

Impact of digitalization processes on the Latvian economy

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Introduction

The modern development of the economy is based on digitalization, which has covered all areas of entrepreneurship. In 2015, the UN adopted the program "The 2030 Agenda for Sustainable Development," which contains 17 goals for the sustainable development of the world the priority of development is decent work and economic growth (SDG8) and industry, innovation and infrastructure (SDG9) , [UN, 2015]. Depending on the definition used, the size of the digital economy is estimated from 4.5 to 15.5% of the world GDP (UNCTAD, 2019). Digitalization not only changes the operation of industries, but also directs us to the need to develop new specialties, new areas of knowledge, changes in fiscal policy, and, most importantly, as stated in the UN document, contributes to the sustainable development of the world's economies (UN, 2015). The largest component of the Information and Communication Technology industry sector is computer services, which account for 40% of all value added in the sector in 2019 (UNCTAD, 2019). The analysis of Information and Communication Technology of Latvia will allow assessing the processes of digitalization of the Latvian economy and forecasting its future development.

Analysis of the industry of Information and Communication Technology (ICT) in Latvia

The processes of digitalization in the world economy have an active influence on the structure of the economies of Latvia, the Baltic States and the EU countries. According to the UN assessment, Latvia is in 22nd place among 165 countries of the world in the implementation of sustainable development goals (UN, 2021). In the country to accelerate the processes of innovative development and digitalization of the economy, Latvia's sustainable development strategy programme by 2030 (THE SAEIMA OF THE REPUBLIC OF LATVIA, 2010), Guidelines for digital transformation for 2021-2027 (DRAFT of the Cabinet, 2020) has been developed.

Latvia's sustainable development strategy programme plans to achieve the following Strategic Indicators by 2030, some of which are presented below:

GDP per one inhabitant (EUR according to purchasing power parity) >27,000 EUR,

Human development index (place in the world) <30,

Global competitiveness index (place in the world) <40.

Undoubtedly, the achievements of ambitious goals are possible only through the use of innovations and digitalization of the economy.

The guidelines provide for action in five directions and cover all key aspects of the digital societal breakthrough: “Digital skills and education”, “Digital security and credibility”, “Access to telecommunications services”, “Digital transformation of the economy (so-called “public administration””, “Innovation, Information Communication Technology (ICT) industry and ICT science”.

In the project “Digital Transformation of Latvia for 2021-2027” a significant role is assigned to the Ministry of Environmental Protection and Regional Development in performing the following functions: Open data and data sharing infrastructure; digital skills and habits development; ICT platforms and solutions for the digital economy ; Integration into the EU Single Digital Market and adoption of EU legislation.

The Ministry of Economy, according to the project, also performs certain functions to accelerate the digitalization processes: Support for digitalization of firms; Support to Government platform based innovative digital products and services developed by the private sector; Digital transformation of SMEs. Taking into account the programme presented by the state to accelerate the processes of digitalization, we will carry out an analysis of the implementation of programme documents of the government of Latvia and we will carry out an analysis of the impact of digitalization on the Latvian economy.

Over the course of five years, the number of Information and Communication Technology (ICT) companies in Latvia has a tendency to increase. Although it should be noted that in the EU countries this indicator has been stable for five years from 2016-2020 and amounts to 18%. (Eurostat, 2021)

Table 1. Enterprises that employ ICT specialists, percentage of enterprises, SMEs (10-249 persons employed), without the financial sector in Latvia and EU (average)

	2016	2017	2018	2019	2020
European Union - 27 countries (from 2020)	18	18	18	18	18
Percentage of the ICT sector in GDP in Latvia	4,53	4,69	4,92	-	-
Enterprises that employ ICT specialists, Percentage of enterprises, 10-249 persons employed in Latvia	16	12	14	19	19

Source: Eurostat, www.eurostat.eu

As can be seen from the presented table 1, the role of the ICT industry in the GDP of Latvia is increasing annually from 2016 to 2018. Thus, in 2016, ICT accounted for 4.53 % of Latvia's GD, but in 2018 the role of the industry increased by 0.39% and amounted to 4.92%, figure 1.

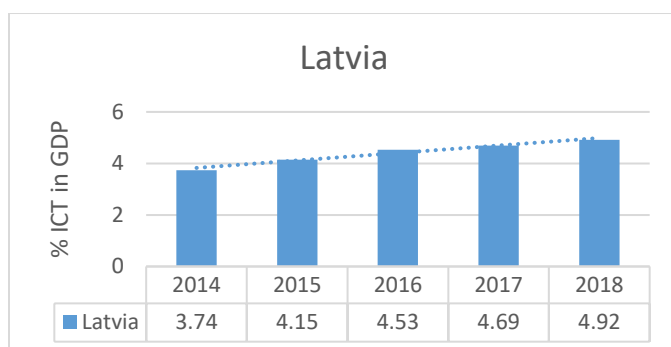


Figure 1. The dynamics of the change in the share of the ITC industry in Latvia's GDP, from 2014 to 2018, developed by the author.

The increase in the number of companies in the ICT sector is reflected in the GDP of the countries. The number of enterprises that employ ICT specialists, (10-249 persons employed), is 19% in Latvia in 2019 and 2020, it is 1% more than the average in the European Union. Thus, the growth in the share of ICT testifies to the active digitalization of the Latvian economy.

The global economic crisis associated with the pandemic has also affected the sector of SMEs, including the ICT industry. To assess the prospects for digitalization of the economy of Latvia, the author calculated the dynamics of the change in the demographics of SMEs in ICT and in total in Latvia and presented the calculations in table 2, figure 2.

Table 2. A comparative analysis of the growth of companies in the Information and Communication Technology sector and the total in the economy of Latvia, from 2014 to 2018, calculated by the author

Indicators	2014	2015	2016	2017	2018
Business demography (birth) in Information and Communication Technology	950	1246	1102	896	1023
Business demography (deaths) in Information and Communication Technology	448	270	863	577	629
The growth of companies in the field of Information and Communication Technology, %	52,8	78,3	21,7	35,6	38,5
Business demography (birth), total	15194	19003	18808	14102	13924
Business demography (deaths), total	9127	6496	16515	11165	10808
The growth of companies, total,%	39,9	34,18	12,19	20,8	22,4

Source: Eurostat, www.eurostat.eu

Let's represent in the form of a graph the changes in the number of enterprises in the Information and Communication Technology sector and the total in the economy of Latvia, figure 2.

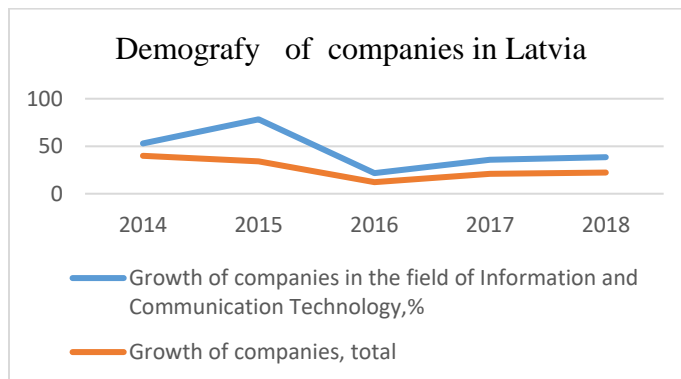


Figure 2 Demographics of Latvian companies in % from 2014 to 2018, calculated by the author.

Thus, the graph shows that the growth of companies in the ICT sector over the five years studied is obvious. The highest growth of companies was observed in 2015 – 78.3%, i.e., on average, out of 1246 formed enterprises in the sector, only 22% were closed and this is the lowest indicator for the period studied, respectively, in the country, the lowest indicator on the number of closed companies was observed in 2014: out of 15194 registered firms, 9127 or 60.1% ceased operation. 2016 showed the country's maximum number of firms that ceased their operations - 87.81%, while at the same time in the ICT sector 78.3, which is 9 percent less than in the economy of Latvia as a

whole. Sure, the performed calculations show that in Latvia sustainable development is observed in the ICT sector, which supports the digital economy of the country.

The transition to online education, virtual purchases led to the growth of companies in the ICT field. In table 3, let's represent the number of online purchases in the country, from 2014 to 2019.

Table 3. Internet purchases by individuals in Latvia and EU, Percentage of individuals, 2014-2019.

Years	Number of items per individuals,% in Latvia	Number of items per individuals,% in EU average
2014	34	46
2015	38	49
2016	44	51
2017	46	54
2018	45	56
2019	47	60

Source: Eurostat, www.eurostat.eu

To assess the level of digitalization of the country's economy, it should be compared with the same indicator on average for the EU: thus, in 2014 the same indicator in the EU countries was 46%, 2015- 49%, 2016 – 51%, in 2017 – 54%, 2018-56% and in 2019 on average - 60% of the population of the EU used online purchases.

It should be noted that the indicators of Latvia lag behind the average European indicators, however, the dynamics to growth and increase of the role of digitalization in the country is obvious.

Forecast of the processes of digitalization of the Latvian economy:

As is known, in entrepreneurship, the main factor for assessing the activities of companies is profit. To predict the development of the industry and evaluate the digitalization of Latvia's economy, the author, based on analysis of data of the Central Statistical Bureau of Latvia, suggests calculating the forecast of the future profit of the industry based on *the least squares method and building a trend (Figure 3)*

Table 4. Prediction of pre-tax profit of the Information and Communication Technology industry in 2020-2022, author's calculation

Years	2015	2016	2017	2018	2019	2020*	2021*	2022*
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Profit before taxes, mln EUR	247	290	275	395	427	466,3	512,8	559,3
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Source: Central Statistical Bureau of Latvia, *- forecast, calculated by the author

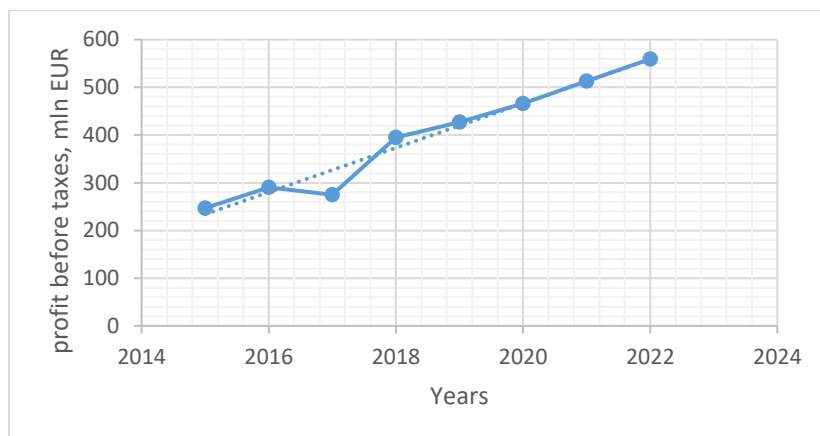


Fig.3 Calculation of pre-tax profit of the Information and Communication Technology industry of Latvia from 2020 to 2022 , mln EUR, figure of the author

As can be seen from the forecast calculations performed by the author, based on the least squares method, the profitability indicator of the Information and Communication Technology industry, reflecting the digitalization of the economy of Latvia in the period from 2020 to 2022, will increase. According to the results obtained, profit in 2022 will increase by 93 million euros compared to 2020. At the same time, the increase has a linear trend.

Conclusions

Thus, the role of the ICT sector in the country is increasing: in 2018, the sector was 4.92% in GDP of Latvia, while the dynamics have been positive over the past five years. The number of companies affecting the digitalization of the country's economy (ICT) in recent years 2018-2019 has increased to 19%, which is 1% higher than the average for the EU countries.

Based on the carried out analysis and the performed calculations of the author, it is shown that Latvia is successfully developing digital business, thus, the number of companies opened in the ICT sector is more stable, i.e., fewer companies are closed, then in general by the sectors of the national economy of Latvia. For the analyzed period from 2014 to 2018 in 2015, 2016 and 2018, the companies were closed twice as much as in the ICT sector. However, the number of people

using online purchases was 47% in 2019, which is 13% lower than average in the EU. Nevertheless, it is almost 30% more than in 2014. Thus, for the analyzed period from 2014 to 2019, the digitalization of Latvia has intensified and trends towards its growth are preserved.

The forecast calculation of the pre-tax profit performed by the author in the industry showed a linear increase, and for three years from 2021 to 2022, an increase of 93 million euros is predicted. Undoubtedly, the data clearly indicates a sharp increase of the Information and Communication Technology industry and an increase in industry profits, the number of established firms, in general, strengthens the influence of digitalization on the economy of Latvia.

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