounting and financial expertise (each, as defined below). In addition, at least one of the external directors must be determined by our board of directors to have accounting and financial expertise. A director with "accounting and financial expertise" is a director that due to his or her education, experience and skills has a high expertise and understanding in financial and accounting matters and financial statements, in such a manner which allows him to deeply understand the financial statements of the company and initiate a discussion about the presentation of financial data. A director is deemed to have "professional qualifications" if he or she either (i) has an academic degree in economics, business management, accounting, law or public service, (ii) has an academic or other degree or has completed other higher education, all in the field of business of the company or relevant for his/her position, or (iii) has at least five years experience serving in one of the following capacities, or at least five years of cumulative experience serving in two or more of the following capacities: (a) a senior business management position in a company with a significant volume of business; (b) a senior position in the company's primary field of business; or (c) a senior position in public administration or service. Our board of directors has determined that Ms. Iris Yahal and Mr. Eli Zamir have the requisite professional qualifications and expertise as required of our external directors under the Companies Law.

An external director may be removed from office only: (i) by a court, upon determination that the external director to be so removed ceased to meet the statutory qualifications for his or her appointment or if he or she violated his or her duty of loyalty to the company or (ii) by the same percentage of shareholders, acting through a shareholders meeting, as is required for his or her election, if the board of directors has determined that the external director to be so removed has ceased to meet the statutory qualifications for his or her appointment or violated his or her duty of loyalty to the company and has proposed the removal to the shareholders. An external director who ceases to meet the conditions for his or her service as such must notify the company immediately and such service shall cease immediately upon such notification.

The initial term of an external director is three years and may be extended by the general meeting of shareholders, for up to two additional three year terms, provided that (i) his or her service for each such additional term is recommended by one or more shareholders holding at least 1% of the company's voting rights and is approved at a shareholders meeting by a disinterested majority, where the total number of shares held by non-controlling, disinterested shareholders voting for such reelection exceeds 2% of the aggregate voting rights in the company, provided that the external director and certain of his or her related parties meet additional independence requirements; or (ii) his or her service for each such additional term is recommended by the board of directors and is approved at a meeting of shareholders by the same majority required for the initial election of an external director.

In January 2019, Mr. Zamir and Ms. Yahal were reappointed for a third three-year term as our external directors, each to hold office until January 2022. In accordance with the regulations under the Companies Law (Relief for Public Companies Whose Shares are Listed on a Stock Exchange Outside of Israel, 2000), dual listed companies, like us, whose securities are listed on the NASDAQ Global Select Market or one of a number of other non-Israeli stock exchanges, may re-appoint an external director for additional three-year terms, in excess of the nine years as described above, if the audit committee and the board of directors confirm that, due to the expertise and special contribution of the external director to the work of the board and its committees, his or her re-appointment is in the best interests of the company. The same special majority is required for election of the external director for each additional three-year term.

Each committee of a company's board of directors is required to include at least one external director and the audit committee must include all of the external directors.

An external director is entitled to compensation as provided in regulations promulgated under the Companies Law and is otherwise prohibited from receiving any compensation, directly or indirectly, in connection with services provided as an external director or otherwise to the company.

Following the termination of an external director's service on a board of directors, such former external director and his or her spouse and children may not be provided a direct or indirect benefit by the company, its controlling shareholder or any entity under its controlling shareholder's control, including engagement to serve as an executive officer or director of the company or a company controlled by its controlling shareholder or employment by, or providing services to, any such company for consideration, either directly or indirectly, including through a corporation controlled by the former external director. This restriction extends for a period of two years with regard to the former external director and his or her spouse or child and for one year with respect to other relatives of the former external director.

Under regulations recently promulgated under the Companies Law, Israeli public companies whose shares are traded on certain U.S. stock exchanges, such as the NASDAQ Global Select Market, and that lack a controlling shareholder (as defined below) are exempt from the requirement to appoint external directors. Any such company is also exempt from the Companies Law requirements related to the composition of the audit and compensation committees of the board. Eligibility for these exemptions is conditioned on compliance with U.S. stock exchange listing rules related to majority board independence and the composition of the audit and compensation committees of the board, as applicable to all listed domestic U.S. companies. Because we have a controlling shareholder as determined under the Companies Law (Asseco), we are not eligible for these exemptions under the new regulations.

Qualifications of Directors Generally Under the Companies Law

Under the Companies Law, the board of directors of a publicly traded company is required to make a determination as to the minimum number of directors (not merely external directors) who must have accounting and financial expertise (according to the same criteria described above with respect to external directors under “—External Directors Under the Companies Law”). In accordance with the Companies Law, the determination of the board should be based on, among other things, the type of the company, its size, the volume and complexity of its activities and the number of directors. Based on the foregoing considerations, our board determined that the number of directors with financial and accounting expertise in our company shall not be less than one. As described above under “—External Directors Under the Companies Law,” currently Ms. Iris Yahal and Mr. Eli Zamir have been determined by the board to possess such accounting and financial expertise.

Unaffiliated Directors Under the Companies Law

Under the Companies Law, the audit committee of a publicly traded company must consist of a majority of unaffiliated directors. An “unaffiliated director” is defined as an external director or a director who meets the following criteria:

- he or she meets the qualifications for being appointed as an external director, except for (i) the requirement that the director be an Israeli resident (which does not apply to companies whose securities have been offered outside of Israel or are listed outside of Israel) and (ii) the requirement for accounting and financial expertise or professional qualifications; and
- he or she has not served as a director of the company for a period exceeding nine consecutive years. For this purpose, a break of less than two years in the service shall not be deemed to interrupt the continuation of the service.

Our audit committee complies with the foregoing required majority of unaffiliated directors.

Audit Committee

In addition to the foregoing requirement concerning the audit committee's unaffiliated director members, the Companies Law also requires more generally that public companies such as ours must appoint an audit committee, comprised of at least three directors, including all of the external directors, one of whom must serve as chairman of the committee. The chairman of the board of directors, or any director employed by or otherwise providing services on a regular basis to the company or to a controlling shareholder or any entity controlled by a controlling shareholder, may not be a member of the audit committee. Under the Companies Law, our audit committee is responsible for (i) determining whether there are deficiencies in the business management practices of the company, including in consultation with the company's internal auditor or the independent auditor, and making recommendations to the board of directors to improve such practices, (ii) determining whether to approve certain related party transactions, including transactions in which an office holder has a personal interest and whether such transaction is extraordinary or material, (iii) establishing the approval process (including, potentially, the approval of the audit committee) for certain transactions with a controlling shareholder or in which a controlling shareholder has a personal interest, (iv) where the board of directors approves the working plan of the internal auditor, examining such working plan before its submission to the board and propose amendments thereto, (v) examining the company's internal controls and internal auditor's performance, including whether the internal auditor has sufficient resources and tools to dispose of his responsibilities (taking into consideration the company's special needs and size), (vi) examining the scope of the company's auditor's work and compensation and submitting a recommendation with respect thereto to the board of directors or the general meeting of shareholders, depending on which of them is considering the appointment of our auditor and (vii) establishing procedures with respect to the handling of company employees' complaints as to the management of the company's business and the protection to be provided to such employees. In compliance with regulations under the Companies Law, our audit committee also approves our financial statements, thereby fulfilling the requirement that a board committee provide such approval. An audit committee may not approve an action requiring its approval, unless at the time of approval a majority of the committee's members are present, of whom a majority consist of unaffiliated directors and at least one of them is an external director.

The NASDAQ listing rules and U.S. securities laws likewise require that we maintain an audit committee, all of whose members are independent of management. In accordance with the Sarbanes-Oxley Act of 2002 and the NASDAQ requirements, our audit committee's direct responsibilities include the appointment, compensation, retention and oversight of our independent auditors (which itself also requires shareholder ratification under Israeli law). The committee's U.S. and NASDAQ mandated responsibilities also include assisting the board in monitoring our financial statements and the effectiveness of our internal controls. We have adopted a formal audit committee charter that we have implemented, embodying these responsibilities.

Our audit committee consists of our two external directors, Mr. Eli Zamir and Ms. Iris Yahal, as well as Mr. Ohad Melnik. Each of Mr. Zamir, Ms. Yahal and Mr. Melnik qualifies as an independent director under both the NASDAQ listing rules and Rule 10A-3 of the Exchange Act. The board has furthermore determined that Ms. Yahal is an "audit committee financial expert" as defined by applicable SEC regulations. See "Item 16A. Audit Committee Financial Expert."

Compensation Committee and Compensation Policy

Under the Companies Law, the board of directors of a public company must appoint a compensation committee. The compensation committee must be comprised of at least three directors, including all of the external directors, who must constitute a majority of the members of the compensation committee. Each compensation committee member who is not an external director must be a director whose compensation does not exceed an amount that may be paid to an external director. The compensation committee is subject to the same Companies Law restrictions as the audit committee as to who may not be a member of the compensation committee. As noted above (under "External Directors Under the Companies Law"), Israeli companies whose securities are traded on stock exchanges such as the NASDAQ Global Select Market, and who do not have a controlling shareholder, do not have to meet the compensation committee composition requirements under the Companies Law. Reliance on this leniency is conditioned upon the compensation committee meeting the composition requirements of the jurisdiction where the company's securities are traded. This leniency does not apply to our company, as we have a controlling shareholder (Asseco).

The duties of the compensation committee include the recommendation to the company's board of directors of a policy regarding the terms of engagement of office holders, to which we refer as a compensation policy. That policy must be adopted by the company's board of directors, after considering the recommendations of the compensation committee, and will need to be brought for approval by the company's shareholders, which approval requires what we refer to as a Special Majority Approval for Compensation. A Special Majority Approval for Compensation requires shareholder approval by a majority vote of the shares present and voting at a meeting of shareholders called for such purpose, provided that either:

- such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a conflict of interest (referred to under the Companies Law as a "personal interest") in such compensation arrangement; or
- the total number of shares of non-controlling shareholders who do not have a personal interest in the compensation arrangement and who vote against the arrangement does not exceed 2% of the company's aggregate voting rights.

We initially adopted a compensation policy during 2013. Our compensation policy was not re-approved at our Annual General Meeting of Shareholders that was held on December 21, 2016. In April 2018, in accordance with Section 276A(c) of the Israeli Companies Law 5759-1999, our compensation committee and the board determined that the approval of the compensation policy is in the best interest of the company and exercised their right to adopt the compensation policy notwithstanding it not having been approved by the shareholders at the Annual Meeting. The compensation policy serves as the basis for decisions concerning the financial terms of employment or engagement of office holders, including exculpation, insurance, indemnification or any monetary payment or obligation of payment in respect of employment or engagement. The compensation policy must relate to certain factors, including advancement of the company's objectives, the company's business plan and its long-term strategy, and creation of appropriate incentives for office holders. It must also consider, among other things, the company's risk management, size and the nature of its operations. The compensation policy must furthermore consider the following additional factors:

- the knowledge, skills, expertise and accomplishments of the relevant office holder;
- the office holder's roles and responsibilities and prior compensation agreements with him or her;
- the relationship between the terms offered and the average compensation of the other employees of the company, including those employed through manpower companies;
- the impact of disparities in salary upon work relationships in the company;
- the possibility of reducing variable compensation at the discretion of the board of directors;
- the possibility of setting a limit on the exercise value of non-cash variable equity-based compensation; and
- as to severance compensation, the period of service of the office holder, the terms of his or her compensation during such service period, the company's performance during that period of service, the person's contribution towards the company's achievement of its goals and the maximization of its profits, and the circumstances under which the person is leaving the company.

The compensation policy must also include the following principles:

- the link between variable compensation and long-term performance and measurable criteria;
- the relationship between variable and fixed compensation, and the ceiling for the value of variable compensation;
- the conditions under which an office holder would be required to repay compensation paid to him or her if it was later shown that the data upon which such compensation was based was inaccurate and was required to be restated in the company's financial statements;
- the minimum holding or vesting period for variable, equity-based compensation; and
- maximum limits for severance compensation.

The compensation committee is responsible for (a) recommending the compensation policy to a company's board of directors for its approval (and subsequent approval by its shareholders) and (b) duties related to the compensation policy and to the compensation of a company's office holders as well as functions previously fulfilled by a company's audit committee with respect to matters related to approval of the terms of engagement of office holders, including:

- recommending whether a compensation policy should continue in effect, if the then-current policy has a term of greater than three (3) years (approval of either a new compensation policy or the continuation of an existing compensation policy must in any case occur every three years, or for a new public company, five years initially);
- recommending to the board of directors periodic updates to the compensation policy;
- assessing implementation of the compensation policy; and

- determining whether the compensation terms of the chief executive officer of the company need not be brought to approval of the shareholders.

Our board of directors has adopted a compensation committee charter setting forth the responsibilities of the compensation committee, which include:

- the responsibilities set forth in the compensation policy;
- reviewing and approving the granting of options and other incentive awards to the extent such authority is delegated by our board of directors; and
- reviewing, evaluating and making recommendations regarding the compensation and benefits for our non-employee directors.

Our compensation committee consists of our two external directors, Mr. Eli Zamir and Ms. Iris Yahal, as well as Mr. Ohad Melnik. Each of the members of our compensation committee qualifies as an independent director under the NASDAQ listing rules.

Internal Auditor

Under the Companies Law, the board of directors is required to appoint an internal auditor, nominated by the audit committee. The role of the internal auditor is to examine, among other matters, whether the company's actions comply with the law and orderly business procedure. Under the Companies Law, the internal auditor may be an employee of the company but not an office holder, or an interested party (i.e., a holder of 5% or more of the voting rights in the company or of the issued share capital, the chief executive officer of the company or any of its directors, or a person who has the authority to appoint the company's chief executive officer or any of its directors), or a relative of an office holder or of an interested party. In addition, the company's independent auditor or its representative may not serve as the company's internal auditor. Our internal auditor is Mr. Eyal Weitzman.

NASDAQ Exemptions for a Foreign Private Issuer

We are a foreign private issuer within the meaning of NASDAQ listing rule 5005(a)(18), since we are incorporated in Israel and we meet the other criteria set forth for a "foreign private issuer" under Rule 3b-4(c) under the Exchange Act. Therefore, pursuant to NASDAQ listing rule 5615(a)(3), we may follow home country practice in lieu of certain provisions of the NASDAQ listing rule 5600 series and certain other NASDAQ listing rules. Please see "Item 16G. Corporate Governance" below for a description of the manner in which we rely upon home country practice in lieu of complying with certain NASDAQ listing rules.

Exculpation, Insurance and Indemnification of Directors and Officers

Our office holders consist of the individuals listed in the table under "Directors and Senior Management," which is displayed under "Item 6. Directors, Senior Management and Employees." Under the Companies Law, an Israeli company may not exempt an office holder from liability with respect to a breach of his or her duty of loyalty, but may exempt in advance an office holder from his or her liability to the company, in whole or in part, with respect to a breach of his duty of care, provided, however, that such a breach is not related to a distribution of a dividend or any other distribution by the company.

Office Holders' Insurance. Our articles provide that, subject to the provisions of the Companies Law, we may enter into a contract for the insurance of the liability of any of our office holders imposed on the office holder in respect of an act performed in his or her capacity as an office holder, with respect to:

- a breach of his duty of care to us or to another person;
- a breach of his duty of loyalty to us, provided that the office holder acted in good faith and had reasonable cause to assume that his act would not prejudice our interests; or
- a financial liability imposed upon him in favor of another person.

We have obtained an insurance policy covering the Formula Group's directors' and officers' liability. Certain of our subsidiaries (Magic Software and its subsidiaries, Sapiens and its subsidiaries, Insync, and Michpal and its subsidiary) participate in the premium payments of the insurance, on a proportional basis. The total premium we paid during 2019 was approximately \$224,000.

Indemnification of Office Holders. Our articles provide that we may indemnify an office holder in respect of an obligation or expense imposed on or expended by an office holder in respect of an act performed in his capacity as an office holder as specified below:

- (i) a financial obligation imposed on him in favor of another person by any judgment, including a settlement or an arbitrator's award approved by a court;
- (ii) reasonable litigation expenses, including attorney's fees, expended by the office holder as a result of an investigation or proceeding instituted against him by a competent authority, provided that such investigation or proceeding concluded without the filing of an indictment against him, and either (i) concluded without the imposition of any financial liability in lieu of criminal proceedings; or (ii) concluded with the imposition of a financial liability in lieu of criminal proceedings but relates to a criminal offense that does not require proof of criminal intent;
- (iii) reasonable litigation expenses, including attorneys' fees, expended by the office holder or charged to him by a court, in proceedings instituted against him by another person, or in a criminal charge from which he was acquitted or in any criminal proceedings of a crime which does not require proof of criminal intent;
- (iv) expenses, including reasonable litigation expenses and legal fees, incurred by an office holder as a result of a proceeding instituted against such office holder in relation to (1) infringements that may impose financial sanction pursuant to the provisions of Chapter H'3 under the Israeli Securities Law, which we refer to as the Securities Law, or (2) administrative infringements pursuant to the provisions of Chapter H'4 under the Securities Law or (3) infringements pursuant to the provisions of Chapter P'1 under the Securities Law; and
- (v) payments made by the office holder to an injured party for damages suffered under Section 52(54)(a)(1)(a) of the Securities Law.

We may undertake to indemnify an office holder as aforesaid, (a) prospectively, provided that in respect of (i) above, the undertaking is limited to categories of events that in the opinion of our board of directors are foreseeable in light of our actual operations at the time that the undertaking to indemnify is given, and to the amounts or criteria that our board of directors deems reasonable under the circumstances, and further provided that such events and amount or criteria are set forth in the undertaking to indemnify, but in any event no more than 25% of Formula's shareholders equity according to its most recent financial statements as of the date of the actual payment of indemnification; and (b) retroactively.

Limitations on Exemption, Insurance and Indemnification. The Companies Law provides that a company may not indemnify an office holder, enter into an insurance contract which would provide coverage for any monetary liability, or exempt an office holder from liability, with respect to any of the following:

- a breach by the office holder of his duty of loyalty unless the office holder acted in good faith and had a reasonable basis to believe that the act would not prejudice the company;
- a breach by the office holder of his duty of care if the breach was done intentionally or recklessly, except for a breach that was made in negligence;
- any act or omission done with the intent to derive an illegal personal benefit;
- any fine levied against the office holder; or
- a counterclaim made by the company or in its name in connection with a claim against the company filed by the office holder.

In addition, under the Companies Law, indemnification of, and procurement of insurance coverage for, our office holders must be approved by our audit committee and our board of directors and, in specified circumstances, by our shareholders.

We have entered into undertakings to indemnify our office holders in specified limited categories of events and in specified amounts, subject to the limitations set by the Companies Law and our articles, as described above. For more information, see "Item 7.B. Related Party Transactions – Indemnification of Office Holders."

Directors' Severance Benefits Upon Termination of Employment

We have not entered into any service contracts with any members of our board of directors that provide for specific benefits upon termination of employment, as none of our directors is employed by us or otherwise subject to a consulting or similar contract with us that provides benefits upon termination of employment or service. The only severance pay benefits that we provide are provided to employees as required under Israeli law and are described below in the section titled "Employees".

D. Employees

The table below sets forth the average number of employees employed by us, as allocated among our six subsidiaries in which we have effective control through December 31, 2019, during each of the last three fiscal years:

	Year ended December 31,		
	2017	2018	2019
Matrix	8,630	9,252	10,337
Magic Software	2,052	2,226	2,642
Sapiens	2,376	2,378	2,959
TSG	375	403	479
Michpal	47	67	187
Insync	997	775	774
Total	14,477	15,101	17,378

The table below sets forth the average number of employees employed by us, as allocated by geographical area of employment, during each of the last three fiscal years:

	Year ended December 31,		
	2017	2018	2019
Israel	10,032	10,399	12,042
United States and Canada	2,913	2,822	2,949
Europe	771	705	1,012
Asia (mainly India)	733	1,161	1,361
South Africa	28	14	14
Total	14,477	15,101	17,378

With respect to our employees in Israel, we are subject to various Israeli labor laws and labor practices, and to administrative orders extending certain provisions of collective bargaining agreements between the Histadrut (Israel's General Federation of Labor) and the Coordinating Bureau of Economic Organizations (the Israeli federation of employers' organizations) to all private sector employees. For example, mandatory cost of living adjustments, which compensate Israeli employees for a portion of the increase in the Israeli consumer price index, are determined, from time to time, on a nationwide basis. Israeli law also requires the payment of severance benefits upon the termination, retirement (in some instances) or death of an employee. We meet this requirement by (i) contributing on an ongoing basis towards "managers' insurance" funds that combine pension, insurance and, if applicable, severance pay benefits and (ii) payment of differences, if applicable. In addition, Israeli employers and employees are required to pay specified percentages of wages to the National Insurance Institute. Other provisions of Israeli law or regulation govern matters such as the length of the workday, minimum wages, other terms of employment and restrictions on discrimination.

We are also subject to the labor laws and regulations of other jurisdictions in the world where we have employees.

E. Share Ownership

As of June 25, 2020, none of our directors or officers owned any shares of our company (whether actual ordinary shares or shares issuable upon exercise of options), except for Mr. Guy Bernstein, our Chief Executive Officer, Mr. Asaf Berenstin, our Chief Financial Officer and Ms. Maya Solomon, our Chief Operational Manager, as described under “Item 6. Directors, Senior Management & Employees— B. Compensation— Option Grants to, and Service Agreement with, Chief Executive Officer” and “Item 6. Directors, Senior Management & Employees— Restricted Share Grants to Chief Financial Officer” above. None of the ordinary shares beneficially owned by Messrs. Bernstein and Berenstin has voting rights different from those possessed by other holders of Formula’s ordinary shares.

At the current time, based on information that he has provided to us, Mr. Guy Bernstein beneficially owns 1,817,973 of Formula’s ordinary shares, in the aggregate. Please see “Item 7. Major Shareholders and Related Party Transactions—A. Major Shareholders” below for more information.

At the current time, based on information that he has provided to us, Mr. Asaf Berenstin owns 10,833 of Formula’s ordinary shares, which were granted to him on November 13, 2014 and on August 17, 2017 (as described above under “Item 6. Directors, Senior Management and Employees— B. Compensation— Restricted Share Grants to Chief Financial Officer” and in Note 17(b) to our consolidated financial statements contained elsewhere in this annual report). Of those shares, as of June 25, 2020, 10,000 are vested and the remainder are subject to restrictions.

At the current time, based on information that she has provided to us, Ms. Maya Solomon owns 10,000 of Formula’s ordinary shares, which were granted to her on November 19, 2018 (as described above under “Item 6. Directors, Senior Management and Employees— B. Compensation— Restricted Share Grants to Chief Operational Officer” and in Note 17(b) to our consolidated financial statements contained elsewhere in this annual report). Of those shares, as of June 25, 2020, 2,500 are vested.

Arrangements Involving the Issuance or Grant of Equity Awards

Formula’s 2011 Share Incentive Plan

In March 2011, our board of directors adopted Formula’s 2011 Share Incentive Plan, which we refer to as the 2011 Plan. Pursuant to the 2011 Plan, we may grant from time to time to our and our subsidiaries’ employees, office holders (which are not Formula’s controlling shareholders) and consultants options to purchase, share based awards or restricted shares with respect to, up to an aggregate of 545,000 ordinary shares of Formula. The 2011 Plan is administered by our board of directors. The 2011 Plan provides that options, restricted shares or other stock-based awards may be granted, from time to time, to such grantees to be determined by our board of directors, at such exercise prices and with such vesting or other terms as shall be determined by the board at its sole and absolute discretion. Options may be granted under the 2011 Plan through March 2021.

In March 2012, our board of directors increased the amount of ordinary shares reserved for issuance under the 2011 Share Incentive Plan by 1,200,000 shares.

Of the options available for grant under the 2011 Plan, we approved the grant, in March 2011, of options to purchase 543,840 ordinary shares to our Chief Executive Officer, each to be exercisable for no consideration and, in March 2012, we approved the grant of options to purchase 1,122,782 ordinary shares to our Chief Executive Officer, each to be exercisable for NIS 0.01 per share. Please see “Item 6. Directors, Senior Management and Employees— B. Compensation— Option Grants to, and Service Agreement with, Chief Executive Officer” for a description of those grants. We have also approved the grant of 10,000 restricted shares to our Chief Financial Officer on each of November 13, 2014 and August 17, 2017 and the grant of 10,000 restricted shares to our Chief Operational Officer on November 19, 2017, in each case under the 2011 Plan. Please see “Item 6. Directors, Senior Management and Employees— B. Compensation— Restricted Share Grants to Chief Financial Officer” for a description of those grants.

As of June 25, 2020, 47,218 ordinary shares remain available for future grants under the 2011 Plan.

Equity Incentive Plans of Our Subsidiaries

Our subsidiaries generally have equity incentive plans pursuant to which qualified directors, employees and consultants may be granted options or other share-based awards consisting of securities of the subsidiaries.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders

The following table presents information regarding the beneficial ownership (as defined in Form 20-F promulgated by the SEC) of Formula's ordinary shares (including shares represented by ADSs) as of June 25, 2020 by each person known to us to be the beneficial owner of 5% or more of Formula's ordinary shares, and by our directors and executive officers as a group, based on information provided to us by our shareholders or disclosed in public filings with the SEC. None of the holders of the ordinary shares listed in the below table has voting rights different from other holders of Formula's ordinary shares. Except where indicated otherwise, we believe, based on information furnished by these owners, that each of the beneficial owners of Formula's ordinary shares listed below has sole investment and voting power with respect to such shares.

Name	Number of Ordinary Shares Beneficially Owned (1)	Percentage of Ownership (2)
Asseco Poland S.A. (3)	5,733,574	37.5%
Guy Bernstein (4)	1,817,973	11.9%
Menora Mivtachim Holdings Ltd.(5)	1,096,755	7.2%
Clal Insurance Enterprises Holdings Ltd. and affiliates (6)	815,626	5.3%
Harel Insurance Investments & Financial Services Ltd.(7)	1,084,002	7.1%
Yelin Lapidot Holdings Management Ltd. (8)	962,397	6.3%
Phoenix Holdings Ltd. (9)	909,270	5.9%
All directors and executive officers as a group (8 persons) (10)	1,831,306	12.0%

- (1) Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission, or the SEC, and generally includes voting or investment power with respect to securities. Ordinary shares underlying options currently exercisable or exercisable within 60 days of the date of this table are deemed outstanding for computing the ownership percentage of the person holding such options but are not deemed outstanding for computing the ownership percentage of any other person. Except as indicated by footnote, and subject to community property laws where applicable, the persons named in the table above have sole voting and investment power with respect to all shares shown as beneficially owned by them.
- (2) The percentages shown are based on 15,294,267 ordinary shares (including shares represented by ADSs, and shares subject to restrictions and repurchase by us) issued and outstanding as of June 25, 2020.
- (3) Based on Amendment No. 3 to Schedule 13D filed by Asseco Poland S.A., or Asseco, with the SEC on October 19, 2017 and on a written notification received from Asseco in March 2020. Includes 1,817,973 ordinary shares owned by Mr. Guy Bernstein, with respect to which Asseco currently possesses the voting rights pursuant to a voting agreement between Asseco and Mr. Bernstein. Due to the public ownership of its shares, Asseco is not controlled by any other corporation or any one individual or group of shareholders.
- (4) Based on Amendment No. 2 to Schedule 13D filed by Mr. Bernstein with the SEC on October 19, 2017. Consists of (a) (i) 260,040 ordinary shares, and (ii) an additional 1,122,782 ordinary shares, all of which are held in trust for Mr. Bernstein, and (b) an additional 435,151 ordinary shares, of which (iii) 300,366 are held by Mr. Bernstein and (iv) 134,785 are held in trust for Mr. Bernstein. Asseco currently possesses the voting rights to all such shares pursuant to a voting agreement between Asseco and Mr. Bernstein.

- (5) Based on Amendment No. 6 to Schedule 13G filed by Menora Mivtachim Holdings Ltd., or Menora Holdings, on February 12, 2020. Such ordinary shares are beneficially owned by Menora Holdings and by entities that are direct or indirect, wholly-owned or majority-owned, subsidiaries of Menora Holdings, as follows: Menora Mivtachim Pensions and Gemel Ltd. (914,027 ordinary shares); Menora Mivtachim Insurance Ltd. (165,497 ordinary shares); Menora Mivtachim Vehistadrut Hamehandesim Nihul Kupot Gemel Ltd. (15,400 ordinary shares); and Shomera Insurance Company Ltd. (1,831 ordinary shares). The economic interest or beneficial ownership in a portion of the foregoing ordinary shares (including the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such shares) is held for the benefit of insurance policy holders, the owners of portfolio accounts, or the members of the mutual funds, provident funds, or pension funds, as the case may be.
- (6) Based on Amendment No. 3 to Schedule 13G filed by Clal Insurance Enterprises Holdings Ltd., or Clal, on February 10, 2020. Clal is a publicly held Israeli corporation. All of the 815,626 ordinary shares are beneficially held by Clal for members of the public through, among others, provident funds and/or pension funds and/or insurance policies, which are managed by subsidiaries of Clal, which subsidiaries operate under independent management and make independent voting and investment decisions.
- (7) Based on Amendment No. 3 to Schedule 13G filed by Harel Insurance Investments & Financial Services Ltd., or Harel Insurance, on January 23, 2020. Harel Insurance is a publicly held Israeli corporation. Out of the 1,084,002 ordinary shares beneficially owned by Harel Insurance: (i) 1,015,710 are held for members of the public through, among others, provident funds and/or mutual funds and/or pension funds and/or insurance policies and/or exchange traded funds, which are managed by subsidiaries of Harel Insurance, each of which subsidiaries operates under independent management and makes independent voting and investment decisions; (ii) 500 are held by third-party client accounts managed by subsidiaries of the Harel Insurance as portfolio managers, each of which subsidiaries operates under independent management and makes independent investment decisions and has no voting power in the securities held in such client accounts, and (iii) 67,792 ordinary shares are beneficially held for Harel Insurance own account.
- (8) Based on Amendment No. 3 to Schedule 13G filed by Yelin Lapidot Holdings Management Ltd., or Yelin, with the SEC on February 10, 2020. Out of the 962,397 ordinary shares beneficially owned by Yelin: (i) 578,884 are beneficially owned Yelin Lapidot Provident Funds Management Ltd., or Yelin Provident, and (ii) 383,513 are beneficially owned by mutual funds managed by Yelin Lapidot Mutual Funds Management Ltd., or Yelin Mutual. Each of Yelin Provident and Yelin Mutual is a wholly-owned subsidiary of Yelin. Messrs. Dov Yelin and Yair Lapidot each own 24.38% of the share capital and 25% of the voting rights of Yelin, and are responsible for the day-to-day management of Yelin Lapidot Holdings. The ordinary shares beneficially owned are held for the benefit of the members of the provident funds and the mutual funds. Each of Yelin, Yelin Provident, Yelin Mutual and Messrs. Yelin and Lapidot disclaims beneficial ownership of the subject ordinary shares.
- (9) Based on Amendment No. 1 to Schedule 13G filed by Phoenix Holdings Ltd. on February 18, 2020. The ordinary shares held by Phoenix Holdings are beneficially owned by various direct or indirect, majority or wholly-owned subsidiaries of Phoenix Holdings, or the Phoenix Subsidiaries. The Phoenix Subsidiaries manage their own funds and/or the funds of others, including for holders of exchange-traded notes or various insurance policies, members of pension or provident funds, unit holders of mutual funds, and portfolio management clients. Each of the Phoenix Subsidiaries operates under independent management and makes its own independent voting and investment decisions. As of December 31, 2019, the securities reported herein were held as follows: (i) Excellence trust funds: 174,071; (ii) The Phoenix “nostro” accounts: 68,588; and (iii) Partnership for Israeli shares and partnership for investing in shares indexes: 666,611. (All ownership rights in these partnership belong to companies that are part of Phoenix Group. The amount of ownership rights held by such companies in the partnership changes frequently according to a mechanism provided in the partnership agreement)
- (10) Includes the shares described in note (4) above, 10,833 vested restricted shares granted to Asaf Berenstin, the Company’s Chief Financial Officer, on November 13, 2014 and on August 17, 2017 under the Company’s 2011 Plan. Besides Mr. Bernstein, Mr. Berenstin and Ms. Solomon (who was granted 10,000 restricted shares in November 2018, of which 2,500 are vested), none of our other directors or executive officers beneficially owns any ordinary shares (whether actual ordinary shares or shares issuable upon exercise of options).

Recent Significant Changes in Holdings of Major Shareholders

On August 3, 2017, Asseco, then holding 6,823,602 ordinary shares, representing 46.3% of our outstanding share capital as of December 31, 2018, sold 2,356,605 ordinary shares, representing 16% of our outstanding share capital as of that December 31, 2018, to eleven Israeli financial institutions, in privately negotiated sales transactions. The purchase price in that transaction was NIS 124.14 per share (or \$34.59 per share, based on the representative exchange rate of NIS 3.589 = US \$1.00 reported by the Bank of Israel as of August 3, 2017).

On August 22, 2017, Asseco sold an additional 589,151 of our ordinary shares, representing 4% of our outstanding share capital as of December 31, 2018, to Mr. Bernstein, our Chief Executive Officer for the same price per share.

On March 22, 2020, Asseco acquired an additional 37,755 of our ordinary shares, representing 0.25% of our outstanding share capital as of March 31, 2020, in the open market.

As a result of these transactions, Asseco's ownership of our outstanding share capital as of June 25, 2020 is 25.6%.

On June 11, 2020, Mr. Bernstein sold 154,000 of our ordinary shares, representing 1% of our outstanding share capital, to an Israeli financial institution, in privately negotiated sale transaction. The purchase price in that transaction was NIS 260.00 per share.

On October 4, 2017, Asseco entered into a shareholders agreement with our Chief Executive Officer, under which Asseco has been granted an irrevocable proxy to vote an additional 1,971,973 (as of December 31, 2019) or 1,817,973 (as of June 25, 2020) of our ordinary shares, thereby effectively giving Asseco beneficial ownership (voting power) over an aggregate of 38.25% or 37.49% of our outstanding ordinary shares as of December 31, 2019 and June 25, 2020, respectively. That percentage is calculated based on 15,294,267 outstanding ordinary shares as of December 31, 2019 and June 25, 2020, respectively, which excludes (i) 24,780 ordinary shares that we repurchased during 2002 and 543,840 that we repurchased during 2011, which lack voting rights, and (ii) shares subject to restrictions, which are voted in proportion to the votes of our other shares.

As of June 25, 2020, we had two shareholders of record, one of which was a United States record holder. The number of record holders is not representative of the number of beneficial holders of our ordinary shares, as the shares of all shareholders (including shares represented by ADSs) are recorded in the name of our Israeli share registrar, Israel Discount Bank Limited's registrar company. All of our ordinary shares (including shares represented by ADSs) have equal voting rights. However, under applicable Israeli law, the shares that we have repurchased and currently hold have no voting rights and, therefore, are excluded from the number of our outstanding shares.

As of June 25, 2020, 136,260 ADSs were issued and outstanding pursuant to a depositary agreement with The Bank of New York Mellon, representing approximately 0.9% of our outstanding ordinary shares. As of that date, there were approximately 10 registered holders of our ADSs, of whom approximately 7 record holders were United States residents. Such number of record holders is not representative of the actual number of beneficial holders of our ADSs in the United States.

We are unaware of any arrangements which may at a subsequent date result in a change in control of Formula.

B. Related Party Transactions

Indemnification of Office Holders

We have undertaken to indemnify each of our office holders. Our office holders' indemnification letters provide, among other things, that we will indemnify each of our office holders to the maximum extent permitted by our articles. Advance payments for coverage of legal expenses in criminal proceedings will be required to be repaid by an office holder to the company if such office holder is found guilty of a crime which requires proof of criminal intent, or if it is determined that the office holder is not lawfully entitled to such indemnification.

All of the indemnification letters granted to our office holders are identical, including indemnification letters granted to office holders who are or may be considered "controlling persons" under the Companies Law.

The indemnification is limited to the expenses and matters detailed in the indemnification letters insofar as they result from an office holder's actions in connection with, among other things, the following matters: the offering of securities by us to the public or to private investors; the offer by us to purchase securities from the public, private investors or other holders, whether pursuant to a prospectus, agreement, notice, report, tender or any other proceeding; our labor relations and/or employment matters and our trade relations; the development or testing of products developed by us, or the distribution, sale, license or use of such products; and occurrences in connection with investments made by us.

Our undertaking for indemnification is limited to up to 25% of our shareholders' equity as it appears in our latest financial statements known at the date of indemnification, calculated with respect to each director and officer of Formula.

Our undertaking for indemnification does not apply to a liability incurred as a result of any of the following:

- (i) a breach by an office holder of his or her fiduciary duty, except, to the extent permitted by law, for a breach while acting in good faith and having reasonable cause to assume that the action was in our best interest;
- (ii) a grossly negligent or intentional violation of the office holder's duty of care;
- (iii) an intentional action in which the office holder intended to reap a personal gain illegally;
- (iv) a fine, civil fine or financial sanction levied against and/or imposed upon the office holder;
- (v) a proceeding instituted against the office holder pursuant to the provisions of Chapter H'3, H'4 or I'1 under the Securities Law, except as otherwise permitted in the undertaking; or
- (vi) a counterclaim brought by us or in our name in connection with a claim against us filed by the office holder, other than by way of defense or by way of third party notice in connection with a claim brought against the office holder by us, or in specific cases in which our board of directors has approved the initiation or bringing of such suit by the office holder, which approval shall not be unreasonably withheld.

We are not required to indemnify an office holder if the office holder, or anyone on his or her behalf, already received payment in respect of a liability subject to indemnification, under an effective insurance coverage or an effective indemnification arrangement with a third party. However, if that payment made to the office holder does not cover the entire liability subject to the indemnification, we will indemnify the office holder in respect of the difference between the amount paid to the office holder and the liability subject to the indemnification.

Office Holders' Insurance

In April and May 2018, our compensation committee and board of directors, followed by our shareholders, approved our obtaining one or more renewals of our directors and officers (D&O) liability insurance, reflecting certain increases in coverage, for a period of up to three years.

The renewed insurance coverage, as so approved, is subject to the following terms: (i) the coverage will be no less than \$10 million, both per claim and in the aggregate; (ii) the annual premium to be paid by our company and its subsidiaries will not exceed an amount representing an increase of 20% or more in any year, as compared to the previous year, and in any event no more than \$400,000 per year; and (iii) any renewal, extension or substitution will be for the benefit of our company's and its subsidiaries' officers and directors and will otherwise be on terms substantially similar to or better (from the perspective of the directors and officers) than those of the then-effective insurance policy.

Pursuant to the foregoing approval, we have obtained an insurance policy covering the Formula Group's D&O liability. Our subsidiaries participate in the premium payments of the insurance policy, on a proportional basis. The current coverage of that policy is up to a maximum of \$40.0 million both per incident and in the aggregate, plus \$10.0 million of Side A DIC coverage. The total premium that we paid for that coverage during 2019 was approximately \$224,000.

Service Agreement with our Chief Executive Officer

We are party to a written service agreement with our Chief Executive Officer, Mr. Guy Bernstein, which was entered into in December 2008 and was amended in March 2011 and in March 2012 and which has a term of 84 months from the date of such last amendment. This agreement provides for early termination by either side upon 180 days advance written notice, during which time the Chief Executive Officer will continue to receive service fees. This agreement furthermore contains customary provisions regarding nondisclosure, confidentiality of information and assignment of inventions.

Option Agreement with our Chief Executive Officer

For a description of the option agreement with our Chief Executive Officer, please see "Item 6.B. Compensation – Option Grants to, and Service Agreement with, Chief Executive Officer."

Services Obtained from Asseco

During 2019, Asseco provided back-office services, professional services and fixed assets to Sapiens' wholly-owned subsidiary, Sapiens Poland, in an amount totaling approximately \$0.7 million.

Services Provided to Asseco

During 2019, Sapiens Poland performed services as a sub-contractor on behalf of Asseco for clients of Asseco in a total amount of approximately \$3.4 million. For historic reasons, Asseco issues invoices to those clients and then Sapiens in turn invoices Asseco on a back-to-back basis (with no margin to Asseco).

Fees Paid for Board Services in Affiliates

Sapiens paid us approximately \$25,300 in respect of their share of the director's fees of Guy Bernstein, their Chairman, for the year ended December 31, 2019.

Matrix paid us approximately \$29,900 in respect of their share of the director's fees of Guy Bernstein, their Chairman, for the year ended December 31, 2019.

Mr. Bernstein serves as the Chief Executive Officer of Formula.

Other Transactions

As of December 31, 2019, we had trade payables balances due to, and trade receivables balances due from, our related parties in amounts of approximately \$1.6 million and \$0.7 million, respectively.

From time to time, in our ordinary course of business, we engage in non-material transactions with our subsidiaries and affiliates where the amount involved in, and the nature of, the transactions are not material to any party to the transaction. We believe that these transactions are made on an arms' length basis upon terms and conditions no less favorable to us, our subsidiaries and affiliates, as we could obtain from unaffiliated third parties. If we engage with our subsidiaries and affiliates in transactions which are not in the ordinary course of business, we receive the approvals required under the Companies Law. These approvals include audit committee approval, board approval and, in certain circumstances, shareholder approval. See "Item 6.C. Board Practices."

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

Financial Statements

Our consolidated financial statements and other financial information are incorporated herein by reference to "Item 18. Financial Statements" below.

Export Sales

In 2019, 38% of our revenues originated from customers located outside of Israel. For information on our revenues breakdown by geographic market for the past three years, see "Item 4.—Information on the Company— Business Overview— Geographical Distribution of Revenues."

Legal Proceedings

From time to time, we are subject to legal, administrative and regulatory proceedings, claims, demands and investigations in the ordinary course of business, including claims with respect to intellectual property, contracts, employment and other matters. In Accordance with IFRS, we accrue a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Significant judgment is required in the determination of both the probability and as to whether a loss is reasonably estimable. These accruals are reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular matter. We intend to vigorously defend ourselves against the above claims, and we generally intend to vigorously defend any other legal claims to which we are subject. While for most litigation, the outcome is difficult to determine, to the extent that there is a reasonable possibility that the losses to which we may be subject could exceed the amounts (if any) that it has already accrued, we attempt to estimate such additional loss, if reasonably possible, and disclose it (or, if it is an immaterial amount, indicate accordingly). The aggregate provision that we have recorded for all other legal proceedings (other than the particular material proceeding described below) is not material. Furthermore, in respect of our ordinary course legal, administrative and regulatory proceedings (i.e., other than the particular material proceeding described below), we estimate, in accordance with the procedures described above, that as of the current time there is no reasonable possibility that we will incur material losses exceeding the non-material amounts already recognized.

Legal Proceedings related to Magic Software:

Disputes with Software Company

In September 2016, an Israeli software company, which was previously involved in an arbitration proceeding with Magic Software and one of its subsidiaries in 2015 and won damages from Magic Software for \$2.4 million, filed a lawsuit seeking damages of NIS 34.1 million from Magic Software and one of its subsidiaries. This lawsuit was filed as part of an arbitration proceeding. In the lawsuit, the software company claimed that warning letters that Magic Software sent to its clients in Israel and abroad, warning those clients against the possibility that the conversion procedure offered by the software company may amount to an infringement of our copyrights (which we refer to as the Warning Letters), as well as other alleged actions, have caused the software company damages resulting from loss of potential business. The lawsuit is based on rulings given in the 2015 arbitration proceeding in which it was allegedly ruled that the Warning Letters constituted a breach of a non-disclosure agreement (NDA) signed between the parties.

Magic Software rejected the claims by the Israeli software company and moved to dismiss the lawsuit entirely. In view of the nature of the claims— both factual and legal— that were raised in the proceedings, the likelihood of an expert-based ruling and the fact that at this point, all of the relevant motions have been filed and all witnesses deposed, it is impossible to properly evaluate whether the lawsuit will be successful, and we are therefore unable to make a reasonably reliable estimate of our chances of successfully defending this lawsuit.

Collection Proceeding Against Customer

In February 2018, Comm-IT Ltd., a subsidiary of Magic Software, commenced an action against a customer for payment of an overdue amount in the Supreme Court of the State of New York, New York County. This action was settled in 2019 for an immaterial amount, and in October 2019 the parties filed a stipulation of discontinuance with the court.

We are not involved in any proceedings in which any of our directors, members of our senior management or any of our affiliates is either a party adverse to us or to our subsidiaries, or has a material interest adverse to us or to our subsidiaries. Other than the above described proceedings, we are also not involved in any proceedings which may have, or have had in the recent past, significant effects on our financial position or profitability.

Dividend Policy

Formula

Under Formula's dividend policy adopted by our board of directors, sums that are not planned to be used for investments in the near future may be distributed to its shareholders as a cash dividend, to the extent that our performance allows such distribution. In the three most recent fiscal years, Formula has made the following distributions:

In November 2019, Formula declared a cash dividend to its shareholders of NIS 1.60 per share (approximately \$0.46 per share), which was paid in January 2020. The aggregate amount distributed by Formula was approximately \$7.1 million.

In August 2019, Formula declared a cash dividend to its shareholders of \$0.52 per share, which was paid in September 2019. The aggregate amount distributed by Formula was approximately \$7.96 million.

In December 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in January 2019. The aggregate amount distributed by Formula was approximately \$5.0 million.

In September 2017, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in November 2017. The aggregate amount distributed by Formula was approximately \$5.0 million.

Sapiens

In August 2019, Sapiens' Board of Directors adopted a dividend policy. Under that policy, on an annual basis, after publishing its annual audited consolidated financial statements in its annual report on Form 20-F, Sapiens' board of directors will announce the distribution of a cash dividend in an amount of up to 40% of its annual net profit (on a non-GAAP basis). Sapiens' board of directors may change, whether as a result of a one-time decision or a change in policy, the rate of dividend distributions and/or decide not to distribute a dividend. The distribution of dividends will be made in compliance with Cayman Islands law, Sapiens' Memorandum and Articles, as well as its contractual obligations. Concurrently with its adoption of this new dividend policy, Sapiens declared a cash dividend of \$0.22 per share, or \$11 million, in the aggregate, which was paid in September 2019. On May 14, 2020, Sapiens declared a cash dividend to its shareholders of \$0.14 per share, which was paid in June 2020. The aggregate amount distributed by Sapiens was approximately \$7.1 million.

Magic Software

In September 2012, Magic Software's board of directors also adopted a policy for distributing dividends, under which Magic Software will distribute a dividend of up to 50% of its annual distributable profits each year, subject to any applicable law. It is possible that Magic Software's board of directors will decide, subject to the conditions stated above, to declare additional dividend distributions. Magic Software's board of directors may at its discretion and at any time, change, whether as a result of a one-time decision or a change in policy, the rate of dividend distributions or determine not to distribute a dividend.

On August 9, 2017 Magic Software's board of directors amended Magic Software's dividend policy under which Magic Software will distribute a dividend of up to 75% of its annual distributable profits each year, subject to any applicable law.

Matrix

In August 2010, Matrix's board of directors decided to change Matrix's dividend distribution policy, whereby in every year, Matrix will distribute a dividend at a rate of 75% (instead of 50% before) of its annual net income. The dividend is to be distributed on a quarterly basis.

Under Israeli law, dividends may be paid by an Israeli company only out of profits and other surplus as calculated under Israeli law, as of the end date of the most recent financial statements or as accrued over a period of two years, whichever amount is greater, and provided that there is no reasonable concern that payment of a dividend will prevent the company from satisfying its existing and foreseeable obligations as they become due. See "Item 10. Additional Information—Memorandum and Articles of Association—Dividend and Liquidation Rights" below for more information.

B. Significant Changes

Since the date of our consolidated financial statements included in this annual report, there has not been a significant change in our company.

ITEM 9. THE OFFER AND LISTING

A. Offer and Listing Details

Our ordinary shares have been trading on the TASE under the symbol "FORT" since our initial public offering in 1991.

Our ADSs are listed on the NASDAQ Global Select Market since October 1997 under the symbol "FORTY." Each ADS represents one ordinary share.

For a description of the ADSs, see "Item 12. Description of Securities Other Than Equity Securities— D. American Depositary Shares."

B. Plan of Distribution

Not applicable.

C. Markets

Since our initial public offering in 1991, our ordinary shares have been traded in Israel on the TASE under the symbol "FORT." No U.S. trading market exists for the ordinary shares. Since October 1997, our ADSs have been traded on the NASDAQ Global Select Market, under the symbol "FORTY." Each ADS represents one ordinary share and is evidenced by an American depositary receipt, or ADR. The ADRs were issued pursuant to a Depositary Agreement entered into with the Bank of New York Mellon.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

We are registered with the Israeli Companies Registrar under the number 52-003669-0. Our objects are specified in our memorandum of association. These objects include:

- operating within the field of informational and computer systems;
- providing management, consulting and sale services for computers, computer equipment, software for computers and for information systems;
- operating a business of systems analysis, systems programming and computer programming; and
- establishing facilities for instruction and training for computers and digital systems.

Description of Our Share Capital

Our company's authorized share capital consists solely of ordinary shares. No preferred shares are currently authorized. Our articles do not restrict in any way the ownership of our ordinary shares by non-residents of Israel, except that these restrictions may exist with respect to citizens of countries which are in a state of war with Israel.

Dividend and Liquidation Rights

Our board of directors is authorized to declare dividends, subject to the provisions of the Companies Law. Dividends on our ordinary shares may be paid only out of profits and other surplus, as defined in the Companies Law, as of the end date of the most recent financial statements or as accrued over a period of two years, whichever amount is greater. Alternatively, if we do not have sufficient profits or other surplus, we may seek permission to effect a distribution by order of an Israeli court. In any event, our board of directors is authorized to declare dividends, provided there is no reasonable concern that a dividend will prevent us from satisfying our existing and foreseeable obligations as they become due. Dividends may be paid in cash or in kind. We may invest or use for our own benefit all unclaimed dividends. If a dividend remains unclaimed for seven years from the date on which we declared it, it lapses and reverts back to us. Our board of directors can nevertheless cause us to pay the dividend to a holder who would have been entitled had the dividend not reverted back to us. In case of the liquidation of our company, after satisfying liabilities to creditors, our assets will be distributed to the holders of ordinary shares in proportion to their holdings. This right may be affected by the grant of a preferential dividend or distribution rights to the holders of a class of shares with preferential rights that may be authorized in the future. Under the Companies Law, the declaration of a dividend does not require the approval of the shareholders of the company, unless the company's articles of association require otherwise. Our articles provide that our board of directors may declare and pay dividends without any action required by our shareholders.

Redemption Provisions

In accordance with our articles, we may issue redeemable shares and accordingly redeem those shares.

Voting, Shareholder Meetings and Resolutions

Holders of our ordinary shares are entitled to one vote for each ordinary share held on all matters submitted to the vote of shareholders. These voting rights may be affected by the grant of any special voting rights to the holders of a class of shares with preferential rights that may be authorized in the future. Under the Companies Law, shares held by our company are not entitled to any rights so long as they are held by the company.

Under the Companies Law and our articles, we must hold an annual general meeting of our shareholders once a year with a maximum period of fifteen months between the meetings, while under NASDAQ listing rule 5620(a), we must hold the meeting within one year after our fiscal year-end (which is December 31st). All meetings of shareholders other than annual general meetings are considered special general meetings. Our board of directors may call a special general meeting whenever it decides it is appropriate. In addition, shareholders representing 5% of the outstanding share capital may require the board of directors to call a special general meeting. Under our articles, the quorum required for a general meeting of shareholders consists of two or more holders present in person or by proxy who hold or represent at least 25% of the voting power. We have opted out of the NASDAQ listing rule 5620(c) requirement that a quorum must constitute at least 33.33% of our outstanding share capital (see "Item 16G. Corporate Governance" below). A meeting adjourned for a lack of a quorum generally is adjourned to the same day in the following week at the same time and place or any time and place as the chairman of the meeting may decide with the consent of the holders of a majority of the voting power represented at the meeting in person or by proxy and voting on the question of adjournment. At the reconvened meeting, if a quorum is not present within one-half hour from the time designated for holding the meeting, the required quorum will consist of two shareholders present in person or by proxy, regardless of the percentage of our outstanding ordinary shares or voting power held by them.

Under the Companies Law, unless otherwise provided in the articles or applicable law (including the Companies Law), all resolutions of the shareholders require a simple majority. Those matters that constitute exceptions to the simple majority approval rule under the Companies Law are described below in this Item 10.B under "—Approval of Certain Transactions Under the Companies Law."

Approval of Certain Transactions Under the Companies Law

The Companies Law codifies the fiduciary duties that office holders, including directors and executive officers, owe to a company. An office holder's fiduciary duties consist of a duty of care and a duty of loyalty. The duty of loyalty includes (i) avoiding any conflict of interest between the office holder's position in the company and his or her personal affairs, (ii) avoiding any competition with the company, (iii) avoiding exploiting any business opportunity of the company in order to receive personal advantage for himself or others, and (iv) revealing to the company any information or documents relating to the company's affairs which the office holder has received due to his or her position as an office holder.

The Companies Law requires that an office holder of a company promptly disclose any conflict of interest (referred to as a personal interest under the Companies Law) that he or she may have and all related material information known to him or her, in connection with any existing or proposed transaction by the company. An interested office holder's disclosure must be made promptly and, in any event, no later than the first meeting of the board of directors at which the transaction is considered. A personal interest, as defined under the Companies Law, includes any personal interest held by the office holder's spouse, siblings, parents, grandparents or descendants; spouse's descendants, siblings or parents; and the spouses of any of the foregoing. A personal interest also includes any interest held by any corporation in which the office holder owns 5% or more of the share capital, is a director or chief executive officer (referred to under the Companies Law as the general manager) or in which he or she has the right to appoint at least one director or the general manager. A personal interest furthermore includes the personal interest of a person for whom the office holder holds a voting proxy or the interest of the office holder with respect to his or her vote on behalf of the shareholder for whom he or she holds a proxy even if such shareholder itself has no personal interest in the approval of the matter.

Under the Companies Law, an extraordinary transaction is defined as a transaction not in the ordinary course of business, not on market terms, or that is likely to have a material impact on the company's profitability, assets or liabilities.

If it is determined that an office holder has a personal interest in a transaction, approval by the board of directors is required for the transaction, unless the company's articles of association provide for a different method of approval. Further, so long as an office holder has disclosed his or her personal interest in a transaction, the board of directors may approve an action by the office holder that would otherwise be deemed a breach of his or her duty of loyalty. However, a company may not approve a transaction or action that is not in the company's interest or that is not performed by the office holder in good faith. An extraordinary transaction in which an office holder has a personal interest requires approval first by the company's audit committee and subsequently by the board of directors. The compensation of, or an undertaking to indemnify or insure, an office holder who is not a director requires approval first by the company's compensation committee, then by the company's board of directors. If such compensation arrangement or an undertaking to indemnify or insure is inconsistent with the company's stated compensation policy, or if the office holder is the chief executive officer (apart from a number of specific exceptions), then such arrangement is further subject to a Special Majority Approval for Compensation (which is described under "Item 6. Directors, Senior Management and Employees— C. Board Practices— Compensation Committee and Compensation Policy"). Arrangements regarding the compensation, indemnification or insurance of a director require the approval of the compensation committee, board of directors and shareholders by ordinary majority, in that order, and under certain circumstances, a Special Majority Approval for Compensation.

An office holder who has a personal interest in a matter that is considered at a meeting of the board of directors or the audit committee may not be present at the meeting or vote on the matter, subject to certain exceptions, including an allowance for him or her to be present in order to present the transaction, if the chairman of the audit committee or board of directors (as applicable) determines that such presentation by him or her is necessary. If the majority of the board members or members of the audit committee, as applicable, have a personal interest in a transaction, they may all be present for the presentation of, and voting upon, the transaction, but it must also then be approved by the shareholders of the company.

The Companies Law applies the same disclosure requirements to a controlling shareholder of a public company, which includes a shareholder that holds 25% or more of the voting rights in the company if no other shareholder owns more than 50% of the voting rights in the company. Extraordinary transactions with a controlling shareholder or in which a controlling shareholder has a personal interest, or a transaction with a controlling shareholder or his or her relative, directly or indirectly, including for receipt of services from an entity controlled by him or her (or his or her relative), and the terms of engagement and compensation of a controlling shareholder who is an office holder or an employee of the company, require the approval of the audit committee, the board of directors and the shareholders of the company. The shareholder approval must include the holders of a majority of the shares held by all shareholders who have no personal interest in the transaction and are voting on the subject matter (with abstentions being disregarded) or, alternatively, the total shares of shareholders who have no personal interest in the transaction and who vote against the transaction must not represent more than two percent (2%) of the voting rights in the company. To the extent that any such transaction with a controlling shareholder is for a period extending beyond three years, approval is required once every three years, unless the audit committee determines that the duration of the transaction is reasonable given the circumstances related thereto. In certain cases provided in regulations promulgated under the Companies Law, shareholder approval is not required.

The approvals of the board of directors and shareholders are required for a private placement of securities (or a series of related private placements during a 12-month period or that are part of one continuous transaction or transactions conditioned upon each other) in which:

- the securities issued represent at least 20% of the company's actual voting power prior to the issuance of such securities, and such issuance increases the relative holdings of a 5% shareholder or causes any person to become a 5% shareholder, and the consideration in the transaction (or a portion thereof) is not in cash or in securities listed on a recognized stock exchange, or is not at a fair market value; or
- a person would become, as a result of such transaction, a controlling shareholder of the company.

Further, under the Companies Law (as described under "Item 6. Directors, Senior Management and Employees— Board Practices— External Directors Under the Companies Law"), the appointment of external directors requires, in addition to a majority of the ordinary shares voting and approving the appointment, that either (a) the approving majority must include a majority of the shares of shareholders that are not controlling shareholders of the company and who do not have a personal interest in the election of the external director (other than a personal interest not deriving from a relationship with a controlling shareholder) and who are present and voting (with abstentions being disregarded), or (b) the shares of such non-controlling, non-interested shareholders that vote against the appointment may not constitute more than two percent (2%) of our total voting rights. In addition, as described below (see "—Modification of Class Rights" in this Item 10.B), under our articles, the alteration of the rights, privileges, preferences or obligations of any class of our share capital requires a simple majority of the class so affected), in addition to the ordinary majority of all classes of shares voting together as a single class at a shareholder meeting.

A further exception to the simple majority shareholder vote requirement is a resolution for the voluntary winding up, or other reorganization of, the company pursuant to Section 350 of the Companies Law, which requires the approval of holders of 75% of the voting rights represented at the meeting, in person, by proxy or by voting deed and voting on the resolution, provided that such shareholders constitute more than 50% of the shareholders voting on such matter.

Shareholder Duties

Under the Companies Law, a shareholder has a duty to act in good faith towards the company in which he holds shares and towards other shareholders and to refrain from abusing his power in the company including voting in the general meeting of shareholders on:

- any amendment to the articles of association;
- an increase of the company's authorized share capital;
- a merger; or
- approval of actions of office holders in breach of their duty of loyalty and of interested party transactions.

A shareholder has the general duty to refrain from depriving rights of other shareholders. Any controlling shareholder, any shareholder who knows that it possesses the power to determine the outcome of a shareholder vote and any shareholder that, under the provisions of the articles of association, has the power to appoint an office holder in the company, is under a duty to act in fairness towards the company. The rules pertaining to a breach of contract apply to a breach of the duty to act in fairness, mutatis mutandis, bringing into account the shareholder's position in the company. The Companies Law does not describe the substance of this duty.

Transfer of Shares

Fully paid ordinary shares are issued in registered form and may be freely transferred under our articles unless the transfer is restricted or prohibited by another instrument.

Modification of Class Rights

Under our articles, the rights attached to any class unless otherwise provided by the terms of the class including voting, rights to dividends and the like, may be varied by adoption of the necessary amendment to the articles, provided that the affected shareholders approve the change by a class meeting in which a simple majority of the voting power of the class represented at the meeting and voting on the matter approves the change.

Election of Directors

Our ordinary shares do not have cumulative voting rights in the election of directors. As a result, the holders of ordinary shares that represent more than 50% of the voting power represented at a shareholders meeting and voting on the matter (disregarding abstentions), have the power to elect all of our directors, other than the external directors who are appointed by a special majority of shareholders. For a summary of the provisions of our articles that govern our directors, see “Item 6. Directors, Senior Management and Employees.”

Anti-Takeover Provisions; Mergers and Acquisitions Under Israeli Law

Mergers

The Companies Law permits merger transactions if approved by each party’s board of directors and shareholders. In order for shareholder approval to be obtained for a merger, a majority of the shares present and voting, excluding shares held by the other party to the merger, or by any person holding at least 25% of the means of control of the other party to the merger, or anyone acting on behalf of either of them, including any of their affiliates, must be voted in favor of the merger. If, however, the merger involves a merger with a company’s own controlling shareholder or if the controlling shareholder has a personal interest in the merger, then the merger is instead subject to the same special majority approval that governs all extraordinary transactions with controlling shareholders (as described above in this Item 10 under “—Approval of Certain Transactions Under the Companies Law”). In the event that the merger transaction has not been approved by either of the above-described special majorities (as applicable), the holders of at least 25% of the voting rights of the company may apply to a court for approval of the merger. The court may approve the merger if it is found that the merger is fair and reasonable, taking into account the value of the parties to the merger and the consideration offered to the shareholders. Upon the request of a creditor of either party to the proposed merger, the court may delay or prevent the merger. A merger may not be consummated unless at least 50 days have passed from the time that a proposal for approval of the merger has been filed with the Israeli Registrar of Companies and 30 days have passed from the date of the approval of the shareholders of the merging companies.

The Companies Law further provides that the foregoing approval requirements will not apply to shareholders of a wholly-owned subsidiary in a rollup merger transaction, or to the shareholders of the acquirer in a merger or acquisition transaction if:

- the transaction does not involve an amendment to the acquirer’s memorandum or articles of association;
- the transaction does not contemplate the issuance of more than 20% of the voting rights of the acquirer which would result in any shareholder becoming a controlling shareholder; and
- there is no “cross ownership” of shares of the merging companies, as described above.

Tender Offers

The Companies Law provides that an acquisition of shares of a public company must be made by means of a tender offer if as a result of the acquisition, the purchaser would become a holder of 25% or more of the voting rights in the company. This rule does not apply if there is already another holder of 25% or more of the voting rights in the company. Similarly, the Companies Law provides that an acquisition of shares in a public company must be made by means of a tender offer if as a result of the acquisition the purchaser would become a holder of more than 45% of the voting rights of the company, if there is no other holder of more than 45% of the voting rights of the company.

The foregoing provisions do not apply to:

- a private placement in which the company’s shareholders approved such holder owning 25% or more of the voting rights in the company (if there is no other shareholder that holds 25% or more of the voting rights in the company); or more than 45% of the voting rights in the company (if there is no other shareholder that holds more than 45% of the voting rights in the company); or
- a purchase from an existing holder of 25% or more of the voting rights in the company that results in another person becoming a holder of 25% or more of the voting rights in the company or a purchase from an existing holder of more than 45% of the voting rights in the company that results in another person becoming a holder of more than 45% of the voting rights in the company.

Regulations adopted under the Companies Law provide that these tender offer requirements do not apply to companies whose shares are listed for trading only outside of Israel or have been publicly offered only outside of Israel if, according to the law in the country in which the shares are traded, including the rules and regulations of the stock exchange on which the shares are traded, there is either a limitation on acquisition of any level of control of the company, or the acquisition of any level of control requires the purchaser to do so by means of a tender offer to the public.

The Companies Law also provides that if following any acquisition of shares, the acquirer holds 90% or more of the company's shares or of a class of shares, the acquisition must be made by means of a tender offer for all of the target company's shares or all of the shares of the class, as applicable, not held by the acquirer. An acquirer who wishes to eliminate all minority shareholders must do so by way of a tender offer and hold, following consummation of the tender offer, more than 95% of all of the company's outstanding shares (and provided that a majority of the offerees that do not have a personal interest in such tender offer shall have approved it, which condition shall not apply if, following consummation of the tender offer, the acquirer holds at least 98% of all of the company's outstanding shares). If, however, following consummation of the tender offer the acquirer would hold 95% or less of the company's outstanding shares, the acquirer may not acquire shares tendered if by doing so the acquirer would own more than 90% of the shares of the target company. Appraisal rights are available with respect to a successfully completed full tender offer for a period of six months after such completion, although the acquirer may provide in the tender offer documents that a shareholder that accepts the offer may not seek appraisal rights.

C. Material Contracts

Please see "Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Company Commitments" for a description of our loan agreement with an Israeli institutional investor and the terms of the trust agreements to which we are party in connection with our Series A Secured Debentures and Series C Secured Debentures, and to which Sapiens is party in connection with its Series B Debentures. Please see "Item 6. Directors, Senior Management and Employees—B. Compensation—Option Grants to, and Service Agreement with, Chief Executive Officer" for a description of our service agreement with our Chief Executive Officer, Mr. Guy Bernstein. Beyond those agreements, Formula is not party to, and has not been party to in the last two years, any material contract entered into outside of its ordinary course of business. In addition, while our subsidiaries are party and have been party in the last two years to numerous contracts with customers, resellers and distributors, such contracts are entered into in the ordinary course of business. Furthermore, we do not deem any other individual contract entered into by any of our subsidiaries outside of the ordinary course of business (such as investment or acquisition agreements) during the last two years to be material to us, except as described below.

D. Exchange Controls

Under current Israeli regulations, we may pay dividends or other distributions in respect of our ordinary shares either in Israeli or non-Israeli currencies. If we make these payments in Israeli currency, they will be freely converted, transferred and paid in non-Israeli currencies at the rate of exchange prevailing at the time of conversion. We expect, therefore, that dividends, if any, that we pay to holders of ADSs, will be paid in dollars, net of conversion expenses, expenses of the depository for our ADSs, the Bank of New York Mellon, and Israeli income taxes (if applicable). Because exchange rates between the NIS and the dollar fluctuate continuously, a U.S. shareholder will be subject to the risk of currency fluctuations between the date when we declare NIS-denominated dividends and the date when we pay them in NIS. See "Item 3. Key Information—Risk Factors."

Non-residents of Israel may freely hold and trade our ADSs or ordinary shares pursuant to the general permit issued under the Israeli Currency Control Law, 1978. Neither our articles nor the laws of the State of Israel restrict in any way the ownership of our ordinary shares by non-residents, except that these restrictions may exist with respect to citizens of countries that are in a state of war with Israel.

E. Taxation

The following is a short summary of the material provisions of the tax environment to which shareholders may be subject. This summary is based on the current provisions of tax law. To the extent that the discussion is based on new tax legislation that has not been subject to judicial or administrative interpretation, we cannot assure you that the views expressed in the discussion will be accepted by the appropriate tax authorities or the courts.

The summary does not address all of the tax consequences that may be relevant to all holders of our ordinary shares and ADSs in light of each holder's particular circumstances and specific tax treatment. For example, the summary below does not address the tax treatment of residents of Israel and traders in securities who are subject to specific tax regimes. As individual circumstances may differ, holders of our ordinary shares and ADSs should consult their own tax adviser as to the United States, Israeli or other tax consequences of the purchase, ownership and disposition of ordinary shares and ADSs. The following is not intended, and should not be construed, as legal or professional tax advice and is not exhaustive of all possible tax considerations. Each individual should consult his or her own tax or legal adviser.

Israeli Taxation Considerations for Our Shareholders

Tax Consequences Regarding Disposition of Our ADSs or Ordinary Shares

Israeli law generally imposes a capital gain tax on the sale of any capital assets by residents of Israel, as defined for Israeli tax purposes, and on the sale of assets located in Israel, including shares of Israeli companies, by both residents and non-residents of Israel, unless a specific exemption is available or unless a tax treaty between Israel and the shareholder's country of residence provides otherwise. The Tax Ordinance distinguishes between "Real Capital Gain" and "Inflationary Surplus". The Inflationary Surplus is a portion of the total capital gain which is equivalent to the increase of the relevant asset's purchase price which is attributable to the increase in the Israeli consumer price index or, in certain circumstances, a foreign currency exchange rate, between the date of purchase and the date of sale. The Real Capital Gain is the excess of the total capital gain over the Inflationary Surplus.

Capital gain

Israeli Resident Individuals

As of January 1, 2012, the tax rate applicable to Real Capital Gain derived by Israeli individuals from the sale of shares, whether or not listed on a stock exchange, is 25%, unless such shareholder claims a deduction for interest and linkage differences expenses in connection with the purchase and holding of such shares, in which case the gain will generally be taxed at a rate of 30%. However, if such shareholder is considered a Substantial Shareholder (i.e., a person who holds, directly or indirectly, alone or together with another person who collaborates with such person on a permanent basis, 10% or more of any of the company's "means of control" (including, among other things, the right to receive profits of the company, voting rights, the right to receive the company's liquidation proceeds and the right to appoint a director)) at the time of sale or at any time during the preceding 12-month period, such gain will be taxed at the rate of 30%. Individual shareholders dealing in securities in Israel are taxed at their marginal tax rates applicable to business income (up to 47% in 2018 and thereafter).

Under current Israeli tax legislation, the tax rate applicable to Real Capital Gain derived by Israeli resident corporations from the sale of shares of an Israeli company is the general corporate tax rate. As described above, the corporate tax rate as of 2018 and thereafter is 23%.

Israeli Resident Corporations

Under current Israeli tax legislation, the tax rate applicable to Real Capital Gain derived by Israeli resident corporations from the sale of shares of an Israeli company is the general corporate tax rate. As described above, the corporate tax rate was 24% in 2017, and as of 2018 the corporate tax rate is 23%.

Non-Israeli Residents Shareholders

Israeli capital gain tax is imposed on the disposal of capital assets by a non-Israeli resident if such assets are either (i) located in Israel; (ii) shares or rights to shares in an Israeli resident company; or (iii) represent, directly or indirectly, rights to assets located in Israel, unless a tax treaty between Israel and the seller's country of residence provides otherwise. As mentioned above, Real Capital Gain is generally subject to tax at the corporate tax rate (23% in 2018 and thereafter) if generated by a company, or at the rate of 25% or 30%, if generated by an individual. Individual and corporate shareholders dealing in securities in Israel are taxed at the tax rates applicable to business income (a corporate tax rate for a corporation and a marginal tax rate of up to 47% for an individual in 2018 and thereafter).

Notwithstanding the foregoing, shareholders who are non-Israeli residents (individuals and corporations) are generally exempt from Israeli capital gain tax on any gains derived from the sale, exchange or disposition of shares publicly traded on the Tel Aviv Stock Exchange or on a recognized stock exchange outside of Israel, provided, among other things, that (i) such gains are not generated through a permanent establishment that the non-Israeli resident maintains in Israel, (ii) the shares were purchased after being listed on a recognized stock exchange, and (iii) with respect to shares listed on a recognized stock exchange outside of Israel, such shareholders are not subject to the Israeli Income Tax Law (Inflationary Adjustments) 5745-1985. However, non-Israeli corporations will not be entitled to the foregoing exemptions if Israeli residents (a) have a controlling interest of more than 25% in such non-Israeli corporation, or (b) are the beneficiaries of or are entitled to 25% or more of the revenues or profits of such non-Israeli corporation, whether directly or indirectly. Such exemption is not applicable to a person whose gains from selling or otherwise disposing of the shares are deemed to be business income.

In some instances where our shareholders may be liable for Israeli tax on the sale of their Ordinary Shares and ADSs, the payment of the consideration may be subject to the withholding of Israeli tax at source. Shareholders may be required to demonstrate that they are exempt from tax on their capital gains in order to avoid withholding at source at the time of sale. Specifically, in transactions involving a sale of all of the shares of an Israeli resident company, in the form of a merger or otherwise, the Israel Tax Authority may require from shareholders who are not liable for Israeli tax to sign declarations in forms specified by this authority or obtain a specific exemption from the Israel Tax Authority to confirm their status as non-Israeli resident, and, in the absence of such declarations or exemptions, may require the purchaser of the shares to withhold taxes at source.

Taxes Applicable to Dividends

Israeli Resident Shareholders

Israeli Resident Individuals. Israeli residents who are individuals are generally subject to Israeli income tax for dividends paid on our ordinary shares (other than bonus shares or share dividends) at 25%, or 30% if the recipient of such dividend is a Substantial Shareholder at the time of distribution or at any time during the preceding 12-month period. However, dividends distributed from taxable income allocated and accrued during the benefits period of an AE are subject to withholding tax at the rate of 15% (if the dividend is distributed during the tax benefits period under the Investment Law or within 12 years after such period, except with respect to an FIC, in which case the 12 year limit does not apply) or 20% with respect to PFE. An average rate will be set in case the dividend is distributed from mixed types of income (regular and Approved/ Beneficiary/Preferred income).

Israeli Resident Corporations. Israeli resident corporations are generally exempt from Israeli corporate tax for dividends paid on shares of Israeli resident corporations (like our ordinary shares and ADSs). However, dividends distributed from taxable income accrued during the benefits period of an AE are subject to withholding tax at the rate of 15%, if the dividend is distributed during the tax benefits period under the Investment Law or within 12 years after such period.

Non-Israeli Resident Shareholders

Non-Israeli residents (whether individuals or corporations) are generally subject to Israeli income tax on the receipt of dividends paid on our Ordinary Shares or ADSs, at the rate of 25% or 30% (if the dividend recipient is a Substantial Shareholder at the time of distribution or at any time during the preceding 12-month period) or 15% if the dividend is distributed from income attributed to our AE or BE, or 20% with respect to PFE. Such dividends are generally subject to Israeli withholding tax at a rate of 25% so long as the shares are registered with a Nominee Company (whether the recipient is a Substantial Shareholder or not), and 15% if the dividend is distributed from income attributed to an AE or BE or 20% if the dividend is distributed from income attributed to a PFE, unless a reduced rate is provided under an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). For example, under the U.S.-Israel Treaty, the maximum rate of tax withheld in Israel on dividends paid to a holder of our ordinary shares or ADSs who is a U.S. resident (for purposes of the U.S.-Israel Treaty) is 25%. However, generally, the maximum rate of withholding tax on dividends, not generated by our AE or BE, that are paid to a U.S. corporation holding at least 10% or more of our outstanding voting capital from the start of the tax year preceding the distribution of the dividend through (and including) the distribution of the dividend, is 12.5%, provided that no more than 25% of our gross income for such preceding year consists of certain types of dividends and interest. Notwithstanding the foregoing, dividends distributed from income attributed to an AE or BE are subject to a withholding tax rate of 15% for such a U.S. corporation shareholder, provided that the condition related to our gross income for the previous year (as set forth in the previous sentence) is met. The aforementioned rates will not apply if the dividend income was generated through a permanent establishment of the U.S. resident which is maintained in Israel. If the dividend is attributable partly to income derived from an AE a BE, or a PFE, and partly to other sources of income, the withholding rate will be a blended rate reflecting the relative portions of the two types of income. U.S. residents who are subject to Israeli withholding tax on a dividend may be entitled to a credit or deduction for U.S. federal income tax purposes in the amount of the taxes withheld, subject to detailed rules contained in United States tax legislation.

A non-Israeli resident who receives dividends from which tax was withheld is generally exempt from the obligation to file tax returns in Israel with respect to such income, provided that (i) such income was not generated from business conducted in Israel by the taxpayer, (ii) the taxpayer has no other taxable sources of income in Israel with respect to which a tax return is required to be filed and (iii) the taxpayer is not obliged to pay excess tax (as further explained below).

Excess Tax

Individuals who are subject to tax in Israel (whether any such individual is an Israeli resident or non-Israeli resident) are also subject to an additional tax for income exceeding a certain level. For 2017 and onwards, the additional tax is at a rate of 3% on annual income exceeding NIS 649,560 for 2019 (approximately \$0.2 million), which amount is linked to the annual change in the Israeli consumer price index, including, but not limited to, dividends, interest and capital gain.

Estate and gift tax

Israeli law presently does not impose estate or gift taxes.

United States Federal Income Tax Considerations

Subject to the limitations described herein, this discussion summarizes certain U.S. federal income tax consequences of the purchase, ownership and disposition of our Ordinary Shares or ADSs to a U.S. holder. A U.S. holder is a holder of our Ordinary Shares or ADSs who is:

- An individual who is a citizen or resident of the U.S. for U.S. federal income tax purposes
- A corporation (or another entity taxable as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any political subdivision thereof, or the District of Columbia
- An estate, the income of which may be included in gross income for U.S. federal income tax purposes regardless of its source
- A trust (i) if, in general, a U.S. court is able to exercise primary supervision over its administration and one or more U.S. persons have the authority to control all of its substantial decisions or (ii) an electing trust that was in existence on August 19, 1996 and was treated as a domestic trust on that date

Unless otherwise specifically indicated, this discussion does not consider the U.S. tax consequences to a person that is not a U.S. holder (which we refer to as a non-U.S. holder) and considers only U.S. holders that will own our Ordinary Shares or ADSs as capital assets (generally, for investment).

This discussion is based on current provisions of the Internal Revenue Code of 1986, as amended, or the Code, current and proposed Treasury Regulations promulgated under the Code and administrative and judicial interpretations of the Code, all as currently in effect and all of which are subject to change, possibly with a retroactive effect. This discussion does not address all aspects of U.S. federal income taxation that may be relevant to any particular U.S. holder based on the U.S. holder's particular circumstances. In particular, this discussion does not address the U.S. federal income tax consequences to U.S. holders who are broker-dealers, insurance companies, real estate investment trusts, regulated investment companies, grantor trusts, individual retirement and tax-deferred accounts, certain former citizens or long-term residents of the U.S., tax-exempt organizations, financial institutions, "financial service entities" or who own, directly, indirectly or constructively, 10% or more of the vote or value of the our outstanding shares, U.S. holders holding our Ordinary Shares or ADSs as part of a hedging, straddle or conversion transaction, U.S. holders whose functional currency is not the U.S. dollar, U.S. holders that acquired our Ordinary Shares or ADSs upon the exercise of employee stock options or otherwise as compensation, and U.S. holders who are persons subject to the alternative minimum tax, who may be subject to special rules not discussed below.

Additionally, the tax treatment of persons who are, or hold our Ordinary Shares or ADSs through a partnership or other pass-through entity is not considered, nor is the possible application of U.S. federal estate or gift taxes or any aspect of state, local or non-U.S. tax laws.

Furthermore, unless otherwise indicated, this discussion assumes that our company is not, and will not become, a "passive foreign investment company," or a PFIC, for U.S. federal income tax purposes. See "—Passive Foreign Investment Companies" below.

Prospective investors should be aware that this discussion does not address the tax consequences to investors who are not U.S. holders. Prospective investors should consult their own tax advisors as to the particular tax considerations applicable to them relating to the purchase, ownership and disposition of ordinary shares or ADSs, including the applicability of U.S. federal, state and local tax laws and non-U.S. tax laws.

Taxation of Distributions on our Ordinary Shares or ADSs

Subject to the discussion below under "Tax Consequences if We Are a Passive Foreign Investment Company," a distribution paid by us with respect to our Ordinary Shares or ADSs to a U.S. holder will be treated as dividend income to the extent that the distribution does not exceed our current and accumulated earnings and profits, as determined for U.S. federal income tax purposes.

Dividends that are received by U.S. holders that are individuals, estates or trusts generally will be taxed at the rate applicable to long-term capital gains, provided those dividends meet the requirements of “qualified dividend income.” The maximum long-term capital gains rate is 20% for individuals with annual taxable income that exceeds certain thresholds. In addition, under the Patient Protection and Affordable Care Act, higher income taxpayers must pay an additional 3.8 percent tax on net investment income to the extent certain threshold amounts of income are exceeded. See “Tax on Net Investment Income” in this Item below. For this purpose, qualified dividend income generally includes dividends paid by a foreign corporation if certain holding period and other requirements are met and either (a) the stock of the foreign corporation with respect to which the dividends are paid is “readily tradable” on an established securities market in the U.S. (e.g., the NASDAQ Capital Market) or (b) the foreign corporation is eligible for benefits of a comprehensive income tax treaty with the U.S. which includes an information exchange program and is determined to be satisfactory by the U.S. Secretary of the Treasury. Dividends that fail to meet such requirements and dividends received by corporate U.S. holders are taxed at ordinary income rates. No dividend received by a U.S. holder will be a qualified dividend (i) if the U.S. holder held the Ordinary Share or ADS with respect to which the dividend was paid for less than 61 days during the 121-day period beginning on the date that is 60 days before the ex-dividend date with respect to such dividend, excluding for this purpose, under the rules of Code Section 246(c), any period during which the U.S. holder has an option to sell, is under a contractual obligation to sell, has made (and not closed) a short sale of, is the grantor of a deep-in-the-money or otherwise nonqualified option to buy, or has otherwise diminished its risk of loss by holding other positions with respect to, such Ordinary Share or ADS (or substantially identical securities); or (ii) to the extent that the U.S. holder is under an obligation (pursuant to a short sale or otherwise) to make related payments with respect to positions in property substantially similar or related to the Ordinary Share and ADS with respect to which the dividend is paid. If we were to be a “passive foreign investment company” (as such term is defined in the Code), or PFIC, for any taxable year, dividends paid on our Ordinary Shares or ADSs in such year or in the following taxable year would not be qualified dividends. See the discussion below regarding our PFIC status under “Tax Consequences if We Are a Passive Foreign Investment Company.” In addition, a non-corporate U.S. holder will be able to take qualified dividend income into account in determining its deductible investment interest (which is generally limited to its net investment income) only if it elects to do so; in such case the dividend income will be taxed at ordinary income rates.

The amount of any distribution which exceeds the amount treated as a dividend will be treated first as a non-taxable return of capital, reducing the U.S. holder’s tax basis in our Ordinary Shares or ADSs to the extent thereof, and then as capital gain from the deemed disposition of the Ordinary Shares or ADSs. Corporate holders will not be allowed a deduction for dividends received in respect of the Ordinary Shares and ADSs.

Distributions of current or accumulated earnings and profits paid in foreign currency to a U.S. holder will be includible in the income of a U.S. holder in a U.S. dollar amount calculated by reference to the exchange rate on the day the distribution is received. A U.S. holder that receives a foreign currency distribution and converts the foreign currency into U.S. dollars subsequent to receipt may have foreign exchange gain or loss based on any appreciation or depreciation in the value of the foreign currency against the U.S. dollar, which will generally be U.S. source ordinary income or loss.

Taxation of the Disposition of the Ordinary Shares or ADSs

Subject to the discussion below under “Tax Consequences if We Are a Passive Foreign Investment Company,” upon the sale, exchange or other disposition of our Ordinary Shares or ADSs, a U.S. holder will recognize capital gain or loss in an amount equal to the difference between the amount realized on the disposition and the U.S. holder’s tax basis in our Ordinary Shares or ADSs. The gain or loss recognized on the disposition of the Ordinary Shares or ADSs will be long-term capital gain or loss if the U.S. holder held the Ordinary Shares or ADSs for more than one year at the time of the disposition and would be eligible for a reduced rate of taxation for certain non-corporate U.S. holders. The maximum long-term capital gains rate is 20% for individuals with annual taxable income that exceeds certain thresholds. In addition, under the Patient Protection and Affordable Care Act, higher income taxpayers must pay an additional 3.8 percent tax on net investment income to the extent certain threshold amounts of income are exceeded. See “Tax on Net Investment Income” in this Item below. Capital gain from the sale, exchange or other disposition of Ordinary Shares or ADSs held for one year or less is short-term capital gain and taxed as ordinary income. Gain or loss recognized by a U.S. holder on a sale, exchange or other disposition of our Ordinary Shares or ADSs generally will be treated as U.S. source income or loss. The deductibility of capital losses is subject to certain limitations.

A U.S. holder that uses the cash method of accounting calculates the dollar value of the proceeds received on the sale as of the date that the sale settles. However, a U.S. holder that uses the accrual method of accounting is required to calculate the value of the proceeds of the sale as of the trade date and may therefore realize foreign currency gain or loss. A U.S. holder that uses the accrual method may avoid realizing foreign currency gain or loss by electing to use the settlement date to determine the proceeds of sale for purposes of calculating the foreign currency gain or loss. In addition, a U.S. holder that receives foreign currency upon disposition of its Ordinary Shares or ADSs and converts the foreign currency into dollars after the settlement date or trade date (whichever date the U.S. holder is required to use to calculate the value of the proceeds of sale) may have foreign exchange gain or loss based on any appreciation or depreciation in the value of the foreign currency against the dollar, which will generally be U.S. source ordinary income or loss.

Tax Consequences if We Are a Passive Foreign Investment Company

We would be a passive foreign investment company, or PFIC, for a taxable year if either (1) 75% or more of our gross income in the taxable year is passive income; or (2) the average percentage (by value determined on a quarterly basis) in a taxable year of our assets that produce, or are held for the production of, passive income is at least 50%. Passive income for this purpose generally includes, among other things, certain dividends, interest, royalties, rents and gains from commodities and securities transactions and from the sale or exchange of property that gives rise to passive income. If we own (directly or indirectly) at least 25% by value of the stock of another corporation, we would be treated for purposes of the foregoing tests as owning our proportionate share of the other corporation's assets and as directly earning our proportionate share of the other corporation's income. As discussed below, we believe that we were not a PFIC for 2019.

If we were a PFIC, each U.S. holder would (unless it made one of the elections discussed below on a timely basis) be taxable on gain recognized from the disposition of our Ordinary Shares or ADSs (including gain deemed recognized if our Ordinary Shares or ADSs are used as security for a loan) and upon receipt of certain excess distributions (generally, distributions that exceed 125% of the average amount of distributions in respect to such shares received during the preceding three taxable years or, if shorter, during the U.S. holder's holding period prior to the distribution year) with respect to our Ordinary Shares or ADSs as if such income had been recognized ratably over the U.S. holder's holding period for the shares. The U.S. holder's income for the current taxable year would include (as ordinary income) amounts allocated to the current taxable year and to any taxable year prior to the first day of the first taxable year for which we were a PFIC. Tax would also be computed at the highest ordinary income tax rate in effect for each other taxable year to which income is allocated, and an interest charge on the tax as so computed would also apply. The tax liability with respect to the amount allocated to the taxable year prior to the taxable year of the distribution or disposition cannot be offset by any net operating losses. Additionally, if we were a PFIC, U.S. holders who acquire our Ordinary Shares or ADSs from decedents (other than nonresident aliens) would be denied the normally-available step-up in basis for such shares to fair market value at the date of death and, instead, would have a tax basis in such shares equal to the lesser of the decedent's basis or the fair market value of such shares on the decedent's date of death.

As an alternative to the tax treatment described above, a U.S. holder could elect to treat us as a "qualified electing fund" (a QEF), in which case the U.S. holder would be taxed, for each taxable year that we are a PFIC, on its pro rata share of our ordinary earnings and net capital gain (subject to a separate election to defer payment of taxes, which deferral is subject to an interest charge). Special rules apply if a U.S. holder makes a QEF election after the first taxable year in its holding period in which we are a PFIC. We have agreed to supply U.S. holders with the information needed to report income and gain under a QEF election if we were a PFIC. Amounts includable in income as a result of a QEF election will be determined without regard to our prior year losses or the amount of cash distributions, if any, received from us. A U.S. holder's basis in its Ordinary Shares or ADSs will increase by any amount included in income and decrease by any amounts not included in income when distributed because such amounts were previously taxed under the QEF rules. So long as a U.S. holder's QEF election is in effect with respect to the entire holding period for its Ordinary Shares or ADSs, any gain or loss realized by such holder on the disposition of its Ordinary Shares or ADSs held as a capital asset generally will be capital gain or loss. Such capital gain or loss ordinarily would be long-term if such U.S. holder had held such Ordinary Shares or ADSs for more than one year at the time of the disposition and would be eligible for a reduced rate of taxation for certain non-corporate U.S. holders. The maximum long-term capital gains rate is 20% for individuals with annual taxable income that exceeds certain thresholds. The QEF election is made on a shareholder-by-shareholder basis, applies to all Ordinary Shares or ADSs held or subsequently acquired by an electing U.S. holder and can be revoked only with the consent of the IRS. The QEF election must be made on or before the U.S. holder's tax return due date, as extended, for the first taxable year to which the election will apply.

As an alternative to making a QEF election, a U.S. holder of PFIC stock that is "marketable stock" (e.g., "regularly traded" on the NASDAQ Capital Market) may, in certain circumstances, avoid certain of the tax consequences generally applicable to holders of stock in a PFIC by electing to mark the stock to market as of the beginning of such U.S. holder's holding period for our Ordinary Shares or ADSs. Special rules apply if a U.S. holder makes a mark-to-market election after the first year in its holding period in which we are a PFIC. As a result of such an election, in any taxable year that we are a PFIC, a U.S. holder would generally be required to report gain or loss to the extent of the difference between the fair market value of the Ordinary Shares or ADSs at the end of the taxable year and such U.S. holder's tax basis in such shares at that time. Any gain under this computation, and any gain on an actual disposition of our Ordinary Shares or ADSs in a taxable year in which we are PFIC, would be treated as ordinary income. Any loss under this computation, and any loss on an actual disposition of our Ordinary Shares or ADSs in a taxable year in which we are PFIC, would be treated as ordinary loss to the extent of the cumulative net-mark-to-market gain previously included. Any remaining loss from marking our Ordinary Shares or ADSs to market will not be allowed, and any remaining loss from an actual disposition of our Ordinary Shares or ADSs generally would be capital loss. A U.S. holder's tax basis in its Ordinary Shares or ADSs is adjusted annually for any gain or loss recognized under the mark-to-market election. There can be no assurances that there will be sufficient trading volume with respect to our Ordinary Shares or ADSs for the Ordinary Shares or ADSs to be considered "regularly traded" or that our Ordinary Shares or ADSs will continue to trade on the NASDAQ Capital Market. Accordingly, there are no assurances that our Ordinary Shares or ADSs will be marketable stock for these purposes. As with a QEF election, a mark-to-market election is made on a shareholder-by-shareholder basis, applies to all Ordinary Shares or ADSs held or subsequently acquired by an electing U.S. holder and can only be revoked with consent of the IRS (except to the extent our Ordinary Shares or ADSs no longer constitute "marketable stock").

Based on an analysis of our assets and income, we believe that we were not a PFIC for 2019. We currently expect that we will not be a PFIC in 2020. The tests for determining PFIC status are applied annually and it is difficult to make accurate predictions of future income and assets, which are relevant to this determination. Accordingly, there can be no assurance that we will not become a PFIC in any future taxable years. U.S. holders who hold our Ordinary Shares or ADSs during a period when we are a PFIC will be subject to the foregoing rules, even if we cease to be a PFIC, subject to certain exceptions for U.S. holders who made QEF, mark-to-market or certain other special elections. U.S. holders are urged to consult their tax advisors about the PFIC rules, including the consequences to them of making a mark-to-market or QEF election with respect to our Ordinary Shares or ADSs in the event that we qualify as a PFIC.

U.S. holders are urged to consult their tax advisors regarding the application of the PFIC rules, including eligibility for and the manner and advisability of making, the QEF election or the mark-to-market election.

Tax on Net Investment Income

A U.S. holder that is an individual or estate, or a trust that does not fall into a special class of trusts that is exempt from the tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. holder's "net investment income" for the relevant taxable year and (2) the excess of the U.S. holder's modified adjusted gross income for the taxable year over a certain threshold (which in the case of individuals will be between \$125,000 and \$250,000, depending on the individual's circumstances). A U.S. holder's net investment income generally will include its dividends on our Ordinary Shares or ADSs and net gains from dispositions of our Ordinary Shares or ADSs, unless those dividends or gains are derived in the ordinary course of the conduct of trade or business (other than trade or business that consists of certain passive or trading activities). Net investment income, however, may be reduced by deductions properly allocable to that income. A U.S. holder that is an individual, estate or trust is urged to consult its tax adviser regarding the applicability of the Medicare tax to its income and gains in respect of its investment in the Ordinary Shares or ADSs.

Non-U.S. Holders of Ordinary Shares or ADSs

Except as provided below, a non-U.S. holder of our Ordinary Shares or ADSs will not be subject to U.S. federal income or withholding tax on the receipt of dividends on, or the proceeds from the disposition of, our Ordinary Shares or ADSs, unless, in the case of U.S. federal income taxes, that item is effectively connected with the conduct by the non-U.S. holder of a trade or business in the United States and, in the case of a resident of a country which has an income tax treaty with the United States, such item is attributable to a permanent establishment in the United States or, in the case of an individual, a fixed place of business in the United States. In addition, gain recognized on the disposition of our Ordinary Shares or ADSs by an individual non-U.S. holder will be subject to tax in the United States if the non-U.S. holder is present in the United States for 183 days or more in the taxable year of the sale and certain other conditions are met.

Information Reporting and Backup Withholding

A U.S. holder generally is subject to information reporting and may be subject to backup withholding at a rate of up to 28% with respect to dividend payments on, or receipt of the proceeds from the disposition of, our Ordinary Shares or ADSs. Backup withholding will not apply with respect to payments made to exempt recipients, including corporations and tax-exempt organizations, or if a U.S. holder provides a correct taxpayer identification number, certifies that such holder is not subject to backup withholding or otherwise establishes an exemption. Non-U.S. holders are not subject to information reporting or backup withholding with respect to dividend payments on, or receipt of the proceeds from the disposition of, our Ordinary Shares or ADSs in the U.S., or by a U.S. payor or U.S. middleman, provided that such non-U.S. holder provides a taxpayer identification number, certifies to its foreign status, or otherwise establishes an exemption. Backup withholding is not an additional tax and may be claimed as a credit against the U.S. federal income tax liability of a holder, or alternatively, the holder may be eligible for a refund of any excess amounts withheld under the backup withholding rules, in either case, provided that the required information is furnished to the IRS.

Information Reporting by Certain U.S. Holders

U.S. citizens and individuals taxable as resident aliens of the United States that own “specified foreign financial assets” with an aggregate value in a taxable year in excess of certain threshold (as determined under Treasury regulations) and that are required to file a U.S. federal income tax return generally will be required to file an information report with respect to those assets with their tax returns. IRS Form 8938 has been issued for that purpose. “Specified foreign financial assets” include any financial accounts maintained by foreign financial institutions, foreign stocks held directly, and interests in foreign estates, foreign pension plans or foreign deferred compensation plans. Under those rules, our Ordinary Shares or ADSs, whether owned directly or through a financial institution, estate or pension or deferred compensation plan, would be “specified foreign financial assets”. Under Treasury regulations, the reporting obligation applies to certain U.S. entities that hold, directly or indirectly, specified foreign financial assets. Penalties can apply if there is a failure to satisfy this reporting obligation. A U.S. Holder is urged to consult his tax adviser regarding his reporting obligation.

The above description is not intended to constitute a complete analysis of all tax consequences relating to acquisition, ownership and disposition of our Ordinary Shares or ADSs. You should consult your tax advisor concerning the tax consequences of your particular situation.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

Formula is subject to the reporting requirements of the Exchange Act that are applicable to a foreign private issuer. In accordance with the Exchange Act, we file reports with the SEC, including annual reports on Form 20-F by April 30 each year. In addition, we furnish interim financial information on Form 6-K on a quarterly basis. We also furnish to the SEC under cover of Form 6-K certain other material information required to be made public in Israel, filed with and made public by any stock exchange or distributed by us to our shareholders. You may inspect without charge and copy at prescribed rates such material at the public reference facilities maintained by the SEC, at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of such material from the SEC at prescribed rates by writing to the Public Reference Section of the SEC, 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

The SEC maintains an Internet site at <http://www.sec.gov> that contains reports and other material that are filed through the SEC’s Electronic Data Gathering, Analysis and Retrieval (EDGAR) system. Formula began filing through the EDGAR system beginning in October 2002. The Exchange Act file number for our SEC filings is 000-29442.

Formula’s ADSs are traded on the NASDAQ Global Select Market. You may inspect reports and other information concerning Formula at the offices of the Financial Industry Regulatory Authority, Inc., or FINRA, 9509 Key West Avenue, Rockville, Maryland 20850. Copies of our SEC filings and submissions are also submitted to the Israel Securities Authority, or ISA, and the TASE. Such copies can be retrieved electronically through the MAGNA distribution site of the ISA (www.magna.isa.gov.il) and the TASE website (maya.tase.co.il).

A copy of each report that we submit in accordance with applicable United States law is available for public review at our principal executive offices, at 5 Haplada Street, Or Yehuda 6021805, Israel. Information about us is also available on our website at <http://www.formulasystems.com>. Such information is not part of this annual report.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate and Currency Exchange Rate Fluctuations; Impact of Inflation

In light of the nature of our activities, we invest our cash and cash equivalents primarily in short-term and long-term deposits. As of December 31, 2019, substantially all of the cash that we held was invested in dollar, Euro, Indian Rupee, and British Pound accounts bearing interest based on LIBOR, and NIS accounts bearing interest based on the Israeli prime rate. Given the current low interest rates in the financial markets, assuming a 10% interest rate decrease, the net decrease in our earnings from our financial assets would be negligible, holding other variables constant.

As described above in this annual report (under “Item 3.D Risk Factors—Risks Related to Operations in Israel—Fluctuations in foreign currency values may affect our business and results of operations” and “Item 5. Operating and Financial Review and Prospects—Operating Results— Impact of Inflation and Currency Fluctuations on Results of Operations”), because most of our software services revenues are received in NIS, a devaluation of the NIS against the dollar adversely impacts our dollar-recorded software services revenues and operating profit, by reducing the dollar-recorded revenues for those software services. Accordingly, a devaluation of the dollar against the NIS positively impacts our dollar-recorded software services revenues and operating profit.

At the same time, a significant portion of our revenues from proprietary software products is currently denominated in dollars and other currencies, particularly Euro and British pound, Indian rupee and to a lesser extent Japanese yen, while a substantial portion of our expenses relating to the proprietary software products, principally salaries and related personnel expenses, is denominated in NIS. As a result, the devaluation of the dollar relative to the NIS increases our operating costs (as denominated in dollars), and, therefore, adversely affects the operational profitability of our proprietary software product reporting segment. An increase in the rate of Israeli inflation compounds this negative impact by further increasing our NIS (and ultimately dollar-recorded) operating expenses, and, consequently, reducing our operational profitability in that business line. Also, the devaluation of these other currencies—particularly Euro, British pound and to a lesser extent Japanese yen—relative to the U.S. dollar reduces our dollar recorded revenues from sales of our proprietary software products and thereby harms our results of operations.

The net effect of these risks stemming from currency exchange rate fluctuations on our operating results can be quantified as follows:

A hypothetical 10% devaluation or appreciation of foreign currencies (primarily the NIS, GBP, Euro, Japanese yen, PLN and INR) against the US dollar, with all other variables held constant on the expected sales, would have resulted in a decrease or increase in 2019 sales revenues of approximately \$111.9 million or \$132.0 million, respectively.

In addition, a hypothetical 10% devaluation of the dollar against the NIS in the year ended December 31, 2019 would have impacted the outstanding Series A Secured Debentures issued by Formula, the NIS 200 million loan that was extended to Formula by a leading Israeli institutional investor in January 2014, and the outstanding Series C Secured Debentures issued by Formula (each of which is described above under “Item 5.B. Liquidity and Capital Resources”), which remaining principal amounts as of December 31, 2019 were valued at NIS 172.9 million, NIS 44.2 million and NIS 297.2 million, respectively, by increasing financial expenses by approximately \$16.6 million in 2019.

Depending upon the circumstances, we will consider entering into currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the dollar, Euro, Japanese yen and/or British Pound against the NIS, or the Euro, Japanese yen and/or British pound against the dollar. There can be no assurance that these activities, or others that we may use from time to time, will eliminate the negative financial impact of currency fluctuations and inflation. We do not—nor do we intend to in the future—engage in currency speculation.

Fluctuations in Market Price of Securities We Hold

We hold the securities of three subsidiaries— Magic Software, Sapiens and Matrix,— which are companies whose securities are listed for trading on the NASDAQ Global Market, NASDAQ Capital Market and/or the TASE. We consider these holdings as long-term holdings. We are exposed to the risk of fluctuation of the price of these companies’ securities. All of these publicly traded companies have experienced significant historical volatility in their stock prices. Fluctuations in the market price of our holdings in these companies may result in the fluctuation of the value of our assets. We typically do not attempt to reduce or eliminate our market exposure on these securities.

Generally, we do not hold nor have we issued, to any material extent, any derivatives or other financial instruments for trading purposes except for our Series A Secured Debentures, Series B Convertible Debentures and Series C Secured Debentures issued pursuant to our public offerings in Israel on the TASE.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. Debt Securities

Not applicable.

B. Warrants and Rights

Not applicable.

C. Other Securities

Not applicable.

D. American Depositary Shares

Fees and charges payable by our ADS holders

The Bank of New York Mellon, which we refer to as the Depositary, serves as the depositary for our ADS program. Pursuant to the deposit agreement by and among our company, the Depositary and owners and holders of our ADSs, which we refer to as the Deposit Agreement, ADS holders may be required to pay various fees to the Depositary. In particular, the Depositary may charge the following fees to any party depositing or withdrawing ADSs, or to any party surrendering American Depositary Receipts (which we refer to as ADRs) that represent the ADSs, or to whom ADRs are issued (including, without limitation, issuance pursuant to a stock dividend or stock split declared by us or an exchange of stock involving the ADRs or any deposited ADSs underlying the ADRs or a distribution of ADRs pursuant to a distribution of underlying shares), as applicable:

- taxes and governmental charges;
- such registration fees as may from time to time be in effect for the registration of transfers of shares generally on our share register and applicable to transfers of shares to the name of the Depositary or its nominee or agent in connection with making deposits or withdrawals under the Deposit Agreement;
- such cable, telex and facsimile transmission expenses as are expressly provided for in the Deposit Agreement;
- such expenses as are incurred by the Depositary in the conversion of foreign currency;
- a fee of \$5.00 or less per 100 ADSs (or portion thereof) for the execution and delivery of ADRs (including in connection with distributions of shares or rights by us) and in connection with the surrender of receipts and withdrawal of the underlying shares;
- a fee of \$.02 or less per ADS (or portion thereof) for any cash distribution made pursuant to the Deposit Agreement, including in connection with distributions of shares or rights;
- a fee for the distribution of securities in connection with certain distributions, such fee being in an amount equal to the fee for the execution and delivery of ADSs which would have been charged as a result of the deposit of such securities but which securities are instead distributed by the Depositary to ADR holders; and
- any other charges payable by the Depositary or any of its agents in connection with the servicing of ADSs or other deposited securities underlying the ADRs.

Amounts received from the Depositary

We do not receive any fees directly or indirectly from the Depositary.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, including our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2019. Based on such evaluation, the Chief Executive Officer and the Chief Financial Officer have concluded that, as of December 31, 2019, the Company's disclosure controls and procedures are effective.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our management, including our Chief Executive Officer and our Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework and criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) as of the end of the period covered by this report.

Based on that evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2019. Notwithstanding the foregoing, there can be no assurance that our internal control over financial reporting will detect or uncover all failures of persons within the Company to comply with our internal procedures, as all internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective may not prevent or detect misstatements.

Our management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of the business of NetEffects, Inc. and OnTarget Group, Inc., that were acquired during 2019 and included in our 2019 consolidated financial statements and constituted 0.9% of total net assets, as of December 31, 2019 and 1.9% of revenues for the year then ended.

Attestation Report of the Registered Public Accounting Firm

The attestation report of Kost Forer Gabbay & Kasierer, a member of EY Global, an independent registered public accounting firm in Israel, on our management's assessment of our internal control over financial reporting as of December 31, 2019 is provided on page F-2, as included under Item 18 of this annual report.

Changes in Internal Control over Financial Reporting

Based on the evaluation conducted by our Chief Executive Officer and our Chief Financial Officer pursuant to Rules 13a-15(d) and 15d-15(d) under the Exchange Act, our management has concluded that there was no change in our internal control over financial reporting that occurred during the year ended December 31, 2019 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16. RESERVED

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Ms. Iris Yahal, who serves on the audit committee of our board of directors, qualifies as our "audit committee financial expert," as defined under the rules and regulations of the SEC.

ITEM 16B. CODE OF ETHICS

We have adopted a code of business conduct and ethics, or code of ethics, applicable to Formula's Chief Executive Officer and Chief Financial Officer (who also serves as its principal accounting officer) and any person performing similar functions, as well as to its directors and other employees. A copy of the code of ethics is available to all of Formula's employees, investors and others without charge, upon request to the following address: Formula Systems (1985) Ltd., 5 Haplada St., Or Yehuda 6021805, Israel, Attn: Chief Executive Officer.

The chairman of our audit committee may approve a request by our Chief Executive Officer, Chief Financial Officer (who also serves as our principal accounting officer) or any person performing similar functions for a waiver from the requirements of our code of ethics pertaining to (i) honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationship; (ii) full, fair, accurate, timely and understandable disclosure in reports and documents that we must file with, or submit to, the SEC and in other public communications made by us; (iii) compliance with applicable governmental laws, rules and regulations; (iv) the prompt internal reporting of violation of the code of ethics to the chairman of our audit committee; and (v) accountability for adherence to the code of ethics; provided in each case that the person requesting such waiver provides to our audit committee a full disclosure of the particular circumstances relating to such request. The chairman of our audit committee will first determine whether a waiver of the relevant requirements of the code of ethics is required and, if such waiver is required, whether a waiver will be granted. The person requesting such waiver may be required to agree to certain conditions before a waiver or a continuing waiver is granted.

Any amendments to the code of ethics and all waivers from compliance with the code of ethics granted to our Chief Executive Officer, Chief Financial Officer (who also serves as our principal accounting officer) or any person performing similar functions with respect to its requirements described in the above paragraph will be publicly disclosed by us via a report on Form 6-K in accordance with the regulations of the SEC. No such amendment was adopted, nor waiver provided, by us during the fiscal year ended December 31, 2019.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Principal Accountant Fees and Services

Formula and its subsidiaries and affiliate company paid the following fees for professional services rendered by Kost Forer Gabbay & Kasierer, Certified Public Accountant, a member firm of Ernst & Young Global, independent registered public accounting firm (which we refer to as Kost Forer), to the Company for the years ended December 31, 2017 and December 31, 2018, respectively:

Services Rendered	Year Ended December 31,	
	2018	2019
	(US dollars in thousands)	
Audit ⁽¹⁾	\$ 1,620	\$ 1,756
Tax and other ⁽²⁾	\$ 610	\$ 553
Total	\$ 2,230	\$ 2,309

- (1) The audit fees for the years ended December 31, 2018 and 2019 were for professional services rendered for: the audits of our annual consolidated financial statements; agreed-upon procedures related to the review of our consolidated quarterly information; statutory audits of Formula and its subsidiaries and affiliated companies; issuance of comfort letters and consents; and assistance with review of documents filed with the SEC.
- (2) Tax fees for the years ended December 31, 2018 and 2019 were for services related to tax compliance, including the preparation of tax returns and claims for refund, and tax advice.

Formula paid the following fees for professional services rendered by Kost Forer to the Company (on a stand-alone basis, excluding services provided to the subsidiaries and affiliates of the Company) for the years ended December 31, 2018 and December 31, 2019, respectively:

Services Rendered	Year Ended December 31,	
	2018	2019
	(US dollars in thousands)	
Audit ⁽¹⁾	\$ 84	\$ 53
Tax and other ⁽²⁾	\$ 28	\$ 47
Total	\$ 112	\$ 100

- (1) The audit fees for the years ended December 31, 2018 and 2019 were for professional services rendered for: the audits of our annual consolidated financial statements; agreed-upon procedures related to the review of our consolidated quarterly information; statutory audits of Formula and its subsidiaries and affiliated companies; issuance of comfort letters and consents; and assistance with review of documents filed with the SEC.
- (2) Tax fees for the years ended December 31, 2018 and 2019 were for services related to tax compliance, including the preparation of tax returns and claims for refund, and tax advice.

Policy on Pre-Approval of Audit and Non-Audit Services of Independent Auditors

Our audit committee is responsible for the oversight of our (and our subsidiaries') independent auditor's work. Our audit committee has adopted a policy and procedures for the pre-approval of audit and non-audit services rendered by our independent registered public accountants, Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global. Pre-approval of an audit or non-audit service may be given as a general pre-approval, as part of the audit committee's approval of the scope of the engagement of our independent auditor, or on an individual basis. Any proposed services that exceed general pre-approved levels also require specific pre-approval by our audit committee. The policy prohibits retention of the independent public accountants to perform the prohibited non-audit functions defined in Section 201 of the Sarbanes-Oxley Act of 2002 or the rules of the SEC, and also requires the audit committee to consider whether proposed services are compatible with the independence of the public accountants.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

None.

ITEM 16G. CORPORATE GOVERNANCE

The NASDAQ Global Select Market requires companies with securities listed thereon to comply with its corporate governance standards. As a foreign private issuer, we are not required to comply with all of the rules that apply to listed domestic U.S. companies. Pursuant to NASDAQ listing rule 5615(a)(3), we have notified NASDAQ that with respect to the corporate governance practices described below, we instead follow Israeli law and practice and accordingly do not follow the NASDAQ listing rules. Except for the differences described below, we do not believe there are any significant differences between our corporate governance practices and those that apply to a U.S. domestic issuer under the NASDAQ corporate governance rules.

- **Independent Director Oversight of Nominations:** Under Israeli law, there is no requirement to have an independent nominating committee or the independent directors of a company select (or recommend for selection) director nominees, as is required under NASDAQ listing rule 5605(e) for a U.S. domestic issuer. Our board of directors handles this process, as is permitted by our articles and the Companies Law. We also need not adopt a formal board resolution or charter addressing the director nominations process and such related matters as may be required under the U.S. federal securities laws, as NASDAQ requires for a U.S. issuer.
- **Shareholder Approval:** Pursuant to Israeli law, we seek shareholder approval for all corporate actions requiring such approval under the requirements of the Companies Law, which are different from, or in addition to, the requirements for seeking shareholder approval under NASDAQ listing rule 5635. See "Item 10. Additional Information—Memorandum and Articles of Association—Approval of Certain Transactions Under the Companies Law" in this annual report for a description of the transactions requiring shareholder approval under the Companies Law.
- **Quorums for Shareholders Meetings.** The quorum for a shareholders meeting, as stipulated in our articles, complies with the provisions of Israeli law, and requires the presence, in person or by proxy of holders of 25% of our outstanding ordinary shares, in lieu of the requirement specified in NASDAQ listing rule 5620(c) under which the quorum for any shareholders meeting shall not be less than 33⅓% of the outstanding voting shares of a listed company.
- **Required Timing for Annual Shareholders Meetings.** Under the Companies Law, we are required to hold an annual shareholders meeting each calendar year and within 15 months of the last annual shareholders meeting, which differs from the corresponding requirement under NASDAQ listing rule 5620(a), which mandates that a listed company hold its annual shareholders meeting within one year of the company's fiscal year-end.

ITEM 16H. MINE SAFETY DISCLOSURES

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

We have elected to provide financial statements and related information pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

Our consolidated financial statements and the report of our independent registered public accounting firm in connection therewith are filed as part of this annual report, as noted on the pages below:

Reports of Independent Registered Public Accounting Firm	F-2 - F-4
Consolidated Statements of Financial Position	F-5 - F-6
Consolidated Statements of Profit or Loss	F-7
Consolidated Statements of Comprehensive Income	F-8
Consolidated Statements of Changes in Equity	F-9 - F-12
Consolidated Statements of Cash Flows	F-13 - F-15
Notes to Consolidated Financial Statements	F-16 - F-110

ITEM 19. EXHIBITS

EXHIBIT INDEX

Exhibit No.

1.1	Memorandum of Association ⁽¹⁾
1.2	Amended and Restated Articles of Association, as adopted by Formula Systems (1985) Ltd. on January 8, 2012 ⁽²⁾
2.1	Depository Agreement by and among Formula Systems (1985) Ltd., Bank of New York Mellon and the holders of the American Depositary Shares of Formula Systems (1985) Ltd. ⁽¹⁾
2.2	Description of American Depositary Shares of Formula Systems (1985) Ltd.*
4.1	Form of Letter of Indemnification for officers and directors, adopted by Formula Systems (1985) Ltd. on January 8, 2012 ⁽³⁾
4.2	English translation of Formula Systems (1985) Ltd. Employees and Office Holders Share Option Plan (2008) ⁽⁴⁾
4.3	Formula Systems (1985) Ltd. 2011 Share Incentive Plan, as amended ⁽⁵⁾
4.4	Formula Systems (1985) Ltd. Compensation Policy ⁽⁶⁾
8.1	List of Subsidiaries*
12.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Exchange Act*
12.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Exchange Act*
13.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(b)/Rule 15d-14(b) under the Exchange Act and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
13.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(b)/Rule 15d-14(b) under the Exchange Act and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
15.1	Consent of Kost, Forer, Gabbay & Kasierer, A Member of Ernst & Young Global*
15.2	Consent of KDA Audit Corporation*

* Filed herewith.

(1) Incorporated by reference to the Registration Statement on Form F-1 (File No. 333-8858).

(2) Incorporated by reference to Exhibit 99.1 to the report on Form 6-K filed by the registrant with the Securities and Exchange Commission on January 18, 2012.

(3) Incorporated by reference to Exhibit 99.2 to the report on Form 6-K filed by the registrant with the Securities and Exchange Commission on January 18, 2012.

(4) Incorporated by reference to Exhibit 4.3 to the annual report on Form 20-F for the 2008 fiscal year filed by the registrant with the Securities and Exchange Commission on April 27, 2009.

(5) Incorporated by reference to Exhibit 4.3 to the annual report on Form 20-F for the 2013 fiscal year filed by the registrant with the Securities and Exchange Commission on April 30, 2014.

(6) Incorporated by reference to Appendix A to Exhibit 99.2 to the report on Form 6-K furnished by the registrant to the Securities and Exchange Commission on November 16, 2016.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

FORMULA SYSTEMS (1985) LTD.

By: /s/ Guy Bernstein
Guy Bernstein
Chief Executive Officer

June 29, 2020
Date

FORMULA SYSTEMS (1985) LTD.
CONSOLIDATED FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2019
U.S. DOLLARS IN THOUSANDS

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

FORMULA SYSTEMS (1985) LTD.

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Formula Systems (1985) Ltd. (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of profit or loss, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, based on our audits and the report of other auditors, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board.

We did not audit the financial statements of Magic Software Japan K.K., a wholly-owned subsidiary of Magic Software Enterprises Ltd., which reflect total assets constituting 0.2% and 0.3% at December 31, 2019 and 2018, respectively, and total revenues constituting 0.7%, 0.7% and 0.7% for the years ended December 31, 2019, 2018 and 2017, respectively, of the related consolidated totals. Those statements were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the amounts included for Magic Software Japan K.K., is based solely on the report of the other auditors.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated June 29, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits and the report of other auditors provide a reasonable basis for our opinion.

/s/ KOST FORER GABBAY & KASIERER
A Member of Ernst & Young Global

We have served as the Company's auditor since 2010.

Tel-Aviv, Israel
June 29, 2020



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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of

FORMULA SYSTEMS (1985) LTD.

Opinion on Internal Control over Financial Reporting

We have audited Formula Systems (1985) Ltd.'s ("the Company") internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) ("the COSO criteria"). In our opinion, the Company, based on our audit and the report of other auditors, maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We did not examine the effectiveness of internal control over financial reporting of Magic Software Japan K.K, a wholly owned subsidiary of Magic Software Enterprises Ltd., whose financial statements reflect total assets and revenues constituting 0.2% and 0.7%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2019. The effectiveness of Magic Software Japan K.K.'s internal control over financial reporting was audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the effectiveness of Magic Software Japan K.K.'s internal control over financial reporting, is based solely on the report of the other auditors.

As indicated in the accompanying Management's Annual Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of NetEffects, Inc., and OnTarget Group, Inc., wholly owned subsidiaries of Magic Software Enterprises Ltd., that were acquired during 2019 and included in the 2019 consolidated financial statements of the Company and constituted approximately 1% of the Company's total and net assets as of December 31, 2019, and approximately 2% of the Company's total revenue for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting NetEffects, Inc. and OnTarget Group, Inc.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Company as of December 31, 2019 and 2018, the related consolidated statements of profit or loss, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2019 and the related notes and our report dated June 29, 2020 expressed an unqualified opinion thereon based on our audit and the report of the other auditors.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit and the report of other auditors provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KOST FORER GABBAY& KASIERER
A Member of Ernst & Young Global

Tel-Aviv, Israel
June 29, 2020

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

U.S. dollars in thousands

	Note	December 31,	
		2019	2018
ASSETS			
CURRENT ASSETS:			
Cash and cash equivalents		\$ 368,666	\$ 268,492
Short-term deposits		29,886	16,881
Marketable securities	5	6,600	9,913
Trade receivables (net of allowances for doubtful accounts of \$6,910 and \$5,195 as of December 31, 2019 and 2018, respectively)		486,007	441,468
Prepaid expenses and other accounts receivable	6	65,709	40,464
Inventories		8,636	3,882
Total current assets		965,504	781,100
LONG-TERM ASSETS:			
Deferred taxes	22f	38,865	14,214
Prepaid expenses, other accounts receivable and other investments		22,205	23,121
Total long-term assets		61,070	37,335
INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY METHOD	8	26,021	25,710
OPERATING LEASE RIGHT-OF-USE ASSETS	17	104,130	-
PROPERTY, PLANTS AND EQUIPMENT, NET	9	43,059	29,182
INTANGIBLE ASSETS, NET	10	165,280	150,306
GOODWILL	11	724,193	640,918
Total assets		\$ 2,089,257	\$ 1,664,551

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

U.S. dollars in thousands (except share and per share data)

	Note	December 31,	
		2019	2018
LIABILITIES AND EQUITY			
CURRENT LIABILITIES:			
Credit from banks and others	12, 14	\$ 125,297	\$ 71,180
Debentures	15	31,362	55,822
Current maturities of operating lease liabilities	17	35,673	-
Trade payables		125,163	118,786
Deferred revenues		93,512	59,509
Employees and payroll accrual		142,033	114,904
Other accounts payable	13	63,172	53,790
Dividend payable		7,081	5,015
Liabilities in respect of business combinations		8,431	5,602
Put options of non-controlling interests	2(21)G	39,668	40,926
Total current liabilities		671,392	525,534
LONG-TERM LIABILITIES:			
Loans from banks and others	14	162,062	139,527
Debentures	15	175,411	114,902
Long-term operating lease liabilities	17	73,686	-
Other long-term liabilities		8,311	8,734
Deferred taxes	22f	53,854	34,819
Deferred revenues		6,491	4,906
Liability in respect of business combinations		14,895	6,125
Put options of non-controlling interests	2(21)G	15,182	15,723
Employee benefit liabilities		11,639	8,884
Total long-term liabilities		521,531	333,620
COMMITMENTS AND CONTINGENCIES	20		
EQUITY	21		
Formula Systems (1985) Ltd. shareholders' equity:			
Share capital:			
Ordinary shares of NIS 1 par value -			
Authorized: 25,000,000 shares at December 31, 2019 and 2018;			
Issued: 15,862,887 and 15,318,958 at December 31, 2019 and 2018, respectively; Outstanding:			
15,294,267 and 14,750,338 at December 31, 2019 and 2018, respectively			
		4,340	4,190
Additional paid-in capital		120,737	98,008
Retained earnings		285,146	262,557
Accumulated other comprehensive income		11,676	3,134
Treasury shares (568,620 shares as of December 31, 2019 and 2018)		(259)	(259)
Total equity attributable to Formula Systems (1985) Ltd.'s shareholders		421,640	367,630
Non-controlling interests	23a	474,694	437,767
Total equity		896,334	805,397
Total liabilities and equity		\$ 2,089,257	\$ 1,664,551

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF PROFIT OR LOSS

U.S. dollars in thousands (except share and per share data)

	Note	Year ended December 31,		
		2019	2018	2017
Revenues:				
Proprietary software products and related services	23c	\$ 414,173	\$ 370,027	\$ 341,350
Software services		1,286,942	1,122,961	1,013,789
Total revenues		1,701,115	1,492,988	1,355,139
Cost of revenues:				
Proprietary software products and related services		225,438	207,859	201,302
Other software products and related services		1,089,628	951,817	857,014
Total cost of revenues		1,315,066	1,159,676	1,058,316
Gross profit		386,049	333,312	296,823
Research and development expenses, net		46,690	41,223	39,853
Selling, marketing, general and administrative expenses		200,870	182,472	184,164
Operating income		138,489	109,617	72,806
Financial expenses	23b	22,443	15,852	29,870
Financial income		3,791	7,562	8,751
Pre-tax income before share of profits of companies accounted for at equity, net		119,837	101,327	51,687
Taxes on income	22h	27,201	24,301	13,371
Share of profits of companies accounted for at equity, net	8	1,787	369	1,124
Net income		\$ 94,423	\$ 77,395	\$ 39,440
Attributable to:				
Equity holders of the Company		38,820	32,365	10,352
Non-controlling interests		55,603	45,030	29,088
		\$ 94,423	\$ 77,395	\$ 39,440
Net earnings per share attributable to equity holders of The Company	23d			
Basic earnings per share		\$ 2.56	\$ 2.20	\$ 0.72
Diluted earnings per share		\$ 2.44	\$ 2.14	\$ 0.68

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

U.S. dollars in thousands

	Year ended December 31,		
	2019	2018	2017
Net income	\$ 94,423	\$ 77,395	\$ 39,440
Other comprehensive income (loss) net of tax effect:			
<u>Amounts that will not be reclassified subsequently to profit or loss:</u>			
Actuarial gain (loss) from defined benefit plans	(26)	387	(898)
Share in other comprehensive income of joint venture	62	58	104
<u>Amounts that will be or that have been reclassified to profit or loss when specific conditions are met:</u>			
Unrealized gain (loss) on debt instruments at fair value through other comprehensive income, net	95	(37)	144
Amounts transferred to the statement of profit or loss for sale of debt instruments at fair value through other comprehensive income, net	-	-	(94)
Foreign exchange differences on translation of foreign operations	22,293	(30,395)	42,389
Total other comprehensive income (loss), net of tax	22,424	(29,987)	41,645
Total Comprehensive income	116,847	47,408	81,085
Total comprehensive income attributable to:			
Equity holders of the Company	47,350	17,610	30,354
Non-controlling interests	69,497	29,798	50,731
	\$ 116,847	\$ 47,408	\$ 81,085

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Share Capital		Additional paid-in capital	Retained earnings	Accumulated other comprehensive Loss	Treasury shares (cost)	Non-controlling interests	Total Equity
	Number	Amount						
Balance as of January 1, 2019	14,750,338	\$ 4,190	\$ 98,008	\$ 262,557	\$ 3,134	\$ (259)	\$ 437,767	\$ 805,397
Impact of the adoption of IFRS 16	-	-	-	(1,187)	-	-	(1,225)	(2,412)
Balance as of January 1, 2019 (Including the impact of the adoption of IFRS 16)	14,750,338	\$ 4,190	\$ 98,008	\$ 261,370	\$ 3,134	\$ (259)	\$ 436,542	\$ 802,985
Net income	-	-	-	38,820	-	-	55,603	94,423
Foreign currency translation reserve	-	-	-	-	8,437	-	13,856	22,293
Actuarial gain from defined benefit plans	-	-	-	(12)	-	-	(14)	(26)
Unrealized gain on debt instruments at fair value through other comprehensive income, net	-	-	-	-	43	-	52	95
Share in other comprehensive income of joint venture	-	-	-	-	62	-	-	62
Total other comprehensive income (loss)	-	-	-	(12)	8,542	-	13,894	22,424
Total comprehensive income (loss)	-	-	-	38,808	8,542	-	69,497	116,847
Issuance of shares upon conversion of convertible debentures	543,929	150	22,321	-	-	-	-	22,471
Cost of share-based payment (Note 18)	-	-	257	-	-	-	3,617	3,874
Dividend to Formula's shareholders	-	-	-	(15,032)	-	-	-	(15,032)
Dividend to non-controlling interests in subsidiaries	-	-	-	-	-	-	(38,233)	(38,233)
Transactions with non-controlling interests due to holding changes, including exercise of employees' stock options	-	-	(100)	-	-	-	1,053	953
Acquisition of non-controlling interests	-	-	(9)	-	-	-	(3,838)	(3,847)
Settlement of put options over non-controlling interests	-	-	260	-	-	-	5,597	5,857
Non-controlling interests arising from initially consolidated company	-	-	-	-	-	-	459	459
Balance as of December 31, 2019	15,294,267	\$ 4,340	\$ 120,737	\$ 285,146	\$ 11,676	\$ (259)	\$ 474,694	\$ 896,334

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Share Capital		Additional paid-in capital	Retained earnings	Accumulated other comprehensive Loss	Treasury shares (cost)	Non- controlling interests	Total Equity
	Number	Amount						
Balance as of January 1, 2018	14,738,782	\$ 4,187	\$ 98,040	\$ 239,156	\$ 18,078	\$ (259)	\$ 413,720	\$ 772,922
Impact of the adoption of IFRS 15	-	-	-	874	-	-	941	1,815
Balance as of January 1, 2018 (Including the impact of the adoption of IFRS 15)	14,738,782	\$ 4,187	\$ 98,040	\$ 240,030	\$ 18,078	\$ (259)	\$ 414,661	\$ 774,737
Net income	-	-	-	32,365	-	-	45,030	77,395
Foreign currency translation reserve	-	-	-	-	(14,983)	-	(15,412)	(30,395)
Actuarial gain from defined benefit plans	-	-	-	189	-	-	198	387
Unrealized loss on debt instruments at fair value through other comprehensive income, net	-	-	-	-	(19)	-	(18)	(37)
Share in other comprehensive income of joint venture	-	-	-	-	58	-	-	58
Total other comprehensive income (loss)	-	-	-	189	(14,944)	-	(15,232)	(29,987)
Total comprehensive income (loss)	-	-	-	32,554	(14,944)	-	29,798	47,408
Issuance of restricted shares to employees	10,000	3	(3)	-	-	-	-	-
Issuance of shares upon conversion of convertible debentures	1,556	(*)	64	-	-	-	-	64
Cost of share-based payment (Note 18)	-	-	234	-	-	-	3,747	3,981
Dividend to Formula's shareholders	-	-	-	(10,027)	-	-	-	(10,027)
Dividend to non-controlling interests in subsidiaries	-	-	-	-	-	-	(31,316)	(31,316)
Dilution in Formula's share in Magic Software due to issuance of Magic Software's ordinary shares	-	-	2,682	-	-	-	22,722	25,404
Transactions with non-controlling interests due to holding changes, including exercise of employees' stock options	-	-	(526)	-	-	-	1,731	1,205
Acquisition of non-controlling interests	-	-	(590)	-	-	-	(1,325)	(1,915)
Non-controlling interests due to expiration of put options	-	-	498	-	-	-	855	1,353
Settlement of put options over non-controlling interests	-	-	(2,391)	-	-	-	(3,933)	(6,324)
Non-controlling interests arising from initially consolidated company	-	-	-	-	-	-	827	827
Balance as of December 31, 2018	<u>14,750,338</u>	<u>\$ 4,190</u>	<u>\$ 98,008</u>	<u>\$ 262,557</u>	<u>\$ 3,134</u>	<u>\$ (259)</u>	<u>\$ 437,767</u>	<u>\$ 805,397</u>

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Share Capital		Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Treasury shares (cost)	Non- controlling interests	Total Equity
	Number	Amount						
Balance as of January 1, 2017	14,728,782	\$ 4,184	\$ 100,571	\$ 234,268	\$ (2,377)	\$ (259)	\$ 387,455	\$ 723,842
Net income	-	-	-	10,352	-	-	29,088	39,440
Foreign currency translation reserve	-	-	-	-	20,325	-	22,064	42,389
Actuarial loss from defined benefit plans	-	-	-	(453)	-	-	(445)	(898)
Unrealized gain on debt instruments at fair value through other comprehensive income, net	-	-	-	-	70	-	74	144
Realized gain on debt instruments at fair value through other comprehensive income, net	-	-	-	-	(44)	-	(50)	(94)
Share in other comprehensive income of joint venture	-	-	-	-	104	-	-	104
Total other comprehensive income (loss)	-	-	-	(453)	20,455	-	21,643	41,645
Total comprehensive income	-	-	-	9,899	20,455	-	50,731	81,085
Issuance of restricted shares to employees	10,000	3	(3)	-	-	-	-	-
Cost of share-based payment (Note 18)	-	-	1,058	-	-	-	2,976	4,034
Dividend to Formula's shareholders	-	-	-	(5,011)	-	-	-	(5,011)
Dividend to non-controlling interests in subsidiaries	-	-	-	-	-	-	(27,645)	(27,645)
Transactions with non-controlling interests due to holding changes, including exercise of employees' stock options	-	-	(1,306)	-	-	-	4,553	3,247
Acquisition of non-controlling interests	-	-	3	-	-	-	3	6
Non-controlling interests due to expiration of put options	-	-	-	-	-	-	2,440	2,440
Settlement of put options over non-controlling interests	-	-	(2,283)	-	-	-	(6,821)	(9,104)
Non-controlling interests arising from exercise of options in indirect subsidiary	-	-	-	-	-	-	28	28
Balance as of December 31, 2017	14,738,782	\$ 4,187	\$ 98,040	\$ 239,156	\$ 18,078	\$ (259)	\$ 413,720	\$ 772,922

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Year ended December 31,		
	2019	2018	2017
Reserve from debt instruments at fair value through other comprehensive income	401	358	377
Foreign currency translation reserve	13,266	4,829	19,812
Reserve from derivatives	4	4	4
Share in other comprehensive loss of companies accounted for at equity, net	(1,995)	(2,057)	(2,115)
Accumulated other comprehensive income (loss)	<u>\$ 11,676</u>	<u>\$ 3,134</u>	<u>\$ 18,078</u>

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

U.S. dollars in thousands

	Year ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	\$ 94,423	\$ 77,395	\$ 39,440
Adjustments to reconcile net income to net cash provided by operating activities:			
Share of profits of companies accounted for at equity, net	(1,787)	(369)	(1,124)
Depreciation and amortization	86,932	48,734	43,646
Changes in value of debentures, net	(2,067)	(3,025)	5,277
Increase (decrease) in employee benefit liabilities	114	565	752
Loss (gain) from sale of property, plants and equipment	(23)	1	26
Stock-based compensation expenses	3,874	3,981	4,552
Changes in value of short-term and long-term loans from banks and others and deposits, net	5,621	(2,296)	6,731
Change in liability in respect of business combinations	(13,157)	(5,743)	(12,819)
Change in liability in respect of business combinations	523	666	1,531
Loss (gain) from sale and increase in value of marketable securities classified as trading	35	(53)	149
Amortization of premium and accrued interest on debt instruments at fair value through other comprehensive income	82	189	716
Realized loss (gain) from sale of debt instruments at fair value through other comprehensive income	-	-	(94)
Change in value of dividend preference derivative in TSG	(93)	(333)	(260)
Working capital adjustments:			
Decrease (increase) in inventories	(938)	(1,024)	1,037
Decrease (increase) in trade receivables	16,265	(66,069)	(38,223)
Decrease (increase) in other current and long-term accounts receivable	12,692	(5,768)	755
Increase (decrease) in trade payables	(18,010)	19,955	6,086
Increase in other accounts payable and employees and payroll Accrual	5,937	12,781	7,199
Increase in deferred revenues	5,658	3,008	15,718
Net cash provided by operating activities	196,081	82,595	81,095

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

U.S. dollars in thousands

	Year ended December 31,		
	2019	2018	2017
Cash flows from investing activities:			
Payments for business acquisitions, net of cash acquired (Appendix C)	(52,457)	(49,069)	(119,103)
Cash paid in conjunction with deferred payments and contingent liabilities related to business combinations	(8,321)	(8,288)	(8,817)
Payments to former shareholders of consolidated company	(996)	-	-
Purchase of intangible assets	(4,399)	(180)	-
Purchase of other investment	(178)	-	-
Purchase of property and equipment	(22,379)	(11,625)	(9,573)
Proceeds from maturity and sale net of investment in debt instruments at fair value through other comprehensive income or loss, net	3,356	4,000	40,622
Proceeds from sale of property and equipment	1,660	440	-
Investment in and loans to affiliates and other companies	37	26	(25)
Investment in restricted deposit on account of future acquisition	(22,890)	-	-
Change in restricted cash in other accounts receivable	-	362	-
Change in short-term and long-term deposits, net	8,160	(17,292)	(888)
Capitalization of software development and other costs	(9,808)	(8,826)	(9,338)
Net cash used in investing activities	(108,215)	(90,452)	(107,122)
Cash flows from financing activities:			
Exercise of employees' stock options in subsidiaries	953	1,206	3,240
Issuance of Magic Software's ordinary shares, net	-	25,404	-
Dividend paid to non-controlling interests	(37,656)	(34,103)	(31,231)
Dividend to Formula's shareholders	(12,966)	(5,012)	(12,081)
Short-term bank credit, net	49,142	(20,741)	(21,176)
Repayment of long-term loans from banks and others	(75,548)	(42,884)	(46,065)
Receipt of long-term loans	73,819	83,478	52,734
Proceeds from issuance of debentures, net	81,676	45,356	78,229
Repayment of long-term liabilities to office of the chief scientist	(617)	(220)	(502)
Repayment of debentures	(30,811)	(9,383)	(3,656)
Purchase of non-controlling interests	(947)	(1,992)	-
Repayment of lease liabilities	(34,500)	-	(480)
Cash paid due to exercise of put option by non-controlling interests	(6,532)	(142)	-
Net cash provided by (used in) financing activities	6,013	40,967	19,012
Effect of exchange rate changes on cash and cash equivalents	6,295	(10,565)	12,912
Increase (decrease) in cash and cash equivalents	100,174	22,545	5,897
Cash and cash equivalents at beginning of year	268,492	245,947	240,050
Cash and cash equivalents at end of year	\$ 368,666	\$ 268,492	\$ 245,947

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

U.S. dollars in thousands

	Year ended December 31,		
	2019	2018	2017
A. <u>Supplemental cash flow information:</u>			
Cash paid (received) in respect of:			
Interest paid	\$ 15,733	\$ 9,061	\$ 6,448
Interest received	\$ 1,380	\$ 680	\$ 145
Taxes paid (received), net	\$ 39,063	\$ 23,295	\$ 19,680
B. <u>Non-cash activities:</u>			
Dividend payable to Formula's shareholders	\$ 7,081	\$ 5,015	\$ -
Purchase of property and equipment	\$ 315	\$ 76	\$ 247
Deferred payments related to business combinations	\$ 19,871	\$ 200	\$ 962
Dividend payable to non-controlling interests	\$ 577	\$ -	\$ 692
Operating lease	\$ 25,074	\$ -	\$ -
Disposal of property	\$ -	\$ 155	\$ -
Issuance of Formula's ordinary shares as a result of conversion of debentures	\$ 22,471	\$ 64	\$ -
C. Acquisition of newly-consolidated subsidiaries and activities, net of cash acquired:			
Assets and liabilities of subsidiaries consolidated as of acquisition date:			
Working capital (other than cash and cash equivalents)	1,656	2,889	9,631
Property and equipment	(2,929)	(547)	(1,332)
Goodwill and intangible assets	(98,194)	(63,819)	(148,085)
Operating lease right-of-use assets	(1,001)	-	-
Other long-term assets	(50)	(103)	(125)
Liabilities to banks and others	5,551	38	281
Long-term liabilities	2,180	421	-
Operating lease liabilities	1,109	-	-
Deferred tax liability, net	7,407	5,590	17,911
Liability to formerly shareholders	1,060	2,053	-
Deferred payments and contingent consideration	19,965	3,582	2,616
Non-controlling interests at acquisition date	5,906	827	-
Total	\$ (57,340)	\$ (49,069)	\$ (119,103)

The accompanying notes form an integral part of the financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 1:- GENERAL

a. General:

Formula Systems (1985) Ltd. ("Formula" or the "Company") was incorporated in Israel and began its business operations in 1985. Since 1991, Formula's ordinary shares, par value NIS 1.0 per share, have been traded on the Tel-Aviv Stock Exchange ("TASE"), and, in 1997, began trading through American Depository Shares ("ADSs") under the symbol "FORTY" on the NASDAQ Global Market in the United States until January 3, 2011, at which date the listing of Formula's ADSs was transferred to the NASDAQ Global Select Market ("NASDAQ"). Each ADS represents one ordinary share of Formula. The Company is considered an Israeli resident. The controlling shareholder of the Company is Asseco Poland S.A. ("Asseco"), a Polish public company, traded on the Warsaw Stock Exchange.

b. Formula, through its investees (collectively, the "Group") is engaged in providing software services, proprietary and non-proprietary software solutions, software product marketing and support, computer infrastructure and integration solutions and training and integration. The Group operates through five directly held subsidiaries; Matrix IT Ltd. ("Matrix"), Sapiens International Corporation N.V ("Sapiens"), Magic Software Enterprises Ltd. ("Magic Software"), Insync Staffing Solutions, Inc. ("Insync") and Michpal Micro Computers (1983) Ltd. ("Michpal"), and one jointly controlled entity: TSG IT Advanced Systems Ltd. ("TSG").

c. The following table presents the ownership of Formula's directly held investees as of the dates indicated (the list consists only of active companies):

Name of Investee	Percentage of ownership	
	December 31,	
	2019	2018
Matrix	48.88	49.21
Sapiens	47.91	48.08
Magic Software	45.34	45.21
Insync	90.09	90.09
Michpal	100	100
TSG ⁽¹⁾	50.00	50.00

1) TSG's results of operations are reflected in the Company's results of operations using the equity method of accounting.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 1:- GENERAL (Cont.)

d. Definitions:

In these financial statements:

The Company	-	Formula Systems (1985) Ltd.
The Group	-	Formula Systems (1985) Ltd. and its investees.
Subsidiaries	-	Companies that are controlled by the Company (as defined in IFRS 10) and whose accounts are consolidated with those of the Company.
Jointly controlled entities	-	Companies owned by various entities that have a contractual arrangement for joint control and are accounted for using the equity method of accounting.
Associates	-	Companies over which the Company has significant influence and that are not subsidiaries. The Company's investment therein is included in the financial statements using the equity method of accounting.
Investees	-	Subsidiaries, jointly controlled entities and associates.
Interested parties and controlling shareholder	-	As defined in the Israeli Securities Regulations (Annual Financial Statements), 2010.
Related parties	-	As defined in IAS 24.

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES

The following accounting policies have been applied consistently in the financial statements for all periods presented, unless otherwise stated.

1) Basis of presentation of the financial statements

These financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IFRS").

The financial statements for the year ended December 31, 2016 were the Group's first consolidated financial statements prepared in accordance with IFRS. The date of transition to IFRS was January 1, 2015. For all periods up to and including the year ended December 31, 2015, the Group prepared its financial statements in accordance with United States generally accepted accounting principles ("U.S. GAAP"). Accordingly, the Group's first consolidated financial statements that comply with IFRS are applicable as of December 31, 2016, together with the comparative period data for the year ended December 31, 2015.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

The Company's financial statements have been prepared on a cost basis, except for certain assets and liabilities such as: financial assets measured at fair value through other comprehensive income; contingent liabilities related to business combination and other financial assets and liabilities (including derivatives) which are presented at fair value through profit or loss.

The Company has elected to present the profit or loss items using the function of expense method.

2) Use of judgments, estimates and assumptions:

The preparation of the consolidated financial statements requires management to make judgments, estimates and assumptions that have an effect on the application of the accounting policies and on the reported amounts of assets, liabilities, revenues and expenses in the financial statements. The Company's management believes that the estimates and assumptions used are reasonable based upon information available at the time they are made. These estimates and underlying assumptions are reviewed regularly. Actual results could differ from those estimates. Changes in accounting estimates are reported in the period of the change in estimate.

The judgments, estimates and assumptions which have the most significant effect on the amounts recognized in the financial statements are employed in determining values of goodwill and identifiable intangible assets and their subsequent impairment analysis, revenue recognition, timing of commitment to execution of transactions, tax assets and tax positions, legal contingencies, research and development capitalization, classification of leases, contingent consideration related to acquisitions, determining the fair value of put options of non-controlling interests, pension and other post-employment benefits and share-based compensation costs. These judgements estimates and assumptions also impact the Company's assessment as to whether it has effective control over companies in which it holds less than the majority of the voting rights.

3) Consolidated financial statements:

The consolidated financial statements comprise the financial statements of companies that are controlled by the Company (subsidiaries). Control is achieved when the Company is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Potential voting rights are considered when assessing whether an entity has control. The consolidation of the financial statements commences on the date on which control is obtained and ends when such control ceases.

Effective control:

In a situation where the Company holds less than a majority of voting power in a given entity, but that power is sufficient to enable the Company to unilaterally direct the relevant activities of such entity, then the control is exercised. When assessing whether voting rights held by the Company are sufficient to give it power, the Company considers all facts and circumstances, including: the amount of those voting rights relative to the amount and dispersion of other vote holders; potential voting rights held by the Company and other shareholders or parties; rights arising from other contractual arrangements; significant personal ties; and any additional facts and circumstances that may indicate that the Company has, or does not have the ability to direct the relevant activities when decisions need to be made, inclusive of voting patterns observed at previous meetings of shareholders.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

The Company's management has concluded that despite the lack of absolute majority of voting power at the general meetings of shareholders of Matrix, Sapiens and Magic Software, in accordance with IFRS 10, these investees are controlled by the Company. The conclusion regarding the existence of control during the years ended December 31, 2019, 2018 and 2017 with respect to Matrix, Sapiens and Magic Software, in accordance with IFRS 10, was made in accordance with the following factors:

Matrix:

i) Governing bodies of Matrix:

Decisions of Matrix's shareholders general meeting are taken by a simple majority of votes represented at the general meeting. The annual (ordinary) general meeting adopts resolutions to elect individual directors, appoint Matrix's independent auditors for the next year, as well as approve the company's financial statements and management's report on operations. In accordance with Matrix's articles of association, the board of directors of Matrix is responsible for managing its current business operations and is authorized to take substantially all decisions which are not specifically reserved to Matrix's shareholders by its articles of association, including the decision to pay out dividends. Matrix's board of directors is composed of 5 members, 3 of whom are independent directors, and one being Formula's chief executive officer who serves as the chairman of Matrix board of directors. For the last 5 years (i.e., 2015-2019), the Company has consistently reappointed mostly the same members of the board of directors. The only few exceptions were (i) the appointment of Mrs. Yafit Keret, who has replaced Mrs. Michal Leshem in 2018 after nine years of service as an external director in accordance with the Companies Law, 5759-1999 (ii) the retirement of Mr. Pinchas Grinfeld in 2017 and (iii) The appointment of Mr. Yitiel Efrat to serve as a third external director in accordance with the Companies Law, 5759-1999. Mr. Efrat was appointed on December 13, 2017 for a three-year term.

ii) Shareholders' structure of Matrix:

Matrix's shareholders structure is dispersed because, apart from the Company, as of December 31, 2019 there was just one financial institution holding more than 5% of Matrix's voting power (8.4% of the votes). There is no evidence that any of the shareholders have or had granted to any other shareholder a voting proxy at the general meeting. Over the last five years (i.e., 2015-2019), Matrix's general meetings were attended by shareholders representing not more than between 75% and 82% of total voting rights, including the Company's share power. Bearing in mind that the Company presently holds approximately 48.88% of total voting power, this means that the level of activity of Matrix's other shareholders is relatively moderate or low. As of December 31, 2019, the attendance by shareholders would have to be higher than 97.8% in order to deprive the Company of an absolute majority of votes at the general meeting. In accordance with voting patterns at Matrix's shareholders' meetings in recent years, it is the Company's management's belief that achieving such a high attendance seems unlikely.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**Sapiens:

i) Governing bodies of Sapiens:

Decisions of Sapiens' shareholders general meeting are taken by a simple majority of votes represented at the general meeting. The annual (ordinary) general meeting adopts resolutions to appoint individual directors, choose Sapiens' independent auditors for the next year, as well as approve the company's financial statements and the management's report on operations.

In accordance with Sapiens' articles of association, the board of directors of Sapiens is responsible for managing its current business operations and is authorized to take substantially all decisions which are not specifically reserved to Sapiens' shareholders by its articles of association, including the decision to pay out dividends. Sapiens' board of directors is composed of 6 members, 4 of whom are independent directors, and one being Formula's chief executive officer who serves as the chairman of Sapiens board of directors. For the last 9 years, the Company has consistently reappointed the same members of the board of directors. Likewise, the previous composition of the board of directors was re-elected during the general meeting that was held in November 2019.

ii) Shareholders structure of Sapiens:

Sapiens' shareholders structure is dispersed because, apart from the Company, only one financial institution held more than 5% of the voting rights at the general meeting (representing 5.4%). There is no evidence that any shareholders have or had granted to any other shareholder a voting proxy at the general meeting. Over the last five years from 2015 to 2019, Sapiens' general meetings were attended by shareholders representing in total between 70% and 80% of the total voting power, including the Company's share power. Bearing in mind that the Company presently holds approximately 47.91% of total voting right, this means that the level of activity of Sapiens' other shareholders is relatively moderate or low. As of December 31, 2019, the attendance from shareholders would have to be higher than 95.8% in order to deprive the Company of an absolute majority of votes at the general meeting.

In accordance with voting patterns at Sapiens' shareholders' meetings in recent years, it is the Company's management's belief that achieving such a high attendance seems unlikely.

Magic Software:

i) Governing bodies of Magic Software:

Decisions of Magic Software's shareholders' general meeting are taken by a simple majority of votes represented at the general meeting. The annual (ordinary) general meeting adopts resolutions to elect individual directors, appoint Magic Software's independent auditors for the next year, as well as to approve Magic Software's financial statements and the management's report on operations.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

In accordance with the Magic Software's articles of association, the board of directors of Magic Software is responsible for managing Magic Software's current business operations and is authorized to take substantially all decisions which are not specifically reserved to Magic Software shareholders by its articles of association, including the decision to pay out dividends. Magic Software's board of directors is composed of 5 members, 3 of whom are independent directors, and one being Formula chief executive officer who also serves as Magic Software chief executive officer. In recent years, the Company has consistently reappointed mostly the same members of the board of directors. The only exception was the appointment of Mr. Avi Zakaya, who has replaced Mr. Yechezkel Zeira after nine years of service.

ii) Shareholders structure of Magic Software:

Magic Software's shareholders' structure is dispersed because, apart from the Company, as of December 31, 2019, there were just three financial institutions holding more than 5% of Magic Software's voting power (representing 8.7%, 7.4% and 6.0% of the votes). There is no evidence that any of the shareholders have or had granted to any other shareholder a voting proxy at the general meeting. Over the last five years from 2015 to 2019, Magic Software's general meetings were attended by shareholders representing not more than 77% of total voting rights. Bearing in mind that the Company presently holds approximately 45.34% of total voting right, this means that the level of activity of Magic Software's other shareholders is relatively moderate or low. As of December 31, 2019, the attendance by shareholders would have to be higher than 90.7% in order to deprive the Company of an absolute majority of votes at the general meeting. In accordance with voting patterns at Magic Software's shareholders' meetings in recent years, it is the Company's management belief that achieving such a high attendance seems unlikely.

The financial statements of the Company and of the investees, after being adjusted to comply with IFRS, are prepared for the same reporting period and using consistent accounting treatment of similar transactions and economic activities. Any discrepancies in the applied accounting policies are eliminated by making appropriate adjustments. Significant intragroup balances and transactions and gains or losses resulting from intragroup transactions are eliminated in full in the consolidated financial statements.

Non-controlling interests in subsidiaries, represent the equity in subsidiaries not attributable, directly or indirectly, to a parent. Non-controlling interests are presented in equity separately from the equity attributable to the equity holders of the Company. Profit or loss and components of other comprehensive income are attributed to the Company and to non-controlling interests. Losses are attributed to non-controlling interests even if they result in a negative balance of non-controlling interests in the consolidated statement of financial position.

Changes in the share interest in a subsidiary that do not result in a loss of control are recognized as a change in equity, by adjusting the balance of the non-controlling interests against the equity attributable to the equity holders of the Company, and net of the consideration paid or received.

4) Business combinations and goodwill:

Business combinations are accounted for by applying the acquisition method. The cost of the acquisition is measured at the fair value of the consideration transferred on the acquisition date with the addition of non-controlling interests in the acquiree. In each business combination, the Company determines whether to measure the non-controlling interests in the acquiree based on their fair value on the acquisition date or at their proportionate share in the fair value of the acquiree's net identifiable assets.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Direct acquisition costs are carried to the statement of profit or loss as incurred.

In a business combination achieved in stages, equity interests in the acquiree that had been held by the acquirer prior to obtaining control are measured at the acquisition date fair value while recognizing a gain or loss resulting from the revaluation of the prior investment on the date of achieving control.

Contingent consideration is recognized at fair value on the acquisition date and classified as a financial asset or liability in accordance with IFRS 9, "Financial Instruments". Subsequent changes in the fair value of the contingent consideration are recognized in profit or loss. If the contingent consideration is classified as an equity instrument, it is measured at fair value on the acquisition date without subsequent remeasurement.

Goodwill is initially measured at cost which represents the excess of the acquisition consideration and the amount of non-controlling interests over the net identifiable assets acquired and liabilities assumed. If the resulting amount is negative, the acquirer recognizes the resulting gain on the acquisition date without subsequent measurement.

5) Investment in joint arrangements:

Joint arrangements are arrangements in which the Company has joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

i. Joint ventures:

In joint ventures the parties that have joint control of the arrangement have rights to the net assets of the arrangement. A joint venture is accounted for by using the equity method.

ii. Joint operations:

In joint operations the parties that have joint control of the arrangement have rights to the assets and obligations for the liabilities relating to the arrangement. The Company recognizes in relation to its interest its share of the assets, liabilities, revenues and expenses of the joint operation.

6) Investments in associates:

Associates are companies in which the Group has significant influence over the financial and operating policies without having control. The investment in an associate is accounted for using the equity method.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

7) Investments accounted for using the equity method:

The Group's investments in associates and joint ventures are accounted for using the equity method. Under the equity method, the investment in the associate or in the joint venture is presented at cost with the addition of post-acquisition changes in the Group's share of net assets, including other comprehensive income of the associate or the joint venture. Gains and losses resulting from transactions between the Group and the associate or the joint venture are eliminated to the extent of the interest in the associate or in the joint venture.

Goodwill relating to the acquisition of an associate or a joint venture is presented as part of the investment in the associate or the joint venture, measured at cost and not systematically amortized. Goodwill is evaluated for impairment as part of the investment in the associate or in the joint venture as a whole.

The financial statements of the Company and of the associate or joint venture are prepared as of the same dates and periods. The accounting policies applied in the financial statements of the associate or the joint venture are uniform and consistent with the policies applied in the financial statements of the Group. Upon the acquisition of an associate or a joint venture achieved in stages when the former investment in the acquiree was accounted for pursuant to the provisions of IFRS 9, the Group adopts the principles of IFRS 3 regarding business combinations achieved in stages. Consequently, equity interests in the acquiree that had been held by the Group prior to achieving significant influence or joint control are measured at fair value on the acquisition date and are included in the acquisition consideration while recognizing a gain or loss resulting from the fair value measurement. The equity method is applied until the loss of significant influence in the associate or loss of joint control in the joint venture or classification as investment held for sale.

On the date of loss of significant influence or joint control, the Group measures any remaining investment in the associate or the joint venture at fair value and recognizes in profit or loss the difference between the fair value of any remaining investment plus any proceeds from the sale of the investment in the associate or the joint venture and the carrying amount of the investment on that date.

8) Functional currency, presentation currency and foreign currency:

i. Functional currency and presentation currency:

The presentation currency of these financial statements is the U.S dollars (the "dollar"), since the Company believes that financial statements in U.S dollars provide more relevant information to its investors and users of the financial statements. The functional currency applied by Formula, on a stand-alone basis, until December 31, 2018, was the dollar. Following an examination and reevaluation of the primary economic environment in which it currently operates and expects to continue operating and taking into consideration the recent trends and its forward-looking business strategy, in accordance with the International Accounting Standard 21 (IAS 21), Formula concluded that its functional currency on a stand-alone basis commencing January 1, 2019 is the NIS. The functional currencies applied by Formula's investees which are consolidated in these financial statements are the currencies of the primary economic environment in which each one of them operates.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

Assets, including fair value adjustments upon acquisition, and liabilities of an investee which is a foreign operation, are translated at the closing rate at each reporting date. Profit or loss items are translated at average exchange rates for all periods presented. The resulting translation differences are recognized in other comprehensive income (loss). Intragroup loans for which settlement is neither planned nor likely to occur in the foreseeable future are, in substance, a part of the investment in the foreign operation and, accordingly, the exchange rate differences from these loans (net of the tax effect) are recorded in other comprehensive income (loss).

Upon the full or partial disposal of a foreign operation resulting in loss of control in the foreign operation, the cumulative gain (loss) from the foreign operation which had been recognized in other comprehensive income is transferred to profit or loss. Upon the partial disposal of a foreign operation which results in the retention of control in the subsidiary, the relative portion of the amount recognized in other comprehensive income is reattributed to non-controlling interests.

ii. Transactions, assets and liabilities in foreign currency:

Transactions denominated in foreign currency are recorded upon initial recognition at the exchange rate at the date of the transaction. After initial recognition, monetary assets and liabilities denominated in foreign currency are translated at each reporting date into the functional currency at the exchange rate at that date. Exchange rate differences are recognized in profit or loss. Non-monetary assets and liabilities denominated in foreign currency and measured at cost are translated at the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currency and measured at fair value are translated into the functional currency using the exchange rate prevailing at the date when the fair value was determined.

9) Cash equivalents:

Cash equivalents are considered highly liquid investments, including unrestricted short-term bank deposits with an original maturity of three months or less from the date of investment or with a maturity of more than three months, but which are redeemable on demand without penalty and which form part of the Group's cash management. Cash and cash equivalent includes amounts held primarily in New-Israeli Shekel, dollars, Euro, Japanese Yen, Indian Rupee and British Pound.

10) Short-term and restricted deposits:

Short-term bank deposits are deposits with an original maturity of more than three months from the date of investment and which do not meet the definition of cash equivalents. The deposits are presented according to their terms of deposit. Restricted deposits include deposits used to secure certain subsidiaries' ongoing projects and credit lines from banks, as well as security deposits with respect to leases, and are classified under other short-term and long-term receivables.

11) Inventories:

Inventories are measured at the lower of cost and net realizable value. The cost of inventories comprises costs of purchase and costs incurred in bringing the inventories to their present location and condition. Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and estimated costs necessary to make the sale. Inventories are mainly comprised of purchased merchandise and products which consist of educational software kits, computers, peripheral equipment and spare parts. Cost is determined on the "first in - first out" basis.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

The Group periodically evaluates the condition and aging of its inventories and makes provisions for impairment of slow-moving inventories accordingly. No such impairments have been recognized in any period presented.

12) Revenue recognition:

On January 1, 2018, the Company initially adopted IFRS 15, "Revenue from Contracts with Customers" ("the Standard") issued by the IASB in May 2014. IFRS 15, supersedes IAS 11 'Construction Contracts', IAS 18 'Revenue from contracts with customers' and related Interpretations and applies to all revenue arising from contracts with customers, unless those contracts are in the scope of other standards. The Company elected to apply the provisions of the Standard using the modified retrospective method with the application of certain practical expedients and without restatement of comparative data.

The accounting policy for revenue recognition applied until December 31, 2017, is as follows:

Revenues are recognized in profit or loss when the revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to the Group and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Revenues are measured at the fair value of the consideration less any trade discounts, volume rebates and returns.

The following are the specific revenue recognition criteria which must be met before revenue is recognized by the Company and its subsidiaries:

i. Revenues from software solutions and services:

- a) Revenues from contracts based on actual inputs. Revenues from master agreements based on actual inputs are recognized based on actual labor hours.
- b) Outsourcing - These agreements are similar in nature to agreements that are based on actual labor hours. The Group allocates employees to projects that are generally managed by the customers at their charge based on the pricing of labor hours. Revenues are recognized based on actual labor hours.

ii. Revenues from sales, distribution and support of software products:

The Group recognizes revenues from the sale of software (i) only after the significant risks and rewards of ownership of the software have been transferred to the buyer for which a necessary condition is delivery of the software, either physically or electronically, or providing the right to use or permission to make copies of the software, (ii) the Group does not retain any continuing management involvement that is associated with ownership and does not retain the effective control of the sold software, (iii) the amount of revenues can be measured reliably, (iv) it is probable that the economic benefits associated with the transaction will flow to the Group and (v) the costs incurred or to be incurred in respect of the transaction can be measured reliably. The Group reports income on a gross basis since it acts as a principal and bears the risks and rewards derived from the transaction.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

Revenue from third-party sales is recorded at a gross or net amount according to certain indicators. The application of these indicators for gross and net reporting of revenue depends on the relative facts and circumstances of each sale and requires significant judgment.

Revenues from sale agreements that do not provide a general right of return and consist of multiple elements such as hardware, service and support agreements are split into different accounting units which are separately recognized. An element only represents a separate accounting unit if and only if it has stand-alone value for the customer. Moreover, there should be reliable and objective evidence of the fair value of all the elements in the agreement or of the fair value of undelivered elements. Revenues from the various accounting units are recognized when the revenue recognition criteria are met with respect to all the elements of the accounting unit based on their specific type and only up to the amount of the consideration that is not contingent on completion or performance of the other elements in the contract.

Maintenance and support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for unspecified upgrades for new versions and enhancements on a when-and-if-available basis does not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered. Revenues from maintenance services are recognized on a straight-line basis at the relative portion of the maintenance contract that is determined for each reporting year. Revenues that have been received before the respective service has been provided are carried to deferred income. Maintenance and support revenue included in multiple element arrangements is deferred and recognized on a straight-line basis over the term of the maintenance and support agreement.

iii. Revenues from training and implementation services:

Revenues from trainings and implementations are recognized when providing the service. Revenues from training services in respect of courses conducted over a period of up to 3 months will be recognized over the period of the course. Revenues from training services in respect of courses ordered in advance and long-term or short term (for a period of up to a year) retraining courses will be recognized over the period of the course. Revenues from projects which are usually ordered by organizations will be recognized under the actual inputs by using the basis of hours actually invested in the project.

iv. Revenues from hardware products and infrastructure solutions:

Revenues from hardware products and infrastructure solutions are recognized after all the significant risks and rewards of ownership of the products have been transferred to the buyer. The Group does not retain any continuing management involvement that is associated with ownership and does not retain the effective control of the sold products, the amount of revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to the Group and the costs incurred or to be incurred in respect of the transaction can be measured reliably.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The accounting policy for revenue recognition applied from January 1, 2018, is as follows:

IFRS 15 establishes a five-step model to account for revenue arising from contracts with customers and requires entities to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model to contracts with their customers:

Step 1: Identify the contract with a customer, including reference to contract combination and accounting for contract modifications.

Step 2: Identify the separate performance obligations in the contract.

Step 3: Determine the transaction price, including reference to variable consideration, significant financing components, non-cash consideration and any consideration payable to the customer.

Step 4: Allocate the transaction price to the distinct performance obligations on a relative stand-alone selling price basis using observable information, if it is available, or using estimates and assessments.

Step 5: Recognize revenue when a performance obligation is satisfied, either at a point in time or over time.

Under IFRS 15, revenues are recognized when control of the promised goods or services are transferred to the customers in an amount that reflects the consideration that the Group expects to receive in exchange for those goods or services.

The Group enters into contracts that can include various combinations of products and software, IT services and hardware, as detailed below, which are generally capable as being distinct from each other and accounted for as separate performance obligations.

For contracts with customers that contain multiple performance obligations, the Group accounts for each individual performance obligation separately, if they are distinct from each other. The transaction price is allocated to the separate performance obligations on a relative stand-alone selling price basis.

Stand-alone selling prices of software sales are typically estimated using the residual approach due to the lack of selling software licenses on a stand-alone basis. Stand-alone selling prices of software services are typically determined by considering several external and internal factors including but not limited to, observable transactions when these services are sold on a stand-alone basis.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

The following is a description of principal activities from which the Group generates its revenues:

i. Sale of proprietary licenses without significant related services

In the event in which the sale of a proprietary license (perpetual or term-based) is distinct from other significant modification or implementation services, and thereby it constitutes a separate performance obligation, the Group considers whether this performance obligation in granting the license is to provide the customer with either:

- a right to access the entity's intellectual property in the form in which it exists throughout the licensing period; or
- a right to use the entity's intellectual property in the form in which it exists at the time of granting the license

The vast majority of licenses sold separately by the Group (thus representing a separate performance obligation) are intended to provide the customer with a right to use the intellectual property, which means that revenues from the sale of such licenses are recognized at the point in time at which control of the license is transferred to the customer.

The Group recognizes revenue from software licensing transactions over time when the Group provides the customer a right to access the Group's intellectual property throughout the license period.

ii. Sale of proprietary licenses with significant related services

Revenues from contracts that include the sale of proprietary licenses with significant related services (for example, modifications, implementation or customization to customer-specific specifications) are generally accounted by the Group as performance obligations satisfied over time. In such contracts the Group is normally committed to provide the customer with a functional IT system and the customer can only benefit from such functional system, being the final product that would normally be comprised of proprietary licenses and significant related services. The Group considers that a commitment to sell a license under such performance obligation does not satisfy the criteria of being distinct, because the transfer of the license is only part of a larger performance obligation. The Group recognizes revenue from such contracts using cost-based input methods, which recognizes revenue and gross profit as the work is performed based on a ratio between actual costs incurred compared to the total estimated costs for the contract. This is because, in accordance with IFRS 15, revenues may be recognized over the course of transferring control of the supplied goods and services, as long as the entity's performance does not create an asset with an alternative use to the entity, and the entity has an enforceable right to payment for performance completed to date throughout the duration of the contract. Provisions for estimated losses on uncompleted contracts are made during the period in which such losses are first determined, in the amount of the estimated loss for the entire contract.

When appropriate, the Group also applies a practical expedient permitted under IFRS 15 whereby if the Group has a right to consideration from a customer in an amount that corresponds directly with the value to the customer of the Group's performance completed to date (for example, a service contract in which an entity bills a fixed amount for each hour of service provided), the Group may recognize revenue in the amount it is entitled to invoice. Deferred revenues, which represent a contract liability, include unearned amounts received under maintenance and support (mainly) and amounts received from customers for which revenues have not yet been recognized.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

iii. Maintenance services and warranties

Post-contract support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for an unspecified upgrade for new versions and enhancements on a when-and-if-available basis do not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered.

The accounting policy regarding the recognition of post-contract support remained unchanged after the adoption of IFRS 15, as such services, in principle, constitute a separate performance obligation where the customer consumes the benefits of goods and services as they are delivered by the provider, as a consequence of which revenues are recognized over time during the service performance period.

The Group considers the post-contract support performance obligation as a distinct performance obligation that is satisfied over time, and as such, it recognizes revenue for post-contract support on a straight-line basis over the period for which technical support is contractually agreed to be provided for the software, typically twelve (12) months.

In certain cases, the Group also provides a warranty for goods and services sold (i.e. extended warranties when the Group contractually undertakes to repair any errors in the delivered software within a strictly specified time limit and/or when the scope of which is broader than just an assurance to the customer that the product/service complies with agreed-upon specifications). The Group has ascertained that such warranties granted by the Group meet the definition of service. The conclusion regarding the extended nature of a warranty is made whenever the Group contractually undertakes to repair any errors in the delivered software within a strictly specified time limit and/or when such warranty is more extensive than the minimum required by law. Under IFRS 15, the fact of granting an extended warranty indicates that the Group provides an additional service. As such, the Group recognizes an extended warranty as a separate performance obligation and allocates a portion of the transaction price to such service. In all cases where an extended warranty is accompanied by a maintenance service, which is even a broader category than the extended warranty itself, revenues are recognized over time because the customer consumes the benefits of such service as it is performed by the provider. If this is the case, the Group continues to allocate a portion of the transaction price to such maintenance service. Likewise, in cases where a warranty service is provided after the project completion and is not accompanied by any maintenance service, then a portion of the transaction price and analogically recognition of a portion of contract revenues will have to be deferred until the warranty service is actually fulfilled.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

iv. Sale of third-party licenses and services

Third-party licenses and services include revenues from the sale of third-party licenses as well as from the provision of services which, due to technological or legal reasons, must be carried out by subcontractors (this applies to hardware and software maintenance and outsourcing services provided by their manufacturers). Revenues from the sale of third-party licenses are accounted for as sales of goods, which means that such revenues are recognized at the point in time at which control of the license is transferred to the customer. Concurrently, revenues from third-party services, including primarily third-party maintenance services, are recognized over time when such services are provided to the customer.

Whenever the Group is involved in the sale of third-party licenses or services, it will consider whether the Group acts as a principal or an agent; however, in most cases the conclusion is that the Group is the main party required to satisfy a performance obligation and therefore the resulting revenues are recognized in the gross amount of consideration.

v. Sale of hardware

Sale of hardware includes revenues from contracts with customers for the supply of infrastructure. In this category, revenues are recognized basically at the point in time at which control of the equipment is transferred. This does not apply to contracts in which the hardware is not delivered separately from services provided alongside, in such case the sale of hardware is part of a performance obligation involving the supply of a comprehensive system. However, such comprehensive projects are a rare practice in the Group as the sale of hardware is predominantly performed on a distribution basis.

In the case of contracts that contain a component of providing a service or equipment, the Group considers whether such arrangements contain a lease component (i.e. whether the Group provides the right to control the use of the identified asset for a period of time in exchange for consideration). The Group has not identified any lease components within contracts concluded with customers.

vi. Variable consideration

In accordance with IFRS 15, if a contract consideration encompasses any amount that is variable, the Group shall estimate the amount of consideration to which it will be entitled in exchange for transferring promised goods or services to the customer, and shall include a portion or the whole amount of variable consideration in the transaction price but only to the extent that it is highly probable a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

The Group is party to a number of contracts which provide for penalties for non-performance or improper performance of contractual obligations. Any contractual penalties may therefore affect the consideration, which has been stated as a fixed amount in the contract, and make it subject to change due to such expected penalties. Therefore, as part of estimating the amount of consideration receivable under a contract, the Group has estimated the expected amount of consideration while taking into account the probability of paying such contractual penalties as well as other factors that might potentially affect the consideration. Apart from contractual penalties, there are no other material factors that may affect the amount of consideration (such as rebates or discounts), but in the event they were identified, they would also affect the amount of revenues recognized by the Group.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

vii. Allocating the transaction price to performance obligations

The Group allocates the transaction price to each performance obligation (or distinct good or service) in an amount that depicts the amount of consideration to which the Group expects to be entitled in exchange for transferring the promised goods or services to the customer.

viii. Significant financing component

When contracts involve a significant financing component, the Group adjusts the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provide the customer with a significant benefit of financing.

The Group has elected to apply the practical expedient allowed by IFRS 15 according to which it does not separate the financing component in transactions whose credit terms are less than one year and recognizes revenue in the amount of the consideration stated in the contract even if the customer pays for the goods or services subsequent to their receipt.

ix. Costs of contracts with customers

Costs of obtaining a contract

Costs of obtaining a contract are those incremental costs incurred by the Group in order to obtain a contract with a customer that it would not have otherwise incurred if the contract had not been obtained. The Group recognizes such costs as an asset if it expects to recover those costs. Such capitalized costs of obtaining a contract shall be amortized over the period when the Group satisfies the performance obligations arising from the contract. Amortization expenses related to costs of obtaining or fulfilling a contract are included in sales and marketing expenses in the consolidated statements of profit or loss.

The Group has elected to apply the practical expedient allowed by IFRS 15 according to which costs of obtaining a contract which are expected to be amortized for a period of less than twelve months are expensed to profit or loss as incurred.

Commissions to sales and marketing and certain management personnel that are paid based on their attainment of certain predetermined sales or profit goals, are considered by the Group as incremental costs of obtaining a contract with a customer, and are deferred and amortized on a systematic basis, consistent with the transfer of the related performance obligations to the customer. As such, sales commissions paid for initial contracts, which are not commensurate with additional commissions paid for renewal of such contracts, are capitalized and amortized over the expected period of benefit (including expected renewals periods). Sales commissions on initial contracts, which are commensurate with additional commissions paid for the renewal of such contracts, are capitalized and then amortized correspondingly to the recognized revenue of the related initial contracts (not including expected renewals periods). Sales commissions for renewal of such initial contracts are capitalized and then amortized on a straight-line basis over the related contractual renewal period. As a practical expedient, if the expected amortization period is for a period of less than twelve months, the commission fee is expensed to profit and loss as incurred.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**Costs to fulfill a contract

Costs to fulfill a contract are the costs incurred in fulfilling a contract with a customer. The Group recognizes such costs as an asset if such costs are not within the scope of another standard (for example, IAS 2 'Inventories', IAS 16 'Property, Plant and Equipment' or IAS 38 'Intangible Assets') and if such costs meet all of the following criteria:

- i) the costs relate directly to a contract or to an anticipated contract with a customer,
- ii) the costs generate or enhance resources of the Group that will be used in satisfying (or in continuing to satisfy) performance obligations in the future, and
- iii) the costs are expected to be recovered.

13) Government grants:

Government grants are recognized when there is reasonable assurance that the grants will be received, and the Group will comply with the attached conditions. Government grants received from the Office of the Israel Innovation Authority ("IIA"), formerly the Office of the Chief Scientist ("OCS"), are recognized upon receipt as a liability if future economic benefits are expected from the research project that will result in royalty-bearing sales.

A liability for the loan is first measured at fair value using a discount rate that reflects a market participant rate of interest. The difference between the amount of the grant received and the fair value of the liability is accounted for as a Government grant and recognized as a reduction of research and development expenses. After initial recognition, the liability is measured at amortized cost using the effective interest method. Royalty payments are treated as a reduction of the liability. If no economic benefits are expected from the research activity, the grant receipts are recognized as a reduction of the related research and development expenses. In that event, the royalty obligation is treated as a contingent liability in accordance with IAS 37.

In each reporting date, the Group evaluates whether there is reasonable assurance that the liability recognized, in whole or in part, will not be repaid (since the Group will not be required to pay royalties) based on the best estimate of future sales and using the original effective interest method, and if so, the appropriate amount of the liability is derecognized against a corresponding reduction in research and development expenses. Amounts paid as royalties are recognized as settlement of the liability.

14) Debentures:

The Group accounts for outstanding principal amount of debentures as long-term liability, in accordance with IFRS 9, with current maturities classified as a short-term liability. The Group identifies and separates equity components contains in convertible debentures by first determining the liability component, in accordance with IAS 32, based on the fair value of an equivalent non- convertible liability. The conversion component valued is being determined to be the residual amount. Debt issuance costs are capitalized and reported as deferred financing costs, which are amortized over the life of the debentures using the effective interest rate method.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

15) Taxes on income:

Current or deferred taxes are recognized in profit or loss, except to the extent that they relate to items which are recognized in other comprehensive income or equity.

● Current taxes:

The current tax liability is measured using the tax rates and tax laws that have been enacted or substantively enacted by the reporting date as well as adjustments required in connection with the tax liability in respect of previous years.

● Deferred taxes:

Deferred taxes are computed in respect of temporary differences between the carrying amounts in the financial statements and the amounts attributed for tax purposes. Deferred taxes are measured at the tax rate that is expected to apply when the asset is realized or the liability is settled, based on tax laws that have been enacted or substantively enacted by the reporting date. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is not probable that they will be utilized. Deductible carryforward losses and temporary differences for which deferred tax assets had not been recognized are reviewed at each reporting date and a respective deferred tax asset is recognized to the extent that their utilization is probable.

Taxes that would apply in the event of the disposal of investments in investees have not been taken into account in computing deferred taxes, as long as the disposal of the investments in investees is not probable in the foreseeable future. Also, deferred taxes that would apply in the event of distribution of earnings by investees as dividends have not been taken into account in computing deferred taxes, since the distribution of dividends does not involve an additional tax liability or since it is the Group's policy not to initiate distribution of dividends from a subsidiary that would trigger an additional tax liability.

Taxes on income that relate to distributions of an equity instrument and to transaction costs of an equity transaction are accounted for pursuant to IAS 12.

Deferred taxes are offset if there is a legally enforceable right to offset a current tax asset against a current tax liability and the deferred taxes relate to the same taxpayer and the same taxation authority.

16) Leases:

As described in Note 2(30) regarding the initial adoption of IFRS 16, "Leases" ("the Standard"), the Company elected to apply the provisions of the Standard using the modified retrospective method (without restatement of comparative data).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The accounting policy for leases applied effective from January 1, 2019, is as follows:

The Company accounts for a contract as a lease when the contract terms convey the right to control the use of an identified asset for a period of time in exchange for consideration.

i) The Group as lessee:

For leases in which the Group is the lessee, the Group recognizes on the commencement date of the lease a right-of-use asset and a lease liability, excluding leases whose term is up to twelve months and leases for which the underlying asset is of low value. For these excluded leases, the Group has elected to recognize the lease payments as an expense in profit or loss on a straight-line basis over the lease term. In measuring the lease liability, the Group has elected to apply the practical expedient in the Standard and does not separate the lease components from the non-lease components (such as management and maintenance services, etc.) included in a single contract.

On the commencement date, the lease liability includes all unpaid lease payments discounted at the interest rate implicit in the lease, if that rate can be readily determined, or otherwise using the Group's incremental borrowing rate. After the commencement date, the Group measures the lease liability using the effective interest rate method.

On the commencement date, the right-of-use asset is recognized in an amount equal to the lease liability plus lease payments already made on or before the commencement date and initial direct costs incurred. The right-of-use asset is measured applying the cost model and depreciated over the shorter of its useful life and the lease term.

Following are the amortization periods of the right-of-use assets by class of underlying asset:

	<u>Years</u>	<u>Mainly</u>
Land	2-26	3-7
Motor vehicles	2-5	2

The Group tests for impairment of the right-of-use asset whenever there are indications of impairment pursuant to the provisions of IAS 36.

ii) Variable lease payments that depend on an index:

On the commencement date, the Group uses the index rate prevailing on the commencement date to calculate the future lease payments.

For leases in which the Group is the lessee, the aggregate changes in future lease payments resulting from a change in the index are discounted (without a change in the discount rate applicable to the lease liability) and recorded as an adjustment of the lease liability and the right-of-use asset, only when there is a change in the cash flows resulting from the change in the index (that is, when the adjustment to the lease payments takes effect).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)iii) Variable lease payments:

Variable lease payments that do not depend on an index or interest rate but are based on performance or usage are recognized as an expense as incurred when the Group is the lessee.

iv) Lease extension and termination options:

A non-cancelable lease term includes both the periods covered by an option to extend the lease when it is reasonably certain that the extension option will be exercised and the periods covered by a lease termination option when it is reasonably certain that the termination option will not be exercised.

In the event of any change in the expected exercise of the lease extension option or in the expected non-exercise of the lease termination option, the Group remeasures the lease liability based on the revised lease term using a revised discount rate as of the date of the change in expectations. The total change is recognized in the carrying amount of the right-of-use asset until it is reduced to zero, and any further reductions are recognized in profit or loss.

v) Lease modifications:

If a lease modification does not reduce the scope of the lease and does not result in a separate lease, the Group remeasures the lease liability based on the modified lease terms using a revised discount rate as of the modification date and records the change in the lease liability as an adjustment to the right-of-use asset.

If a lease modification reduces the scope of the lease, the Group recognizes a gain or loss arising from the partial or full reduction of the carrying amount of the right-of-use asset and the lease liability. The Group subsequently remeasures the carrying amount of the lease liability according to the revised lease terms, at the revised discount rate as of the modification date and records the change in the lease liability as an adjustment to the right-of-use asset.

The accounting policy for leases applied until December 31, 2018, is as follows:

The criteria for classifying leases as finance or operating leases depend on the substance of the agreements and are made at the inception of the lease in accordance with the following principles as set out in IAS 17.

The Group as lessee:

i) Finance leases:

A lease that transfers substantially all the risks and rewards incidental to ownership of the leased asset to the Group is classified as a finance lease. At the commencement of the lease term, the leased asset is measured at the lower of the fair value of the leased asset or the present value of the minimum lease payments.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The leased asset is depreciated over the shorter of its useful life and the lease term.

ii) Operating leases:

Leases in which substantially all the risks and rewards of ownership of the leased asset are not transferred to the Group are classified as operating leases. Lease payments are recognized as an expense in profit or loss on a straight-line basis over the lease term.

17) Property, plant and equipment, net:

Property, plant and equipment are measured at cost, including directly attributable costs, less accumulated depreciation, accumulated impairment losses and any related investment grants and excluding day-to-day servicing expenses. Cost includes spare parts and auxiliary equipment that are used in connection with plant and equipment. The cost of an item of property, plant and equipment comprises the initial estimate of the costs of dismantling and removing the item and restoring the site on which the item is located.

Depreciation is calculated on a straight-line basis over the useful life of the assets at annual rates as follows:

	%
Land and Buildings	2 - 4
Computers, software and peripheral equipment	20 - 33 (mainly 33)
Office furniture and equipment	6 - 33 (mainly 7)
Motor vehicles	14 - 15 (mainly 15)

Leasehold improvements are amortized using the straight-line method over the term of the lease (including option terms that are deemed to be reasonably assured) or the estimated useful life of the improvements, whichever is shorter.

The useful life, the depreciation method and the residual value of an asset are reviewed at least each year-end (at the end of the year) and any changes are accounted for prospectively as a change in accounting estimate. Depreciation of an asset ceases at the earlier of the date that the asset is classified as held for sale and the date that the asset is derecognized. For impairment testing of property, plant and equipment, see Note 2(20) below.

18) Research and development costs:

Research expenditures incurred in the process of software development are recognized in profit or loss when incurred. An intangible asset arising from a software development project or from the development phase of an internal project is recognized if the Group can demonstrate the technical feasibility of completing the intangible asset so that it will be available for use or sale; the Group's intention to complete the intangible asset and use or sell it; the ability to use or sell the intangible asset; how the intangible asset will generate future economic benefits; the availability of adequate technical, financial and other resources to complete the intangible asset; and the ability to measure reliably the respective expenditure asset during its development. The Group establishes technological feasibility upon completion of a detailed program design or a working model.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

Research and development costs incurred between the completion of a detailed program design and the point at which the product is ready for general release, have been capitalized.

Capitalized software costs are measured at cost less any accumulated amortization and any accumulated impairment losses on a product by product basis. Amortization of capitalized software costs begin when development is complete, and the product is available for use. The Group considers a product to be available for use when the Group completes its internal validation of the product that is necessary to establish that the product meets its design specifications including functions, features, and technical performance requirements. Internal validation includes the completion of coding, documentation and testing that ensure bugs are reduced to a minimum. The internal validation of the product takes place a few weeks before the product is made available to the market. In certain instances, The Group enters into a short pre-release stage, during which the product is made available to a selected number of customers as a beta program for their own review and familiarization. Subsequently, the release is made generally available to customers. Once a product is considered available for use, the capitalization of costs ceases and amortization of such costs to "cost of sales" begins.

Capitalized software costs are amortized on a product by product basis by the straight-line method over the estimated useful life of the software product (between 5-7 years).

Research and development costs incurred in the process of developing product enhancements are generally charged to expenses as incurred.

The Group assesses the recoverability of its capitalized software costs on a regular basis by assessing the net realizable value of these intangible assets based on the estimated future gross revenues from each product reduced by the estimated future costs of completing and disposing of it, including the estimated costs of performing maintenance and customer support over its remaining economical useful life using internally generated projections of future revenues generated by the products, cost of completion of products and cost of delivery to customers over its remaining economical useful life.

During the years ended December 31, 2019 , 2018 and 2017, no such unrecoverable amounts were identified.

19) Other intangible assets:

Separately acquired intangible assets are measured on initial recognition at cost, including directly attributable costs. Intangible assets acquired in a business combination are measured at fair value at the acquisition date. Expenditures relating to internally generated intangible assets, excluding capitalized development costs, are recognized in profit or loss when incurred.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

According to management's assessment, intangible assets with a finite useful life are amortized over their useful life and reviewed for impairment whenever there is an indication that the asset may be impaired. The amortization period and the amortization method for an intangible asset are reviewed at least at each year end. Other intangible assets are comprised mainly of customer-related intangible assets, backlogs, brand names, capitalized courses development costs, non-compete agreements and acquired technology and patent, and are amortized over their useful lives using a method of amortization that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used up. The useful life of intangible assets is as follows:

	Years
Customer relationship and backlog	1 - 15
Acquired technology	2 - 8
Brand names and patents	5 - 10

Gains or losses arising from the derecognition of an intangible asset are determined as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in profit or loss.

The useful life of these assets is reviewed annually to determine whether their indefinite life assessment continues to be supportable. If the events and circumstances do not continue to support the assessment, the change in the useful life assessment from indefinite to finite is accounted for prospectively as a change in accounting estimate, and on that date the asset is tested for impairment. Commencing from that date, the asset is amortized systematically over its useful life.

20) Impairment of non-financial assets:

The Group evaluates the need to record an impairment of non-financial assets (property, plant and equipment, capitalized software costs and other intangible assets, goodwill, investments in joint venture) whenever events or changes in circumstances indicate that the carrying amount is not recoverable.

If the carrying amount of non-financial assets exceeds their recoverable amount, the assets are reduced to their recoverable amount. The recoverable amount is the higher of fair value less costs of sale and value in use. In measuring value in use, the expected future cash flows are discounted using a pre-tax discount rate that reflects the risks specific to the asset. The recoverable amount of an asset that does not generate independent cash flows is determined for the cash-generating unit to which the asset belongs. Impairment losses are recognized in profit or loss.

An impairment loss of an asset, other than goodwill, is reversed only if there have been changes in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognized. Reversal of an impairment loss, as above, shall not be increased above the lower of the carrying amount that would have been determined (net of depreciation or amortization) had no impairment loss been recognized for the asset in prior years and its recoverable amount. The reversal of impairment loss of an asset presented at cost is recognized in profit or loss.

The following criteria are applied in assessing impairment of these specific assets:

i. Goodwill in respect of subsidiaries:

For the purpose of impairment testing, goodwill acquired in a business combination is allocated, at the acquisition date, to each of our cash-generating units that are expected to benefit from the synergies of the combination.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The Group reviews goodwill for impairment once a year, on December 31, or more frequently if events or changes in circumstances indicate that there is an impairment.

Goodwill is tested for impairment by assessing the recoverable amount of the cash-generating unit (or group of cash-generating units) to which the goodwill has been allocated. An impairment loss is recognized if the recoverable amount of the cash-generating unit (or group of cash-generating units) to which goodwill has been allocated is less than the carrying amount of the cash-generating unit (or group of cash-generating units). Any impairment loss is allocated first to goodwill. Impairment losses recognized for goodwill cannot be reversed in subsequent periods.

ii. Investment in associate or joint venture using the equity method:

After application of the equity method, the Group determines whether it is necessary to recognize any additional impairment loss with respect to the investment in associates or joint ventures. The Group determines at each reporting date whether there is objective evidence that the carrying amount of the investment in the associate or the joint venture is impaired. The test of impairment is carried out with reference to the entire investment, including the goodwill attributed to the associate or the joint venture.

During the years ended December 31, 2019, 2018 and 2017 no impairment indicators were identified.

21) Financial instruments:

On January 1, 2018, the Group initially adopted IFRS 9, "Financial Instruments" ("the Standard"). The Group elected to apply the provisions of the Standard retrospectively without restatement of comparative data.

The accounting policy for financial instruments applied until December 31, 2017 is as follows:

A. Financial assets:

Financial assets within the scope of IAS 39 are initially recognized at fair value plus directly attributable transaction costs, except for financial assets measured at fair value through profit or loss in respect of which transaction costs are recorded in profit or loss. After initial recognition, the accounting treatment of financial assets is based on their classification as follows:

i. Financial assets at fair value through profit or loss:

This category includes financial assets held for trading and a dividend preference derivative in TSG (for a description of the TSG derivative, see Note 8).

ii. Loans and receivables:

Loans and receivables are investments with fixed or determinable payments that are not quoted in an active market. After initial recognition, loans are measured based on their terms at amortized cost plus directly attributable transaction costs using the effective interest method and less any impairment losses. Short-term borrowings are measured based on their terms, normally at face value.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

iii. Available-for-sale financial assets:

Available-for-sale financial assets are (non-derivative) financial assets that are designated as available for sale or are not classified in any of the three preceding categories. After initial recognition, available-for-sale financial assets are measured at fair value. Gains or losses from fair value adjustments, except for interest, exchange rate differences that relate to debt instruments and dividends from an equity instrument, are recognized in other comprehensive income. When the investment is disposed of or in case of impairment, the other comprehensive income (loss) is transferred to profit or loss.

B. Financial liabilities:

Financial liabilities are initially recognized at fair value. Loans and other liabilities measured at amortized cost are presented less direct transaction costs. After initial recognition, the accounting treatment of financial liabilities is based on their classification as follows:

i. Financial liabilities at amortized cost:

After initial recognition, loans and other liabilities are measured based on their terms at amortized cost less directly attributable transaction costs using the effective interest method.

ii. Financial liabilities at fair value through profit or loss:

Financial liabilities at fair value through profit or loss include financial liabilities classified as held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Derivatives, including separated embedded derivatives, are classified as held for trading unless they are designated as effective hedging instruments.

C. Offsetting financial instruments:

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

D. Compound financial instruments:

- i. Convertible debentures which contain both an equity component and a liability component are separated into two components. This separation is performed by first determining the liability component based on the fair value of an equivalent non-convertible liability. The value of the conversion component is determined to be the residual amount. Directly attributable transaction costs are apportioned between the equity component and the liability component based on the allocation of proceeds to the equity and liability components.
- ii. Convertible debentures that are denominated in foreign currency contain two components: the conversion component and the debt component. The liability conversion component is initially recognized as a financial derivative at fair value. The balance is attributed to the debt component. Directly attributable transaction costs are allocated between the liability conversion component and the liability debt component based on the allocation of the proceeds to each component.

E. Embedded derivatives:

The Group assesses the existence of an embedded derivative and whether it is required to be separated from a host contract when the Group first becomes party to the contract. Reassessment of the need to separate an embedded derivative only occurs if there is a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required.

F. Put option granted to non-controlling interests:

When the Group grants to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to the Group any benefits incidental to ownership of the equity instrument (i.e. the Group does not have a present ownership in the shares concerned), then at the end of each reporting period the non-controlling interests (to which a portion of net income attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in equity of the Group, under "Additional paid-in capital".

The Group remeasures the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option. If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the option expires, the liability is settled and it is a portion of the investment in the subsidiary disposed of, without loss of control therein.

If the Group has present ownership in the shares concerned, these non-controlling interests are accounted for as if they are held by the Group and changes in the amount of the liability are carried to profit or loss.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

G. Derecognition of financial instruments:

i. Financial assets:

A financial asset is derecognized when the contractual rights to the cash flows from the financial asset expire or the Group has transferred its contractual rights to receive cash flows from the financial asset or assumes an obligation to pay the cash flows in full without material delay to a third party, and, in addition it has transferred substantially all the risks and rewards of the asset, or has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

A transaction involving factoring of accounts receivable and credit card vouchers is derecognized when the above-mentioned conditions are met.

If the Group transfers its rights to receive cash flows from an asset and neither transfer nor retains substantially all the risks and rewards of the asset nor transfers control of the asset, a new asset is recognized to the extent of the Group's continuing involvement in the asset. When continuing involvement takes the form of guaranteeing the transferred asset, the extent of the continuing involvement is the lower of the original carrying amount of the asset and the maximum amount of consideration received that the Group could be required to repay. As of December 31, 2017, the Group has no open factoring transactions.

ii. Financial liabilities:

A financial liability is derecognized when it is extinguished, that is when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor (the Group) discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability.

H. Impairment of financial assets:

The Group assesses at the end of each reporting period whether there is any objective evidence of impairment of a financial asset or group of financial assets as follows:

i. Financial assets carried at amortized cost:

Objective evidence of impairment exists when one or more events that have occurred after initial recognition of the asset have a negative impact on the estimated future cash flows. The amount of the loss recorded in profit or loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not yet been incurred) discounted at the financial asset's original effective interest rate. If the financial asset has a variable interest rate, the discount rate is the current effective interest rate. In a subsequent period, the amount of the impairment loss is reversed if the recovery of the asset can be related objectively to an event occurring after the impairment was recognized. The amount of the reversal, up to the amount of any previous impairment, is recorded in profit or loss.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

ii. Available-for-sale financial assets:

For equity instruments classified as available-for-sale financial assets, evidence of impairment includes a significant or prolonged decline in the fair value of the asset below its cost and evaluation of changes in the technological, economic or legal environment or in the market in which the issuer of the instrument operates. The determination of a significant or prolonged impairment depends on the circumstances at each reporting date. In making such a determination, historical volatility in fair value is considered, as well as a decline in fair value of 20% or more, or a decline in fair value whose duration is six months or more. Where there is evidence of impairment, the cumulative loss recorded in other comprehensive income is reclassified to profit or loss. In subsequent periods, any reversal of the impairment loss is recognized in other comprehensive income.

During 2016 and 2017 the Group did not recognize an impairment charge over its investments in available-for-sale marketable securities.

The accounting policy for financial instruments applied commencing from January 1, 2018, is as follows:

A. Financial assets:

Financial assets within the scope of the Standard, are measured at the date of initial recognition at their fair value, plus transaction costs that can be directly attributed to the acquisition of the financial asset, except in the case of a financial asset measured at fair value through profit or loss, in respect of which, transaction costs are charged to profit or loss.

The Group classifies and measures the debt instruments in its financial statements on the basis of the following criteria:

- the Group's business model for the management of financial assets; and
- the contractual cash flow characteristics of the financial asset.

i. The Group measures debt instruments at amortized cost when:

The Group's business model is the holding of financial assets in order to collect contractual cash flows, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows, that are only principal and interest payments in respect of the amount of the principal, that has not yet been repaid. Subsequent to initial recognition, instruments in this group shall be presented at their cost at cost plus transaction costs directly using the amortized cost method. In addition, on the date of initial recognition, an entity may irrevocably designate a debt instrument at fair value through profit or loss, if such designation eliminates or significantly reduces inconsistencies in measurement or recognition, for example, if the related financial liabilities, are also measured at fair value through profit or loss.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**ii. The Group measures debt instruments at fair value through other comprehensive income when:

The Group's business model is the holding of financial assets in order to collect contractual cash flows and the sale of the financial assets, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows that are only principal and interest payments in respect of the amount of the principal that has not yet been repaid. Subsequent to initial recognition, instruments in this group are measured at fair value. Gains or losses arising from adjustments to fair value, other than interest and exchange rate differentials, are recognized in other comprehensive income.

iii. The Group measures debt instruments at fair value through profit or loss when:

A financial asset which is a debt instrument does not meet the criteria for measurement at amortized cost or at fair value through other comprehensive income. After initial recognition, the financial asset is measured at fair value and gains or losses from fair value adjustments are recognized in profit or loss.

iv. Equity instruments and other financial assets held for trading:

Investments in equity instruments do not meet the above criteria and accordingly are measured at fair value through profit or loss. Other financial assets held for trading such as derivatives, including embedded derivatives separated from the host contract, are measured at fair value through profit or loss unless they are designated as effective hedging instruments. In respect of certain equity instruments that are not held for trading, on the date of initial recognition, the Company made an irrevocable election to present subsequent changes in fair value in other comprehensive income which changes would have otherwise been recorded in profit or loss. These changes will not be reclassified to profit or loss in the future, even when the investment is disposed of. Dividends from investments in equity instruments are recognized in profit or loss when the right to receive the dividends is established.

B. Impairment of financial assets:

The Group examines at each reporting date the provision for loss in respect of financial debt instruments that are not measured at fair value through profit or loss. The Group distinguishes between two situations of recognition of a provision for loss:

- i. Debt instruments for which there has been no significant deterioration in the quality of their credit since the initial recognition or in cases where the credit risk is low – in this situation, the provision for loss recognized for this debt instrument will take into account expected credit losses in a period of 12 months after the reporting date;
- ii. Debt instruments whose credit quality has deteriorated significantly since their initial recognition and for which the credit risk is not low – in this situation, the provision for a loss to be recognized will take into account projected credit losses - over the remaining life of the instrument.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The Group has financial assets with short credit periods, such as customers, for which it applies the relief prescribed in the model. In other words, the Group measures the provision for loss in an amount equal to expected credit losses throughout the life of the instrument.

An impairment loss on debt instruments measured at amortized cost is recognized in profit or loss with a corresponding loss allowance that is offset from the carrying amount of the financial asset, whereas the impairment loss on debt instruments measured at fair value through other comprehensive income is recognized in profit or loss with a corresponding loss allowance that is recorded in other comprehensive income and not as a reduction of the carrying amount of the financial asset in the statement of financial position.

The Company applies the low credit risk simplification in the Standard, according to which the Company assumes the debt instrument's credit risk has not increased significantly since initial recognition if on the reporting date it is determined that the instrument has a low credit risk, for example when the instrument has an external rating of "investment grade".

C. Derecognition of financial assets:

The Group derecognizes a financial asset when and only when:

- i. The contractual rights to the cash flows from the financial asset expire; or
- ii. The Group transfers substantially all the risks and rewards deriving from the contractual rights to receive the cash flows from the financial asset or when some of the risks and rewards of transferring the financial asset remain with the entity but it may be said that it transferred control over the asset; or
- iii. The Group retains the contractual rights to receive the cash flows arising from the financial asset but assumes a contractual obligation to pay these cash flows in full to a third party, without material delay.

D. Financial liabilities:**i. Financial liabilities measured at amortized cost:**

Financial liabilities are initially recognized at fair value less transaction costs that are directly attributable to the issue of the financial liability. After initial recognition, the Group measures all financial liabilities at amortized cost using the effective interest rate method, except for:

- Financial liabilities at fair value through profit or loss, such as derivatives;
- Financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies;
- Financial guarantee contracts;
- Contingent consideration recognized by an acquirer in a business combination as to which IFRS 3 applies.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

- ii. Financial liabilities measured at fair value through profit or loss:

At initial recognition, the Group measures financial liabilities that are not measured at amortized cost at fair value. Transaction costs are recognized in profit or loss. After initial recognition, changes in fair value are recognized in profit or loss.

- E. Derecognition of financial liabilities:

A financial liability is derecognized when it is extinguished, that is, when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability.

When there is a modification in the terms of an existing financial liability, the Group evaluates whether the modification is substantial.

If the terms of an existing financial liability are substantially modified, such modification is accounted for as an extinguishment of the original liability and the recognition of a new liability. The difference between the carrying amounts of the above liabilities is recognized in profit or loss.

If the modification is not substantial, the Group recalculates the carrying amount of the liability by discounting the revised cash flows at the original effective interest rate and any resulting difference is recognized in profit or loss.

When evaluating whether the modification in the terms of an existing liability is substantial, the Group considers both quantitative and qualitative factors.

- F. Offsetting financial instruments:

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

- G. Put option granted to non-controlling interests:

When the Group grants to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to the Group any benefits incidental to ownership of the equity instrument (i.e. the Group does not have a present ownership in the shares concerned) then at the end of each reporting period the non-controlling interests (to which a portion of net profit attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in equity of the Group, under "Additional paid-in capital".

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data
NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The Group remeasures the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option.

If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the put option expires, the liability is settled and a portion of the investment in the subsidiary disposed of, without loss of control therein.

If the Group has present ownership of the non-controlling interests, these non-controlling interests are accounted for as if they are held by the Group, and changes in the amount of the liability are carried to profit or loss.

22) Fair value measurement:

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value measurement is based on the assumption that the transaction will take place in the asset's or the liability's principal market, or in the absence of a principal market, in the most advantageous market.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest. Fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use. The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities measured at fair value or for which fair value is disclosed are categorized into levels within the fair value hierarchy based on the lowest level input that is significant to the entire fair value measurement:

- Level 1 - quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 - inputs other than quoted prices included within Level 1 that are observable directly or indirectly.
- Level 3 - inputs that are not based on observable market data (valuation techniques which use inputs that are not based on observable market data).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

23) Treasury shares:

Company shares held by the Company and/or by investees are recognized at cost of purchase and presented as a deduction from equity. Any gain or loss arising from a purchase, sale, issue or cancellation of treasury shares is recognized directly in equity.

24) Provisions:

A provision in accordance with IAS 37 is recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. If the effect is material, provisions are measured according to the estimated future cash flows discounted using a pre-tax interest rate that reflects the market assessments of the time value of money and, where appropriate, those risks specific to the liability. When the Group expects part or all of the expense to be reimbursed, for example under an insurance contract, the reimbursement is recognized as a separate asset but only when the reimbursement is virtually certain. The expense is recognized in the statement of profit or loss net of any reimbursement.

Following are the types of provisions included in the financial statements:

i. Legal claims:

A provision for claims is recognized when the Group has a present legal or constructive obligation as a result of a past event, it is more likely than not that an outflow of resources embodying economic benefits will be required by the Group to settle the obligation and a reliable estimate can be made of the amount of the obligation.

ii. Contingent liability recognized in a business combination:

A contingent liability in a business combination is measured at fair value upon initial recognition. In subsequent periods, it is measured at the higher of the amount initially recognized less, when appropriate, cumulative amortization, and the amount that would be recognized at the end of the reporting period in accordance with IAS 37.

25) Derivative financial instruments and hedging:

From, time to time, the Group enters into contracts for derivative financial instruments such as forward currency contracts and options contracts to hedge risks associated with foreign exchange rates resulting from international activities and interest rate fluctuations. The derivative instruments primarily hedge or offset exposures to Euro, Japanese Yen and New Israeli Shekel ("NIS") exchange rate fluctuations.

The Group's options and forward contracts do not qualify for hedging accounting. Any gains or losses arising from changes in the fair values of the derivatives are recorded immediately in profit or loss as financial income or expense.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

26) Employee benefit liabilities:

The Group maintains several employee benefit plans:

i. Short-term employee benefits:

Short-term employee benefits are benefits that are expected to be settled wholly before twelve months after the end of the annual reporting period in which the employees render the related services. These benefits include salaries, paid annual leave, paid sick leave, recreation and social security contributions and are recognized as expenses as the services are rendered. A liability in respect of a cash bonus or a profit-sharing plan is recognized when the Group has a legal or constructive obligation to make such payment as a result of past service rendered by an employee and a reliable estimate of the amount can be made.

ii. Post-employment benefits:

The plans are normally financed by contributions to insurance companies and classified as defined contribution plans or as defined benefit plans.

Formula's and its Israeli investees' (as defined with respect to their Israeli employee contribution plans pursuant to section 14 of Israel's Severance Pay Law, 1963 (the "Severance Pay Law")) pay fixed contributions to those plans and will have no legal or constructive obligation to pay further contributions if the fund into which those contributions are paid does not hold sufficient amounts to pay all employee benefits relating to employee service in the current and prior periods. Contributions to the defined contribution plan in respect of severance or retirement pay are recognized as an expense when contributed concurrently with performance of the employee's services.

Formula and its Israeli investees also operate a defined benefit plan in respect of severance or retirement pay to their Israeli employees pursuant to the Severance Pay Law. According to the Severance Pay Law, employees are entitled to severance pay upon dismissal or retirement. The liability for termination of employment is measured using the projected unit credit method. The actuarial assumptions include rates of employee turnover and future salary increases based on the estimated timing of payment. The amounts are presented based on discounted expected future cash flows using a discount rate determined by reference to market yields at the reporting date on high quality corporate bonds that are linked to Israel's Consumer Price Index with a term that is consistent with the estimated term of the severance pay obligation.

In respect of its severance pay obligation to certain of its employees, the Group makes current deposits in pension funds and insurance companies (the "plan assets"). Plan assets comprise assets held by a long-term employee benefit fund or qualifying insurance policies. Plan assets are not available to the Group's own creditors and cannot be returned directly to the Group.

The liability for employee benefits shown in the statement of financial position reflects the present value of the defined benefit obligation, less the fair value of the plan assets. Remeasurements of the net liability are recognized in other comprehensive income in the period in which they occur.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

Severance expenses for the years 2017, 2018 and 2019 were \$37,313, \$30,318 and \$37,218, respectively.

iii. Other long-term employee benefits:

Certain employees of the Group are entitled to benefits in respect of adaptation grants. These benefits are accounted for as other long-term benefits since the Group estimates that these benefits will be utilized and the respective Group's obligation will be settled during the employment period and more than twelve months after the end of the annual reporting period in which the employees rendered the related service.

The Group's net obligation for other long-term employee benefits, which is computed based on actuarial assumptions, is for the future benefit due to employees for services rendered in the current period and in prior periods and taking into account expected salary increases. The amount of these benefits is discounted to its present value. The discount rate is determined by reference at the reporting date to market yields on high quality corporate bonds that are linked to the Consumer Price Index and whose term is consistent with the term of the Group's obligation.

Remeasurement of the net obligation is recognized to the statement of comprehensive income in the incurred period.

27) Earnings per share:

Earnings per share are calculated by dividing the net income attributable to equity holders of the Company by the weighted number of ordinary shares outstanding during the period. Potential ordinary shares are included in the computation of diluted earnings per share when their conversion decreases earnings per share from continuing operations. Potential ordinary shares that are converted during the period are included in diluted earnings per share only until the conversion date and from that date in basic earnings per share. The Company's share of earnings of investees is included based on its share of earnings per share of the investees multiplied by the number of shares held by the Company.

28) Concentration of credit risk:

Financial instruments that potentially subject the Group to concentrations of credit risk consist principally of cash and cash equivalents, short-term bank deposits, restricted cash, trade receivables, marketable securities and foreign currency derivative contracts.

The majority of the Group's cash and cash equivalents, bank deposits, marketable securities and other financial instruments are invested with major banks in Israel, the United States and Europe. Management believes that these financial instruments are held in financial institutions with high credit standing, and accordingly, minimal credit risk exists with respect to these investments. Cash and cash equivalents and short-term deposits in the United States may be in excess of insured limits and are not insured in other jurisdictions. Generally, these banks deposits may be redeemed upon demand and therefore bear minimal risk.

The Group's marketable securities, which as of December 31, 2019, are solely held by Magic Software, include investments in commercial and government bonds and foreign banks. The Group's marketable securities are considered to be highly liquid and have a high credit standing. In addition, managements of the Group's investees limit the amount that may be invested in any one type of investment or issuer, thereby reducing credit risk concentrations and consider their portfolios in foreign banks to be well-diversified (also refer to Note 5).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)**

The Group's trade receivables are generally derived from sales to large organizations located mainly in Israel, North America, Europe and Asia Pacific. The Group performs ongoing credit evaluations of its customers using a reliable outside source to determine payment terms and credit limits which are approved based on the size of the customer and to date has not experienced any material losses. In certain circumstances, Formula and its investees may require letters of credit, other collateral or additional guarantees. From time to time, the Group's subsidiaries sell certain of its accounts receivable to financial institutions, within the normal course of business.

The Group maintains an allowance for doubtful accounts receivable based upon management's experience and estimate of collectability of each outstanding invoice. The allowance for doubtful accounts is determined with respect to specific debts or which collection is doubtful. The risk of collection associated with accounts receivable is mitigated by the diversity and number of customers.

Bad debt expense, net for the years ended December 31, 2017, 2018 and 2019 was \$1,373, \$1,723 and \$1,176 respectively.

From time to time, the Group enters into foreign exchange forward and option contracts intended to protect against the changes in value of forecasted non-dollar currency cash flows. These derivative instruments are designed to offset a portion of the Group's non-dollar currency exposure (see Note 2 (25) above).

29) Liquidity risk:

Liquidity risk arises from managing the Group's working capital as well as from financial expenses and principal payments of the Group's debt instruments. Liquidity risk consists of the risk that the Group will have difficulty in fulfilling obligations relating to financial liabilities.

The Group's policy is to ascertain constant cash adequacy needed for settling its liabilities when due. For this purpose, the Group aims to hold cash balances (or adequate credit lines) that will meet anticipated demands.

Formula and its investees examine cash flow forecasts on a monthly basis as well as information regarding cash balances. As of the reporting date, these forecasts indicate that the Group can expect sufficient liquid sources for covering its entire liabilities under reasonable assumptions.

30) Changes in accounting policies - initial adoption of new financial reporting and accounting standards:**A. First time implementation of IFRS 16 – "Leases":**

In January 2016, the IASB issued IFRS 16, "Leases" ("the Standard"), which provides guidance on the recognition, measurement, presentation and disclosure of leases and supersedes IAS 17, "Leases" ("the old Standard"), IFRIC 4, "Determining Whether an Arrangement Contains a Lease", and SIC-15, "Operating Leases - Incentives". According to the Standard, a lease is a contract, or part of a contract, that conveys the right to use an asset for a period of time in exchange for consideration.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The Standard has been applied for the first time in these financial statements. As permitted by the Standard, the Group elected to apply the provisions of the Standard using the modified retrospective method, according to which it recognized lease liabilities on the initial application date of the Standard in respect of leases previously classified as operating leases according to IAS 17. The amount of the liability as of the date of initial application of the Standard was measured using the lessees' incremental borrowing rate of interest on the date of initial application of the Standard.

Certain right-of-use assets were measured as if the Standard had been applied from the commencement date of the lease but for the purpose of calculation, the lessee's incremental borrowing rate on the date of initial application was used, while the carrying amount of other right-of-use assets was identical to the carrying amount of the lease liability.

For details of the accounting policy applied from the date of initial application of the Standard, see Note 2(16).

The main effect of the initial application of the Standard relates to existing leases in which the Group is the lessee. According to the Standard, as explained in Note 2(16), the Group recognizes a lease liability and a corresponding right-of-use asset for each lease in which it is the lessee, excluding certain exceptions. This accounting treatment is different than the accounting treatment applied under the old Standard according to which the lease payments in respect of leases for which substantially all the risks and rewards incidental to ownership of the leased asset were not transferred to the lessee were recognized as an expense in profit or loss on a straight-line basis over the lease term.

The effects of the above changes on the consolidated statements of financial position are as follows:

As of January 1, 2019	As previously reported	The change	According to IFRS 16
LONG-TERM ASSETS			
Right-of-use assets	-	105,525	105,525
Current Liabilities			
Current maturities of operating lease liabilities	-	26,681	26,681
LONG-TERM LIABILITIES			
Long-term operating lease liabilities	-	81,256	81,256
Equity			
Retained earnings	262,557	(1,187)	261,370
Non-controlling interests	437,767	(1,225)	436,542

The Group was assisted by an external valuation expert in determining the appropriate interest rate for discounting its leases based on credit risk, the weighted average term of the leases and other economic variables.

31) Certain amounts in the prior years' financial statements have been reclassified to conform to the current year's presentation.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 3:- NEW STANDARDS, INTERPRETATIONS AND AMENDMENTS ADOPTED BY THE GROUP**1. Amendments to IFRS 10 and IAS 28 regarding sale or transfer of assets between an investor and its associate or joint venture:

In September 2014, the IASB issued amendments to IFRS 10 and IAS 28 (which we refer to as the Amendments) regarding the accounting treatment of the sale or transfer of assets (an asset, a group of assets or a subsidiary) between an investor and its associate or joint venture. According to the Amendments, when an investor loses control of a subsidiary or a group of assets that are not a business in a transaction with its associate or joint venture, the gain will be partially eliminated such that the gain to be recognized is the gain from the sale to the other investors in the associate or joint venture. According to the Amendments, if the remaining rights held by the investor represent a financial asset as defined in IFRS 9, the gain will be recognized in full. If the transaction with an associate or joint venture involves loss of control of a subsidiary or a group of assets that are a business, the gain will be recognized in full. The Amendments are to be applied prospectively. A mandatory effective date has not yet been determined by the IASB, but early adoption is permitted.

2. IFRS 3, “Business Combinations”:

In October 2018, the IASB issued an amendment to the definition of a “business” in IFRS 3, “Business Combinations” (“the Amendment”). The Amendment is intended to assist entities in determining whether a transaction should be accounted for as a business combination or as an acquisition of an asset.

The Amendment consists of the following:

1. Clarification that to meet the definition of a business, an integrated set of activities and assets must include, as a minimum, an input and a substantive process that together significantly contribute to the ability to create output.
2. Removal of the reference to the assessment whether market participants are capable of acquiring the business and continuing to operate it and produce outputs by integrating the business with their own inputs and processes.
3. Introduction of additional guidance and examples to assist entities in assessing whether the acquired processes are substantive.
4. Narrowing the definitions of “outputs” and “business” by focusing on goods and services provided to customers.
5. Introducing an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business.

The Amendment is to be applied prospectively to all business combinations and asset acquisitions for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after January 1, 2020, with earlier application permitted.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 3:- NEW STANDARDS, INTERPRETATIONS AND AMENDMENTS ADOPTED BY THE GROUP (Cont.)**3. Amendments to IFRS 9, IFRS 7 and IAS 39:

In September 2019, the IASB published an amendment to IFRS 9, “Financial Instruments”, IFRS 7, “Financial Instruments: Disclosures” and IAS 39, “Financial Instruments: Recognition and Measurement” (“the Amendment”).

In view of global regulatory changes, numerous countries have considered introducing a reform in the benchmark Interbank Offered Rates (“IBORs”) (LIBOR, the London Interbank Offered Rate, being one of the most common examples) and switching to a risk-free interest rate alternative (“RFRs”) which extensively rely on data of specific transactions. The IBOR reform leads to uncertainty regarding the dates and amounts to be attributed to future cash flows relating to both hedging instruments and hedged items that rely on existing IBORs.

According to the existing accounting guidance of IFRS 9 and IAS 39, entities that have entered into the above hedges are facing uncertainty as a result of the IBOR reform which is likely to affect their ability to continue meeting the effective hedging requirements underlying existing transactions as well as the hedging requirements of future transactions. In order to resolve this uncertainty, the IASB issued the Amendment to offer transitional reliefs for entities that apply IBOR-based hedge accounting. The Amendment represents phase one in the reform that will include additional amendments in the future.

The Amendment also permits certain reliefs in applying the hedge accounting effectiveness tests during the period of transition from IBORs to RFRs. These reliefs assume that the benchmark interest underlying the hedge will not change as a result of the expected interest reform. The reliefs will be effective indefinitely, until the occurrence of one of the events specified in the Amendment. The Amendment also requires entities to provide specific disclosures of the application of any reliefs.

The Amendment is to be applied retrospectively for annual periods beginning on or after January 1, 2020. Early adoption is permitted. The Group believes that the adoption of the Amendment will not have an effect on its consolidated financial statements since its subsidiaries do not enter into substantial IBOR-based hedges.

4. Amendments to IAS 1, “Presentation of Financial Statements”:

In January 2020, the IASB issued several amendments to IAS 1, “Presentation of Financial Statements” (“the Amendments”) in order to clarify the criteria for determining the classification of liabilities as current or non-current.

The Amendments include the following clarifications:

- Clarification of the definition of the right to defer settlement of a liability.
- Clarification that only the rights an entity has at the end of the reporting period can determine whether it has the right to defer settlement of the liability.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 3:- NEW STANDARDS, INTERPRETATIONS AND AMENDMENTS ADOPTED BY THE GROUP (Cont.)

- Clarification of the means that can be used to settle a liability other than by transfer of cash (such as by transfer of equity instruments).

The Amendments are to be applied retrospectively effective for annual periods beginning on or after January 1, 2022, with earlier application permitted.

The Group estimates that the Amendments will not have a material effect on its financial statements.

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS

i. Formula

Acquisition of Michpal Micro Computers (1983) Ltd.(3.845)

On January 3, 2017, the Company directly acquired all of the share capital of Michpal, an Israeli-based company that develops, sells and supports a proprietary on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprise and payroll service providers, for a total cash consideration of NIS 85,000 (approximately \$22,106), or NIS 74,032 (approximately \$19,254) net of acquired cash. Acquisition related costs were immaterial. Unaudited pro forma condensed profit or loss for the years ended December 31, 2016 and 2017 were not presented, since the acquisition is immaterial. The results of Michpal’s operations have been included in the consolidated financial statements since January 2017.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (2,713)
Intangible assets	11,329
Deferred tax liability	(2,606)
Goodwill	13,244
Total assets acquired net of acquired cash	<u>\$ 19,254</u>

ii. Sapiens

a. Acquisition of Cálculo S.A.U.

On September 27, 2019 (the “Acquisition Date”), Sapiens completed the acquisition of all of the share capital of Cálculo S.A.U (“Cálculo”), a Spanish-based company engaged in insurance consulting and managed services, and develops, sells and supports a proprietary core solution to the insurance Spanish market, for a total cash consideration of \$5,760 (of which \$5,608 were paid in September 2019, and \$152 in the first quarter of 2020). The net impact on cash flow from investing activities was \$1,554, net of \$4,054 of cash acquired. In addition, the sellers and senior executives are entitled to performance-based payments relating to achievements of various targets over three years (2019-2021) of up to \$1,700. Some of these payments are subject to continued employment, and therefore were not included in the purchase price. Acquisition related costs were immaterial. Unaudited pro forma condensed profit or loss for the years ended December 31, 2018 and 2019 were not presented, since the acquisition is immaterial. The results of Cálculo’s operations have been included in the consolidated financial statements since September 2019.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated provisional ⁽¹⁾ fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets excluding cash acquired	\$	47
Intangible assets		1,037
Goodwill		622
Total assets acquired, net of acquired cash	\$	<u>1,706</u>

(1) The estimated fair values of the tangible and intangible assets referring to acquisition which were made in 2019 are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. The Group's management believes the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Group expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period.

b. Acquisition of Adaptik Corporation

On March 7, 2018, Sapiens completed the acquisition of all of the share capital of Adaptik Corporation ("Adaptik"), a New-Jersey company engaged in the development of software solutions for P&C insurers, (including policy administration, rating, billing, customer and task management and product design), for total cash consideration of \$18,179 (of which \$17,979 was paid in March 2018 and \$200 will be paid in March 2022). In addition, the seller may be entitled to performance-based payments relating to achievement of revenue targets over three years (2018-2020) of up to \$3,700, of which \$1,300 was paid during 2019. Such payment entitlements are subject to continued employment and therefore were not included in the purchase price. Acquisition-related costs were approximately \$300. Unaudited pro forma condensed profit or loss for the years ended December 31, 2017 and 2018 were not presented, since the acquisition is immaterial. The result of Adaptik's operations have been included in the consolidated financial statements since March 2018.

The following table summarizes the estimated fair values of the acquired assets and liabilities as of the acquisition date:

Net liabilities excluding cash acquired	\$	(2,817)
Intangible assets		12,936
Deferred taxes		(3,528)
Goodwill		11,468
Total assets acquired, net of acquired cash	\$	<u>18,059</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)c. Acquisition of KnowledgePrice.com

On December 27, 2017, Sapiens signed a definitive agreement for the acquisition of all of the share capital of KnowledgePrice.com's ("KnowledgePrice"), a Latvian company, which specializes in digital insurance services and consulting. The fair value of the total consideration amounted to \$6,029, including cash consideration of \$4,068 (out of this amount \$3,758 was paid in December 2017 and \$310 was paid in January 2018), and a contingent obligation valued at \$1,652 at the acquisition date, of which Sapiens paid \$62 during 2019. In addition, the seller may be entitled to performance based payment relating to achievement of revenue and profitability targets over three years (2018-2020) and a retention payment of up to \$1,116 that is subject to continued employment and therefore not part of the purchase price, of which Sapiens paid \$590 during 2019. Acquisition related costs were immaterial. Unaudited proforma condensed profit or loss for the years ended December 31, 2016 and 2017 were not presented, since the acquisition is immaterial.

The following table summarizes the estimated fair values of the acquired assets and liabilities as of the acquisition date:

Net assets excluding cash acquired	505
Intangible assets	2,417
Deferred taxes	(363)
Goodwill	3,195
Total assets acquired, net of acquired cash	<u>\$ 5,754</u>

d. Acquisition of StoneRiver, Inc.

On February 28, 2017, Sapiens completed the acquisition of all of the share capital of StoneRiver, Inc. ("StoneRiver"), a provider of technology solutions and services to the insurance industry for cash consideration of \$101,351. Sapiens-related acquisition costs of \$1,348 are presented in general and administrative expenses. The acquisition of StoneRiver and Adaptik expanded Sapiens' presence and scale in the North American insurance market and allows Sapiens to offer its customers and partners a more extensive product portfolio in the industry. The results of StoneRiver's operations have been included in the consolidated financial statements since February 28, 2017.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the assets acquired and liabilities:

Current assets	\$ 16,785
Property and equipment	1,088
Intangible assets	38,145
Goodwill	77,014
Other long-term assets	<u>78</u>
Total assets acquired	\$ 133,110
Current liabilities	\$ 10,595
Deferred revenues	5,742
Deferred tax liabilities	15,071
Other long-term liabilities	<u>351</u>
Total liabilities acquired	\$ 31,759
Total purchase price	\$ 101,351

The following table sets forth the components of intangible assets associated with the acquisition:

	Fair value
Developed technology	\$ 34,039
Customer relationships	3,333
Backlog	<u>773</u>
Total intangible assets	\$ 38,145

Revenues of StoneRiver for the period since the acquisition date through December 31, 2017, which are included in the consolidated financial statements, amounted to \$67,805.

iii. Magic Software

a. Acquisition of NetEffects

On July 1, 2019, Magic Software acquired a all of the share capital of NetEffects Inc (“NetEffects”), a U.S based services company, engaged in IT staffing and recruiting services, for a total consideration of \$12,500, of which \$9,400 was paid upon closing and the remaining \$3,100 will be paid in three installments following the first, second and third year anniversary of the acquisition. Acquisition related costs were immaterial. Acquisition related costs were immaterial. Unaudited proforma condensed profit or loss for the years ended December 31, 2018 and 2019 was not presented, since the acquisition is immaterial. The results of operations were included in the consolidated financial statements of the Group commencing July 1, 2019

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated provisional ⁽¹⁾ fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets excluding cash acquired	\$ 91
Intangible assets	8,716
Goodwill	3,526
Total assets acquired net of acquired cash	<u>\$ 12,333</u>

(1) The estimated fair values of the tangible and intangible assets are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. Magic Software’s management believe the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Company expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period

b. Acquisition of PowWow Inc.

On April 1, 2019 Magic Software acquired all of the share capital of PowWow Inc. (“PowWow”), creator of SmartUX™, a leading Low-Code development platform for mobilizing and modernizing enterprise applications, for a total consideration of \$8,443 (net of acquired cash). Total consideration includes an estimated deferred consideration of \$2,040 contingent upon PowWow meeting various revenue targets over three years (2020-2022). Acquisition related costs amounted to \$980. Unaudited pro forma condensed profit or loss for the year ended December 31, 2018 was not presented, since the acquisition is immaterial. The results of operations were included in the consolidated financial statements of the Group commencing April 1, 2019.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets excluding cash acquired	\$ (758)
Intangible assets	2,855
Deferred taxes	(473)
Goodwill	6,819
Total assets acquired net of acquired cash	<u>\$ 8,443</u>

c. Acquisition of OnTarget Group Inc.

On February 28, 2019, Magic Software acquired all of the share capital of OnTarget Group Inc. (“OnTarget”), a U.S.-based services company, specializes in outsourcing of software development services, for a total consideration of \$12,456. Total consideration consists of \$6,000 which was paid upon closing and the remaining amount constitutes a deferred payment contingent upon OnTarget meeting future operating results over four years (2019-2022). Unaudited pro forma condensed profit or loss for the year ended December 31, 2018 was not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. OnTarget results of operations were included in the consolidated financial statements of the Company commencing March 1, 2019.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets excluding cash acquired	\$ 444
Intangible assets	4,908
Deferred taxes	(1,276)
Goodwill	8,380
Total assets acquired net of acquired cash	<u>\$ 12,456</u>

- d. On October 1, 2019 Magic Software acquired 30% of the share capital of Infinigy Solutions LLC (“Infinigy”), increasing its share capital interest from 70% to 100%, for a total cash consideration of \$4,393, which was paid upon closing. Infinigy is U.S.-based services company focused on expanding the development and implementation of technical solutions which deliver design-driven turnkey solutions, combining Architecture and Engineering, or A&E design project management and general contracting competencies, across the wireless communications industry.

- e. Other acquisitions by Magic in 2017 and 2018

During each of the years ended December 31, 2017 and 2018, Magic acquired additional activities whose influence on the financial statements of the Group was immaterial, for total consideration of \$1,050 and \$588, respectively

iv. Matrix

- a. Acquisition of Techtop Ltd.

On April 7, 2019, Matrix purchased the net assets of Techtop Ltd.’s (“TechTop”), (meeting the definition of a business) for a cash consideration of NIS 17,087 (approximately \$4,764). TechTop is a leasing Israeli supplier of professional sound and systems. As part of the purchase price allocation, the excess of the purchase price paid over the value of net assets acquired in the amount of NIS 8,602 (approximately \$2,398) was allocated to goodwill. Unaudited pro forma condensed profit or loss for the year ended December 31, 2018 was not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Techtop results of operations were included in the consolidated financial statements of the Company commencing April 1, 2019.

- b. Acquisition of Medatech Information Technologies Ltd.

On February 20, 2019, Matrix acquired all the share capital of Medatech Information Technologies Ltd., (“Medatech Technologies”) an Israeli-based company and a leading system integrator with many years of experience in distributing and implementing Priority ERP software, for NIS 85,000 (approximately \$23,500) or NIS 77,753 (approximately \$21,496) net of acquired cash. On April 7, 2019, Matrix acquired additional 25% of the issued and outstanding share capital of Medatech Systems Inc., (“Medatech Systems”) a subsidiary of Medatech Technologies, for NIS 5,175 (approximately \$1,443) or NIS 2,007 (approximately \$560) net of acquired cash. Resulting from the acquisition, Medatech Technologies interest in the issued and outstanding share capital of Medatech Systems increased to 75%. Matrix and the seller both hold mutual options to purchase and sell (respectively) 5% of the remaining share capital of Medatech Systems at the end of the second year anniversary following the acquisition. Unaudited pro forma condensed profit or loss for the year ended December 31, 2018 was not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Medatech results of operations were included in the consolidated financial statements of the Company commencing March 1, 2019

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets excluding cash acquired	\$ 2,340
Intangible assets	7,553
Deferred taxes	(2,276)
Credit from banks and others	(5,550)
Non-controlling interests	(434)
Goodwill	20,423
Total assets acquired net of acquired cash	<u>\$ 22,056</u>

c. Acquisition of Dana Engineering Ltd.

On February 6, 2019, Matrix acquired 80% of the issued and outstanding share capital of Dana Engineering Ltd., (“Dana Engineering”) an Israeli-based company providing project management services in the field of national infrastructure in Israel, for total cash consideration of NIS 52,000 (approximately \$14,370). Matrix and the seller hold mutual options to purchase and sell (respectively) the remaining 20% interest in Dana Engineering which may be exercised following the second-year anniversary of the acquisition. Unaudited pro forma condensed profit or loss for the year ended December 31, 2018 was not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Dana Engineering results of operations were included in the consolidated financial statements of the Company commencing February 1, 2019.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets excluding cash acquired	\$ (9,270)
Intangible assets	5,311
Deferred taxes	(1,138)
Non-controlling interests	(5,235)
Goodwill	9,746
Total assets acquired net of acquired cash	<u>\$ (586)</u>

d. Acquisition of Noah Technologies Ltd.

On November 13, 2018, Matrix acquired all the share capital of Noah Technologies Ltd, an Israeli based company providing engineering solutions, computerized catalogs and IT professional services, for approximately NIS 6,090 (approximately \$1,651) in cash or NIS 4,251 (approximately \$1,152) net of acquired cash. In accordance with the purchase agreement the seller may also be entitled to receive performance-based payments capped at NIS 4,000 (approximately \$1,084), estimated on the date of the acquisition at NIS 3,089 (approximately \$837), relating to achievement of certain profitability targets for the years 2019-2021. Unaudited pro forma condensed profit or loss for the years ended December 31, 2017 and 2018 were not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Noah Technologies results of operations were included in the consolidated financial statements of the Company commencing December 1, 2018.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (475)
Intangible assets	781
Deferred taxes	(171)
Goodwill	1,854
Total assets acquired net of acquired cash	<u>\$ 1,989</u>

e. Acquisition of Integrity Software 2011 Ltd.

On July 30, 2018, Matrix acquired 65% of the share capital of Integrity Software 2011 Ltd., an Israeli-based company providing software solutions to the enterprise sector in Israel in the fields of software security, IT infrastructure and virtualization, for approximately NIS 9,000 (approximately \$2,454) in cash or NIS 4,881 (approximately \$1,331) net of acquired cash. In accordance with the purchase agreement the seller may also be entitled to receive performance-based payments capped at NIS 4,000 (approximately \$1,091), estimated on the date of the acquisition at NIS 823 (approximately \$224), contingent upon the seller meeting certain profitability targets during the years 2019-2021. Matrix and the seller both hold mutual options to purchase and sell (respectively) 10% of the remaining share capital of Integrity. Unaudited pro forma condensed profit or loss for the years ended December 31, 2017 and 2018 were not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Integrity Software results of operations were included in the consolidated financial statements of the Company commencing August 1, 2018.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (1,130)
Intangible assets	1,316
Deferred taxes	(303)
Non-controlling interests	(318)
Goodwill	1,990
Total assets acquired net of acquired cash	<u>\$ 1,555</u>

f. Acquisition of Cambium (2014) Ltd.

On July 25, 2018, Matrix acquired 55% of the share capital of Cambium (2014) Ltd. for NIS 3,126 in cash (approximately \$860) or NIS 2,729 net of acquired cash (approximately \$750 net of acquired cash). Matrix and the seller hold mutual options to purchase and sell (respectively) 15% of the remaining share capital of Cambium. Due to the put option, the Group recorded a financial liability in an amount of NIS 870 (approximately \$239) as of the acquisition date. Unaudited pro forma condensed profit or loss for the years ended December 31, 2017 and 2018 were not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Cambium results of operations were included in the consolidated financial statements of the Company commencing August 1, 2018.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (8)
Intangible assets	365
Deferred taxes	(84)
Non-controlling interests	(238)
Goodwill	715
Total assets acquired net of acquired cash	<u>\$ 750</u>

g. Acquisition of Pleasant Valley Business Solutions, LLC.

On March 13, 2018 Matrix acquired all of the share capital of Pleasant Valley Business Solutions, or PVBS, a U.S company, for cash consideration of approximately \$7,590 (or \$5,490 net of acquired cash). In accordance with the purchase agreement the seller may also be entitled to receive performance-based payments, estimated on the date of the transaction at \$2,819, contingent upon the seller meeting certain profitability targets measured over three years (2018-2020) and up to a total additional consideration of \$6,500. PVBS is engaged in the implementation and assimilation of ERP systems for U.S government suppliers. Unaudited pro forma condensed profit or loss for the year ended December 31, 2017 was not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. PVBS results of operations were included in the consolidated financial statements of the Company commencing April 1, 2018.

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (793)
Intangible assets	1,809
Deferred taxes	(499)
Goodwill	7,792
Total assets acquired net of acquired cash	<u>\$ 8,309</u>

h. Acquisition of Alius Group Inc

On January 18, 2018, Matrix acquired 50.1% of the share capital of Alius consulting group, a U.S.-based company headquartered in New York, for a total cash consideration of approximately \$6,241. Total consideration consists of \$3,241 paid in cash at closing (\$2,960 net of acquired cash) with the remaining \$3,000 to be paid at the end of the second year anniversary following the acquisition. Under the terms of the acquisition, Matrix and the seller held mutual options to purchase and sell (respectively) the remaining shares within two years following the closing date.

On November 25, 2018, Matrix acquired the remaining 49.9% of the share capital of Alius for additional and final consideration of \$13,802. Alius is a global consulting financial firm that provides advisory services in the area of regulatory, risk and compliance in the U.S financial markets. Unaudited pro forma condensed profit or loss for the year ended December 31, 2017 was not presented, since the acquisition is immaterial. Acquisition related costs were immaterial.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

Alius Group results of operations were included in the consolidated financial statements of the Company commencing February 1, 2018.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (4)
Intangible assets	2,986
Deferred taxes	(806)
Goodwill	14,190
Total assets acquired net of acquired cash	<u>\$ 16,366</u>

v. Michpal

a. Acquisition of Unique Software Industries Ltd.

In November, 2019, Michpal acquired all of the share capital of Unique Software Industries Ltd. (“Unique”), an Israeli-based company and a provider of integrated solutions in the field of payroll, including pay-stubs, pension services management, education funds management, and software solutions for managing employee attendance, for a total cash consideration of NIS 48,650 (approximately \$14,049) or NIS 44,945 (approximately \$12,979) net of acquired cash. In accordance with the purchase agreement the seller may also be entitled to receive a performance-based payment capped at NIS 12,218 (approximately \$3,528), estimated on the date of the acquisition at NIS 9,736 (approximately \$2,811), subject to certain milestones to be met by Unique over the following 4 years from the acquisition date. Unaudited pro forma condensed profit or loss for the years ended December 31, 2018 and 2019 were not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Unique results of operations were included in the consolidated financial statements of the Company commencing November 1, 2019.

The following table summarizes the preliminary⁽¹⁾ estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net liabilities excluding cash acquired	\$ (244)
Intangible assets	8,425
Deferred tax liability	(1,938)
Goodwill	9,547
Total assets acquired net of acquired cash	<u>\$ 15,790</u>

(1) The estimated fair values of the tangible and intangible assets referring to acquisition which were made in 2019 are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. The Group’s management believes the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Group expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

b. Acquisition of Effective Solutions Ltd.

In November 2018, Michpal acquired 80% of the issued and outstanding share capital of Effective Solutions Ltd., an Israeli based service provider engaged in consulting services in the fields of operational cost savings and procurement, as well as salary control and monitoring, for a total cash consideration of NIS 24,000 (approximately \$6,516). In addition, Michpal and the seller hold mutual call and put options, respectively, for the remaining 20% interest in Effective Solutions. Due to the put option, a financial liability was recorded in an amount of NIS 3,028 (approximately \$808) as of the acquisition date. Unaudited pro forma condensed profit or loss for the years ended December 31, 2017 and 2018 were not presented, since the acquisition is immaterial. Acquisition related costs were immaterial. Effective Solutions results of operations were included in the consolidated financial statements of the Company commencing November 1, 2018.

The following table summarizes the fair values of the assets acquired and liabilities at the date of acquisition:

Net assets	\$	692
Non-controlling interests		(320)
Intangible assets		739
Deferred tax liability		(170)
Goodwill		5,232
Total assets acquired net of acquired cash	\$	<u>6,173</u>

NOTE 5:- MARKETABLE SECURITIES

a. The following table summarizes the composition of the Group's investment in marketable securities:

	<u>December 31,</u>	
	<u>2019</u>	<u>2018</u>
<u>Fair value through profit or loss</u> ⁽¹⁾		
Convertible bonds designated at fair value through profit or loss	1,112	1,156
<u>Fair value through other comprehensive income</u>		
Corporate bonds	5,488	8,757
	<u>\$ 6,600</u>	<u>\$ 9,913</u>

⁽¹⁾ The consolidated statements of profit or loss for the years ended 2017, 2018 and 2019 include gains (losses) from marketable securities designated at fair value through profit or loss in amounts of (\$149), \$53 and (\$35), respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 5:- MARKETABLE SECURITIES (Cont.)

b. The following is a summary of marketable securities which are measured at fair value through other comprehensive income:

	December 31,							
	2019				2018			
	Amortized cost	Unrealized losses	Unrealized Gains	Market value	Amortized cost	Unrealized losses	Unrealized gains	Market Value
Corporate bonds	\$ 5,487	\$ -	\$ 1	\$ 5,488	\$ 8,851	\$ (94)	\$ -	\$ 8,757

In 2017, 2018 and 2019, the Group received proceeds from sales and maturity of debt instruments measured at fair value through other comprehensive income of \$39,594, \$4,000 and \$3,356 and recorded related net gains of \$94, \$0 and \$0 in profit or loss under financial income, respectively.

As of December 31, 2019, the amortized cost of all debt instruments at fair value through other comprehensive income is due within one year in accordance with its contractual maturities.

NOTE 6:- PREPAID EXPESNES AND OTHER ACCOUNTS RECEIVAVABLE

The following table summarizes the composition of the Group's Prepaid expenses, other accounts receivable and other investments:

	December 31,	
	2019	2018
Prepaid expenses and advances to suppliers	\$ 37,394	\$ 25,161
Government departments	22,134	12,318
Dividend receivable from jointly controlled entity	3,000	-
Employees	488	426
Related Parties	1,278	262
Receivables in respect of an embedded derivative transaction	-	354
Other	1,415	1,943
	<u>\$ 65,709</u>	<u>\$ 40,464</u>

NOTE 7:- FAIR VALUE MEASUREMENT

In determining fair value, the Group utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible and considers counterparty credit risk in its assessment of fair value.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 7:- FAIR VALUE MEASUREMENT (Cont.)

The Group's financial assets and liabilities measured at fair value on a recurring basis, including accrued interest components, consisted of the following types of instruments as of December 31, 2018 and 2019:

	Fair value measurements			
	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Assets:				
Convertible bonds at fair value through profit or loss (Note 5)	-	1,112	-	\$ 1,112
Corporate bonds at fair value through other comprehensive income (Note 5)	-	5,488	-	5,488
Dividend preference derivative in TSG ⁽¹⁾	-	-	1,539	1,539
	<u>-</u>	<u>6,600</u>	<u>1,539</u>	<u>\$ 8,139</u>
Liabilities:				
Foreign currency derivative contracts	-	67	-	67
Contingent consideration	-	-	13,979	13,979
	<u>-</u>	<u>67</u>	<u>13,979</u>	<u>\$ 14,046</u>

	Fair value measurements			
	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Convertible bonds at fair value through profit or loss (Note 5)	-	1,156	-	\$ 1,156
Corporate bonds at fair value through other comprehensive income (Note 5)	-	8,757	-	8,757
Receivables in respect of an embedded derivative transaction	-	-	354	354
Dividend preference derivative in TSG ⁽¹⁾	-	-	2,733	2,733
	<u>\$ -</u>	<u>\$ 9,913</u>	<u>\$ 3,087</u>	<u>\$ 13,000</u>
Liabilities:				
Foreign currency derivative contracts	-	47	-	47
Contingent consideration	-	-	7,047	7,047
	<u>-</u>	<u>47</u>	<u>7,047</u>	<u>\$ 7,094</u>

⁽¹⁾ The fair value of dividend preference derivative in TSG was estimated using the Monte-Carlo simulation technique.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 8:- INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY METHOD

The following table summarizes the Group's investments in companies accounted for at equity:

	December 31,	
	2019	2018
Affiliated company	5	27
Joint venture – TSG	26,016	25,683
	<u>26,021</u>	<u>25,710</u>

Investment in TSG

- a. The Company holds directly a 50% share interest in the issued and outstanding share capital of TSG, a joint venture engaged in the fields of command and control systems, intelligence, homeland security and cyber security. The Company's investment in TSG is included in the financial statements using the equity method of accounting. At the acquisition date the Company attributed an amount of \$2,140 to a separate component of dividend preference derivative. The dividend preference derivative is measured at fair value through profit or loss and is presented in the consolidated statements of financial position under long-term prepaid expenses, other accounts and other investments.
- b. The following table summarizes the balances related to the Company's investment in TSG in the consolidated statements of financial position:

	December 31,	
	2019	2018
<u>Investment in companies accounted for at equity method</u>		
Shares	18,347	18,014
Capital note	7,669	7,669
	<u>26,016</u>	<u>25,683</u>
<u>Long-term prepaid expenses, other accounts, and other investments</u>		
Dividend preference derivative at fair value through profit or loss	1,539	2,733

- c. The following table summarizes the changes in the fair value of TSG's dividend preference derivative:

	December 31,	
	2019	2018
Opening balance	2,733	2,400
Increase in fair value recognized in profit or loss	93	333
Currency exchange rate in other comprehensive income	213	-
Decrease due to dividend declared by TSG	(1,500)	-
Closing balance	<u>1,539</u>	<u>2,733</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 8:- INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY (Cont.)

d. The following table summarizes the changes in the carrying amount of the Company's Investment in TSG:

January 1, 2017	\$	24,022
Company's share of profit		1,134
Company's share of other comprehensive income		104
December 31, 2017	\$	<u>25,260</u>
Company's share of profit		365
Company's share of other comprehensive income		58
December 31, 2018	\$	<u>25,683</u>
Company's share of profit		1,771
Company's share of other comprehensive income		62
Company's Share in dividend declared by TSG		(1,500)
December 31, 2019	\$	<u>26,016</u>

e. The following table summarizes financial information of TSG:

(i) Summarized statement of financial position in accordance with IFRS as of December 31, 2018 and 2019 (as presented in TSG's financial statements):

	December 31,	
	2019	2018
Current assets	48,340	39,101
Noncurrent assets excluding goodwill	5,507	1,498
Current liabilities	(28,436)	(22,152)
Noncurrent liabilities	(8,625)	(3,750)
Equity	16,786	14,697
Company's share in TSG	50%	50%
Excess cost of intangible assets net of deferred tax	8,393	7,349
Goodwill	9,836	9,836
Company's carrying amount of the investment in TSG	<u>26,016</u>	<u>25,683</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 8:- INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY (Cont.)

(ii) The following table key highlights of TSG profit or loss for the years ended December 31, 2017, 2018 and 2019 (as presented in TSG's financial statements):

	Year ended December 31,		
	2019	2018	2017
Revenues	84,350	66,154	66,816
Net income	4,966	3,437	4,938
Other comprehensive income	124	116	208
Total comprehensive income	<u>5,090</u>	<u>3,553</u>	<u>5,146</u>
Company's share interest in TSG	50%	50%	50%
Company's share of total comprehensive income before amortization of excess cost of intangible assets net of tax	2,545	1,776	2,573
Amortization of excess cost of intangible assets net of tax	(712)	(1,353)	(1,335)
Company's share of total comprehensive income	<u>1,833</u>	<u>423</u>	<u>1,238</u>
Company's share of other comprehensive income	62	58	104
Company's share of profit	<u>1,771</u>	<u>365</u>	<u>1,134</u>
	<u>1,833</u>	<u>423</u>	<u>1,238</u>

NOTE 9:- PROPERTY, PLANTS AND EQUIPMENT, NET

a. Property, plants and equipment, net, are comprised of the following as of the below dates:

	December 31,	
	2019	2018
Cost:		
Computers, software, furniture, and equipment	\$ 110,955	\$ 86,122
Motor vehicles	5,022	1,631
Buildings	975	1,833
Leasehold improvements	31,435	23,975
	<u>148,387</u>	<u>113,561</u>
Accumulated depreciation:		
Computers, software, furniture, and equipment	\$ 86,802	\$ 70,401
Motor vehicles	2,271	765
Buildings	87	217
Leasehold improvements	16,168	12,996
	<u>105,328</u>	<u>84,379</u>
Depreciated cost	<u>\$ 43,059</u>	<u>\$ 29,182</u>

b. Depreciation expenses totaled \$9,598, \$10,480, and \$12,071 for the years ended December 31, 2017, 2018 and 2019, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 10:- INTANGIBLE ASSETS, NET

a. Intangible assets, net, are comprised of the following as of the below dates:

	December 31,	
	2019	2018
Original amounts:		
Capitalized Software costs	\$ 213,221	\$ 195,500
Customer relationship	179,023	138,733
Acquired technology	74,456	86,430
Backlog and non-compete agreement	6,850	6,789
Other intangibles	4,524	4,171
Patent	1,389	1,280
	<u>479,463</u>	<u>432,903</u>
Accumulated amortization:		
Capitalized Software costs	168,315	148,299
Customer relationship	98,543	78,470
Acquired technology	35,653	45,378
Backlog and non-compete agreement	6,675	6,105
Other intangibles	4,243	3,779
Patent	754	566
	<u>314,183</u>	<u>282,597</u>
Total	<u><u>\$ 165,280</u></u>	<u><u>\$ 150,306(*)</u></u>

(*) Immaterial adjustment to comparative data

b. Amortization expenses totaled \$34,048, \$38,254 and \$41,330 for the years ended December 31, 2017, 2018 and 2019, respectively.

NOTE 11:- GOODWILL

The following table summarizes the changes in the carrying amount of goodwill for the years ended December 31, 2018 and 2019:

	December 31,	
	2019	2018
Opening balance	\$ 640,918	\$ 617,272
Acquisition of subsidiaries (*)	54,460	43,627
Classifications	2,977	(18)
Foreign currency translation adjustments	25,838	(19,963)
Closing balance	<u><u>\$ 724,193</u></u>	<u><u>\$ 640,918(*)</u></u>

The Group performed annual impairment tests during the fourth quarter of 2019 and did not identify any impairment losses.

(*) Immaterial adjustment to comparative data

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 12:- SHORT TERM LIABILITIES TO BANKS AND OTHERS

	December 31,		December 31,	
	2019		2019	2018
	Interest rate	Currency		
	%			
Bank credit	2.25-3.1	NIS	580	736
Bank credit	US Prime -0.2	USD	688	2,362
Short-term bank loans	Israeli Prime + 0.8	NIS	868	-
Short-term bank loans	1.65-1.75	NIS	28,937	1,068
Commercial securities not listed	0.75	NIS	28,935	-
Current maturities of long-term loans from banks and other financial institutions (Note 14)	2.06-5.5	NIS	64,060	65,453
Current maturities of long-term loans from banks (Note 14)	Libor +2.2	NIS Linked to USD	804	836
Short-term interest on long-term loans from other financial institutions ⁽¹⁾	2.6-5.5	NIS	425	725
			<u>\$ 125,297</u>	<u>\$ 71,180</u>

NOTE 13:- OTHER ACCOUNTS PAYABLE

Other accounts payable are comprised of the following as of the below dates:

	December 31,	
	2019	2018
Government institutions	\$ 35,775	\$ 29,485
Accrued royalties to the IIA (see Note 20e)	223	843
Accrued expenses and other current liabilities	27,174	23,462
Total	<u>\$ 63,172</u>	<u>\$ 53,790</u>

NOTE 14:- LONG TERM LIABILITIES TO BANKS AND OTHERS

a. Long term liabilities to banks and others are comprised of the following as of the below dates:

Interest rate	Currency	Long-term liabilities	Current maturities	Long-term liabilities net of current maturities	Total long-term liabilities net of current maturities
					December 31, 2019
%					
2.06-5.5	NIS (Unlinked)	225,103	64,060	\$ 161,043	\$ 137,697
Libor +2.2	NIS Linked to USD	1,823	804	1,019	1,830
		<u>226,926</u>	<u>64,864</u>	<u>\$ 162,062</u>	<u>\$ 139,527</u>

b. Maturity dates:

	December 31,	
	2019	2018
First year (current maturities)	\$ 64,864	\$ 66,289
Second year	50,460	47,731
Third year	47,733	33,893
Fourth year	38,784	30,776
Fifth year and thereafter	25,085	27,127
	<u>\$ 226,926</u>	<u>\$ 205,816</u>

c. Details of liens, guarantees and credit facilities are described in Note 20.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 15:- DEBENTURES

The Group's liabilities under debentures are attributable to debentures issued by Formula and Sapiens. The debentures are all listed for trading on the Tel-Aviv Stock Exchange.

a. Debentures are comprised of the following as of the below dates:

	Effective Interest rate	Currency	Par value in issuance currency	Par Value	Unamortized debt premium (discount) and issuance costs, net	Current maturities	Total long-term debentures, net of current maturities	Short-term accrued interest	Total short-term and long-term debentures
	%						December 31, 2019		
Formula's Series A Secured Debentures (2.8%)	2.4	NIS (Unlinked)	NIS 171,056	\$ 49,497	519	9,899	40,117	686	50,702
Formula's Series C Secured Debentures (2.3%)	2.5	NIS (Unlinked)	NIS 300,000	\$ 86,806	(813)	9,549	76,444	163	86,156
Sapiens' Series B Debentures (3.37%)	3.69	NIS (Linked to fix rate of USD)	NIS 245,000	\$ 69,287	(539)	9,898	58,850	1,167	69,915
				\$ 205,590	(833)	29,346	175,411	2,016	206,773
	Effective Interest rate	Currency	Par value in issuance currency	Par Value	Unamortized debt premium (discount) and issuance costs, net	Current maturities	Total long-term debentures, net of current maturities	Short-term accrued interest	Total short-term and long-term debentures
	%								
Formula's Series A Secured Debentures (2.8%)	2.4	NIS (Unlinked)	NIS 205,266	\$ 54,769	684	9,128	46,325	758	56,211
Formula's Series B Convertible Debentures (2.74%)	3.65	NIS (Linked to fix rate of USD)	NIS 125,000	31,812	(79)	31,812	-	2,971	34,704
Sapiens' Series B Debentures (3.37%)	3.69	NIS (Linked to fix rate of USD)	NIS 280,000	79,185	(710)	9,898	68,577	1,334	79,809
				\$ 165,766	(105)	50,838	114,902	5,063	170,724

During the years ended December 31, 2018 and 2019, the Group recorded \$5,165 and \$5,450, respectively, of interest expenses, and \$289 and \$178, respectively, as amortization of debt premium, discount and issuance costs, net in respect of the Group's debentures.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 15:- DEBENTURES (Cont.)

b. Aggregate principal annual payments of the debentures:

	Repayment amount
2020	29,346
2021	29,346
2022	29,346
2023	29,346
2024 and thereafter	88,206
	<u>205,590</u>

c. Formula's debentures

i) Formula Systems Series A Secured Debentures

On September 16, 2015, Formula issued Formula Systems Series A Secured Debentures in the aggregate principle amount of NIS 102,260 (approximately \$26,295), at a purchase price equal to 100% of their par value, payable in eight equal annual installments on July 2nd of each of the years 2017 through 2024. The Formula Systems Series A Secured Debentures bear a fixed interest rate of 2.8% per annum (which may vary based on the credit rating of the debentures), payable on July 2nd and January 2nd of each of the years 2016 through 2024. Issuance costs including early commitment commission of approximately NIS 1,246 (approximately \$320), were allocated to the Formula Systems Series A Secured Debentures and are amortized as financial expenses over the term of Series A Secured Debentures due in 2024.

On January 31, 2018, Formula issued additional Formula Systems Series A Secured Debentures in an aggregate principle amount of NIS 150,000 (approximately \$44,053) through a private placement to qualified investors in Israel. The gross proceeds received by Formula for the issuance of Formula Systems Series A Secured Debentures in January 2018 were NIS 155,205 (approximately \$45,581), out of which NIS 336 was attributed to interest payable (approximately \$99). Debt premium of NIS 4,869 (approximately \$1,430) net of issuance costs of NIS 782 (approximately \$225) were allocated to the Formula Systems Series A Secured Debentures and are amortized as financial income over the remaining term of Formula Systems Series A Secured Debentures due in 2024.

The Formula Systems Series A Secured Debentures issued in September 2015 together with the Formula Systems Series A Secured Debentures sold in the private placement, form one single series with identical terms and conditions.

The Series A Secured Debentures are nominated in New Israeli Shekel not linked to any currency or index and non-convertible. The Formula Systems Series A Secured Debentures are secured with collateral consist of shares of Matrix, Magic Software and Sapiens (See note 20a).

The Formula Systems Series A Secured Debentures are listed for trading on the Tel-Aviv Stock Exchange. As of December 31, 2019, the fair value of Formula's Series A Secured Debentures, based on the quoted market price on the Tel-Aviv Stock Exchange, were approximately \$52,138.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 15:- DEBENTURES (Cont.)**ii) Formula Systems Series B Convertible Debentures

On September 16, 2015, Formula issued Formula Systems Series B Convertible Debentures, linked to US dollars, in the aggregate principle amount of NIS 125,000 (approximately \$32,140), at a purchase price equal to 102% of their par value. The principal amount of Formula Systems Series B Secured Debentures bears a fixed interest rate of 2.74% per annum, payable in one installment together with the remaining unconverted principle amount on March 26, 2019. The Formula Systems Series B Convertible Debentures were convertible, at the election of each holder, into Formula's ordinary shares, from the date of issuance and until March 10, 2019, at a conversion price of NIS 157 par value per one share, adjusted in events of shares split, reverse shares split, a rights offering, a distribution of bonus shares or a cash dividend.

The conversion equity component was valued at \$1,248, allocated to additional paid in capital on the issuance date. Debt discount and issuance costs including early commitment commission were approximately \$367, allocated to the Formula Systems Series B Convertible Debentures and are amortized as financial expenses over the term of Formula Systems Series B Convertible Debentures due in 2019.

During 2018 and mainly 2019, holders of Formula Systems Series B Convertible Debentures converted an aggregate principal amount of NIS 80,484 into 545,485 of Formula's ordinary shares, which constitute, in aggregate, approximately 3.57% of Formula's issued and outstanding share capital following those conversions (an aggregate principle amount of NIS 232 was converted into 1,556 Formula's ordinary shares in 2018 and principle amount NIS 80,252 was converted into 543,929 Formula's ordinary shares in 2019). The remaining outstanding Series B Convertible Debentures amounting to NIS 44,516 (or \$11,350) and their respective accumulated interest of \$1,135 were fully paid on March 26, 2019.

The Series B Debentures were listed for trading on the Tel-Aviv Stock Exchange.

iii) Formula Systems Series C Secured Debentures

On March 31, 2019, Formula issued Formula Systems Series C Secured Debenture in the aggregate principle amount of NIS 300,000 (approximately \$82,600), at a purchase price equal to 100% of their par value, payable in five annual installments of NIS 33,000 on December 1 of each of the years 2020 through 2024 and two annual installments of NIS 67,500 on December 1 of each of the years 2025 and 2026. The outstanding principle amount of Formula Systems Series C Secured Debentures bears a fixed annual interest rate of 2.29% (which may vary based on the credit rating of the debentures), payable on December 1st and June 1st of each of the years 2019 through 2026. Issuance costs including early commitment commission of approximately NIS 3,355 (approximately \$924) were allocated to Formula Systems Series C Secured Debentures and are amortized as financial expenses over the term of Formula Systems Series C Secured Debentures due in 2026.

The Formula Systems Series C Secured Debentures are nominated in New Israeli Shekel and are not linked to any currency or index and are non-convertible. The Formula Systems Series C Secured Debentures are secured with collateral consist of shares of Matrix, Magic Software and Sapiens (See note 20a).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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NOTE 15:- DEBENTURES (Cont.)

The Series C Secured Debentures are listed for trading on the Tel-Aviv Stock Exchange. As of December 31, 2019, the fair value of Formula's Series C Secured Debentures, based on the quoted market price on the Tel-Aviv Stock Exchange, were approximately \$90,174.

The public offerings of Formula's debentures were made only in Israel and not to U.S. persons (as defined in Rule 902(k) under the Securities Act of 1933, as amended (the "Securities Act")), in an overseas directed offering (as defined in Rule 903(b)(i)(ii) under the Securities Act), and was exempt from registration under the Securities Act pursuant to the exemption provided by Regulation S thereunder.

The sale of Formula debentures was not registered under the Securities Act, and Formula debentures may not be offered or sold in the United States and/or to U.S. persons without registration under the Securities Act or an applicable exemption from the registration requirements of the Securities Act.

In accordance with the indenture for Formula Systems Series A Secured Debentures, Formula Systems Series B Convertible Debentures and Formula Systems Series C Secured Debentures, Formula has undertaken to maintain a number of conditions and limitations on the manner in which it operates its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on its assets, or undergo an asset sale or other change that results in a fundamental change in its operations, and to meet certain financial covenants (see Notes 20a and 20c(1)(ii)).

d. Sapiens' Series B Debentures

On September 16, 2017 Sapiens issued its unsecured Series B Debentures in an aggregate principal amount of NIS 280,000 (approximately \$79,186), linked to the US dollar and payable in eight equal annual payments of \$9,898 on January 1st of each of the years 2019 through 2026. The outstanding principal amount of Sapiens' Series B Debentures bear a fixed interest rate of 3.37% per annum (which may vary based on the credit rating of the debentures), payable on January 1st and July 1st of each of the years 2018 through 2025, with one final interest payment on January 1, 2026. Debt discount and issuance costs were approximately \$956, allocated to Sapiens' Series B Debentures discount and are amortized as financial expenses over the term of Series B Debentures due in 2026.

On June 8, 2020, Sapiens issued additional Sapiens' Series B Debentures in an aggregate principle amount of NIS 210,000 (approximately \$60,362) through a public offering in Israel. The gross proceeds received for the issuance of Sapiens' Series B Debentures in June 2020 were NIS 210,840 (approximately \$60,603), out of which approximately NIS 3,006 was attributed to interest payable (approximately \$864). Debt discount of NIS 2,166 (approximately \$623) and issuance costs of NIS 2,326 (approximately \$669) were allocated to Sapiens' Series B Debentures and are amortized as financial expenses over the remaining term of the Sapiens Series B Debentures due in 2026.

Sapiens' Series B Debentures issued in September 2017 together with the Sapiens' Series B Debentures issued in June 2020, form one single series with identical terms and conditions.

Sapiens' Series B Debentures are linked to the US Dollar, unsecured and non-convertible. Sapiens' Series B Debentures are listed for trading on the TASE. As of December 31, 2019, the fair value of Sapiens' Series B Debentures, based on the quoted market price on the Tel-Aviv Stock Exchange, were approximately \$70,593.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 15:- DEBENTURES (Cont.)**

The public offerings of Sapiens' debentures were made only in Israel and not to U.S. persons (as defined in Rule 902(k) under the Securities Act of 1933, as amended (the "Securities Act")), in an overseas directed offering (as defined in Rule 903(b)(i)(ii) under the Securities Act), and was exempt from registration under the Securities Act pursuant to the exemption provided by Regulation S thereunder.

The sale of Sapiens debentures was not registered under the Securities Act, and the Sapiens debentures may not be offered or sold in the United States and/or to U.S. persons without registration under the Securities Act or an applicable exemption from the registration requirements of the Securities Act.

In accordance with the indenture for the Sapiens Series B Debentures, Sapiens has undertaken to maintain a number of conditions and limitations on the manner in which it operates its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on Sapiens' assets, or undergo an asset sale or other change that results in a fundamental change in Sapiens' operations and to meet certain financial covenants (see Note 20c(3)(iii)).

NOTE 16:- RELATED PARTIES TRANSACTIONS

- a) Acquisition of Sapiens Software Solutions (Poland) Sp. Z o.o (formerly "Insseco Sp. Z o.o.") ("Sapiens Poland")

On August 18, 2015, Sapiens completed the acquisition from Asseco, the parent company of Formula, of all issued and outstanding share capital of Sapiens Poland. Under the share purchase agreement for that acquisition, Asseco committed to assign to Sapiens Poland all customer contracts that relate to the intellectual property that Sapiens acquired as part of the acquisition. In the event that Asseco cannot obtain the consent of any customer to the assignment of its contract to Sapiens Poland, Asseco will hold that customer's contract in trust for the benefit of Sapiens Poland. Under that arrangement, in 2016, Sapiens Poland invoiced Asseco in a back-to-back manner for all invoices issued by Asseco on Sapiens Poland's behalf to customers under those contracts that were not yet assigned by Asseco to Sapiens Poland.

During the years ended December 31, 2017, 2018 and 2019, Asseco provided back-office services, professional services and fixed assets to Sapiens' wholly-owned subsidiary, Sapiens Poland, in amounts totaling approximately \$1,600, \$980 and \$676, respectively.

During the years ended December 31, 2017, 2018 and 2019, Sapiens Poland performed services as a sub-contractor on behalf of Asseco for clients of Asseco in total amounts of approximately \$8,250, \$3,200 and \$3,400, respectively. For historic reasons, Asseco issues invoices to those clients and then Sapiens in turn invoices Asseco on a back-to-back basis.

As of December 31, 2018 and 2019, the Group had no trade payable balances due from its transactions with Asseco, as detailed above. As of December 31, 2018 and 2019, the Group had trade receivables balances due from its transactions with Asseco, as detailed above, in amounts of approximately \$1,000 and \$770, respectively.

- b) During 2017 Matrix performed services as a sub-contractor on behalf of Asseco Denmark A.S., a subsidiary of Asseco, in an amount totaling approximately €0.5 million (\$564).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 16:- RELATED PARTIES TRANSACTIONS (Cont.)**

c) Fees paid for board services in affiliates

Sapiens paid Formula director fees for the years ended December 31, 2017, 2018 and 2019, of approximately \$28.6, \$25.0 and \$25.3, respectively, in respect of Mr. Guy Bernstein, Sapiens' Chairman and Formula's chief executive officer.

Matrix paid Formula director fees for the years ended December 31, 2017, 2018 and 2019, of approximately \$30.0, \$29.0 and \$29.9, respectively, in respect of Mr. Guy Bernstein, Matrix' Chairman and Formula's chief executive officer.

d) Other Transactions

The Group's subsidiaries and affiliates engage from time to time with each other in non-material transactions, in the ordinary course of business, where the amounts involved in, and the nature of the transactions are not material for either of the parties. The Group believes that these transactions are made on an arms' length basis upon terms and conditions no less favorable to the Group, its subsidiaries and affiliates, as it could obtain from unaffiliated third parties. If Group engages with its subsidiaries and affiliates in transactions which are not in the ordinary course of business, the Group receives the approvals required under the Companies Law. These approvals include audit committee approval, board approval and, in certain circumstances, shareholder approval.

Note 17:- LEASES

The Group leases substantially all of its office space and vehicles under operating leases. The Group's leases have original lease periods expiring between 2020 and 2029. Some leases include one or more options to renew. The Group does not assume renewals in its determination of the lease term unless the renewals are deemed to be reasonably certain at lease commencement. Lease payments included in the measurement of the lease liability comprise the following: the fixed non-cancellable lease payments, payments for optional renewal periods where it is reasonably certain the renewal period will be exercised, and payments for early termination options unless it is reasonably certain the lease will not be terminated early.

In June 2012, Sapiens entered into a lease agreement for new corporate offices in Holon, Israel. The lease expires in January 2024, with an option by Sapiens to extend for an additional 5-year term. The Group deemed this option as reasonably certain to be renewed.

In April 2019, Sapiens entered into a lease agreement for a new office in Bangalore, India. The lease expires in April 2029, with an option by Sapiens to extend for an additional 5-year term. The Group deemed this option as not-reasonably certain to be renewed.

Sapiens has several leased offices in the United States, with expiry dates varying between 2020 and 2026, with no renewal options.

Matrix has entered into a lease agreement for its corporate offices in Herzliya, Israel. The lease expires in October 2023.

In September 2015, John Bryce ("JB" – subsidiary of Matrix) entered into a lease agreement for its training facility in Tel-Aviv, Israel. The lease expires in September 2023, with an option by JB to extend for an additional 5-year term. The Group deemed this option as reasonably certain to be renewed.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- LEASES (Cont.)

In November 2019, Comblack IT (subsidiary of Magic Software) entered into a lease agreement for new corporate offices in Ramat-Gan, Israel. The lease expires in April 2025, with an option by Comblack to extend for an additional 5-year term. The Group deemed this option as reasonably certain to be renewed.

The Group has several leased offices in Israel, Japan, Europe and United States, with expiry dates varying between 2020 and 2026, with renewal options varying between 2021 and 2030.

Under IFRS 16, all leases with durations greater than 12 months, including non-cancellable operating leases, are now recognized on the statement of financial position. The aggregated present value of lease agreements is recorded as a long-term asset titled operating lease right-of-use assets.

The corresponding lease liabilities are classified between operating lease liabilities which are current and long-term.

Maturity analysis of undiscounted future lease payments receivable for operating leases:

2020	37,059
2021	25,466
2022	12,988
2023	10,266
2024	8,188
2025 and thereafter	32,773
Total undiscounted cash flows	126,740
Less imputed interest	(17,381)
Present value of lease liabilities	109,359

Depreciation expenses of operating lease right-of-use assets totaled \$33,531 for the year ended December 31, 2019.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 18:- EMPLOYEE OPTION PLANS

- a) Formula and its subsidiaries grant, from time to time, options, restricted share units or restricted shares to their officers and employees to purchase shares in the respective companies. In general, the options expire ten years after grant. The following table sets forth the breakdown of share-based compensation expense resulting from such grants, as included in the consolidated statements of profit or loss:

	Year ended December 31,		
	2019	2018	2017
Cost of revenues	\$ -	\$ 2	\$ 7
Research and development expenses	-	4	8
Selling and marketing expenses	74	4	-
General and administrative expenses	3,800	3,971	4,019
	<u>\$ 3,874</u>	<u>\$ 3,981</u>	<u>\$ 4,034</u>

- b) Formula:

In March 2011, Formula's shareholders approved the adoption of Formula's 2011 Employee and Officer Share Incentive Plan (the "2011 plan"). Pursuant to the 2011 plan, Formula may grant from time to time to Formula's and its investees' employees and officers (which are not Formula's controlling shareholders) ordinary shares, restricted shares, restricted share units or options to purchase up to 545,000 ordinary shares of Formula. The 2011 plan is administered by Formula's board of directors. The 2011 plan provides that share based compensation may be granted, from time to time, to such grantees to be determined by the board, at an exercise price and under such terms to be determined at its sole and absolute discretion. Share based compensation may be granted under the 2011 plan through March 2021. In 2012, Formula's shareholders approved the increase of the amount of ordinary shares reserved for issuance under the 2011 plan by 1,200,000 options.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 18:- EMPLOYEE OPTION PLANS (Cont.)**

In March 2012, concurrently with the amendment and extension of its chief executive officer's service agreement, the board of directors of Formula following the approval by Formula's compensation committee, awarded him with a share option incentive plan, under the 2011 plan, exercisable for 1,122,782 of Formula ordinary shares (the "grant"), as long as he continues to serve as (i) a chief executive officer of Formula and/or (ii) a director of each of the directly held subsidiaries of Formula; provided that if he fails to meet the foregoing requirement (A) due to the request of the board of directors of either Formula or any of its directly held subsidiaries (other than a request which is based on actions or omissions by the chief executive officer that would constitute "cause" under his service agreement with Formula), (B) because the chief executive officer is prohibited under the governing law or charter documents of the relevant company or the stock exchange rules and regulations applicable to such company from being a director of such company (other than due to his actions or omissions) or (C) notwithstanding the chief executive officer's willingness to be so appointed (but provided that neither (A) nor (B) applies); then, in each of (A), (B) and (C), the chief executive officer will be deemed to have complied with clauses (i) or (ii) above. The options vest, i.e., Formula's redemption right with respect to the options and the underlying ordinary shares issuable upon exercise lapses, in equal quarterly installments over an eight-year period that commenced in March 2012 and concludes on December 31, 2019.

Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested options and/or restricted shares will immediately become vested. The exercise price of the options is NIS 0.01 per share. The grant is accounted for as a modification to the March 2011 grant to the chief executive officer. Total fair value of the grant was calculated based on Formula's share price on the grant date and totaled \$18,347 (\$16.34 per share). In accordance with the terms of the options grant, the shares issuable upon exercise of the options will be deposited with a trustee and Formula's chief executive officer will not be permitted to vote or dispose of them until the shares are released from the trust. In June 2013, all options were exercised into shares however they have been deposited with a trustee and Formula's chief executive officer was not permitted to vote or dispose of them until the shares are released from the trust. All shares participate in dividends and have the right to vote, however for so long as the shares are held by the trustee (even if they have vested) the voting rights may only be exercised by the trustee. In accordance with the guidelines of Formula incentive plan, as long as the shares underlying any grant under the plan are being held by the trustee they will be voted by the trustee in the same proportion as the results of the shareholder meeting. Only those shares for which the vesting period has expired may be collected from the trustee.

On August 3, 2017 and on August 22, 2017 Asseco sold 2,356,605 and 589,151, respectively, of Formula's ordinary shares, in the aggregate representing 20% of Formula issued and outstanding share capital to eleven (11) Israeli financial institutions and to the Company's chief executive officer, respectively, in privately negotiated sales transactions. The sales resulted in Asseco's share interest in Formula decreasing from 46.3% to 26.3% and to its loss of control of the Company. In accordance with Mr. Bernstein's share-based award plan, such loss of control in the Company resulted in the immediate acceleration of all of his unvested shares, which amounted to 350,869 shares as of such date.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 18:- EMPLOYEE OPTION PLANS (Cont.)**

In November 2014, Formula's board of directors, following the approval by Formula's compensation committee, awarded its chief financial officer with 10,000 restricted shares under the 2011 plan (the "restricted shares"). These restricted shares vest on a quarterly basis over a four-year period, commencing on November 13, 2014 and concluding on November 13, 2018, provided that during such time the chief financial officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates, except that if he fail to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute "cause" under his grant agreement with Formula); then, the chief financial officer will be deemed to have complied with clauses (i) or (ii) above. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested restricted shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and equaled \$239 (\$23.9 per share).

In accordance with the Company's chief financial officer's share based award plan, Asseco's loss of control in the Company resulted in the immediate acceleration of all of his unvested shares under the grant of November 2014, which amounted to 3,125 shares.

In August 2017, Formula's board of directors, following the approval by Formula's compensation committee, awarded its chief financial officer additional 10,000 restricted shares under the 2011 plan (the "new restricted shares"). These new restricted shares vest on a quarterly basis over a three-year period, commencing on August 17, 2017 and concluding on August 17, 2020, provided that during such time the chief financial officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates, except that if he fails to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute "cause" under his grant agreement with Formula), then, the chief financial officer will be deemed to have complied with clauses (i) or (ii) above. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested new restricted shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and equaled to \$371 (\$37.1 per share).

The total compensation expense that the Company recorded in its statement of profit or loss for the year ended December 31, 2019 in respect of its chief financial officer was \$66.

As of December 31, 2019, all 20,000 restricted shares granted to Formula's chief financial officer in November 2014 and in August 2017 were deposited with the trustee, out of which 17,500 were then vested.

In November 2018, Formula's board of directors, following the approval by Formula's compensation committee, awarded its chief operational officer 10,000 restricted shares under the 2011 plan (the "restricted shares"). These restricted shares vest on an annual basis over a four-year period, commencing on November 19, 2018 and concluding on November 19, 2022, provided that during such time the chief operational officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates. Total fair value of the grant was calculated based on the Formula share price on the grant date and equaled \$382 (\$38.2 per share). The total compensation expense the Company recorded in its statement of profit or loss for the year ended December 31, 2019 in respect of its chief operational officer was \$191.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 18:- EMPLOYEE OPTION PLANS (Cont.)**

As of December 31, 2019, all 10,000 new restricted shares granted in November 2018 to Formula's chief financial officer were deposited with the trustee, out of which 2,500 were then vested.

c) Matrix:

In October 2015 Matrix approved an agreement with Revava Management Company Ltd. through which Mr. Moti Gutman provides services to Matrix as a chief executive officer, and pursuant to which among other things, Matrix granted Mr. Gutman 225,000 restricted share units (RSU) exercisable into 225,000 ordinary shares of Matrix without an exercise price. The RSU vested in three equal shares portions of 75,000 RSU units, each at December 31st of each year under the agreement, but not before the publication of Matrix's financial statements for the past year, and subject to certain conditions. In 2018, the remaining unvested 75,000 restricted share units (RSU) were vested and exercised.

In December 2017, Matrix extended its agreement with Revava Management Company Ltd. for additional five years' term starting on January 1, 2018. As part of the new agreement Matrix awarded Mr. Gutman additional 256,890 (RSUs), which vest on an annual basis over a five-year period, commencing on January 1, 2018 and concludes on December 31, 2022, but not before the publication of Matrix's financial statements for each respective year, and subject to certain conditions. In 2019, 51,378 restricted share units (RSU) were vested and exercised. As of December 31, 2019 Mr. Gutman holds 205,512 restricted share units (RSU) from this grant.

In April 2015, the board of directors of Matrix approved, following the approval by Matrix's compensation committee, the grant of 1,850,000 options which are exercisable into up to 1,850,000 ordinary shares of Matrix of NIS 1 par value each, to 19 senior officers of Matrix. The exercise price of the options was NIS 19.485 at the date of their grant, subject to adjustments, including upon the distribution of dividends. 50% of the options vested on April 1, 2017, with the remaining options vested in equal parts on January 1, 2018, and on January 1, 2019. On each of the exercise dates all exercisable options were allotted to shares according to a net exercise mechanism resulting with Matrix not receiving any cash consideration for the issuance of its shares.

In January 2019 the board of directors of Matrix approved, following the approval by Matrix's compensation committee, the grant of 1,440,000 options which are exercisable into up to 1,440,000 ordinary shares of Matrix of NIS 1 par value each, to 20 senior officers of Matrix. The exercise price of the options was NIS 41.7 at the date of their grant, subject to adjustments, including upon the distribution of dividends. 50% of the options will be vested on January 1, 2021 with the remaining amount vesting in equal parts on January 1, 2022 and 2023. When the actual exercise will take place, shares will be allotted, according to a net exercise mechanism resulting with Matrix not receiving any cash consideration for the issuance of its shares.

In June 2015 the general shareholder meeting of Matrix approved, after obtaining the approval of Matrix's compensation committee and the Matrix board of directors the grant of 300,000 options which are exercisable into up to 300,000 ordinary shares of Matrix of NIS 1 par value to the President and Vice Chairman of the Matrix board. The exercise price of the options was NIS 21.39 at the date of their grant, subject to adjustments, including upon the distribution of dividends. 50% of the options vested on June 4, 2017, with the remaining options vested in equal parts on January 1, 2018 and 2019. On each of the exercise dates all exercisable options were allotted to shares according to a net exercise mechanism resulting with Matrix not receiving any cash consideration for the issuance of its shares.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 18:- EMPLOYEE OPTION PLANS (Cont.)

In February 2019 the general shareholder meeting of Matrix approved, after obtaining the approval of Matrix’s compensation committee and Matrix board of directors the grant of 80,000 options which are exercisable into up to 80,000 ordinary shares of Matrix of NIS 1 par value, to the President and Vice Chairman of the Matrix board. The exercise price of the options was NIS 43.16 at the date of their grant, subject to adjustments, including upon the distribution of dividends. 50% of the options will vest on January 1, 2021, with the remaining amount vesting in equal parts on January 1, 2022 and 2023. When the actual exercise will take place, shares will be allotted, according to a net exercise mechanism resulting with Matrix not receiving any cash consideration for the issuance of its shares.

The fair value of the options was estimated on the date of grant using the Binomial model based on the terms which are: risk-free interest rate is 0.5% -1.6%, early exercise factor is 70% and expected volatility is 24%. The contractual life of the options is 5 years from the date of grant.

The following table summarizes Matrix employee stock based compensation activity during the year ended December 31, 2019:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (in years)	Aggregate intrinsic value
Outstanding at January 1, 2019	769,390	2.61	2.19	6,823
Exercised	563,878	3.65	-	5,272
Granted	1,520,000	11.16	5	213
Outstanding at December 31, 2019	1,725,512	10.17	3.73	17,153
Exercisable at December 31, 2019	51,378	-	-	1,033

The aggregate intrinsic value provided on the table above represents the total intrinsic value that would have been received by the option holders had all option holders exercised their options on the respective dates. This value would change based on the change in the market value of Matrix’ ordinary shares and the change in the exchange rate between the New Israeli Shekel and dollar. Total unrecognized compensation costs related to non-vested share-based compensation arrangements granted under the Matrix equity incentive plan as of December 31, 2018 and 2019 were \$1,930 and \$2,491, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 18:- EMPLOYEE OPTION PLANS (Cont.)

d) Sapiens:

The following table summarizes Sapiens stock based compensation activity during the year ended December 31, 2019:

	Year ended December 31, 2019			
	Amount of options	Weighted average exercise price	Weighted average remaining contractual life (in years)	Aggregate intrinsic value
Outstanding at January 1, 2019	2,055,182	9.86	3.80	2,594
Granted	155,000	13.60		
Exercised	(177,872)	6.96		
Expired and forfeited	(162,898)	9.57		
Outstanding at December 31, 2019	<u>1,869,412</u>	<u>10.25</u>	<u>3.21</u>	<u>23,838</u>
Exercisable at December 31, 2019	<u>970,408</u>	<u>9.34</u>	<u>2.41</u>	<u>13,258</u>

In 2017, 2018 and 2019, Sapiens granted 920,910, 317,000 and 155,000 stock options to its employees and directors to purchase its shares, respectively. The weighted average grant date fair values of the options granted during the years ended December 31, 2017, 2018 and 2019 were \$4.17, \$3.43 and \$4.24, respectively. The aggregate intrinsic value provided on the table above represents the total intrinsic value that would have been received by the option holders had all option holders exercised their options on the respective dates. This value would change based on the change in the market value of Sapiens' common shares. The total intrinsic value of options exercised during the years ended December 31, 2017, 2018 and 2019 was \$5,739, \$1,641 and \$2,301, respectively.

The options outstanding under Sapiens' stock option plans as of December 31, 2019 have been separated into ranges of exercise price as follows:

Ranges of exercise price \$	Options outstanding as of December 31, 2019	Weighted Average remaining contractual Term (Years)	Weighted average exercise price \$	Options Exercisable as of December 31, 2019	Weighted Average Exercise price of Options Exercisable \$
1.26-6.10	12,158	1.33	2.75	12,158	2.75
7.60	300,000	1.34	7.60	300,000	7.60
8.45-8.96	95,000	2.48	8.88	63,750	8.93
9.11-9.96	457,254	3.05	9.39	287,000	9.43
10.21-11.21	145,000	4.11	10.94	55,000	10.69
11.23	607,500	3.68	11.23	200,000	11.23
11.99-12.40	90,000	3.16	12.13	52,500	12.17
13.12	125,000	1.57	13.12	-	-
13.28-15.60	37,500	5.25	15.14	-	-
	<u>1,869,412</u>	<u>3.21</u>	<u>10.25</u>	<u>970,408</u>	<u>9.34</u>

The total equity-based compensation expense related to all of Sapiens' equity-based awards, recognized for the years ended December 31, 2017, 2018 and 2019, after being adjusted to comply with IFRS, was \$2,201, \$2,009 and \$1,125, respectively. As of December 31, 2019, there was \$2,567 of total unrecognized compensation cost related to non-vested options, which is expected to be recognized over a period of up to four years.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 18:- EMPLOYEE OPTION PLANS (Cont.)

During 2017, 29,500 of the 88,500 restricted shares of Sapiens Decision, the Company's majority-owned subsidiary which were granted to one of the former shareholders of KPI in 2014, vested, thereby reducing the Company's percentage ownership of Sapiens Decision from 94.25% to 92.89%. During 2017, Sapiens Decision granted 122,730 options to certain of its employees to purchase shares of Sapiens Decision.

e) Magic Software:

The following table summarizes Magic Software stock based compensation activity during the year ended December 31, 2019:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (in years)	Aggregate intrinsic value
Outstanding at January 1, 2019	220,767	3.83	3.81	1,684
Granted	-	-		
Exercised	(78,500)	2.47		
Forfeited	(22,500)	-		
Outstanding at December 31, 2019	<u>119,767</u>	<u>2.58</u>	<u>1.37</u>	<u>1,171</u>
Exercisable at December 31, 2019	<u>119,767</u>	<u>2.58</u>	<u>1.37</u>	<u>1,171</u>

The aggregate intrinsic value provided on the table above represents the total intrinsic value that would have been received by the option holders had all option holders exercised their options on the respective dates. This value would change based on the change in the market value of Magic Software's ordinary shares. Total intrinsic value of options exercised during the years ended December 31, 2017, 2018 and 2019, was \$502, \$617 and \$537 respectively. As of December 31, 2019, there was no unrecognized compensation cost related to non-vested share-based compensation arrangements granted under Magic Software's plans.

The options outstanding as of December 31, 2019, have been separated into ranges of exercise price categories, as follows:

Ranges of Exercise price \$	Options outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price \$	Options exercisable	Weighted average exercise price of exercisable options \$
1.01-2	40,000	0.30	1.38	40,000	1.38
3.01-4	73,517	1.77	3.02	73,517	3.02
5.01-6	6,250	3.61	5.02	6,250	5.02
	<u>119,767</u>	<u>1.37</u>	<u>2.58</u>	<u>119,767</u>	<u>2.58</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- EMPLOYEE BENEFIT LIABILITIES

Employee benefits consist of post-employment benefits, other long-term benefits and termination benefits.

a) Post-employment benefits:

According to the labor laws and Severance Pay Law in Israel, the Israeli companies in the Group are required to pay compensation to an employee upon dismissal or retirement or to make current contributions in defined contribution plans pursuant to section 14 to the Severance Pay Law, as specified below. These liabilities are accounted for as a post-employment benefit. The computation of the Group's employee benefit liability is made according to the current employment contract based on an employee's salary and employment term which establish the entitlement to receive the compensation.

The post-employment employee benefits are normally financed by contributions classified as a defined benefit plan or as a defined contribution plan, as detailed below.

1) Defined contribution plans:

Section 14 of the Severance Pay Law, 1963 applies to part of the compensation payments, pursuant to which the fixed contributions paid by the Group into pension funds and/or policies of insurance companies release the Group from any additional liability to employees for whom said contributions were made. These contributions and contributions for benefits represent defined contribution plans.

2) Defined benefit plans:

The Group accounts for that part of the payment of compensation that is not covered by contributions in defined contribution plans, as above, as a defined benefit plan for which an employee benefit liability is recognized and for which the Group deposits amounts in central severance pay funds and in qualifying insurance policies.

3) Other long-term benefits:

According to Matrix's agreements with one of its senior officers, he is entitled to an adaptation bonus in an amount of 12 salaries. This liability has been recognized as a defined benefit.

b) Composition of defined benefit plans is as follows:

	December 31,	
	2019	2018
Defined benefit obligation	95,692	81,556
Fair value of plan assets	(84,053)	(72,672)
Net defined benefit liability	<u>11,639</u>	<u>8,884</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 20:- COMMITMENTS AND CONTINGENCIESa) Liens:

1) Liens have been incurred by Formula over a certain portion of the Matrix, Magic Software and Sapiens' shares which it held. As of December 31, 2019 Formula has collaterals attributed to a credit agreement with a financial institution and in connection with Formula's Series A Secured Debentures and Series C Secured Debentures issued by Formula on the TASE (see Notes 14 and 15).

2) Composition of pledged shares of Matrix, Magic Software and Sapiens owned by Formula as of December 31, 2019:

	December 31, 2019		
	Financial institution credit agreement	Formula's Series A Secured Debentures	Formula's Series C Secured Debentures
Matrix ordinary shares, par value NIS 1.0 per share	1,569,098	4,128,865	6,031,761
Magic Software ordinary shares, par value NIS 0.1 per share	760,323	5,825,681	2,411,474
Sapiens common shares, par value €0.01 per share	511,920	1,260,266	2,957,590

3) In January 2018, following the private placement of additional NIS 150,000 par value Series A Secured Debentures, Formula pledged additional 1,692,954 shares of Matrix and 3,487,198 shares of Magic Software (see Note 15).

4) In January 2019, the Company unpledged, in accordance with the financial institution's credit agreement, 3,694,517 shares of Matrix, 1,356,820 shares of Magic Software and 898,613 shares of Sapiens. In January 2020, Following the final repayment by Formula of the loan, the Company unpledged the remaining pledged shares consisting 1,569,098 shares of Matrix, 760,323 shares of Magic Software and 511,920 shares of Sapiens.

5) In March 2019, following the offering of Formula's Series C Secured Debentures of NIS 300,000 par value, Formula pledged 6,031,761 shares of Matrix, 2,411,474 shares of Magic Software and 2,957,590 shares of Sapiens (see Note 15).

b) Guarantees:

As of December 31, 2019, the Group provided performance bank guarantees in an aggregate amount of approximately \$35,996 as security for performance of various contracts with customers and suppliers. As of December 31, 2019, the Group provided bank guarantees in an aggregate amount of approximately \$7,500 as security for rent to be paid for its leased offices. As of December 31, 2019, the Group had restricted bank deposits in an aggregate amount of \$809 in favor of the above-mentioned bank guarantees.

In addition, The Company and its subsidiaries provided certain cross guaranties in favor of certain subsidiaries in the Group.

c) Covenants:

In connection with the Group's debentures and credit facility agreements with banks and other financial institutions, as of December 31, 2019, the Group committed to the following:

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 20:- COMMITMENTS AND CONTINGENCIES (Cont.)**1) Formulai) Liability to Financial Institution

In the context of Formula's credit facility obtained from a financial institution, Formula has undertaken to maintain the following financial covenants, as they will be expressed in its financial statements, as described:

- a. Formula shareholders' equity (not including minority interests) shall not be less than \$160 million at all times. As of December 31, 2019 Formula shareholders' equity was \$422 million.
- b. The ratio of Formula shareholders' equity (not including minority interests) to total consolidated assets will not be less than 20%. As of December 31, 2019, Formula shareholders' equity constituted 20.2% of total consolidated assets.
- c. The ratio of Company's financial debts less cash, short-term deposits and short-term marketable securities (financial debt, net) to the annual EBITDA (based on accumulated calculation for the four last quarters all based on the Company's consolidated financial statements) will not exceed 3.5. As of December 31, 2019, the ratio of the Company's financial debt, net to EBITDA was 0.4.
- d. The ratio of Company's financial debts less cash, short-term deposits and short-term marketable securities to the total assets will not exceed 30% (all based on the Company's consolidated financial statements). As of December 31, 2019, the Company's financial debts, net was 4.3% of total assets.
- e. Formula's financial liabilities in its stand-alone balance sheet shall not be higher than NIS 700 million (approximately \$203 million). As of December 31, 2019, Formula's financial liabilities in its stand-alone balance sheet were \$150 million.
- f. Formula will not create any pledge on all or part of its property and assets in favor of any third party and will not provide any guarantee to secure any third party's debts without the financial institution's consent.
- g. Formula will not sell and/or transfer all or part of its assets to others in any manner whatsoever without the financial institution's advance written consent unless it is done in the ordinary course of business.
- h. Formula committed not to distribute dividends except for if the ratio of the Company's unpaid principal amount of the loan to the fair market value of its collaterals will not exceed 50%, and if the distribution will not cause its cash, short-term deposits and short-term marketable securities to be less than NIS 45 million (approximately \$13 million), or if the dividend will not exceed 75% of accumulated profits accrued from the date of which the loan was granted until the distribution.

In January 2020, meeting all the above-mentioned financial covenants, Formula repaid the last and final installment of its loan from financial institution from 2014, pursuant to which the credit agreement was fully matured and the related collaterals were released.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 20:- COMMITMENTS AND CONTINGENCIES (Cont.)ii) Formula's Debentures

In accordance with Formula's indenture for its Series A and Series C Secured Debentures, Formula has undertaken to maintain the following financial covenants and obligations:

- a. A covenant not to distribute dividends unless (i) Formula shareholders' equity attributable to Formula Systems shareholders shall not be less than \$290 million, (ii) Formula's net financial indebtedness (financial indebtedness offset by cash, marketable securities, deposits and other liquid financial instruments) shall not exceed 50% of net CAP (defined as financial indebtedness, net, plus shareholders' equity), and (iii) the aggregate amount of distributions from January 1, 2016 shall not exceed the aggregate amount of net income for the year ended December 31, 2015 together with 75% of accumulated profits from January 1, 2016 until the respective distribution date and (iv) no event of default shall have occurred.
- b. Financial covenants, including (i) the equity attributable to Formula Systems shareholders, as reported in Formula's annual or quarterly financial statements, shall not be less than \$215 million - as of December 31, 2019 Formula equity attributable to Formula Systems shareholders' was approximately \$421.6 million, (ii) Formula's net financial indebtedness (financial indebtedness offset by cash, marketable securities, deposits and other liquid financial instruments) shall not exceed 65% of net CAP (defined as financial indebtedness, net, plus total equity) - as of December 31, 2019 Formula's net financial indebtedness was 9.0% of net CAP, (iii) The ratio of Formula's net financial indebtedness to the last twelve-months period EBITDA will not exceed 5 (all based on the Company's quarterly and annual consolidated financial statements) - as of December 31, 2019 the ratio of Formula's net financial indebtedness to EBITDA was 0.41 and (iv) at all times, Formula's cash balance on a stand-alone basis will not be less than the semi annual interest payments for the unpaid principal amount of Series A and Series C Secured Debentures - as of December 31, 2019 Formula's cash balances exceeds the semi annual interest payments amount.
- c. Standard events of default including among others:
 1. Suspension of trading of the debentures on the TASE over a period of 60 days;
 2. If the rating of the debentures is less than BBB- by Standard and Poors Maalot or equivalent rating of other rating agencies;
 3. Failure to have the debentures rated over a period of 60 days;
 4. If there is a change in control without consent of the rating agency; and
 5. If Formula fails to continue to control any of its subsidiaries.

2) Matrix

In the context of Matrix's engagements with banks and financial institutions for receiving credit facilities, Matrix has undertaken to maintain the following financial covenants, as they are expressed in its financial statements:

- (i) The total rate of Matrix financial debts and liabilities to banks with the addition of debts in respect of debentures that have been and/or will be issued by Matrix and shareholders' loans that have been and/or will be granted to Matrix (collectively, the "debts") will not exceed 40% of its total balance sheet.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 20:- COMMITMENTS AND CONTINGENCIES (Cont.)

- (ii) The ratio of Matrix net debt to the annual EBITDA will not exceed 3.5. As of December 31, 2019, Matrix ratio of net debt to EBITDA was 0.9.
- (iii) Matrix equity shall not be lower than NIS 275 million (approximately \$80 million) at all times. As of December 31, 2019 Matrix's equity was approximately NIS 740 million (approximately \$214 million).
- (iv) Matrix balances of cash and short-term investments in its balance sheet shall not be less than NIS 50 million (approximately \$14 million). In the context of Matrix' issuance of commercial Securities which are not listed, Matrix committed to maintain at all time a cash and short-term investments balances of approximately NIS 100 million (approximately \$29 million). As of December 31, 2019, Matrix's cash and short-term investments were approximately NIS 460 million (approximately \$133 million).
- (v) In the event that Formula ceases to hold 30% of Matrix share capital or is no longer the largest shareholder in Matrix, the credit may be placed for immediate repayment.
- (vi) Matrix has committed that the rate of ownership and control of Matrix IT-Systems shall never be below 50.1%.
- (vii) Matrix will not create any pledge on all or part of its property and assets in favor of any third party and will not provide any guarantee to secure any third party's debts as they are today and as they will be without the banks' consent (except for a first rate fixed pledge on an asset which acquisition will be financed by a third party and which the pledge will be in his favor).
- (viii) Matrix will not sell and/or transfer all or part of its assets to others in any manner whatsoever without the banks' advance written consent unless it is done in the ordinary course of business.

3) Sapiens

In accordance with the indenture for Sapiens' Series B Debentures, Sapiens has undertaken to maintain a number of conditions and limitations on the manner in which it can operate its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on its assets, or undergo an asset sale or other change that results in fundamental change in its operations. Sapiens Series B Debentures deed of trust also requires it to comply with certain financial covenants, as described below. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of the debentures (below BBB-) could result in the acceleration of Sapiens' obligation to repay the debentures. The deed of trust includes the following provisions:

- (i) a negative pledge, subject to certain exceptions;
- (ii) a covenant not to distribute dividends unless (i) Sapiens equity attributable to Sapiens shareholders' shall not be less than \$160 million, (ii) Sapiens net financial indebtedness (financial indebtedness offset by cash, marketable securities, deposits and other liquid financial instruments) does not exceed 65% of net CAP (defined as financial indebtedness, net, plus total equity), (iii) the amount of accumulated dividends from the issuance date and going forward shall not exceed Sapiens net income for the year ended December 31, 2016 and the first three quarters of the year ended December 31, 2017, plus 75% of Sapiens accumulated profits from September 1, 2017 and up to the date of distribution, and (iv) no event of default shall have occurred.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 20:- COMMITMENTS AND CONTINGENCIES (Cont.)

financial covenants, including (i) the equity attributable to the shareholders of Sapiens, as reported in its annual or quarterly financial statements, will not be less than \$120 million – as of December 31, 2019 Sapiens' shareholders equity was \$224 million, and (ii) Sapiens' net financial indebtedness (financial indebtedness offset by cash, marketable securities deposits and other liquid financial instruments) shall not exceed 65% of net CAP (defined as financial indebtedness, net, plus shareholders equity, including deposits and other liquid financial instruments) – as of December 31, 2019 Sapiens' net financial indebtedness was 1.58% of net CAP, and (iii) the ratio of Sapiens' net financial indebtedness to EBITDA (based on accumulated calculation for the four last quarters) shall not exceed 5.5 – as of December 31, 2019 the ratio of Sapiens' net financial indebtedness to EBITDA was 0.07.

4) Magic Software

Under the terms of the loan with an Israeli financial institution, Magic Software has undertaken to maintain the following financial covenants, as they will be expressed in its consolidated financial statements (in accordance with US GAAP):

- (i) Total equity attributable to Magic Software' shareholders shall not be lower than \$100 million at all times – as of December 31, 2019 Magic Software shareholders' equity was \$248 million;
- (ii) Magic Software's consolidated cash and cash equivalents and marketable securities available for sale shall not be less than \$10 million – as of December 31, 2019 Magic Software's cash and marketable securities available for sale were \$89 million;
- (iii) The ratio of Magic Software's consolidated total financial debts to consolidated total assets will not exceed 50% - as of December 31, 2019 Magic Software's financial debts were 5.4% of total assets;
- (iv) The ratio of Magic Software's total financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.25 – as of December 31, 2019 the ratio of Magic Software's net financial indebtedness to EBITDA was negative (-1.7) (cash exceeds indebtedness) ; and
- (v) Magic Software shall not create any pledge on all of its property and assets in favor of any third party without the financial institution's consent.

As of December 31, 2019, each of Formula, Matrix, Sapiens and Magic Software is in compliance with all of its financial covenants.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 20:- COMMITMENTS AND CONTINGENCIES (Cont.)d) Legal proceedings:

- 1) In September 2016, an Israeli software company, which was previously involved in an arbitration proceeding with Magic Software in 2015 and won damages from it for \$2.4 million, filed a lawsuit seeking damages of NIS 34,106 against Magic Software and one of its subsidiaries. This lawsuit was filed as part of an arbitration proceeding. In the lawsuit, the software company claimed that warning letters that Magic Software sent to its clients in Israel and abroad, warning those clients against the possibility that the conversion procedure offered by the software company may amount to an infringement of Magic Software's copyrights (the "Warning Letters"), as well as other alleged actions, have caused the software company damages resulting from loss of potential business. The lawsuit is based on rulings given in the 2015 arbitration proceeding in which it was allegedly ruled that the Warning Letters constituted a breach of a non-disclosure agreement (NDA) signed between the parties. Magic Software rejects the claims by the Israeli software company and moved to dismiss the lawsuit entirely. At this point, all the relevant motions have been filed and all witnesses deposed including legal summaries. The Group is unable to make a reasonably reliable estimate of its chances of successfully defending this lawsuit.
- 2) In addition to the above-described legal proceedings, from time to time, Formula and/or its subsidiaries and affiliates are subject to legal, administrative and regulatory proceedings, claims, demands and investigations in the ordinary course of business, including claims with respect to intellectual property, contracts, employment and other matters. The Group accrues a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Significant judgment is required in the determination of both the probability and as to whether a loss is reasonably estimable. These accruals are reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular matter. The Group intends to defend itself vigorously against the above claims, and it generally intends to vigorously defend any other legal claims to which it is subject. While for most litigations, the outcome is difficult to determine, to the extent that there is a reasonable possibility that the losses to which the Group may be subject could exceed the amounts (if any) that it has already accrued, the Group attempts to estimate such additional loss, if reasonably possible, and disclose it (or, if it is an immaterial amount, indicate accordingly). The aggregate provision that the Group has recorded for all other legal proceedings (other than the particular material proceedings described above) is not material.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 20:- COMMITMENTS AND CONTINGENCIES (Cont.)

e) Royalty commitments:

Sapiens Technologies (1982) Ltd. (“Sapiens Technologies”), a wholly owned subsidiary of Sapiens incorporated in Israel, was partially financed under programs sponsored by the Israel Innovation Authority (“IIA”), formerly the Office of the Chief Scientist (“OCS”) for the support of certain research and development activities conducted in Israel. In exchange for participation in the programs by the IIA, Sapiens Technologies agreed to pay 3.5% of total net consolidated license and maintenance revenue and 0.35% of the net consolidated consulting services revenue related to the software developed within the framework of these programs based on an understanding with IIA reached in January 2012. The royalties will be paid up to a maximum amount equaling 100%-150% of the grants provided by the IIA, linked to the dollar, and for grants received after January 1, 1999, bear annual interest at a rate based on LIBOR.

As of December 31, 2019, the estimated amount due to IIA amounted to \$1,172. As of December 31, 2019, the Group had a contingent liability to pay royalties of \$6,299.

f) Insurance:

The Company and its subsidiaries and affiliates insure themselves in bodily injury and property damage insurance policies, including third party, professional liability and employer’s liability insurance policies. Formula, Sapiens, Magic Software and Michpal directors and officers (D&O) are insured under an “umbrella” policy for insurance of directors and officers including D&O side A DIC policy (another layer of protection for officers) acquired by the Company for itself and its subsidiaries, for a period of 12 months from December 18, 2018 which was extended to February 14, 2020 and for a period of 12 months from February 15, 2020.

NOTE 21:- EQUITY

The composition of the Company’s share capital is as follows:

	December 31, 2019			December 31, 2018		
	Authorized	Issued	Outstanding	Authorized	Issued	Outstanding
Ordinary shares, NIS 1 par value each	25,000,000	15,862,887	15,294,267	25,000,000	15,318,958	14,750,338

- Formula’s ordinary shares, par value NIS 1 per share, are traded on the TASE, and Formula’s ADSs, each representing one ordinary share, are traded on the NASDAQ.
- Formula holds 568,620 of its ordinary shares.
- In December 2016, Formula declared a cash dividend of approximately \$7,070 (or \$0.48 per share) to shareholders of record on December 30, 2016 that was paid on January 12, 2017.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- EQUITY (Cont.)

- d. In September 2017, Formula declared a cash dividend of approximately \$5,011 (or \$0.34 per share) to shareholders of record on October 17, 2017 that was paid on November 2, 2017.
- e. In May 2018, Formula declared a cash dividend of approximately \$5,012 (or \$0.34 per share) to shareholders of record on June 5, 2018 that was paid on June 20, 2018.
- f. In December 2018, Formula declared a cash dividend of approximately \$5,015 (or \$0.34 per share) to shareholders of record on December 31, 2018 that was paid on January 16, 2019.
- g. In August 2019, Formula declared a cash dividend of approximately \$7,953 (or \$0.52 per share) to shareholders of record on September 12, 2019 that was paid on September 25, 2019.
- h. In November 2019, Formula declared a cash dividend of approximately NIS 24,471 (approximately \$7,079) or NIS 1.6 per share (approximately \$0.46 per share) to shareholders of record on December 24, 2019 that was paid on January 8, 2020.
- i. For information concerning Formula's employees and officers share-based plans, see Note 18.
- j. For information concerning Formula's issuance of shares as a result of conversions prior to maturity of Formula systems' Series B Convertible Debentures, see Note 15c(ii).

NOTE 22:- TAXES ON INCOME

- a. Israeli taxation:

- 1) Corporate tax rate in Israel:

Taxable income of Israeli companies was generally subject to corporate tax at the rate of was 24% in 2017 and 23% in 2018 and 2019. However, the effective tax rate payable by a company that derives income from a Preferred Enterprise or Preferred Technological Enterprise (as discussed below) may be considerably lower.

- 2) Tax benefits under the Israeli Law for the Encouragement of Capital Investments, 1959 (the "Law"):

Effective January 1, 2011, the Knesset enacted the Law for Economic Policy for 2011 and 2012 (Amended Legislation), and among other things, amended the Law in August 2013 ("the Amendment"). According to the Amendment, a flat corporate tax rate of 16% was established for exporting industrial enterprises (over 25%) that meet minimum requirements which establish that such companies contribute to the country's economic growth and apply a competitive factor for the Israel Gross Domestic Product. The reduced tax rate will not be program dependent and will apply to the "Preferred Enterprise's" (as such term is defined in the Investment Law) entire "preferred income".

The Amendment also prescribes a distribution from a Preferred Enterprise out of the "Preferred Income" would be subject to 15% withholding tax for Israeli-resident individuals and non-Israeli residents (subject to applicable treaty rates), or 20% for dividends which are distributed on or after January 1, 2014 and from "Preferred Income" that was produced or accrued after such date. A distribution from a Preferred Enterprise out of the "Preferred Income" would be exempt from withholding tax for an Israeli-resident company.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 22:- TAXES ON INCOME (Cont.)**

In 2011, Magic Software and one of its Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subjected to the amended tax rate of 16% for the tax years 2011-2016.

As of December 31, 2015, some of the Company Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment and therefore and subject to the amended tax rate of 16%, which was used for 2014-2016 tax years.

New Amendment- Preferred Technology Enterprise (“PTE”):

In December 2016, the Economic Efficiency Law (Legislative Amendments for Applying the Economic Policy for the 2017 and 2018 Budget Years), 2016 which includes Amendment 73 to the Law for the Encouragement of Capital Investments (“the 2017 Amendment”) was published and was pending the publication of regulations, in May 2017 regulations were promulgated by the Finance Ministry to implement the “Nexus Principles” based on OECD guidelines published as part of the Base Erosion and Profit Shifting (BEPS) project. Following the publication of the regulations the 2017 Amendment became fully effective. According to the 2017 Amendment, a Preferred Technological Enterprise, as defined in the 2017 Amendment, with total consolidated revenues of the group companies is less than NIS 10 billion, shall be subject to 12% tax rate on income derived from intellectual property (in development area A—a tax rate of 7.5%). In order to qualify as a Preferred technological enterprise certain criterion must be met, such as a minimum ratio of annual R&D expenditure and R&D employees, as well as having at least 25% of annual revenues derived from exports.

The 2017 Amendment further provides that a technology company satisfying certain conditions will qualify as a Special PTE (an enterprise for which, among others, total consolidated revenues of its parent company and all subsidiaries is at least NIS 10 billion) and will thereby enjoy a reduced corporate tax rate of 6% on PTI regardless of the company’s geographic location within Israel. In addition, a Special PTE will enjoy a reduced corporate tax rate of 6% on capital gain derived from the sale of certain “Benefited Intangible Assets” to a related foreign company if the Benefited Intangible Assets were either developed by the Special Preferred Technology Enterprise or acquired from a foreign company on or after January 1, 2017, and the sale received prior approval from the IIA. A Special PTE that acquires Benefited Intangible Assets from a foreign company for more than NIS 500 million will be eligible for these benefits for at least ten years, subject to certain approvals as specified in the Investment Law.

Any dividends distributed from income from the preferred technological enterprises will be subject to tax at a rate of 20%. The 2017 Amendment further provides that, in certain circumstances, a dividend distributed to a foreign corporate shareholder, would be subject to a 4% tax rate (if the percentage of foreign investors exceeds 90%).

Starting 2017, part of the Group’s taxable income in Israel is entitled to a preferred 12% tax rate in the preferred technological enterprise track under Amendment 73 to the Investment Law.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 22:- TAXES ON INCOME (Cont.)**3) Tax benefits under the Israeli Law for the Encouragement of Industry (Taxes), 1969:

It is Formula's management's belief that certain of its Israeli investees currently qualify as Industrial Companies within the meaning of the Law for the Encouragement of Industry (Taxes), 1969 (the "Industrial Encouragement Law"). The Industrial Encouragement Law defines an "Industrial Company" as a company that is resident in Israel and that derives at least 90% of its income in any tax year, other than income from defense loans, capital gains, interest and dividends, from an enterprise whose major activity in a given tax year is industrial production. Under the Industrial Encouragement Law, the Company is entitled to amortization of the cost of purchased know-how and patents over an eight-year period for tax purposes as well as accelerated depreciation rates on equipment and buildings.

Eligibility for the benefits under the Industrial Encouragement Law is not subject to receipt of prior approval from any governmental authority.

4) Foreign Exchange Regulations:

Under the Foreign Exchange Regulations, certain Israeli subsidiaries of the Group calculate their tax liability in dollars according to certain orders. The tax liability, as calculated in dollars is translated into NIS according to the exchange rate as of December 31 of each year.

5) Structural changes in Matrix:

On November 1, 2018, a tax ruling was signed determining that effective December 31, 2017 as part of a merger process, two subsidiaries of Matrix will transfer all their assets and liabilities subject to the provisions of section 103 of the Income Tax Ordinance.

b. Non-Israeli investees:

Non-Israeli subsidiaries are taxed according to the tax laws in their respective country of residence. Deferred income taxes were provided in relation to undistributed earnings of non-Israeli subsidiaries, which the Group intends to distribute in the near future.

The Group intends to permanently reinvest undistributed earnings in the foreign subsidiaries in which earnings arose, in the vast majority of its subsidiaries. If the earnings, for which deferred taxes were not provided, were distributed in the form of dividends or otherwise, the Group would be subject to additional Israeli income taxes (subject to an adjustment for foreign tax credits) and non-Israeli withholding taxes.

The amount of undistributed earnings of foreign subsidiaries that are considered to be reinvested as of December 31, 2018 and 2019 was \$82,375 and \$105,136, respectively. However, a determination of the amount of the unrecognized deferred tax liability for temporary difference related to those undistributed earnings of foreign subsidiaries is not practicable due to the complexity of the structure of our group of investees for tax purposes and the difficulty of projecting the amount of future tax liability.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 22:- TAXES ON INCOME (Cont.)**

The amount of cash and cash equivalents that were held by the Group's investees outside of Israel and would have been subject to income taxes if distributed as dividend as of December 31, 2018 and 2019 was \$50,817 and \$54,388, respectively.

c. Tax Reform- United States of America

The U.S. Tax Cuts and Jobs Act of 2017 ("TCJA") was approved by US Congress on December 20, 2017 and signed into law by US President Donald J. Trump on December 22, 2017. This legislation makes complex and significant changes to the U.S. Internal Revenue Code. Such changes include a reduction in the corporate tax rate and limitations on certain corporate deductions and credits, among other changes.

The TCJA reduces the U.S. federal corporate income tax rate from 35% to 21% effective January 1, 2018. In addition, the TCJA makes certain changes to the depreciation rules and implements new limits on the deductibility of certain expenses and deduction.

Except for one US subsidiary which has a share interest in a subsidiary in India, all of the other Group's subsidiaries in the United States do not have any foreign subsidiaries and, therefore, the remaining provisions of the TCJA have no material impact on the Group's results of operations.

The Group re-measured its U.S. deferred tax assets and liabilities, based on the rates at which they are expected to reverse in the future. The estimated tax benefit recorded related to the re-measurement of the provisional net deferred taxes was approximately \$4,228 for the year ended December 31, 2017.

d. Net operating loss carried forward:

As of December 31, 2019, Formula and its subsidiaries have cumulative losses for tax purposes totaling approximately \$162,735, of which \$137,270 was in respect of Israeli subsidiaries and approximately \$25,465 of which was in respect of subsidiaries abroad.

1) Formula

As of December 31, 2019, Formula stand-alone had cumulative carry forward tax losses in Israel totaling approximately NIS 257,462 (approximately \$74,500), which can be carried forward and offset against taxable income in the future for an indefinite period.

2) Matrix

As of December 31, 2019, certain subsidiaries of Matrix had operating carry-forward tax losses totaling approximately NIS 113,649 (approximately \$32,885), which can be carried forward and offset against taxable income in the future for an indefinite period.

3) Magic Software

As of December 31, 2019, certain subsidiaries of Magic Software had operating carry forward tax losses totaling approximately \$18,017, which can be carried forward and offset against taxable income in the future for an indefinite period.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 22:- TAXES ON INCOME (Cont.)

4) Sapiens

As of December 31, 2019, certain subsidiaries of Sapiens had carry-forward tax losses totaling approximately \$28,842. Most of these carry-forward tax losses have no expiration date.

5) Insync

As of December 31, 2019 Insync did not have any carry forward tax losses.

6) Michpal

As of December 31, 2019 Michpal did not have any carry forward tax losses.

e. Income tax assessments:

Formula and its subsidiaries are routinely examined by various tax authorities. Below is a summary of the income tax assessments of Formula and its subsidiaries:

1) Formula

Formula has received final tax assessments (or assessments that are deemed final) through the tax year 2013.

2) Matrix

Matrix and its subsidiaries have received final tax assessments (or assessments that are deemed final) through the tax year 2014.

3) Magic Software

Magic Software and its Israeli subsidiaries have received final tax assessments (or assessments that are deemed final) through the year 2013.

4) Sapiens

Tax assessments filed by some of Sapiens' Israeli subsidiaries through the year 2012 are considered to be final.

f. Deferred tax liabilities, net:

1) Presentation in consolidated statements of financial position:

	December 31,	
	2019	2018
Deferred taxes assets	\$ 38,865	\$ 14,214
Deferred tax liabilities	(53,854)	(34,819)
	<u>\$ (14,989)</u>	<u>\$ (20,605)</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 22:- TAXES ON INCOME (Cont.)

2) Composition:

	December 31,	
	2019	2018
Net operating losses carried forward	\$ 6,115	\$ 4,579
Intangibles, fixed asset and operating lease right-of-use assets	(56,036)	(32,914)
Lease right-of-use Liability	22,863	-
Differences in measurement basis (cash basis for tax purposes)	(345)	(1,571)
Other	12,414	9,301
	<u>\$ (14,989)</u>	<u>\$ (20,605)</u>

g. Pre-tax income:

	Year ended December 31,		
	2019	2018	2017
Domestic (Israel)	\$ 90,729	\$ 81,317	\$ 38,204
Foreign	30,895	20,379	14,607
Total	<u>\$ 121,624</u>	<u>\$ 101,696</u>	<u>\$ 52,811</u>

h. Taxes on income (tax benefit) consist of the following:

	Year ended December 31,		
	2019	2018	2017
Current taxes	\$ 40,181	\$ 30,302	\$ 22,375
Deferred taxes	(12,980)	(6,001)	(9,004)
Total	<u>\$ 27,201</u>	<u>\$ 24,301</u>	<u>\$ 13,371</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 22:- TAXES ON INCOME (Cont.)

i. Theoretical tax:

The following table presents reconciliation between the theoretical tax expense, assuming that all income was taxed at statutory tax rates, and the actual income tax expense, as recorded in the Group's consolidated statements of profit or loss:

	Year ended December 31,		
	2019	2018	2017
Income before income taxes, as per the statement of operations	\$ 121,624	\$ 101,696	\$ 52,811
Statutory tax rate in Israel	23%	23%	24%
Tax computed at the statutory tax rate	27,974	23,390	12,675
Non-deductible expenses (non-taxable income) net and tax-deductible costs not included in the accounting costs	792	1,393	1,522
Effect of different tax rates	1,114	379	843
Effect of "Approved, Beneficiary or Preferred Enterprise" status	(2,557)	(1,233)	(252)
Group's share of profits of companies accounted for at equity	(411)	(86)	(270)
Deferred taxes on current losses (utilization of carry forward losses) and temporary differences for which a valuation allowance was provided, net	1,087	(796)	4,695
Effect of change in tax rates	-	-	(5,796)
Taxes in respect of prior years	(569)	(485)	(227)
Uncertain tax positions	1,889	2,703	342
Other	(2,118)	(964)	(161)
Taxes on income	\$ 27,201	\$ 24,301	\$ 13,371

j. Uncertain tax positions:

A reconciliation of the beginning and ending amount of total unrecognized tax benefits in Formula's subsidiaries is as follows:

Balance as of December 31, 2016	3,280
Increase due to consolidation in a subsidiary	66
Decrease related to prior years' tax positions	(135)
Increase related to current year tax positions	813
Balance as of December 31, 2017	4,024
Decrease related to prior years' tax positions	(198)
Increase related to current year tax positions	2,775
Balance as of December 31, 2018	6,601
Decrease related to prior years' tax positions	(243)
Increase related to current year tax positions	1,999
Balance as of December 31, 2019	8,357

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 22:- TAXES ON INCOME (Cont.)

Although the Group believes that it has adequately provided for any reasonably foreseeable outcomes related to tax audits and settlement, there is no assurance that the final tax outcome of its tax audits will not be different from that which is reflected in the Group's income tax provisions. Such differences could have a material effect on the Group's income tax provision, cash flow from operating activities and net income in the period in which such determination is made.

The entire balance of unrecognized tax benefits, if recognized, would reduce the Group's annual effective tax rate.

NOTE 23:- SUPPLEMENTARY FINANCIAL STATEMENT INFORMATION

a. Composition of Non-controlling interest in material partially owned subsidiaries:

	December 31,	
	2019	2018
Matrix and its subsidiaries	\$ 120,225	\$ 106,667
Sapiens and its subsidiaries	203,942	193,832
Magic Software and its subsidiaries	150,370	137,158
Other	157	110
	<u>\$ 474,694</u>	<u>\$ 437,767</u>

b. The following table provides detailed breakdown of the Group's financial income and expenses:

	Year ended December 31,		
	2019	2018	2017
Financial expenses:			
Financial expenses related to liabilities in respect of business combinations	\$ 1,061	\$ 1,108	\$ 765
Interest expenses on loans and borrowings	6,376	6,891	7,700
Financial costs related to Debentures	5,632	5,479	2,832
Interest expenses attributed to IFRS 16	4,195	-	-
Bank charges, negative foreign exchange differences and other financial expenses	5,179	2,374	18,573
	<u>22,443</u>	<u>15,852</u>	<u>29,870</u>
Financial income:			
Income from marketable securities and embedded derivative	747	832	138
Interest income from deposits, positive foreign exchange differences and other financial income	3,044	6,730	8,613
	<u>3,791</u>	<u>7,562</u>	<u>8,751</u>
Financial expenses, net	<u>\$ 18,652</u>	<u>\$ 8,290</u>	<u>\$ 21,119</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 23:- SUPPLEMENTARY FINANCIAL STATEMENT INFORMATION (Cont.)

c. Geographical information:

1) The Group's property and equipment is located as follows:

	December 31,	
	2019	2018
Israel	\$ 28,446	\$ 22,401
United States	4,709	4,033
Europe	1,828	1,307
Japan	265	282
Other	7,811	1,159
Total	\$ 43,059	\$ 29,182

2) Revenues:

The Group's revenues classified by geographic area (based on the location of customers) are as follows:

	Year ended December 31,		
	2019	2018	2017
Israel	\$ 1,047,265	\$ 893,605	\$ 846,298
International:			
United States	462,803	418,148	322,892
Europe	145,564	141,316	131,025
Africa	15,336	13,726	24,370
Japan	14,925	11,053	15,763
Other (mainly Asia pacific)	15,222	15,140	14,791
Total	\$ 1,701,115	\$ 1,492,988	\$ 1,355,139

d. Earnings per share:

The following table presents the computation of basic and diluted net earnings per share for the Group:

	Year ended December 31,		
	2019	2018	2017
Numerator:			
Basic earnings per share – net income attributable to equity holders of the Company	\$ 38,820	\$ 32,365	\$ 10,352
Diluted earnings per share - net income attributable to equity holders of the Company	\$ 37,457	\$ 33,376	\$ 10,085
Denominator:			
Basic earnings per share - weighted average shares outstanding	15,190	14,740	14,437
Effect of dilutive securities	151	831	295
Diluted earnings per share – adjusted weighted average shares outstanding	15,341	15,571	14,732
Basic net earnings per share	2.56	2.20	0.72
Diluted net earnings per share	2.44	2.14	0.68

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 24:- OPERATING SEGMENTS**

a. General:

The Group is engaged through five directly held subsidiaries; Matrix; Magic Software; Sapiens; Insync and Michpal; and one jointly controlled entity: TSG, in providing software services, proprietary and non-proprietary software solutions, software product marketing and support, computer infrastructure and integration solutions and training and integration.

Matrix

Matrix IT Ltd. is Israel's leading IT services company. Matrix provides software solutions and services, software development projects, outsourcing, integration of software systems and services – all in accordance with its customers' specific needs. Matrix also provides upgrading and expansion of existing software systems.

Matrix operates through its directly and indirectly held subsidiaries in the following segments: (1) Information Technology (IT) Software solutions and services, Consulting & Management in Israel; (2) Information Technologies (IT) Software solutions and services in the U.S; (3) Training and integration; (4) Computer infrastructure and integration solutions; and, (5) Software product marketing and support.

Information Technologies (IT) Software solutions and services, Consulting & Management in Israel:

The software solutions and services in Israel provided by Matrix consist mainly of providing tailored software solutions and upgrading and expanding mainly existing large-scale software systems. These services include, among others, developing customized software, adapting software to the customer's specific needs, implementing software and modifying it based on the customer's needs, outsourcing, software project management, software testing and QA and integrating all or part of the above elements.

Furthermore the activity in this segment includes project management consulting services and multi-disciplinary operational and engineering consulting services, including supervision of complex engineering projects, all according to client specific needs as the scope of work invested in each element varies from one customer to the other. In 2019, activity in Software solutions and value-added services in Israel accounted for approximately 63% of Matrix's revenues for approximately 50% of its operating income, respectively.

Information Technologies (IT) Software solutions and services in the United States:

Matrix activities in this segment are primarily providing software solutions and services of Governance Risk and Compliance ("GRC") experts, including activities on the following topics: risk management, management and prevention of fraud, Anti-Money Laundering, trade surveillance as well as, specialized advisory services in the area of compliance with financial regulation and operational services, through Matrix-IFS (formerly Exzac Inc.), a wholly owned subsidiary of Matrix, as well as providing solutions and specialized technological services in areas such as: portals, BI (Business Intelligence) DBA (Data Base Administration), CRM (Customer Relation Management) and EIM (Enterprise Information Management). Furthermore the activity in this segment includes dedicated solutions for the GovCon Government contracting market, IT help desk services specializing in healthcare and software product distribution services particularly IBM products. The activity in this segment is performed mostly through Matrix IFS and Xtiva Technologies Inc., wholly owned subsidiaries of Matrix and their respective subsidiaries. In 2019, activity in the U.S accounted for approximately 11% of Matrix's revenues and for approximately 23% of its operating income, because of higher operating gross margin in the U.S.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 24:- OPERATING SEGMENTS (Cont.)***Training and integration:*

Matrix's activities in this segment consist of operating a network of high-tech training and instruction centers which provide application courses, professional training courses and advanced professional studies in the high-tech industry, courses of soft skills and management training and provision of training and implementation of computer systems. In 2019, activity in training and integration accounted for approximately 4% of Matrix's revenues and for approximately 7% of its operating income, respectively.

Computer infrastructure and integration solutions:

Matrix's activities in this segment is primarily providing computer solutions to computer and communications infrastructures, marketing and sale of computers and peripheral equipment to business customers, providing related services, and cloud computing solutions (through the business specializing unit of the Company - Cloud Zone) and a myriad of services regarding Database services and Big data services (through the specialized business unit Data zone). In 2019, activity in Computer infrastructure and integration solutions accounted for approximately 17% of Matrix's revenues and for approximately 11% of its operating income, respectively.

Software product marketing and support:

Matrix's activities in this segment include marketing, distributing and support for various software products, the principal of which are CRM, computer systems management infrastructures, web world content management, database and data warehouse mining, application integration, database and systems, data management and software development tools. In 2019, activity in software product marketing and support accounted for about 5% of Matrix's revenues and for approximately 9% of its operating income, respectively.

Sapiens

Sapiens is a leading global provider of software solutions for the insurance industry. Sapiens' extensive expertise is reflected in its innovative software platforms, suites, solutions and services for property & casualty (P&C); life, pension & annuity (L&A); reinsurance; financial and compliance (F&C); workers' compensation (WC); and financial markets. Sapiens offers a full digital suite that provides an end-to-end, holistic and seamless digital experience for carriers, agents, customers and assorted insurance personnel, across multiple devices and technologies. Sapiens' offerings enable its customers to effectively manage their core business functions – including policy administration, claims and billing – supporting insurers during their digital transformation journeys. Sapiens portfolio also covers underwriting, illustration and electronic application. Furthermore, Sapiens supplies decision management solutions tailored to a variety of financial services providers, so business users across verticals can quickly deploy business logic and comply with policies and regulations throughout their organizations. Its platforms possess modern, modular architecture and are digital-driven empowering customers to respond to the rapidly changing insurance market and frequent regulatory changes, while improving the efficiency of their core operations.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 24:- OPERATING SEGMENTS (Cont.)****Magic Software**

Magic Software is a global provider of: (i) proprietary application development and business process integration platforms; (ii) selected packaged vertical software solutions; as well as (iii) software services and Information Technologies (“IT”) outsourcing software services. Magic Software’s technology is used by customers to develop, deploy and integrate on-premise, mobile and cloud-based business applications quickly and cost effectively. In addition, Magic Software’s technology enables enterprises to accelerate the process of delivering business solutions that meet current and future needs and allow customers to dramatically improve their business performance and return on investment.

With respect to software services and IT outsourcing services, Magic Software offers a vast portfolio of professional services in the areas of infrastructure design and delivery, application development, technology consulting planning and implementation services, integration projects, project management, software testing and quality assurance, engineering consulting (including supervision of engineering projects), support services, cloud computing for deployment of highly available and massively-scalable applications and API’s and supplemental outsourcing services, all according to the specific needs of the customer, and in accordance with the professional expertise required in each case.

In addition, Magic Software offers a variety of proprietary comprehensive packaged software solutions through certain of its subsidiaries for (i) enterprise-wide and fully integrated medical platform (“Clicks”), specializing in the design and management of patient-file oriented software solutions for managed care and large-scale health care providers. This platform aims to allow providers to securely access an individual’s electronic health record at the point of care, and it organizes and proactively delivers information with potentially real time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers; (ii) enterprise management systems for both hubs and traditional air cargo ground handling operations from physical handling and cargo documentation through customs, seamless electronic data interchange, or EDI communications, dangerous goods, special handling, track and trace, security to billing (“Hermes”); (iii) enterprise human capital management, or HCM, solutions, to facilitate the collection, analysis and interpretation of quality data about people, their jobs and their performance, to enhance HCM decision making (“HR Pulse”); (iv) revenue management and monetization solutions in mobile, wireline, broadband and mobile virtual network operator/enabler, or MVNO/E (“Leap”); and (v) comprehensive systems for managing broadcast channels in the area of TV broadcast management through cloud-based on-demand service or on-premise solutions;

Magic Software solutions are used by customers to develop, deploy and integrate on-premise, mobile and cloud-based business applications quickly and cost effectively. In addition, its technology enables enterprises to accelerate the process of delivering business solutions that meet current and future needs and allow customers to dramatically improve their business performance and return on investment. Its software solutions include application platforms for developing and deploying specialized and high-end large-scale business applications (Magic xpa application platform, formerly branded uniPaaS, Appbuilder and Magic SmartUX), an integration platform that allows the integration and interoperability of diverse solutions, applications and systems in a quick and efficient manner (Magic xpi business and process integration platform, formerly branded iBOLT), a hybrid integration platform as a service (IPaaS), which enables customers to accelerate digital transformation on the cloud, on-premises or on both (Magic xpc) and FactoryEye - a proprietary high performance, low-code, flexible, hybrid platform for manufacturers based on existing infrastructure enabling real-time virtualizations of all production data and advanced analytics (based on machine learning) for improved productivity and competitive advantage. These solutions enable Magic Software customers to improve their business performance and return on investment by supporting the affordable and rapid delivery and integration of business applications, systems and databases.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data****NOTE 24:- OPERATING SEGMENTS (Cont.)**

Magic Software products and services are available through a global network of regional offices, independent software vendors, system integrators, distributors and value-added resellers as well as original equipment manufacturers and consulting partners in approximately 50 countries.

Insync

InSync is a U.S based national supplier of employees to Vendor Management Systems (VMS) Workforce Management Program accounts. Insync specializes in providing professionals in the following areas; Accounting and Finance, Administrative, Customer Service, Clinical, Scientific and Healthcare, Engineering, Manufacturing and Operations, Human Resources, IT Technology, LI/MFG, and Marketing and Sales. InSync currently supports more than 30 VMS program customers with employees in over 40 states.

Michpal

Michpal, an Israeli registered company, is a developer of proprietary, on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprises and payroll service providers. Michpal also developed several complementary modules such as attendance reporting, which are sold to its customers for additional fees. Together with its subsidiaries Unique Software Industries Ltd, a software development and services company, providing integrated solutions in the field of payroll for more than 30 years, including pay-stubs, pension services management, education funds management, and software solutions for managing employee attendance, and Effective Solutions Ltd Michpal also provides consulting services in the fields of operational cost savings and procurement, as well as salary control and monitoring a payroll, labor, pensions, social security and employee income tax matters. As of December 31, 2019, Michpal serves approximately 8,000 customers, most of which are long-term customers.

TSG

TSG is a global high technology company engaged in high-end technical solutions for protecting the safety of national borders, improving data gathering mechanisms, and enhancing communications channels for military, homeland security and civilian organizations.

TSG operates primarily in the defense and homeland security arenas. The nature of military and homeland security actions in recent years, including low intensity conflicts and ongoing terrorist activities, as well as budgetary pressures to focus on leaner but more technically advanced forces, have caused a shift in the defense and homeland security priorities for many of TSG's major customers. As a result, TSG believes there is a continued demand in the areas of command, control, communications, computer and intelligence (C4I) systems, intelligence, surveillance and reconnaissance (ISR) systems, intelligence gathering systems, border and perimeter security systems, cyber-defense systems. There is also a continuing demand for cost effective logistic support and training and simulation services. TSG believes that its synergistic approach of finding solutions that combine elements of its various activities positions it to meet evolving customer requirements in many of these areas.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 24:- OPERATING SEGMENTS (Cont.)

TSG tailors and adapts its technologies, integration skills, market knowledge and operationally-proven systems to each customer’s individual requirements in both existing and new platforms. By upgrading existing platforms with advanced technologies, TSG provides customers with cost-effective solutions, and its customers are able to improve their technological and operational capabilities within limited budgets.

TSG markets its systems and products either as a prime contractor or as a subcontractor to various governments and defense and homeland security contractors worldwide. In Israel, TSG sells its defense, intelligence and homeland security systems and products mainly to the IMOD, which procures all equipment for the Israeli Defense Force (IDF).

b) Consolidated Goodwill in material partially owned subsidiaries:

	December 31,	
	2019	2018
Matrix and its subsidiaries	\$ 260,492	\$ 215,696
Sapiens and its subsidiaries	316,082	311,489
Magic Software and its subsidiaries	117,743	95,006
Michpal and its subsidiaries	29,876	18,727
	<u>\$ 724,193</u>	<u>\$ 640,918</u>

c) Reporting on operating segments:

The operating segments are identified on the basis of information that is reviewed by the chief operating decision maker (“CODM”) to make decisions about resources to be allocated and assess its performance. The CODM have been identified as Formula’s CEO. The CODM assess the performance of the Group based on each of the Group’s directly held investees’ operating income (or loss). Headquarters and finance expenses of Formula are allocated proportionally among the investees.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 24:- OPERATING SEGMENTS (Cont.)

	<u>Matrix</u>	<u>Sapiens</u>	<u>Magic Software</u>	<u>Other</u>	<u>Adjustments</u>	<u>Total</u>
Year ended December 31, 2019:						
Revenues from external customers	1,005,721	325,674	322,401	131,668	(84,349)	1,701,115
Inter-segment revenues	3,986	-	3,229	510	(7,725)	-
Revenues	<u>1,009,707</u>	<u>325,674</u>	<u>325,630</u>	<u>132,178</u>	<u>(92,074)</u>	<u>1,701,115</u>
Unallocated corporate expenses	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Depreciation and amortization	<u>11,713</u>	<u>25,619</u>	<u>14,025</u>	<u>4,148</u>	<u>(2,104)</u>	<u>53,401</u>
Operating income	<u>71,552</u>	<u>32,336</u>	<u>33,817</u>	<u>8,227</u>	<u>(7,443)</u>	<u>138,489</u>
Financial expenses, net						(18,652)
Group's share of profits of companies accounted for at equity, net						1,787
Taxes on income						(27,201)
Net income						<u>94,423</u>
Year ended December 31, 2018:						
Revenues from external customers	878,188	289,707	282,205	109,041	(66,153)	1,492,988
Inter-segment revenues	2,869	-	2,170	80	(5,119)	-
Revenues	<u>881,057</u>	<u>289,707</u>	<u>284,375</u>	<u>109,121</u>	<u>(71,272)</u>	<u>1,492,988</u>
Unallocated corporate expenses	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(2,113)</u>	<u>(2,113)</u>
Depreciation and amortization	<u>8,554</u>	<u>26,249</u>	<u>12,562</u>	<u>5,081</u>	<u>(3,712)</u>	<u>48,734</u>
Operating income	<u>61,264</u>	<u>16,799</u>	<u>31,698</u>	<u>4,210</u>	<u>(4,354)</u>	<u>109,617</u>
Financial expenses, net						(8,290)
Group's share of profits of companies accounted for at equity, net						369
Taxes on income						(24,301)
Net income						<u>77,395</u>
Year ended December 31, 2017:						
Revenues from external customers	790,946	269,194	256,207	105,608	(66,816)	1,355,139
Inter-segment revenues	3,679	-	1,933	200	(5,812)	-
Revenues	<u>794,625</u>	<u>269,194</u>	<u>258,140</u>	<u>105,808</u>	<u>(72,628)</u>	<u>1,355,139</u>
Unallocated corporate expenses	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(3,472)</u>	<u>(3,472)</u>
Depreciation and amortization	<u>6,855</u>	<u>21,969</u>	<u>13,611</u>	<u>4,935</u>	<u>(3,724)</u>	<u>43,646</u>
Operating income (loss)	<u>54,337</u>	<u>(5,053)</u>	<u>25,956</u>	<u>3,670</u>	<u>(6,104)</u>	<u>72,806</u>
Financial expenses, net						(21,119)
Group's share of profits of companies accounted for at equity, net						1,124
Taxes on income						(13,371)
Net income						<u>39,440</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 25:- SUBSEQUENT EVENTS

- a) In January 2020, Formula repaid the last and final installment of its loan from financial institution from 2014, pursuant to which the credit agreement was fully matured and the related collaterals were released as detailed in Note 20(a)(4) above.
- b) On March 12, 2020, Formula concluded the acquisition of 80% of the share capital of Ofek Aerial Photography Ltd (“Ofek”), an Israeli company engaged in the fields of aerial and satellite mapping, geographic data collection and processing, and in the provision of services in numerous geographic applications for a cash consideration of approximately NIS 27,670 (approximately \$7,604).
- c) In March 2020, Matrix entered into a credit agreement with an Israeli financial institution, pursuant to which, Matrix borrowed NIS 200,000 (approximately \$57,870) for a five-years term, bearing a fixed interest at a rate of 2% per annum.
- d) On February 6, 2020 Sapiens completed the acquisition of sum.cumo GmbH (“sum.cumo”). Sum.cumo provide services to insurers in the DACH region (Germany, Switzerland and Austria), helping them to set up their business model and obtain a marketing edge. Sum.cumo experts in consulting, user experience, marketing and technology enable the region’s insurers to launch successful e-commerce environments. The total purchase price was approximately \$24,700 in cash, an additional \$4,400 in restricted Sapiens’ outstanding shares units, and \$2,200 in future contingent payments, both subject to earn out based and retention specific criteria.
- e) On March 18, 2020, Sapiens (via its wholly owned subsidiary, Sapiens Technologies (1982) Ltd.) entered into a secured credit agreement with HSBC Bank plc. Pursuant to the Credit Agreement, Sapiens borrowed \$20,000 for a one-year term. The bank loan will mature on March 16, 2021 whereas the interest will be paid and calculated on a quarterly basis. The bank loan bears interest at the rate of LIBOR plus 2%. The loan was fully repaid following the consummation of an additional NIS 210,000 (approximately \$60 million) of the Sapiens’ non-convertible unsecured Series B Debentures as detailed below.
- f) On June 8, 2020 Sapiens consummated a public offering in Israel of an additional NIS 210,000 (approximately \$60 million) of the Sapiens’ non-convertible unsecured Series B Debentures. These additional debentures are part of the same series as, and will have terms that mimic the terms of, Sapiens’ already outstanding Series B Debentures, and are listed for trading on the Tel Aviv Stock Exchange. For more details regarding Sapiens’ public offering from June 2020 please see Note 15(d) above.
- g) On May 18, 2020, Michpal concluded the acquisition of 70% of the share capital of Liram Financial Software Ltd. (“Liram”), an Israeli provider of proprietary integrated specialized solutions in the field of financial accounting, taxation and compliance, for cash consideration of approximately NIS 15.3 million (approximately \$4.3 million).

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

**To the Board of Directors and Shareholders of
Magic Software Japan K. K.**

Opinion on the Financial Statements

We have audited the accompanying statements of financial position of Magic Software Japan K.K. (the “Company”) as of December 31, 2018 and 2019, and the related statements of comprehensive income and cash flows for each of the three years in the period ended December 31, 2019. In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2019, and the related statements of comprehensive income and cash flows for each of the three years in the period ended December 31, 2019 in conformity with International Financial Reporting Standards.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), (PCAOB), the Company’s internal control over financial reporting as of December 31, 2019, based on Section 404 of the Sarbanes-Oxley Act (“SOA”) and our report dated February 13, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to **assess** the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis of our opinion.

Tokyo, Japan
February 13, 2020

/s/ KDA Audit Corporation

KDA Audit Corporation

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

**To the Board of Directors and Shareholders of
Magic Software Japan K. K.**

Opinion on Internal Control over Financial Reporting

We have audited Magic Software Japan K.K.'s (the "Company") internal control over financial reporting as of December 31, 2019, based on Section 404 of the Sarbanes-Oxley Act ("SOA"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on Section 404 of the Sarbanes-Oxley Act ("SOA").

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), (PCAOB), the statements of financial position of the Company as of December 31, 2018 and 2019, and the related statements of comprehensive income and cash flows for each of the three years in the period ended December 31, 2019 and our report dated February 13, 2020 expressed unqualified opinion.

Basis for Opinion

the Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Assessment of Internal Control over Financial Reporting. Our responsibility is to express an opinion on the entity's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

An entity's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. An entity's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the entity; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the entity are being made only in accordance with authorizations of management and directors of the entity; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the entity's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Tokyo, Japan

February 13, 2020

/s/ KDA Audit Corporation
KDA Audit Corporation

Description of Formula Systems (1985) Ltd. American Depositary Shares

Authorized Share Capital

The authorized share capital of Formula Systems (1985) Ltd. (hereinafter, “Formula”, “we”, “us”, “our” or similar expressions) consists of 25,000,000 New Israeli Shekels, or NIS, divided into 25,000,000 ordinary shares, par value NIS 1.0 per share, or ordinary shares. Some of the ordinary shares may be represented from time to time by American Depositary Shares, or ADSs, which represent ordinary shares on a one-for-one basis. As of June 25, 2020, we had 15,294,267 ordinary shares (including shares subject to restrictions and repurchase by us) issued and outstanding, of which 136,260 shares were represented by ADSs that have been issued pursuant to a depositary agreement with The Bank of New York Mellon and which represent approximately 0.9% of our outstanding ordinary shares.

Registration Number and Purposes of the Company

Our registration number with the Israeli Registrar of Companies is 52-003669-0. Our objects are specified in our memorandum of association. Those objects include:

- operating within the field of informational and computer systems;
- providing management, consulting and sale services for computers, computer equipment, software for computers and for information systems;
- operating a business of systems analysis, systems programming and computer programming; and
- establishing facilities for instruction and training for computers and digital systems.

Voting Rights

All ordinary shares have identical voting and other rights in all respects.

Transfer of Shares

Our fully paid ordinary shares are issued in registered form and may be freely transferred under our articles, unless the transfer is restricted or prohibited by another instrument, applicable law or the rules of a stock exchange on which the shares are listed for trade. The ownership or voting of our ordinary shares by non-residents of Israel is not restricted in any way by our articles or the laws of the State of Israel, except for ownership by nationals of some countries that are, or have been, in a state of war with Israel.

Election and Removal of Directors

Our ordinary shares do not have cumulative voting rights for the election of directors. As a result, the holders of a majority of the voting power represented at a shareholders meeting have the power to elect all of our directors, subject to the special approval requirements for external directors.

Under our articles of association, or articles, our board of directors must consist of not less than three but no more than eleven directors, including at least two external directors who serve pursuant to the Israeli Companies Law, 5759-1999, or the Companies Law. The actual number of directors may be adjusted from time to time by resolution of our shareholders. Pursuant to the Companies Law, each of our directors (other than external directors, for whom special election requirements apply under the Companies Law) is elected by a simple majority vote of holders of our voting shares, participating and voting at each annual general meeting of our shareholders. In addition, our directors (other than the external directors, who are elected for a term of three years each time under the Companies Law and who can only be removed under special circumstances under the Companies Law) are elected for a one-year term, until the next annual general meeting of our shareholders, and serve on our board of directors unless they are removed by a vote of our shareholders at a general meeting of our shareholders or upon the occurrence of certain events, in accordance with the Companies Law. Our articles allow our board of directors to fill vacancies on the board (including vacancies caused by an expansion of the size of the board of directors by our shareholders).

Dividend and Liquidation Rights

We may declare a dividend to be paid to the holders of our ordinary shares in proportion to their respective shareholdings. Under the Companies Law, dividend distributions are determined by the board of directors and do not require the approval of the shareholders of a company unless the company’s articles of association provide otherwise. Our articles do not require shareholder approval of a dividend distribution and provide that dividend distributions may be determined by our board of directors.

Pursuant to the Companies Law, the distribution amount is limited to the greater of retained earnings or earnings generated over the previous two years, according to our then last reviewed or audited financial statements, provided that the end of the period to which the financial statements relate is not more than six months prior to the date of the distribution. If we do not meet such criteria, we may only distribute dividends with court approval. In each case, we are only permitted to distribute a dividend if our board of directors and the court, if applicable, determines that there is no reasonable concern that payment of the dividend will prevent us from satisfying our existing and foreseeable obligations as they become due.

In the event of our liquidation, after satisfaction of liabilities to creditors, our assets will be distributed to the holders of our ordinary shares in proportion to their shareholdings. That right, as well as the right to receive dividends, may be affected by the grant of preferential dividend or distribution rights to the holders of a class of shares with preferential rights that may be authorized in the future.

Exchange Controls

There are currently no Israeli currency control restrictions on remittances of dividends on our ordinary shares, proceeds from the sale of the shares or interest or other payments to non-residents of Israel, except for shareholders who are subjects of countries that are, or have been, in a state of war with Israel.

Shareholder Meetings

Under Israeli law, we are required to hold an annual general meeting of our shareholders once every calendar year that must be held no later than 15 months after the date of the previous annual general meeting. All meetings other than the annual general meeting of shareholders are referred to in our articles as special general meetings. Our board of directors may call special general meetings whenever it sees fit, at such time and place, within or outside of Israel, as it may determine. In addition, the Companies Law provides that our board of directors is required to convene a special general meeting upon the written request of (i) any two of our directors or one-quarter of the members of our board of directors or (ii) one or more shareholders holding, in the aggregate, either (a) 5% or more of our outstanding issued shares and 1% of our outstanding voting power or (b) 5% or more of our outstanding voting power.

Subject to the provisions of the Companies Law and the regulations promulgated thereunder, shareholders entitled to participate and vote at general meetings are the shareholders of record on a date to be decided by the board of directors, which may be between four and 40 days prior to the date of the meeting. Furthermore, the Companies Law requires that resolutions regarding the following matters must be passed at a general meeting of our shareholders:

- amendments to our articles;
- appointment or termination of our auditors;
- appointment of external directors;
- approval of certain related party transactions;
- increases or reductions of our authorized share capital;
- a merger; and
- the exercise of our board of directors' powers by a general meeting, if our board of directors is unable to exercise its powers and the exercise of any of its powers is required for our proper management.

The Companies Law and our articles require that notice of any annual general meeting or special general meeting be provided to shareholders at least 21 days prior to the meeting and if the agenda of the meeting includes, among other matters, the appointment or removal of directors, the approval of transactions with office holders or interested or related parties, approval of the company's chief executive officer (referred to under the Companies Law as the general manager) to serve as the chairman of its board of directors or an approval of a merger, notice must be provided at least 35 days prior to the meeting.

The Companies Law allows one or more of our shareholders holding at least 1% of the voting power of a company to request the inclusion of an additional agenda item for an upcoming shareholders meeting, assuming that it is appropriate for debate and action at a shareholders meeting. Under applicable regulations, such a shareholder request must be submitted within three or, for certain requested agenda items, seven days following our publication of notice of the meeting. If the requested agenda item includes the appointment of director(s), the requesting shareholder must comply with particular procedural and documentary requirements. If our board of directors determines that the requested agenda item is appropriate for consideration by our shareholders, we must publish an updated notice that includes such item within seven days following the deadline for submission of agenda items by our shareholders. The publication of the updated notice of the shareholders meeting does not impact the record date for the meeting. In lieu of this process, we may opt to provide pre-notice of our shareholders meeting at least 21 days prior to publishing official notice of the meeting. In that case, our 1% shareholders are given a 14-day period in which to submit proposed agenda items, after which we must publish notice of the meeting that includes any accepted shareholder proposals.

Under the Companies Law, shareholders of a public company such as ours are not permitted to take action by way of written consent in lieu of a meeting.

Voting Rights

Quorum Requirements

Pursuant to our articles, holders of our ordinary shares have one vote for each ordinary share held on all matters submitted to a vote before the shareholders at a general meeting. Under our articles, the quorum required for our general meetings of shareholders consists of at least two shareholders present in person, by proxy or written ballot who hold or represent between them at least 25% of the total outstanding voting rights. A meeting adjourned for lack of a quorum is generally adjourned to the same day in the following week at the same time and place, or to such day and at such time and place as the Chairman of the meeting may determine with the consent of the holders of a majority of the voting power represented at the meeting in person or by proxy and voting on the question of adjournment. At the reconvened meeting, if a quorum is not present within half an hour from the time appointed for holding the meeting, any two shareholders present in person or by proxy, shall constitute a quorum (subject to rules and regulations, if any, applicable to Formula).

Vote Requirements

Our articles provide that all resolutions of our shareholders require a simple majority vote of shares present and voting at a general meeting, unless otherwise required by the Companies Law or by our articles.

There are various exceptions to the foregoing simple majority rule. Under the Companies Law, each of (i) the approval of an extraordinary transaction with a controlling shareholder and (ii) the terms of employment or other engagement of the controlling shareholder of the company or such controlling shareholder's relative (even if such terms are not extraordinary) require the approval of the company's audit committee (or compensation committee with respect to compensation arrangements), board of directors and shareholders, in that order. In addition, the shareholder approval must fulfill one of the following requirements:

- at least a majority of the shares held by all shareholders who do not have a personal interest in the transaction and who are present and voting at the meeting approves the transaction, excluding abstentions; or
- the shares voted against the transaction by shareholders who have no personal interest in the transaction and who are present and voting at the meeting do not exceed 2% of the voting rights in the company.

Additional exceptions to the foregoing simple majority rule under the Companies Law include the following:

(a) The approval and extension of a compensation policy and certain deviations therefrom require the approval of compensation committee, board of directors and shareholders, in that order. The shareholder approval must be by a majority vote of the shares present and voting at a meeting of shareholders called for such purpose, provided that either: (a) such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a personal interest in such compensation policy; or (b) the total number of shares of non-controlling shareholders who do not have a personal interest in the compensation policy and who vote against the policy does not exceed 2% of the company's aggregate voting rights;

(b) The terms of employment or other engagement (or an amendment thereto) of the chief executive officer of the company require compensation committee, board of directors and shareholders, in that order. The shareholder approval must be by a majority vote of the shares present and voting at a meeting of shareholders called for such purpose, provided that either: (a) such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a personal interest in such compensation; or (b) the total number of shares of non-controlling shareholders who do not have a personal interest in the compensation and who vote against the compensation does not exceed 2% of the company's aggregate voting rights;

(c) The chairman of a company's board of directors also serving as its chief executive officer requires the same special majority approval as applies to (i) and (ii) above (substituting the personal interest in the service of the chairman as chief executive officer in place of personal interest in the compensation policy or compensation);

(d) The election or reelection of external directors, which requires approval by a majority vote of the shares present and voting at a meeting of shareholders called for such purpose, provided that either: (a) such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a personal interest (other than a personal interest not deriving from a relationship with a controlling shareholder) in such (re-)election; or (b) the total number of shares of non-controlling shareholders who do not have a personal interest (other than a personal interest not deriving from a relationship with a controlling shareholder) in the (re-)election and who vote against the (re-)election does not exceed 2% of the company's aggregate voting rights);

(e) The voluntary winding up, or an approval of a scheme of arrangement or reorganization, of the company pursuant to Section 350 of the Companies Law requires the approval of holders of 75% of the voting rights represented at a general meeting, in person or by proxy, and voting on the resolution.

Access to Corporate Records

Under the Companies Law, shareholders are provided access to: minutes of our general meetings; our shareholders register and principal shareholders register, articles of association and annual audited financial statements; and any document that we are required by law to file publicly with the Israeli Companies Registrar or the Israel Securities Authority. These documents are publicly available and may be found and inspected at the Israeli Registrar of Companies. In addition, shareholders may request to be provided with any document related to an action or transaction requiring shareholder approval under the related party transaction provisions of the Companies Law. We may deny this request if we believe it has not been made in good faith or if such denial is necessary to protect our interest or protect a trade secret or patent.

Modification of Class Rights

Under our articles, if at any time our share capital is divided into different classes of shares, the rights attached to any class of share, such as voting, liquidation and dividend rights, may be amended by adoption of a resolution by the holders of a majority of the issued shares of that class present and voting at a separate general meeting of the holders of the shares of that class.

Acquisitions under Israeli Law

Full Tender Offer.

A person wishing to acquire shares of an Israeli public company and who would as a result hold over 90% of the target company's issued and outstanding share capital is required by the Companies Law to make a tender offer to all of the company's shareholders for the purchase of all of the issued and outstanding shares of the company. A person wishing to acquire shares of a public Israeli company and who would as a result hold over 90% of the issued and outstanding share capital of a certain class of shares is required to make a tender offer to all of the shareholders who hold shares of the relevant class for the purchase of all of the issued and outstanding shares of that class. If the shareholders who do not accept the offer hold less than 5% of the issued and outstanding share capital of the company or of the applicable class, and more than half of the shareholders who do not have a personal interest in the offer accept the offer, all of the shares that the acquirer offered to purchase will be transferred to the acquirer by operation of law. However, a tender offer will also be accepted if the shareholders who do not accept the offer hold less than 2% of the issued and outstanding share capital of the company or of the applicable class of shares.

Upon a successful completion of such a full tender offer, any shareholder that was an offeree in such tender offer, whether such shareholder accepted the tender offer or not, may, within six months from the date of acceptance of the tender offer, petition an Israeli court to determine whether the tender offer was for less than fair value and that the fair value should be paid as determined by the court. However, under certain conditions, the offeror may include in the terms of the tender offer that an offeree who accepted the offer will not be entitled to petition the Israeli court as described above.

If a tender offer is not accepted in accordance with the requirements set forth above, the acquirer may not acquire shares from shareholders who accepted the tender offer that will increase its holdings to more than 90% of the company's issued and outstanding share capital or of the applicable class.

Special Tender Offer.

The Companies Law provides that an acquisition of shares of an Israeli public company must be made by means of a special tender offer if as a result of the acquisition the purchaser would become a holder of 25% or more of the voting rights in the company. This requirement does not apply if there is already another holder of at least 25% of the voting rights in the company. Similarly, the Companies Law provides that an acquisition of shares in a public company must be made by means of a special tender offer if as a result of the acquisition the purchaser would become a holder of more than 45% of the voting rights in the company, if there is no other shareholder of the company who holds more than 45% of the voting rights in the company, subject to certain exceptions.

A special tender offer must be extended to all shareholders of a company, but the offeror is not required to purchase shares representing more than 5% of the voting power attached to the company's outstanding shares, regardless of how many shares are tendered by shareholders. A special tender offer may be consummated only if (i) the offeror acquired shares representing at least 5% of the voting power in the company and (ii) the number of shares tendered by shareholders who accept the offer exceeds the number of shares held by shareholders who object to the offer (excluding the purchaser, controlling shareholders, holders of 25% or more of the voting rights in the company or any person having a personal interest in the acceptance of the tender offer, including their relatives and companies under their control). If a special tender offer is accepted, the purchaser or any person or entity controlling it or under common control with the purchaser or such controlling person or entity may not make a subsequent tender offer for the purchase of shares of the target company and may not enter into a merger with the target company for a period of one year from the date of the offer, unless the purchaser or such person or entity undertook to effect such an offer or merger in the initial special tender offer.

Merger

The Companies Law permits merger transactions if approved by each party's board of directors and, unless certain requirements described under the Companies Law are met, by a majority vote of each party's shareholders. In the case of the target company, approval of the merger further requires a majority vote of each class of its shares.

For purposes of the shareholder vote, unless a court rules otherwise, the merger will not be deemed approved if a majority of the votes of shares represented at the meeting of shareholders that are held by parties other than the other party to the merger, or by any person (or group of persons acting in concert) who holds (or hold, as the case may be) 25% or more of the voting rights or the right to appoint 25% or more of the directors of the other party, vote against the merger. If, however, the merger involves a merger with a company's own controlling shareholder or if the controlling shareholder has a personal interest in the merger, then the merger is instead subject to the same special majority approval that governs all extraordinary transactions with controlling shareholders (as described above under "Vote Requirements").

If the transaction would have been approved by the shareholders of a merging company but for the separate approval of each class or the exclusion of the votes of certain shareholders as provided above, a court may still approve the merger upon the petition of holders of at least 25% of the voting rights of a company. For such petition to be granted, the court must find that the merger is fair and reasonable, taking into account the respective values assigned to each of the parties to the merger and the consideration offered to the shareholders of the target company.

Upon the request of a creditor of either party to the proposed merger, the court may delay or prevent the merger if it concludes that there exists a reasonable concern that, as a result of the merger, the surviving company will be unable to satisfy the obligations of the merging entities, and may further give instructions to secure the rights of creditors.

In addition, a merger may not be consummated unless at least 50 days have passed from the date on which a proposal for approval of the merger is filed with the Israeli Registrar of Companies and at least 30 days have passed from the date on which the merger was approved by the shareholders of each party.

Anti-takeover Measures under Israeli Law

The Companies Law allows us to create and issue shares having rights different from those attached to our ordinary shares, including shares providing certain preferred rights with respect to voting, distributions or other matters and shares having preemptive rights. No preferred shares are authorized under our articles. In the future, if we do authorize, create and issue a specific class of preferred shares, such class of shares, depending on the specific rights that may be attached to it, may have the ability to frustrate or prevent a takeover or otherwise prevent our shareholders from realizing a potential premium over the market value of their ordinary shares. The authorization and designation of a class of preferred shares will require an amendment to our articles, which requires the prior approval of the holders of a majority of the voting power of our issued and outstanding shares present and voting at a general meeting. The convening of the meeting, the shareholders entitled to participate, and the majority vote required to be obtained at such a meeting will be subject to the requirements set forth in the Companies Law as described above in "Voting Rights."

Borrowing Powers

Pursuant to the Companies Law and our articles, our board of directors may exercise all powers and take all actions that are not required under law or under our articles to be exercised or taken by our shareholders, including the power to borrow money for company purposes.

Changes in Capital

Our articles enable us to increase or reduce our share capital. Any such changes are subject to Israeli law and must be approved by a resolution duly passed by our shareholders at a general meeting by voting on such change in the capital. In addition, transactions that have the effect of reducing capital, such as the declaration and payment of dividends in the absence of sufficient retained earnings or profits, require the approval of both our board of directors and an Israeli court.

List of Subsidiaries

Name of Subsidiary	Jurisdiction of Incorporation
InSync Staffing Services, Inc.	Delaware
Matrix IT Ltd.	Israel
Magic Software Enterprises Ltd.	Israel
Michpal Micro Computers (1983) Ltd.	Israel
Sapiens International Corporation N.V.	Cayman Islands
TSG Advanced IT Systems, Ltd	Israel
Ofek Ariel Photography Ltd	Israel

**CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) UNDER
THE EXCHANGE ACT**

I, Guy Bernstein, certify that:

1. I have reviewed this annual report on Form 20-F for the year ended December 31, 2019 of Formula Systems (1985) Ltd. (the “Registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The Registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the Registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Registrant’s internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Registrant’s internal control over financial reporting; and
5. The Registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Registrant’s auditors and the audit committee of the Registrant’s board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Registrant’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant’s internal control over financial reporting.

Date: June 29, 2020

/s/ Guy Bernstein
Guy Bernstein
Chief Executive Officer

**CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) UNDER
THE EXCHANGE ACT**

I, Asaf Berenstin, certify that:

1. I have reviewed this annual report on Form 20-F for the year ended December 31, 2019 of Formula Systems (1985) Ltd. (the “Registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Registrant as of, and for, the periods presented in this report;
4. The Registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the Registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Registrant’s internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Registrant’s internal control over financial reporting; and
5. The Registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Registrant’s auditors and the audit committee of the Registrant’s board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Registrant’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant’s internal control over financial reporting.

Date: June 29, 2020

/s/ Asaf Berenstin

Asaf Berenstin
Chief Financial Officer
(Principal Financial and Accounting Officer)

**CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of Formula Systems (1985) Ltd. (the "Company") on Form 20-F for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Guy Bernstein, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: June 29, 2020

/s/ Guy Bernstein

Guy Bernstein
Chief Executive Officer

**CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of Formula Systems (1985) Ltd. (the "Company") on Form 20-F for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Asaf Berenstin, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: June 29, 2020

/s/ Asaf Berenstin

Asaf Berenstin

Chief Financial Officer

(Principal Financial and Accounting Officer)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-156686) of Formula Systems (1985) Ltd., of our reports dated June 29, 2020, with respect to the consolidated financial statements of Formula Systems (1985) Ltd. and the effectiveness of internal control over financial reporting of Formula Systems (1985) Ltd. included in this annual report on Form 20-F for the year ended December 31, 2019.

Tel- Aviv, Israel
June 29, 2020

/s/ Kost, Forer, Gabbay & Kasierer
KOST, FORER, GABBAY & KASIERER
A Member of Ernst & Young Global

CONSENT OF INDEPENDENT AUDITORS

OF

Magic Software Japan K.K

We consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-156686) of Formula Systems (1985) Ltd., of our report dated February 13, 2020, with respect to the financial statements of Magic Software Japan K.K as of December 31, 2019, which report appears in the annual report on Form 20-F of Formula Systems (1985) Ltd. for the year ended December 31, 2019.

/s/ KDA Audit Corporation

KDA Audit Corporation

Registered Auditors

Tokyo, Japan
June 25, 2020