IT Companies: Trends and Outlook

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Abstract: The paper aims to explore the income stability of 9 IT companies that are high tech leaders, and to single out the group of the most attractive ones among them. Hence, the authors conducted an analysis of the dynamics of the actual and projected level of the net income. The scholars selected Alphabet, Apple, Cisco System, Microsoft, Dell Technologies, HP Enterprise, IVM, Ericsson, and Huawei for the research. The given study used heuristic analysis, as well as least squares, confidence intervals and clustering, in order to evaluate the companies' performance. The research revealed that Alphabet, Apple, Cisco System, Microsoft Dell Technologies, IVM, and Huawei enjoyed the increasing dynamics of net income, whereas the indicators of HP Enterprise, Ericsson had decreasing dynamics both in actual and forecast values. The paper determined the width of the confidence interval, which certified that Apple, Cisco System, Dell Technologies, and Huawei are the most stable companies. At the same time, Microsoft, HP Enterprise, IVM, and Ericsson experience the highest fluctuations. Simultaneously, the unfavourable position of the HP Enterprise and Ericsson is intensified by the fact that these companies have negative dynamics of the actual value of net income and its forecast. There is a number of reasons for this situation, however the major one is the transfer of capital to other enterprises.

Key words: high technology (high tech), innovative developments, net income, IT companies, forecast, confidence interval.

JEL: C 15, F 23, O 33

Introduction

Currently, high technology is not a well-defined issue and there is no unified vision of the prospects for its development. Nevertheless, cutting-edge technologies and various innovations are perceived as the major factors of economic success of many countries, driving them towards increasing competitiveness (Varavva, 2021; Klapkiv et. al., 2020). The impact of information and communication technology (ICT) on the development of society is increasingly noticeable, as most of them relate to the field of digitalization and communication (Trynchuk, 2017; Zhao et. al., 2019). In general, modern innovative developments include the following: artificial intelligence (AI), Internet of Things (IoT),

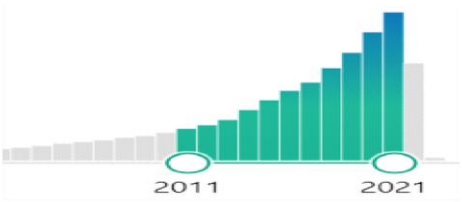
big data, blockchain, 5G, 3D printing, robotics, unmanned aerial vehicle (UAV) - commonly known as drones, genome editing, nanotechnology, and Solar PV (Afrifa et. al., 2022; Stirbu, 2014; Tsygankova et. al., 2021). High technology increases the level of labour productivity and the quality of people's lives. Artificial intelligence in combination with robotics changes the business landscape and transforms production. 3D printing techniques make unit production much cheaper, faster and of higher quality; it can automatically prototype new products (Borremans et. al., 2018).

The adoption of high technology by developing countries allows them to take a big step into the future. Advanced technology allows modern companies to achieve certain results, despite the low capital investments, resources, and opportunities (Khrapkina et. al., 2021). High technology enables the economy of less developed countries to achieve significant successful development in certain areas of the national economy (Arkhipov et. al., 2017). In Nigeria, for instance, the farmers managed to achieve significant results in smart agriculture thanks to the use of the Internet of Things. In Colombia, 3D printing and scanning have opened up enormous possibilities for the representatives of light industry to revolutionise the fashion industry. Therefore, the analysis of the experience of using high technology in certain areas of the economy and their implementation in economic reality is an important direction of fundamental and applied scientific research.

Theoretical premises

During the last decade, various papers related to the impact of high technology on the activities of individual companies and on the development of countries have been published in the economic literature. According to the data of PubMed (a free resource supporting the search and retrieval of biomedical and life sciences literature) alone, from 2011 to 2021, more than 444,000 papers that discussed the impact of high technology on the modern world were published (Fig. 1).

Figure 1. Dynamics of the Number of Publications Related to High Technology



Source: own study, the data are available for download from (PubMed, URL: https://pubmed.ncbi.nlm.nih.gov)

The relevant studies demonstrate that in the vast majority of cases scientists are interested in the development changes that the use of high technology can cause in countries. In particular, in their article, F. Caselli and W.J. Coleman (Caselli and Coleman, 2006) determine cross-country differences regarding the use of advanced technologies in the aggregate production function, when skilled and unskilled labour are imperfect substitutes. The scholars found that there is a dependence between the skills of workers and the technologies of the economy in different countries. Countries having high GDP use skilled labour more often and more efficiently than countries having low GDP. Moreover, these countries use unskilled labour relatively less efficiently. This trend is particularly evident in the field of IT technologies and in the activity of IT corporations in certain countries (Calabrese et. al., 2021). The low efficiency of the use of unskilled labour is explained by the fact that rich countries, which are skilled-labour abundant, choose technologies that are best suited to skilled workers; at the same time, poor countries, which are unskilled-labour abundant, choose technologies more appropriate to unskilled workers (Egorova et. al., 2022). The scientists also focus on alternative explanations, such as capital-skill complementarity and differences in schooling quality (Mitić et. al., 2017).

In his 'Identification of the Technology Frontier' E. Balatsky (Balatsky, 2021) examines the innovation market. The author introduces the concept of a technology frontier. He understands it as the relative productivity of labour relative to the technological leader – the United States. The scholar investigates the conditions under which it is justified for developing economies to move from large-scale borrowing of foreign new technologies to their independent development within the country. The application of the econometric model in order to determine the specified frontier continues the ideas of J. Schumpeter regarding two innovation stages: invention and diffusion of a new technology. The scientists established that both types of costs depend on relative labour productivity. To improve the accuracy of the calculations, countries were clustered into two groups: advanced, for which the technology frontier has been crossed and their own developments of new technologies prevail, and developing, for which the problem of the technology frontier remains important. The assessment showed that the current value of the technology frontier is in the region of 70% of labour productivity in the United States. Furthermore, this value tends to increase, which creates additional difficulties for the transition of catching-up countries

in the field of high-tech development. This is particularly relevant for the IT sphere. US investments in this field make the lag behind the countries of the digital periphery more and more significant.

A study on the contribution of imitation activities and innovative research effort on productivity growth for the US companies and some European leading economies (Pérez et al., 2015) is also worth attention. Having this in mind, the author carried out a comparative analysis with two model specifications. In the first group, the scholar studied the results of companies that actively used R&D efforts in their activities, and the second – those that saved on such works. Taking into account the method of determining the technological frontier, it was possible to determine the leading countries from among the researched technological companies. This study was conducted for a 50-year horizon, and thus it shows the establishment of uniformities in the long-term period.

Chinese scientists studied the importance of innovation in combination with intellectual property for different countries. Scientists state that the intellectual property right (IPR) protection with regard to innovative technologies significantly affects the transfer of technologies from one country to another (Zheng et al., 2020). The scientists from Tunisia, who managed to assert that lead users (LUs) who possess advanced skills and valuable knowledge can contribute to enhance new successful innovations, and hence, enable companies to gain short and long-term profits (Marzouki and Belkahla, 2020), reached a similar conclusion.

B. Guler was interested in studying the effects of innovations in information technology on the mortgage and housing markets. The scientist modelled the situation on the mortgage market, where he studied the impact of idiosyncratic income, as well as moving and house price shocks. The research proved that the IT improvement can rationalize the loosening of mortgage loan conditions, which in turn could even mitigate financial crises (Guler, 2015).

IT are also widely used in the environmental sphere. Italian scientists studied whether various types of information and communication technologies adoption and other innovation practices (techno-organisational change and training courses) are complementary inputs with respect to the adoption of specific environmental innovations. They have managed to discover that complementarities exist between technological

innovation and both adoption of information and communication technologies management systems and information and communication technologies for cooperation with clients (Antonioli et al., 2018).

B. H. Hall and C. Helmers focused on determining methods to stimulate innovation and diffusion of climate-change related technologies. The publication investigated the characteristics of 238 patents on 90 inventions contributed by major multinational innovators to the "Eco-Patent Commons". The research revealed that the cost of these innovations is not meaningfully important for the stimulation and spread of innovations in the field of green technologies. Therefore, one can state that there is not only an increase in social consciousness regarding climate protection in society, but also a desire to accelerate these processes by introducing available technologies regardless of the availability of funds to pay for their use (Hall and Helmers, 2013).

Studies of the localisation of technology parks and their impact on the activities of surrounding companies have gained great importance. After analysing the impact of various characteristics of science and technology parks (STPs) on the productivity of their tenants, the scientists found that firms located near science and technology parks demonstrate higher productivity and also achieve higher results of their activities (Albahari et al., 2018).

Simultaneously, there are publications that show the presence of obstacles in the diffusion of innovative technologies in poor regions. Nonetheless, such local communities are hardly involved in the innovation development and they are a minority. Therefore, the development assistance received by Finnish private enterprises for the development of their innovative processes did not bring the expected results in the development of the region. As a result, innovation activities of the Finnish companies focus on an educated wealthy minority and rather developed markets of middle-income countries (Hooli, 2021).

In this aspect, there is also very relevant research on the maturity of IT companies to digital transformation use (Vovk and Zyza, 2013). Companies try to keep abreast of the latest innovations and cutting-edge technologies, but not all of them are ready to implement them. German scientists have identified five dimensions that need to be evaluated for maturity through a number of additional criteria. These dimensions include corporate

culture, openness to collaboration (ecosystem), operations (internal processes), management, and business strategy (Gollhardt et al., 2020).

Numerous publications devoted to the impact of advanced technologies on the economic, ecological, and social development of society show that the impact of these ICT covers almost all domains of human life and radically changes them. Those countries that do not just follow the general trend of innovation development, but lead it, determining where the world should go, will indicate the main vector of global development. At the same time, the more actively technological changes are introduced, the more companies try to keep in touch with the latest innovations and technologies. Even though companies differ in their approaches to transformation in detail, the success of their development can always be evaluated basing on quantitative indicators, the key of which is the net income of companies.

The aforementioned finding prompted the analysis of the dynamics of net income of 9 companies, which are considered world leaders in the IT sphere. The main objective of the analysis was to establish the stability of their income in a 5-year perspective and to single out a group of the most attractive ones among them. The analysis of global `IT market trends presented in this article is considered a case study. We have not analysed quantitative indicators and trends of IT development in the global dimension by world regions, sub-regions or individual economies. The authors have focused on analysing the performance of leading IT corporations, examining the shift in one of their key performance indicators: net income.

Methodology

Since high technologies primarily affect the IT sphere, we selected 9 companies (Alphabet, Apple, Cisco System, Microsoft, Dell Technologies, HP Enterprise, IVM, Ericsson, Huawei) that actively use such information technologies as artificial intelligence, Internet of things, Big data, Blockchain, and 5G for our research.

The given study used heuristic analysis, which involved ranking of the companies depending on their income stability, in order to evaluate the companies' performance. The choice of the revenue indicator is justified by the fact that it is revenue that is the

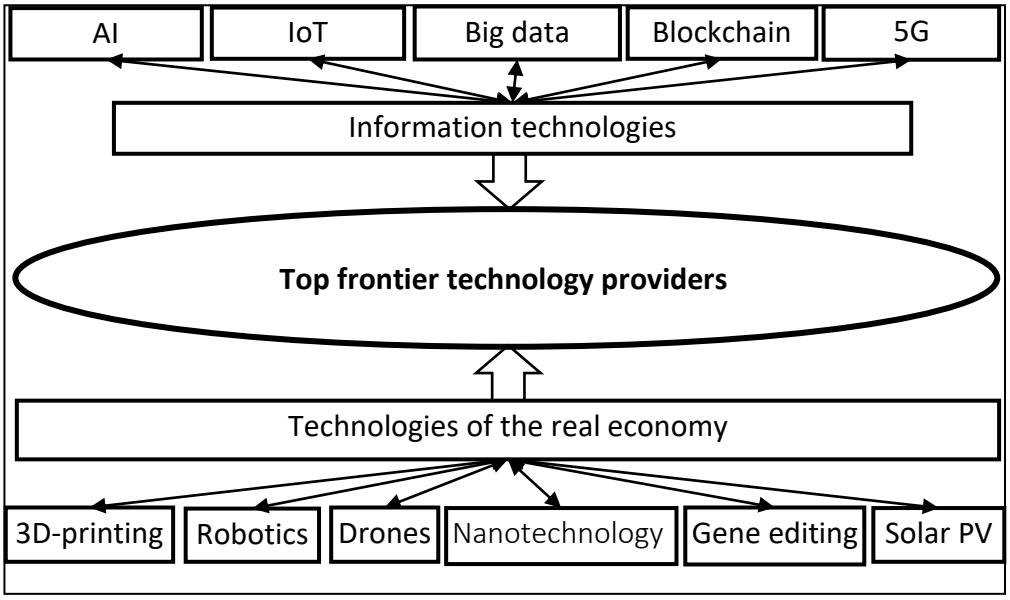
key indicator that reflects the performance of companies in the markets and that affects the competitiveness of companies.

In this paper, the methodology used is the Statista business data platform (Statista business data platform, 2021) for the graphs and charts of the companies' net income dynamics, and the least squares method for a 5-year forecast. Aiming to determine the accuracy of the forecasting model, the confidence interval was 95%, which means that 95% of future points are expected to fall within this radius from the forecasted result (with normal distribution). The methodology also included grouping of the companies basing on the determined data regarding the percentage of the width of the confidence interval to the value of the forecast for the next year. Given that one group consisted of the companies which behaviour can be predicted and those companies for which there cannot be a qualitative forecast.

Results

Nowadays, in the modern market environment, the most common advanced technologies are divided into 2 blocks: information technologies and technologies of the real economy (Fig. 2).

Figure 2. Most Common Advanced Technologies



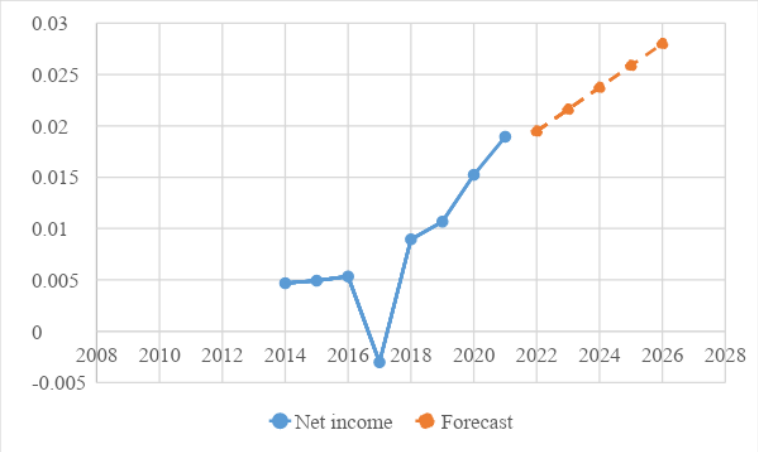
Source: own study, based on United Nations (2021)

Artificial intelligence (AI) is commonly defined as the capability of machines to replicate the cognitive abilities that were previously performed by the human brain. Specific applications of AI that focus on narrow tasks are now widely available and can be used, for example, for virtual assistants in smartphones, suggestions based on customer's online purchasing habits, solutions for credit card fraud or spam detection, etc. New versions of AI are based on machine learning and use large data sets. Let's analyse the net income dynamics for 2 companies that widely use AI in their products (Fig. 3).

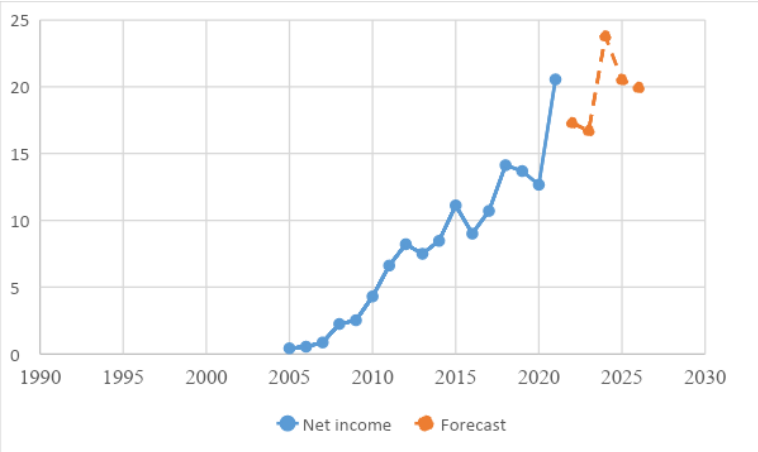
Figure 3. Net Income Dynamics and Forecast for the Companies

Working with Artificial Intelligence (in billion U.S. dollars)

Alphabet



Apple



Source: own study, based on Statista business data platform (2021) Technology & Telecommunications, Annual revenue of Alphabet from 2011 to 2021 & Global revenue of Apple from 2004 to 2021

Figure 3 demonstrates the dynamics of the net income of the most successful companies in this sector and its forecast for the next 5 years.

It is also obvious that both companies are showing a gradual increase in net income. This indicates their strong position in the market. Alphabet's forecast curve is rapidly climbing due to improved internet market conditions in artificial intelligence (with the exception of 2017, when the European Commission fined Alphabet €2.42 billion for antitrust violations). Apple's forecast curve shows some growth in 2017, which may be due to technological blunders by its main competitor; in particular, Samsung was unable to offset the negative effects of the release of the failed Galaxy Note 7 base model, which led to a significant drop in sales.

Alphabet's confidence interval is very significant (according to the forecast, 2×48.90% of the predicted value in the next year), which is evident through a noticeable decrease in net income in 2016-2017. There is a 14% decrease compared to last year. Cost per click (the amount Alphabet charge advertisers) has dropped significantly year-on-year, and Alphabet attributes this trend to the shift toward mobile devices and the growing importance of YouTube ads, which perform lower than desktop ads. Simultaneously, the company's earnings report indicated that Google's traffic acquisition costs as a percentage of revenue will continue to grow however the pace will slow later this year. General Google expenses, including the payments to phone makers like Apple that use its services, have reached $6.45 billion, or 24% of Google's ad revenue. This is 33% more than last year. In the interim, investors are concerned that further increases in these expenses could reduce Google's revenues (D'Onfro, 2019).

As evidenced by the forecast, Apple, despite its ups and downs, generally has positive dynamics. The confidence interval illustrating the deviation is only 2×15.19%. The iPhone maker has been able to keep up the unprecedented growth of the past 15 years. In its last fiscal year, which ended September 25, Apple delivered 33% revenue growth to $365.8 billion thanks to strong demand for 5G iPhone upgrades. But that growth spurt came after a year of single-digit sales growth and the 2019 fiscal year when Apple's sales declined.

The bull case for Apple is that it has built an ecosystem of a billion consumers who spend money on services and that it is well-positioned for future categories like self-driving cars and augmented reality. Moreover, Apple (NASDAQ:AAPL) is trading at about 30 times its

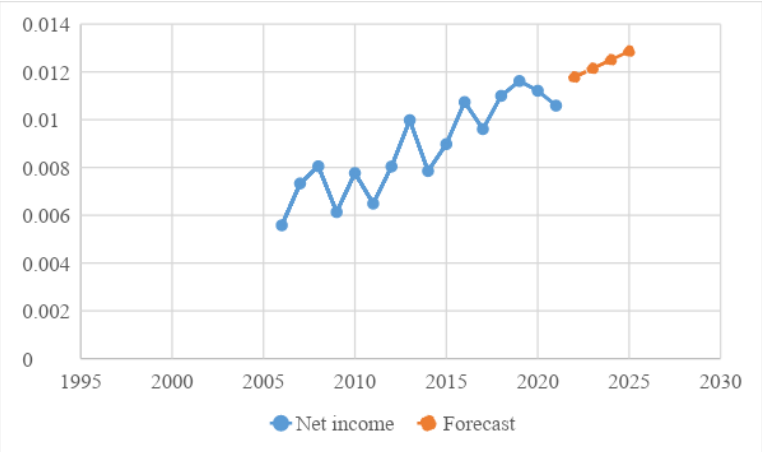
expected 12-month earnings, according to Refinitiv data. At the beginning of 2021, this factor was 32. Hal Eddins, chief economist at Apple shareholder Capital Investment Counsel, said Apple has been a "safety stock" through the pandemic and that investors are likely expecting solid future sales.

Some analysts believe Apple has plenty of room to grow in the coming years, with future products such as the Apple Car (Stephen, 2022).

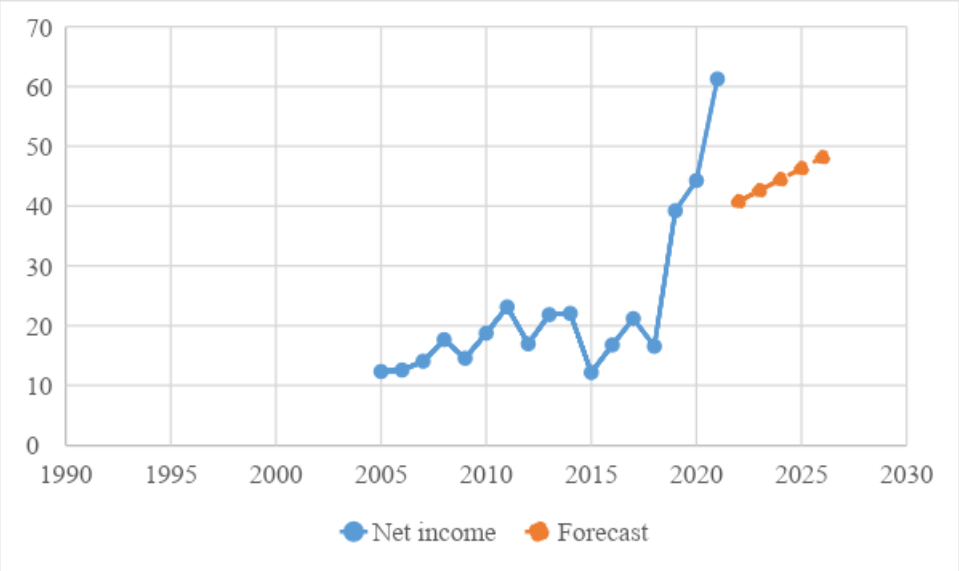
The Internet of Things (IoT), sometimes referred to as the Internet of Objects, is a concept of a network consisting of interconnected physical devices that have built-in transmitters, as well as software that allows automatic transmission and exchange of data between the physical world and computer systems. At the same time, it uses standard communication protocols. In addition to transmitters, a network may have actuators embedded in physical objects and interconnected through wired or wireless networks. The noted interconnected devices, which have the ability to read data and actuate, programming, and identification function, also make it possible to eliminate the need for human participation in many processes, due to the use of intelligent interfaces. Such companies as Cisco System and Microsoft are among the most powerful companies in this field (Fig. 4).

Figure 4. Net Income Dynamics and Forecast for the Most Successful Companies in the Field of Artificial Intelligence (in billion U.S. dollars)

Cisco System



Microsoft



Source: own study, based on Statista business data platform (2021), Technology & Telecommunications, Cisco Systems' revenue worldwide from 2006 to 2021 & Microsoft's revenue from 2015 to 2021 financial years, by segment

The charts show the net income increase in both companies. In Cisco System, the growth occurs with noticeable fluctuations, possibly due to negative consumer attitudes towards the company after the dot-com crash in 2004. Since 2005, the company has begun to pick up sales again, but with a more measured and deliberate strategy. The presence of a number of established business platforms and technologies that have continued to perform effectively despite the overall industry downturn has played a large positive role in this. Overall, Cisco System shows growth in the forecast. The confidence interval is 2×15.04% of the predicted value, which indicates a good approximation and the absence of highly noticeable fluctuations. A detailed analysis confirms that the largest revenues of Cisco Systems are still generated in the countries of North and South Americas, particularly, the total revenue generated by the company in 2020 was $29.29 billion, a 5% decrease from the previous year. In EMEA (Europe, Middle-East, and Africa), sales decreased by 3% and amounted to $12.66 billion, and in APJC (Asia Pacific, Japan, and China), sales decreased by 6% and amounted to $7.35 billion.

Cisco reported that 2020 fiscal year net income fell to $11.21 billion from $11.62 billion. Along with the financial report, Cisco announced a restructuring plan that included a voluntary early retirement programme with compensation and job cuts. About $900

million has been allocated for these events. At a conference with analysts, Cisco Systems CEO Chuck Robbins said that the company aims to reduce its annual expenses by $1 billion (Company Cisco Systems, 2022).

The analysis revealed that Microsoft's results show different dynamics. Until 2019, the financial situation of the company was stable. However, starting from 2019, we have been observing a rapid rise in indicators, thanks to a series of acquisitions by other AI data companies. The forecast curve has also gone up. The behaviour of net income is very unpredictable, as one can see from the graph and the confidence interval (2×46.4% of the predicted value). As of today, Microsoft's market capitalisation of the IT sector is tremendous, making its shares quite important on the New York Stock Exchange. The corporation has successfully survived several crises. The period from 2007 to 2013 was particularly complicated for the company. Currently, the company's securities are showing a confident growth. For most stock market investors, Microsoft assets are one of the most desirable ones. They are blue chip stocks. By using them in trade, one can make a steady profit.

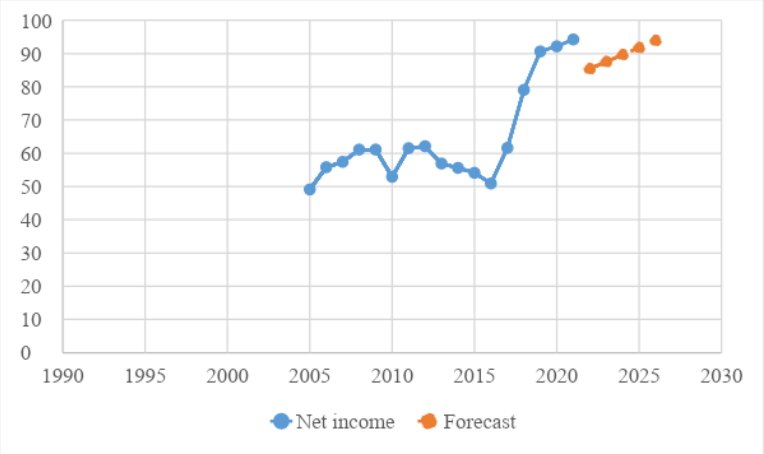
The next type of advanced technology is Big data. Big Data is a combination of structured and unstructured data of huge volumes and significant diversity, effectively processed by horizontally scalable software tools. The technology appeared in the 2000s and it is an alternative to traditional database management systems and business intelligence (BI) solutions.

In a broad sense, big data is spoken of as a social and economic phenomenon associated with the emergence of technological capabilities to analyse vast amount of data, and in some problem areas − the entire world’s volume of data.

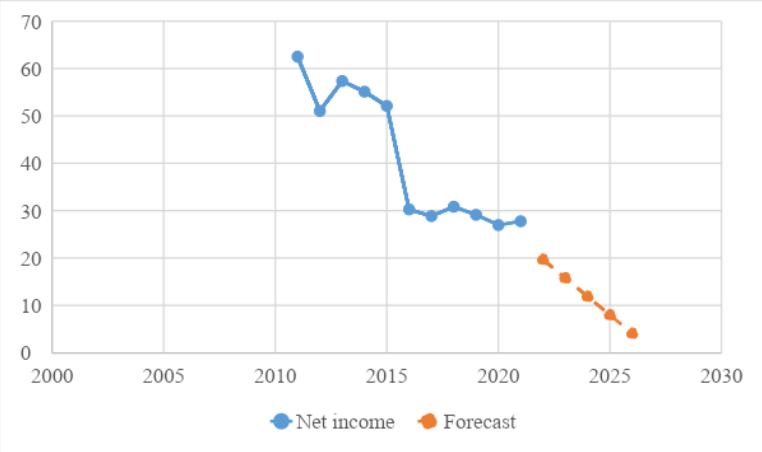
Traditionally, the three Vs are singled out as defining characteristics for big data, namely: volume (in the sense of the amount of physical volume), velocity (in the sense of both the growth rate and the need for high-speed processing and obtaining results), and variety (in the sense of the possibility of simultaneous processing of various types of structured and semi-structured data); later, there were multiple variations and interpretations of this feature. Dell Technologies and HP Enterprise are among the leaders in the field of Big data. Let's take a look at their dynamics and forecast (Fig. 5).

Figure 5. Net Income Dynamics and Forecast for the Most Successful Companies in the Field of Big Data (in billion U.S. dollars)

Dell Technologies



HP Enterprise



Source: own study, based on Statista business data platform (2021), Technology & Telecommunications, Dell Technologies net revenue worldwide from 1996 to 2022 & HP (Hewlett Packard Enterprise's) net revenue from 2011 to 2021

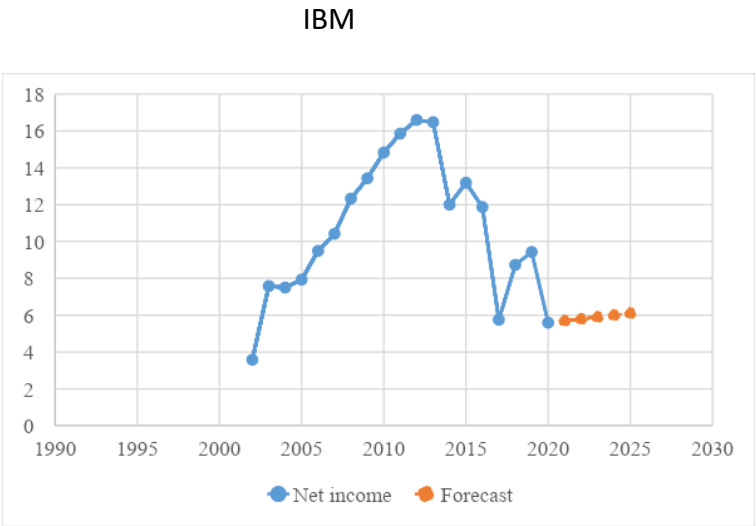
It is quite evident that in terms of net income, Dell Technologies remained about the same level until 2016. Starting from 2016, this indicator began to increase sharply. This is due to Dell Technologies' acquisition of EMC. On September 7, 2016, Dell Technologies announced completion of the acquisition of EMC Corporation. The acquired EMC became part of the renewed Dell Technologies Corporation as a subsidiary company named "Dell EMC". Dell's units dealing with the sales of enterprise servers, data storage systems, and some other devices related to the corporate market were transferred to Dell

EMC. The forecast curve is an upward straight line. The value of the confidence interval is moderate (approximately 2×23% of the predicted value).

We would like to study the graph depicting the dynamics of HP Enterprise net income. We could notice that its income drastically fell in 2016 and gradually continues to fall. This forecast is negative, because there has been a split of parent company Hewlett-Packard to separate activities with Big Data. The difference in the confidence interval is extremely significant (2×61.78% relative to the forecast). Here are the reasons for this sharp drop in 2016. In May 2016, the Company announced a tax-free spin-off and merger of its Enterprise Services business (with a turnover of $19 billion, formed from the EDS company) with competing Computer Sciences Corporation ("CSC"). This caused a negative forecast of the net income dynamics of this company.

The next advanced technology we will analyse is Blockchain. This segment of the high-tech market has such leaders as Microsoft, whose graph was presented above, and IBM. The first step we would like to take is to analyse the graph of the IBM net income dynamics (Fig. 6).

Figure 6. Net Income Dynamics and Forecast for the Most Successful Companies in the Field of Blockchain (in billion U.S. dollars)



Source: own study, based on Statista business data platform (2021), Technology & Telecommunications, IBM revenue worldwide from 1999 to 2021

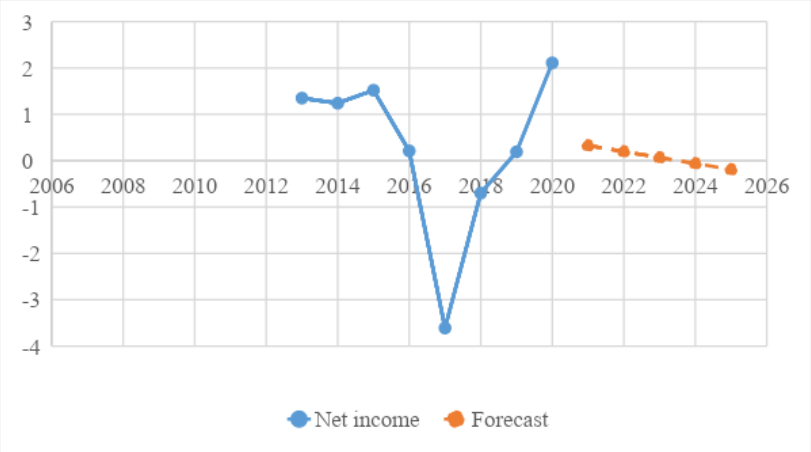
The patterns represented in the figure show that, until 2012, the IT company enjoyed steady growth. Then the curve rolls down in a noticeable wave-like fall. Afterwards,

the projected straight line signals moderate growth. However, the confidence interval is very large, i.e. 2×111.75%. The overall decline in net income since 2013 is related to IBM's acquisition of SoftLayer Technologies, a large international hosting provider, which operated 13 data centres in the United States, Singapore and Amsterdam, most of them in co-location facilities, for about $2 billion. The other reason is related to another investment: in 2014 IBM announced that it would invest $1.2 billion in expansion of its global private cloud network including the construction of 15 more data centres as part of the IBM's cloud strategy.

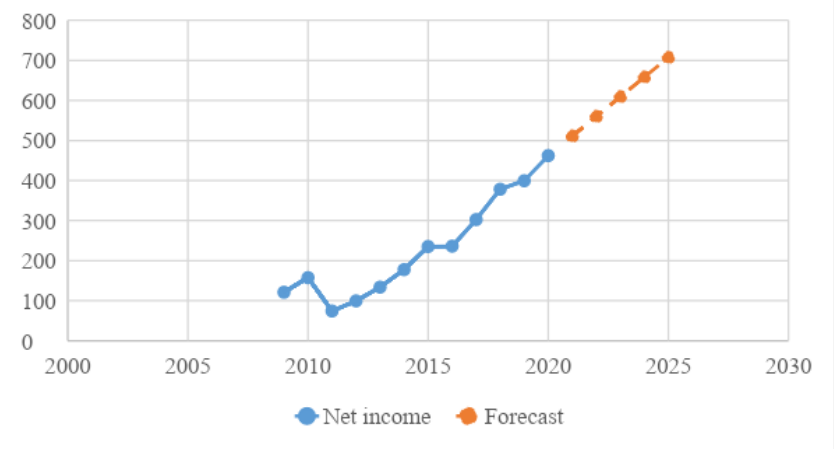
The last but not the least technology we will analyse is 5G. Companies such as Ericsson and Huawei are the leaders in the implementation of this technology (Fig.7).

Figure 7. Net Income Dynamics and Forecast for the Most Successful Companies in the Field of 5G (in billion U.S. dollars)

Ericsson



Huawei



Source: own study, based on Statista business data platform (2021), Technology & Telecommunications, Ericsson - statistics & facts & Huawei's revenue by business segment from 2009 to 2021

The presented net income graph for the first company shows a negative forecast, which is due to a sharp decrease in this indicator in 2017, due to restructuring charges and customer project adjustments. At the same time, write-down of assets and restructuring charges totalled SEK 13.4 billion. The width of the confidence interval is equal to 2x350%, which indicates that it is impossible of make a realistic forecast.

As for Huawei, a Chinese company, we can see an unstoppable increase in its net income. The forecast shows the same dynamics. At the same time, the width of the confidence interval is equal to 218.6 %. Huawei advocates openness, collaboration, and shared success. Through joint innovation with the customers and partners, the company is expanding the value of ICT to foster a healthy and symbiotic industry ecosystem. Huawei is an active member of more than 600 standards organisations, industry alliances, and open source communities, where they work with their peers to develop mainstream standards and drive the industry forward.

Despite a challenging business environment in the context of the COVID-19 pandemic, Huawei has remained committed to a globalised and diversified supply chain – one that doesn't rely on any single country or region, but instead leverages global resources to ensure supply continuity. As a member of the ICT community, Huawei has been doing everything they can to support the ongoing fight against the pandemic. The company continues to work closely with their customers to ensure the stable operations of more than 1,500 networks across over 170 countries and regions, and has been actively using ICT technology to assist the pandemic response in local communities (Huawei Investment & Holding Co, 2020).

Huawei works with carriers to build networks that deliver the best possible experiences. According to multiple third-party test reports on 5G network experience in large cities released in 2020, the best 5G networks in Seoul, Amsterdam, Madrid, Zurich, Hong Kong, and Riyadh were all built by Huawei. 5G devices for consumers have been developing rapidly, with more than 270 5G smartphone models available on the global market by the end of 2020. The diverse device ecosystem and the low latency and high bandwidth inherent in 5G networks have resulted in numerous Huawei 5G service innovations (Huawei Investment & Holding Co, 2020).

The conducted analysis of the actual and projected income of Alphabet, Apple, Cisco System, Microsoft, Dell Technologies, HP Enterprise, IVM, Ericsson, and Huawei allows us to determine the stability of the net income dynamics for each of these companies. Basing on the width of the confidence interval, we will divide the companies into groups (Table 1).

Table 1. Distribution of the IT Companies Depending on the Forecast Accuracy

Company	The width of the confidence interval is less than 2×30 %	The width of the confidence interval varies from 231 % to 2×100 %	The width of the confidence interval is over 2×100%
Alphabet		V	
Apple	V		
Cisco System	V		
Microsoft			V
Dell Technologies	V		
HP Enterprise			V
IBM			V
Ericsson			V
Huawei	V		

Source: own study

Thus, we were able to determine the companies that are more stable in the market of advanced technologies, namely, Apple, Cisco System, Dell Technologies, and Huawei. The activities of these companies are managed and can be traced over time. The economic stability of their activities makes these companies attractive to customers and investors. Alphabet is less stable. Their customers and technology development partners can deal with the management of this company only after the careful research of the company state. It is most difficult to predict the state of such companies as Microsoft, HP Enterprise, IBM, and Ericsson in today's market. Therefore, other market participants should be very careful about cooperation with these companies.

Summary

After the comprehensive analysis of the dynamics of the actual and projected net income of 9 IT companies that widely use artificial intelligence, Internet of Things, Big data, Blockchain, and 5G in their activities, we singled out 3 groups of companies. The study revealed that among the analysed companies Alphabet, Apple, Cisco System, Microsoft Dell

Technologies, IVM, and Huawei have an upward forecast curve, which indicates the successful development of these companies. At the same time, HP Enterprise and Ericsson show a decline in their net income forecast. The decrease in this economic indicator at HP Enterprise is explained by the spin-off and merger of the part of its assets with the competing Computer Sciences Corporation in 2016. The deterioration of the market situation at Ericsson occurred due to the due to restructuring charges and customer project adjustments in April 2017.

After all, for customers and partners of the companies, it is critical not only to determine the general trend of the companies' net income, but also the degree of fluctuation of this indicator. The thorough evaluation of the width of the confidence interval within the framework of the forecast of these companies indicated that Apple, Cisco System, Dell Technologies, and Huawei have the smallest fluctuations. This fact signposts a stable increase in their net income, inoculates these companies against challenges and sends their partners and investors an important message that builds confidence in them. Such companies as Microsoft, HP Enterprise, IVM, Ericsson have extremely high fluctuations in their financial indicators. Simultaneously, the financial and economic condition of HP Enterprise and Ericsson is complicated by the negative dynamics of the net income of these companies. In this case, Alphabet takes an intermediate position.

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