

Software and Information Services

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Main Points:

- Total sales in the Israeli IT market are expected to increase 4.6% in 2017, led by services and software. In our opinion, demand from the financial and government sectors will contribute to aggregate demand, and also expansion in activity in growing fields such as cloud computing and business intelligence (BI).
- However, strong competition among the large corporations in these fields is expected to continue to push services prices downward. All this while at the same time employee salaries are rising and demand for workers is outstripping supply.
- The macro- data attest to the strength of the software services sector as well as computer consulting. Exports from the sector increased 16.5% in 2016. In addition, the number of employees in the sector has grown consistently, whereas within the industrial fields in the IT sector the number of employees has declined.
- Consolidation in the IT services sector is continuing. In 2016, as in previous years, the large corporations continued to acquire small companies and to expand into new areas of activity. All this in a sector in which 86% of revenues are concentrated within 6% of the businesses (according to 2015 data).
- Data from the financial reports of the companies in the information services sector indicate an increase in operating profitability and liquidity ratios, as well as a decline in the level of financial leverage in 2016, and also attest to a positive trend.

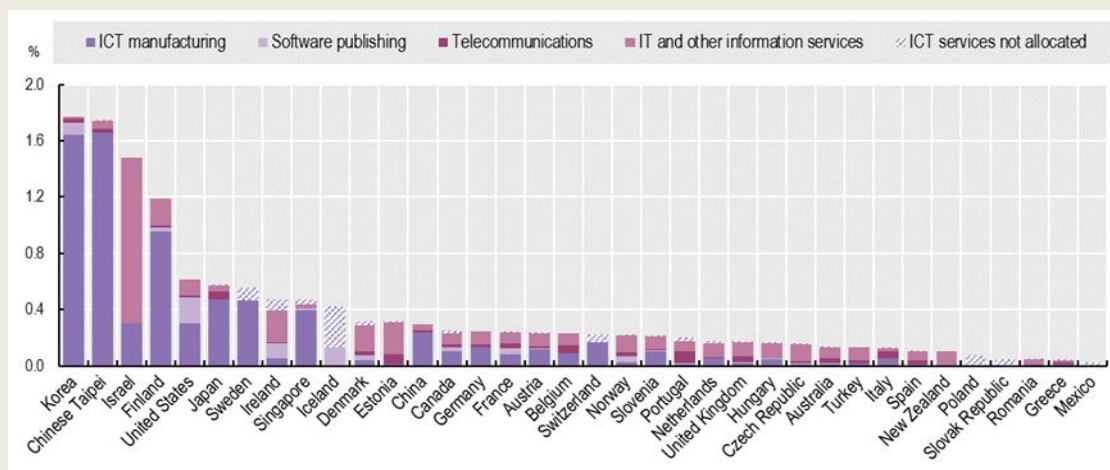
Background

The **information and communication technology (ICT)** sector groups together the activity of the industrial sectors with services that further information with the help of electronic means (processing, preparation, transfer, broadcast, and presentation). Sub-sectors included within the **ICT** sector are:

Industry	<ul style="list-style-type: none"> - Manufacture of computers, consumer electronics, magnetic and optical media - Manufacture of electronic components - Manufacture of communication equipment
Services	<ul style="list-style-type: none"> - Telecommunications - Computer programming and consultancy - Software publishing, data processing and Repair of computers
Wholesale activity	<ul style="list-style-type: none"> - Wholesale of computers, computer peripheral equipment, and software - Wholesale of electronic and telecommunications equipment and parts

The ICT sector is characterized by relatively high human capital and R&D costs, as a result of ever increasing competition within the technology fields that requires high investment in order to discover the “next big thing” and to achieve a competitive advantage, and sometimes also in order to remain relevant vis-à-vis competitors within the field. R&D expenditures as a percentage of GDP in the ICT sector in Israel are among the highest in an international comparison (see Chart 1). In addition, most of the R&D expenditures in Israel’s ICT sector are attributed to the information technology services sector – equaling 79% of total R&D expenditures within the overall sector in 2013.

CHART 1: R&D expenditures in the ICT sector as a percentage of GDP in an international comparison, 2013 data



Source: OECD

Israel's comparative advantages have helped to attract large international corporations, such as IBM, Google, Intel, and more, to establish branches and R&D centers in Israel, and to invest in the country's high-tech sector. According to the OECD, the large international companies are responsible for 51% of total R&D investment in Israel in the ICT sectors in 2013. On this regard, we note that the changes in corporate tax policy that are expected to be proposed by the Trump administration in the US are likely to change the current picture. Under the assumption that the expected reform in the US tax system will be accepted, then the large American firms, headed by technology companies, will be able to repatriate "trapped profits" to the US from other countries, and this at a relatively low tax rate.

It is reasonable to assume that due to this process, which re-centers the attention of American corporations towards activity within the US, will have some impact on R&D activity in Israel, while Israeli companies are acquired with the goal of relocating some activities to the US. This is due to a number of factors: first, a substantial cut in the US corporate tax rate will increase the worthwhileness of moving manufacturing and R&D centers to the US; second, in the event a change in taxation for the purpose of adding a border adjustment tax on American corporations will occur, then the incentive will increase for Israeli companies that export R&D products primarily to the US to transfer their centers to the US; third, reduction in taxes on profits that are returned to the US from overseas will reduce the motive to keep these in Israel, and consequently will reduce returning investment in the Israeli economy, while the emphasis instead turns to the acquisition of Israeli companies and transferring their activity and their growth, as much as possible, to the US.

Exports from the ICT sector account for a substantial portion of total Israeli exports. According to an initial estimate, in 2015 total exports of this sector amounted to NIS 64bn, which represent 19.2% of total exports of goods and services from Israel that year.

In this survey we will introduce the computer software services sector, computer consulting, and other accompanying services (62), because it includes the information services subsector, so it represents in some kind of manner the trends in the information services subsector. This sector includes the supply of expert services in the ICT field - writing services, customization, revisions, inspection, and software support; planning and design of computer systems; administration and operation of computer systems and facilities for data processing on location at the customer, centers of software R&D, and other technical and professional services within the field of computers. This sector is the largest among the sectors within the realm of ICT in terms of production and export.

In 2015 the sub-sector accounted for 46.6% of total production and 61.5% of total exports of the ICT sector (according to an initial estimate).

According to data from the Tel Aviv-based IVC Research Center, as of December 2014 there were 4,467 companies present in Israel in the fields of ICT. Of these 1,324 operated in the fields of IT and software. According to data from the Israel Central Bureau of Statistics (CBS), the weighted number of businesses¹ in the computer programming and consultancy services sector equaled 12,340 in 2015 (see Table 1). The table shows that most of the revenues in the sector are concentrated in only 3.6% of the businesses, which happen to be large and medium sized businesses (more details on this later). Furthermore, it is interesting to see that close to half of the businesses in the sector do not hire salaried employees, or in other words, a company of one person.

TABLE 1 – The computer programming and consultancy services sector (62), 2015 data according to VAT records

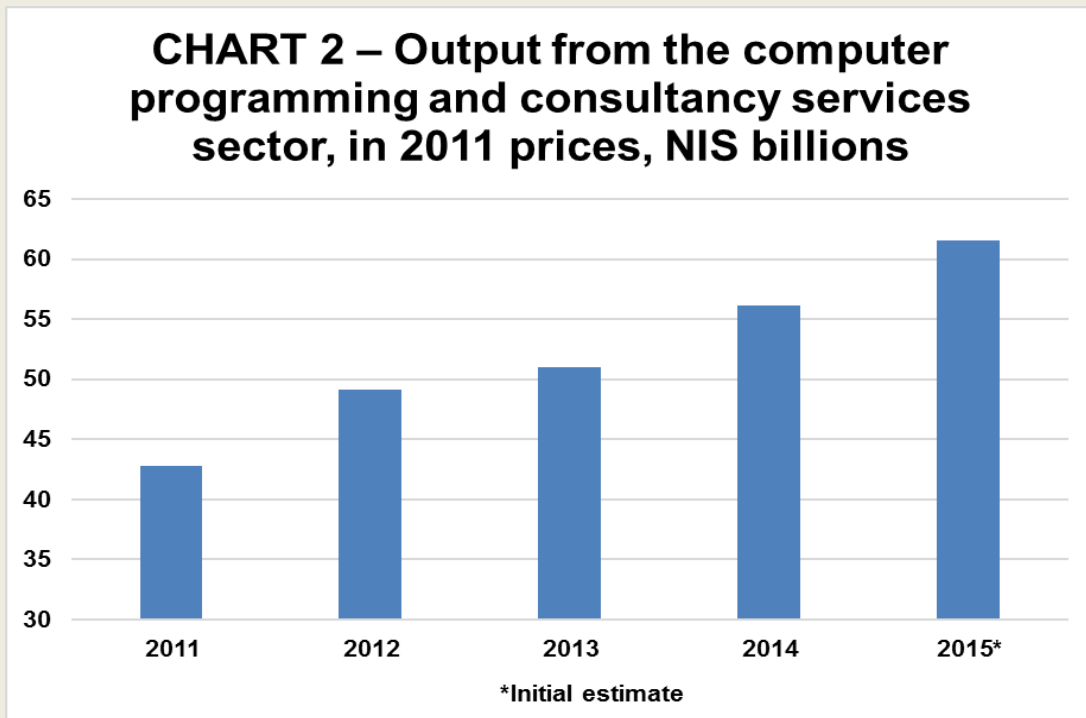
Weighted number of businesses	Revenues in current prices (NIS millions)	Type of business			
		Does not employ salaried employees		Employs salaried employees	
		% of total businesses	% of total revenues	% of total businesses	% of total revenues
12,340	74,359	46.8	2.4	53.2	97.6
Business categories according to annual revenues					
Up to NIS 19.99m		NIS 20m – NIS 99.99m		NIS 100m and more	
% of businesses	% of total revenues	% of businesses	% of total revenues	% of businesses	% of total revenues
96.4	19.7	2.7	21	0.9	59.3

Analysis from a macro-economic angle

The macro-economic data give an indication of the strength of the sector. As can be seen in Chart 2, output from the computer programming and consultancy services sector has grown at a comfortable pace over recent years. Thus, the real growth rate in 2015, according to initial estimates, equaled 10%, which is similar to the multi-year average over the last four years. This is not surprising since there are many opportunities in the sector, and there are constantly technological developments in new fields, such as cloud

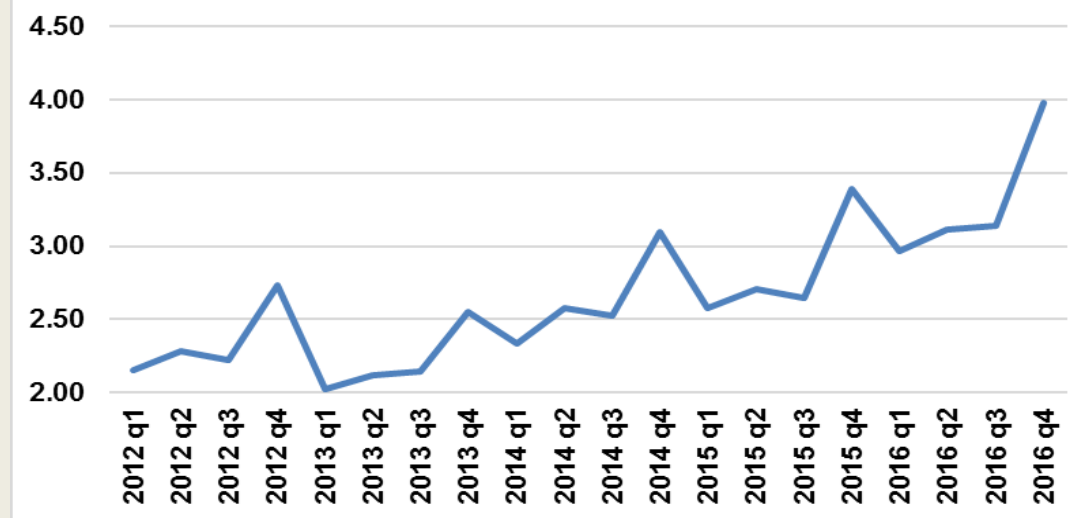
¹ A business is an entity that sells products and assets or provides services. In Table 1 data is presented on businesses with income above zero in at least one month of the year. The weighting takes into consideration the number of months in which income is registered, that is to say, a business in which revenues were above zero in only one month out of the year is counted as 1/12.

computing and the Internet of things (IoT), which are among the areas representing sources of growth and expansion.



The export of computer and software services is in an upward trend and is constantly growing, as can be seen in Chart 3. Exports from the sector increased 17.4% in nominal dollar terms last year (fourth quarter of 2016 compared to the parallel quarter in 2015). Total sector exports increased 16.5%, in nominal dollar terms in 2016, amounting to US\$13.19bn. Furthermore, since 2014, with the exception of the second and third quarters of 2015, sector exports increased by a double-digit rate in each quarter compared to the parallel quarter in the preceding year. The growth in the exports of the sub-sector is consistent with the trend in the overall Israeli economy – strengthening of services exports, at the expense of goods exports.

CHART 3: Exports of computer programming and consultancy services sector (62), unadjusted data in US\$ billions

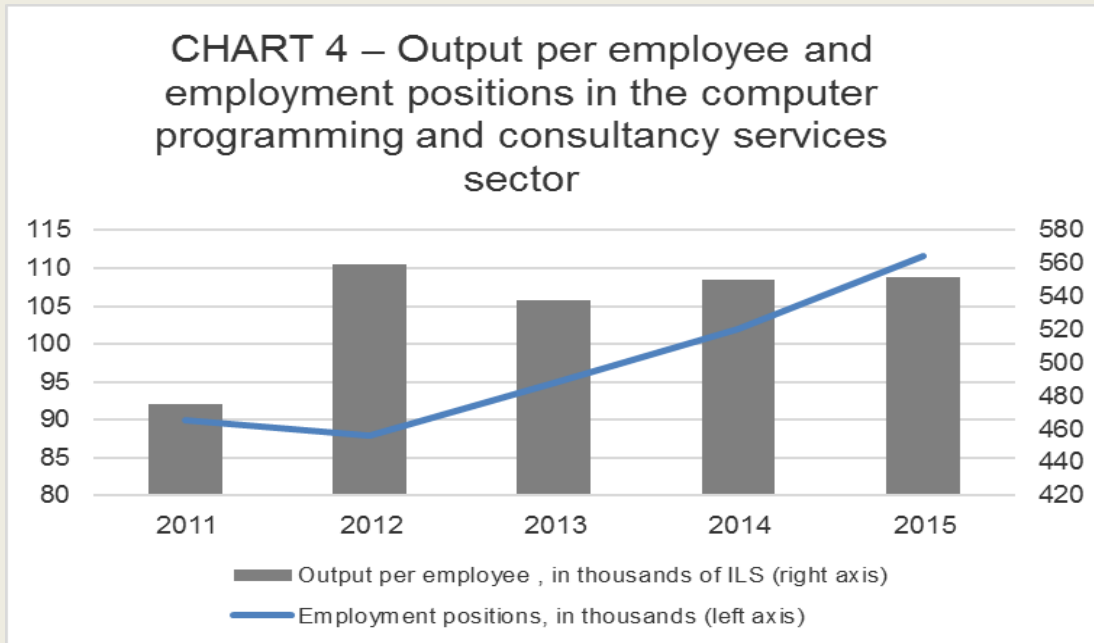


The number of employment positions in the sector is in an upward trend that began in 2013 (see Chart 4), indicating the sector is growing. In the computer programming and consultancy services sector the employees represent a primary factor of production; therefore, a substantial portion of the expenditures of companies in the sector is directed toward salaries. On this regard, we note that the average annual compensation² per employee in the sector increased 2.8% on average in the last three years. This is apparently against the backdrop of a greater demand for programmers and computer personnel over the available supply, and this makes it difficult for companies in the sector to find employees who match their demand, and costs companies ever increasing salary costs. At a time when the number of employment positions in the industrial activities of the ICT sector (such as the manufacturing of electronic components and communication equipment) is constantly declining, primarily due to competition on a cost basis from countries in east Asia, the increase in the number of employment positions in the computer programming and consultancy services sector is encouraging and represents another indicator of the strength of the sector.

An index on output per employee, which gives an indication of labor productivity, has been in an upward trend since 2011, with the exception of 2012. On the other hand, as can be seen, production per employee has still not returned to the peak level registered in 2012, and in 2015 the upward trend in labor productivity moderated. Of course the rise in this index is a positive development; however, in the scenario in which the moderation that occurred in 2015 stemmed from a “compromise” on the quality of

² Salary expenditures and accompanying costs

employees, against the backdrop of surplus demand for employees in the field, then the deterioration in the index is likely to continue and to weigh on future activity in the sector.



Where is the sector heading?

It appears that the sector has substantial growth potential in the coming years, this in light of the need, which is almost obligatory, of every organization, whether large or small, to operate, administer, and to analyze all accumulated information it holds. Thus, there is the need of large businesses, such as the large retailers that require software and information services for a wide range of uses, among them for example, administration of a membership club database that enables them to offer to customer's suitable sales that match the characteristics of their needs.

Also, a small neighborhood grocery store or convenience store needs software and information services in order to carry out money transfers and to maintain a pricing and inventory system. In addition, the organizations do not rest on their laurels and are required to react to changes occurring in consumption patterns and to update accordingly the software programs and the applications they use. Thus for example, the transfer from use of computers to the broad use of smartphones has led many organizations to create a modified version of their websites for smartphones, and designated applications.

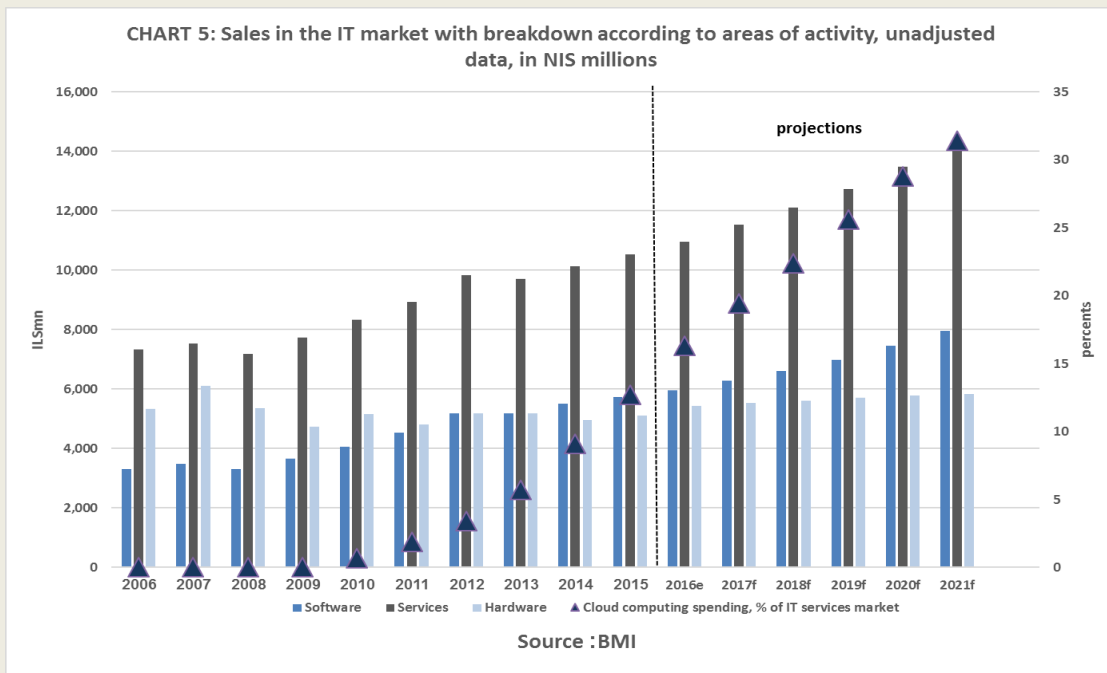
According to the forecasts of international research firm BMI (Business Monitor International – A Fitch company), sales of companies in the IT market³ in Israel will grow 4.6% in 2017 to NIS 23.4bn⁴ (see Chart 5), the highest growth rate in the last four years. The rise in sales will be led by software and services, whereas hardware is expected to show a slowdown in its rate of growth.

In the opinion of the company, the increase in revenues in the software field will derive primarily from the update of existing products; however, over the longer term also from information security due to a rise in cyber-warfare, such as – hacker attacks on the databases of credit card companies and also breaking into and sabotaging websites that are identified with Israel from nationalistic motives. The increase in revenues from IT services will stem primarily from new demand for cloud technology, particularly at medium- and small-sized organizations, and from the development in the realm of the Internet of things (IoT).

On this regard, it is worth noting the increase that has occurred in the cloud services activity portion out of total IT services in recent years, with this increase expected to continue in the future, as presented in the accompanying Chart. The hardware realm is expected to tread along with little movement as computing sales have reached stages of maturity, and environmental concerns will weigh on the sale of accessory and peripheral equipment, while on the other hand server sales are expected to climb. Israeli cyber activity is expected to experience demand from the US government, which is requesting to improve its condition in this realm in the US and in other places around the world wherever there is US interest.

³ The market is split into three unique areas: Hardware- PCs, servers, storage devices and accessories (such as printers); Software- business software, systems management and database management software and operating systems; Services- implementation, systems integration, maintenance and high value services

⁴ We note that there is no full identity between the Israeli CBS (Central Bureau of Statistics) data to the BMI data regarding IT sector. A part of the explanation is the different definitions by those two. Thus whereas the CBS define internet websites services and R&D services as an IT services, the latter don't. Nevertheless, according to our examination there is a positive correlation between the data provided by those two resources.



Many areas of activity are still in the process of growth or the prime of their lives

If we consider the new technology trends before us, such as the Internet of things (IoT), smart cities, and health IT, then it appears that the need for technology information services is expected to grow and expand.

The trend involving smart cities, which is turning out to be the next big thing, is attracting investment from IT companies that are interested in entering the field. This activity is expected to improve the services for the benefit of citizens and to save many costs for municipalities. Thus for example, recently Israel telecom company Bezek, in cooperation with a software company, launched a software platform that includes, among other things, garbage dumpsters that notify in real time when they need to be emptied and streetlamps that turn off automatically when a street shows no activity. Furthermore, the company has operated a pilot in the Israeli city of Modi'in.

The field of health-IT, which enables the monitoring of patients from afar in real time, is indeed only in its early stages of development. However, taking into consideration the lengthening of human life expectancy and the shortage of doctors and hospital beds in Israel, this field can be an efficient solution and it should expand in the coming years.

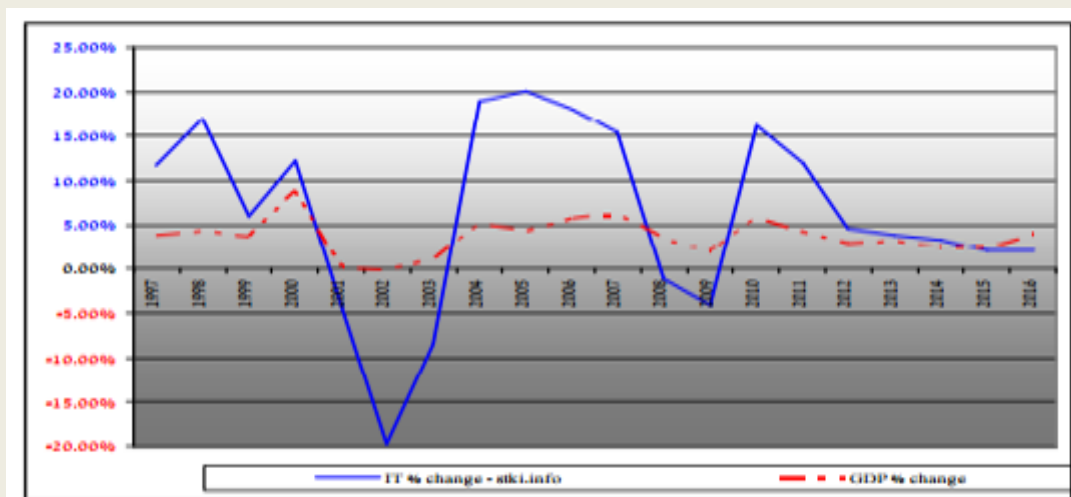
Additional fields that have started to be uncovered, and their growth is expected to continue include the field of business intelligence (BI), which enables organizations to administer, monitor, and to oversee their business operations; and cloud computing, which makes it possible to lower costs, thanks to the use of servers that are physically located at the service supplier, thus enabling savings in purchasing memory and applications. Each of the aforementioned are expected to enhance the demand for cyber security and information defense since they represent new attack targets.

The correlation between IT services activity and GDP growth hints at stable sales

Since sales of the IT sector in Israel account for a sizeable portion of the revenues of companies in the sector, the activity of the sector is correlated with the trends in local economic activity (see Chart 6). Thus, years of economic prosperity accompanied by an increase in profitability in the business sector should be considered a comfortable period for organizations to increase their investments in general, and particularly in fields of information technology. This is correct also regarding government investments in the fields of software and computing. Years of economic prosperity are seen as having high revenues from taxes that permit investments in computer systems and software, and the upgrade of existing systems. On the other hand, during years of moderate economic activity, organizations tend to be more cautious, and cut first from investment budgets since most of these are able to be postponed.

It is interesting to see that for the most part the changes in the IT market are greater than the changes in GDP. That is to say, in the years in which growth in GDP declines, negative growth is registered in sales of the IT market. Alternatively, in years in which an increase in growth is registered, the increase in sales in the IT market is greater. **Looking forward, in our opinion indeed the increase in GDP is expected to decline from 4.0% in 2016 to 3.4% in 2017, yet the change stems primarily from a number of one-time factors, which likely hints that the rate of change in the growth of sales in the IT market will be stable.**

CHART 6: IT market compared to the Israeli economy, annual growth rates



Source: Professor Arnia & Co. – Financial Advisors Inc.

The government and the financial sectors will continue to be central sources of revenue for the sector

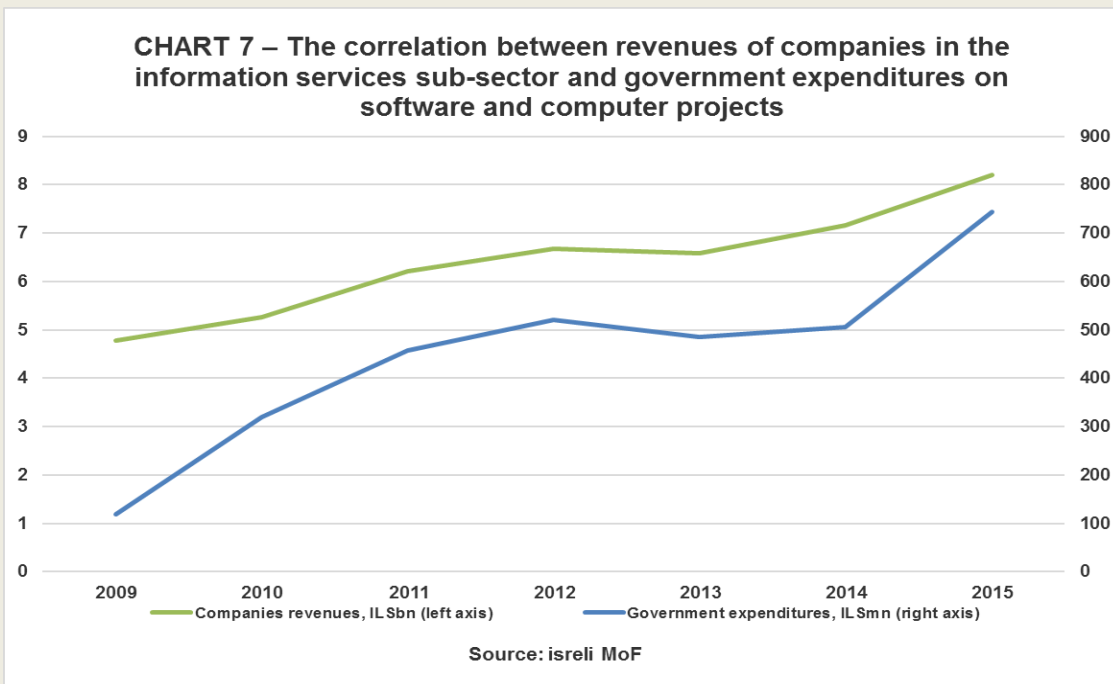
The companies in the IT services sector supply a substantial portion of their services to the government and financial sectors, and thus are dependent on developments in these sectors. Regarding the latter, the companies in the IT services sector profit primarily when there are regulatory changes that obligate the companies in the financial sector to update information systems. In the past, implementation of the Basel II Accords, which deal with the manner in which capital adequacy ratios in the banking system are calculated, and the FATCA regulations in the US, which obligate “foreign” banks to relay details on bank accounts of US citizens for tax purposes, and also the European Solvency Directive, similarly, among insurance companies, represented revenue sources for companies in the IT services sector.

Looking forward, when judging according to the developments in the financial sector, it appears that demand for IT services in the sector is expected to continue. This is thanks to additional regulatory measures that are expected to provide sources of revenue, such as the continuing implementation of Basel III guidelines led by the Israel Supervisor of Banks and the separation of credit cards from banks due to the conclusions of the Shtrum Committee, as well as the establishment of digital banks (for example, “Pepper” – the first digital bank in Israel, introduced by Bank Leumi).

Over the years many projects in the government sector represented a substantial revenue source for companies in the sector. Especially notable are all the projects related to the topic of “E-government”, which has the goal of providing information and government services to citizens through the use of technological means. These projects include: “Merkava”, which is an Israeli project involving a broad computing system that links government ministries; “Tamar”, which is a platform that enables business owners, government employees, and citizens to carry out actions vis-à-vis the various government ministries; “Shoham”, which is a government payment service that enables payment of taxes, fees, and fines over the Internet; and the very last, the establishment of “the pension clearing house”, which is a database that bundles data for savers, employers, and pension advisors. On this regard, it is interesting to see, as presented in Chart 7, the correlation between revenues of the public companies in the information services sectors to the government expenditures on software and computer projects. Of course it is possible to link this with what was noted above, regarding the correlation between economic activity and activity in the IT sector, which benefits as well government revenues, which in turn enables the government to increase its investments in the fields of software and computing.

⁵ According to the classification of the Israel Securities Authority, see company details in the accompanying table, in the section in which an analysis of company financial reports is presented.

Looking forward, it appears that government expenditure on computer and information systems is not expected to fade. According to the main principles of the 2017-2018 government budget, the Ministry of National Infrastructures, Energy, and Water Resources plans to establish an information system that will concentrate all the data on natural gas and oil exploration, with the goal of making things easier for oil and gas explorers. In addition, the transfer of Israel Defense Forces (IDF) bases to the Negev desert region involves the transfer of information and computer systems. Furthermore, it is reasonable to assume that maintenance and upgrading existing systems will also provide a substantial revenue source.



Consolidation within the sector, which concentrated activity in the hands of a number of large groups, is continuing

The advantages of economies of scale for the large companies, which are able to provide a broad set of services, represent a factor that makes it easier for customers, and highlights the need to combine with a number of suppliers (one-stop-shop). Also advantageous are national distribution, length of time in the business, broad experience in the field, and financial backing. All these factors are required in providing such substantial, sensitive services. These factors help the large groups to maintain their market share and to continue to attract new customers. In addition, the customers in the sector are characterized by a high degree of loyalty and they do not change their suppliers often. This is due to the high barriers associated with changing existing information systems in an organization.

The search for new technologies, customers from different areas of activity, and penetration into new areas are reflected in the many acquisitions of small companies by the large groups. There are many examples of this just from recent years. Thus, Malam Team Ltd. acquired in 2016 the purchase of the activities of Panda Advisors Ltd. in the realm of provident funds, and in the years that passed they also acquired Eltel Technologists Ltd. and consulting company CBIT. Matrix IT Ltd. acquired over the last two years the companies NIT and STONS in the US, and AVIV AMCG in Israel, while in all the years of its activity it acquired tens of companies. One Software Technologies Ltd. acquired in 2016 Dicomano Labs, which provides cloud solutions, and Nibit which is active in software systems for retail chains. Hilan Tech Ltd. acquired in 2017 Salto, in 2016 it acquired a portion of Danel Software, and in 2014 it acquired Ness Technologies Israel Ltd.

However, there is nothing in the current consolidation moves in the sector to create a sense of comfort for the large corporations. And this is because activity in the realm of information services is dynamic and competitive, and it is difficult for the large companies in the sector to create exclusivity. All this represents a factor for pressuring prices for services downwards, whereas employee salaries, which represent a primary factor of production, are constantly rising.

Analysis of the financial results of the public companies in the information services sector⁶

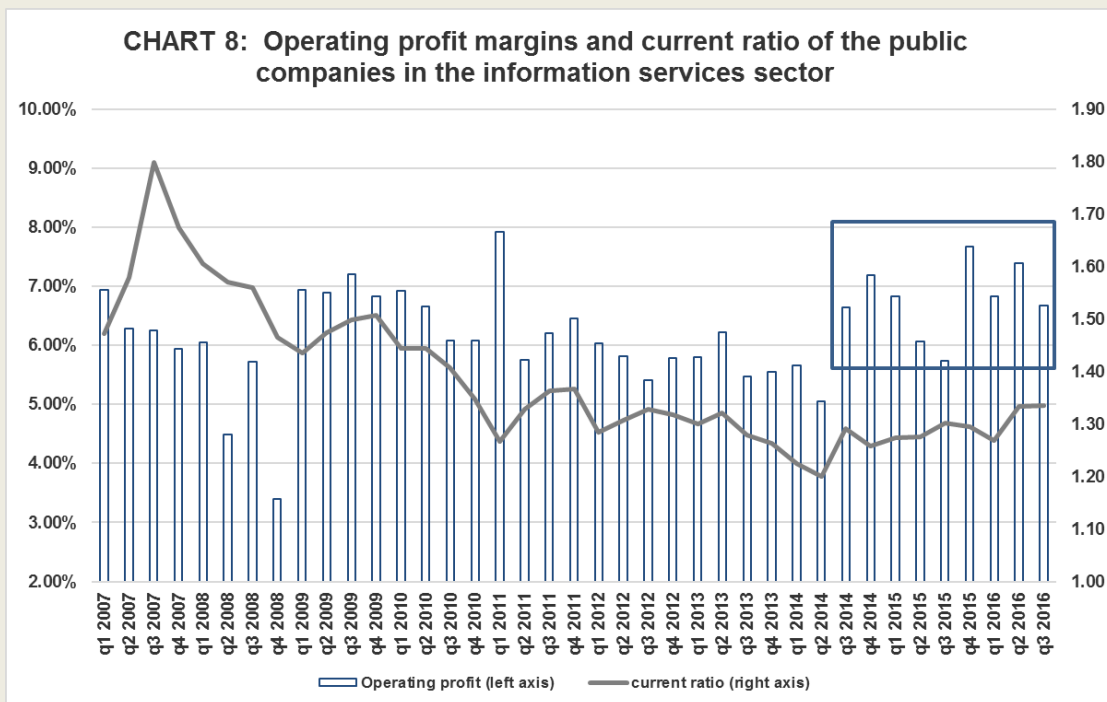
The public companies participating in the analysis include⁷:

Company Name	Relative proportion of the aggregate balance sheet
Matrix IT	30.8%
Malam Team	20.9%
Hilan	14.9%
Computer Direct Group (Michshov Yashir)	14.1%
E & M Computing Ltd.	9.4%
Taldor Computer Systems Ltd.	9.2%
A.L.D. Advanced Logistics Developments	0.8%

⁶ Excluding software. According to the classification of the Israel Securities Authority (ISA).

⁷ Data of the public companies: Calanit Carmon Software Services and One Software Technologies Ltd. were omitted from the analysis because they are owned by Computer Direct Group Ltd. (Michshov Yashir).

Looking over the long-term, it can be seen that the quarterly **operating profit margins** have been climbing over the past two years, compared to the years 2011-2013. The average aggregate operating profit margin over the past two years equals 6.8%, compared to 5.8% in the preceding three-year period (see Chart 8).



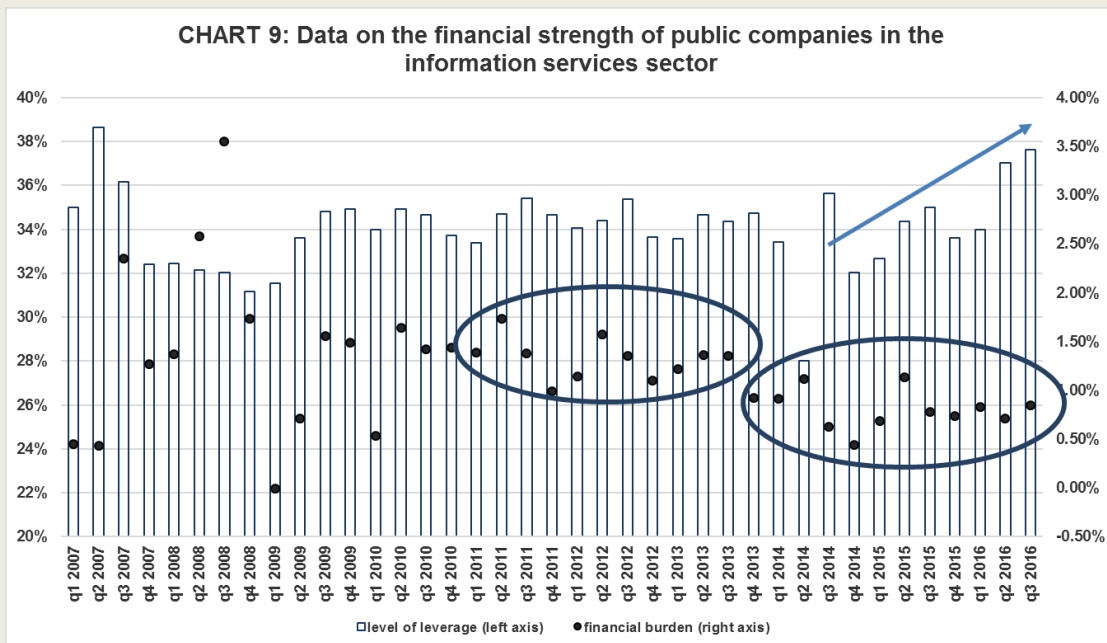
Liquidity indices were in an upward trend in 2016. The aggregate current ratio (the ratio between current assets and current liabilities) equaled 1.33 in the third quarter of 2016, without a change compared to the second quarter of the same year. However, when compared to the same quarter of 2015 the current ratio increased 0.03 percentage points.

The aggregate quick ratio (the ratio between current assets excluding inventory and current liabilities) equaled 1.26 in the third quarter of 2016, representing a slight increase of 0.01 percentage point compared to the preceding quarter and an increase of 0.04 percentage point compared to the parallel quarter in the preceding year.

Looking over the long-term, the liquidity indices that were registered in the second and third quarters of 2016 are the highest since 2012. The rise in the liquidity ratios is encouraging because these ratios reflect the ability of the companies in the sector to cover their current liabilities from existing resources under their control.

The aggregate **level of leverage**, which is measured by the ratio between shareholder equity and the value of the balance sheet, has been in a downward trend that started in the second quarter of 2016, as can be seen in Chart 9. Thus, in the third quarter of 2016 this ratio equaled 37.5%, and this is compared to the long term average equaled 34.1%

The aggregate **financial burden** (the ratio between finance expenditures and revenues), as can be seen, has also declined. Probably as an outcome of the historically low monetary rate of the bank of Israel. The decline in the level of leverage is positive, because it lowers the costs stemming from raising foreign capital, and consequently lowers the financial burden, and therefore benefitting the profits of companies in the sector.



In summary, the IT services sector has been showing strength already for several consecutive years. Output of the sector has increased continuously over this time. The momentum in services exports has not skipped over exports from this sector. Employment positions in the sector are increasing, whereas in the industrial segments within the information technology sector the number of employed persons is decreasing.

According to the forecasts, revenues of the companies in the IT services sector are expected to grow also in the coming year, led by new areas of activity, to which the large groups in the sector are expanding, primarily through the acquisition of smaller companies. Demand from the most important sectors, government and finance, is

expected to continue, due to the upgrade of existing systems and the implementation of regulatory measures.

On the other hand, competition between the large groups that is pressuring prices downward, and also the expectations for a moderation in the 2017 growth rate, are likely to weigh on companies in the sector.

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