



SOCIO-ECONOMIC NECESSITY AND PROSPECTS FOR THE INTRODUCTION OF THE DIGITAL ECONOMY

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ABSTRACT

This article discusses the socio-economic benefits of the introduction of the digital economy. The relevance of this article is due to the fact that in recent years digital technologies have penetrated into all sectors and links of the economy, becoming one of the most promising means of development at the macro, meso and micro levels. Within the framework of this study, the problems associated with the introduction of digital technologies were studied, its socio-economic significance was analyzed. Scientific and practical proposals and recommendations have been developed to achieve the socio-economic efficiency of the introduction of the digital economy.

CCS CONCEPTS

• Digital economy; • digitalization; • digital space; • digital technology; • database; • social welfare; • economic growth; • digital integration.;

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1 INTRODUCTION

One of the main goals of any State is to ensure high quality of life and safety of its citizens. In the XXI century, the process of digital technology development has accelerated. Digitalization has affected almost all spheres of people's lives. That is why the state should use digital tools to achieve its goals.

The development of digitalization is one of the main trends in modern Russia. It affects almost all spheres, introducing digital technologies into them and thereby improving the quality of life of the population. Digitalization technologies have been successfully implemented in our country for many years.

2 METHODOLOGY

Digitalization of the business sector has a direct impact on economic growth, employment, and competitiveness. Figure 1 shows the dynamics of the digitalization indicator of commercial organizations.

Having studied the dynamics of the indicators presented in Figure 1, we can note a positive trend in the development of digitalization of organizations in the enterprise sector.

3 RESULTS

In the period from 2010 to 2018, the use of broadband Internet by organizations increased by 22.2%. In 2018, there was a jump in the use of websites, in total they became more popular by 14.9% during the study period. The use of enterprise resource planning systems (ERP systems) increased by 12.7%.

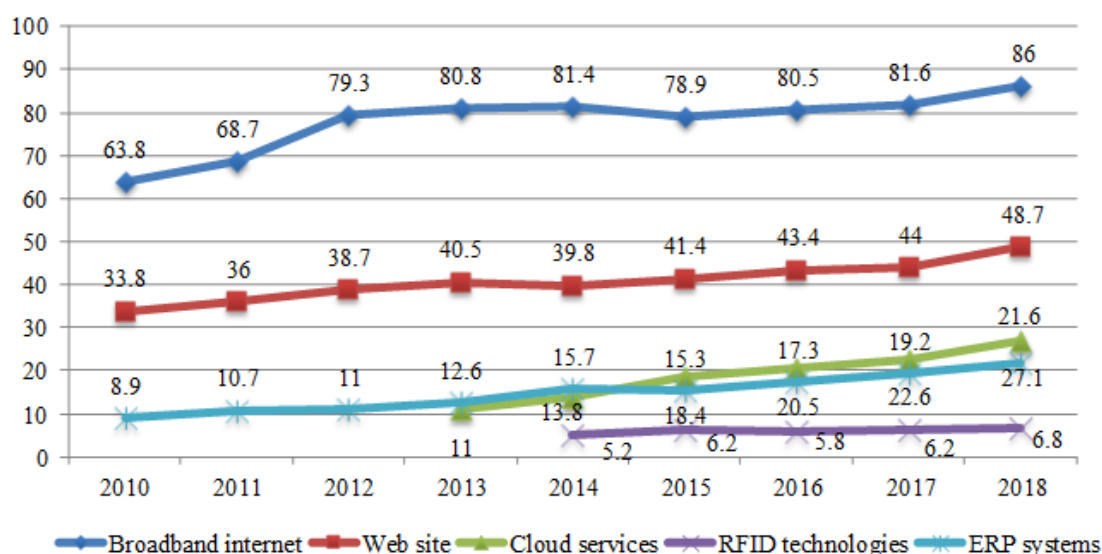


Figure 1: Digitalization of business sector organizations (as a percentage of the total number of organizations) [1]

Table 1: Absolute deviations and growth rates of indicators of digitalization of business sector organizations

Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Absolute deviations								
Broadband Internet	4.9	10.6	1.5	0.6	-2.5	1.6	1.1	4.4
Website	2.2	2.7	1.8	-0.7	1.6	2	0.6	4.7
Cloud services				2.8	4.6	2.1	2.1	4.5
RFID - technology					1	-0.4	0.4	0.6
ERP-systems	1.8	0.3	1.6	3.1	-0.4	2	1.9	2.4
Growth rate								
Broadband Internet	7.7	15.4	1.9	0.7	-3.1	2.0	1.4	5.4
Website	6.5	7.5	4.7	-1.7	4.0	4.8	1.4	10.7
Cloud services				25.5	33.3	11.4	10.2	19.9
RFID - technology					19.2	-6.5	6.9	9.7
ERP-systems	20.2	2.8	14.5	24.6	-2.5	13.1	11.0	12.5

The cloud infrastructure makes it possible to implement joint initiatives between financial organizations and organizations of other sectors of the economy, allowing you to quickly, in the shortest possible time, create new working business models and accelerate the introduction of new products to the consumer market. In the period from 2013 to 2018, the percentage of organizations using cloud services increased significantly from 11% to 27.1%, respectively, an increase of 17.1%.

RFID technologies are used to control the movement of goods in the warehouse and in the store, control working hours, identification of vehicles, automation of production. Despite the obvious growth of the presented indicators, the methods of automatic identification of objects (RFID systems) are not yet popular in our country. In the period from 2014 to 2018, the growth rate was only 1.6%. Figure 2 shows data on indicators of digitalization of the social sphere. It includes the digitalization of educational institutions of

higher education, organizations operating in the field of health and social services, culture, sports, leisure and entertainment.

The use of digital technologies in the work of social organizations makes it possible not only to improve the quality of services provided, but also to increase the correctness of forecasts, risk and threat assessments, as well as to optimize ways to neutralize them. Having studied the data in Table 2, we can note the constant growth of indicators. The use of broadband Internet in the period from 2010 to 2018 increased by 36.7%, the largest increase was in 2015, it amounted to 15.5%. The use of websites is also steadily growing, in the period under review their number increased by 38.9%. In the period from 2013 to 2018, the reconciliation of cloud services increased by 13.4%, the peak growth rate was in 2015 and amounted to 41.5%. RFID technologies have not found popularity in social organizations, in the period from 2014 to 2018, the percentage of their use has practically not changed, the growth was only 0.8%.

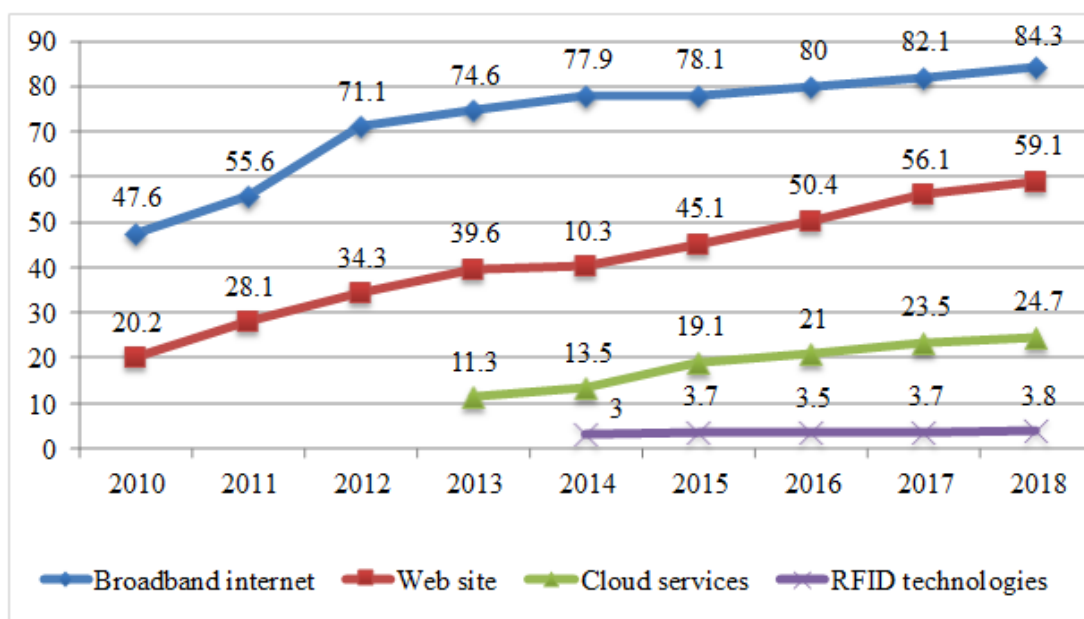


Figure 2: Digitalization of social organizations (as a percentage of the total number of organizations)

Table 2: Absolute deviations and growth rates of indicators of digitalization of the social sphere

Indicators	2011	2012	2013	2014	2015	2016	2017	2018
Absolute deviations								
Broadband Internet	8	15.5	3.5	3.3	0.2	1.9	2.1	2.2
Website	7.9	6.2	5.3	0.7	4.8	5.3	5.7	3
Cloud services				2.2	5.6	1.9	2.5	1.2
RFID - technology					0.7	-0.2	0.2	0.1
ERP-systems								
Broadband Internet	16.8	27.9	4.9	4.4	0.3	2.4	2.6	2.7
Website	39.1	22.1	15.5	1.8	11.9	11.8	11.3	5.3
Cloud services				19.5	41.5	9.9	11.9	5.1
RFID - technology					23.3	-5.4	5.7	2.7

Figure 3 shows the digitalization of social organizations in 2018. At the same time, as you can see from the figure, digital technologies are most often used in educational organizations. The field of education is leading in all the considered indicators. The Internet is used in 92.7% of organizations for the most part for information retrieval, e-mail, financial transactions, staff training, subscriptions to electronic databases and libraries. Websites are used in 83% of organizations, cloud services and RFID technologies are used in 39% and 13.3% of organizations, respectively.

In second place is the healthcare system. In it, 92.1% of organizations use broadband Internet, mainly for searching information on the Internet, using e-mail, financial transactions, conferences and staff training. 75% of organizations have websites, cloud services and RFID technologies are used by 31.2% and 4.2% of organizations, respectively.

Digitalization of libraries, archives, museums and other cultural objects takes the third place, 87.9% of organizations have Internet, 48.8% have websites. Cloud services and RFID technologies were used by 19.3% and 3.4% of organizations in the year under study, respectively. At the same time, most of the material stored in libraries, archives and museums has been digitized. Figure 4 shows the constant growth of digitized copies.

In the period from 2012 to 2018, the number of electronic catalogues of libraries increased by 99.3 million units or by 117.8% and by 2018 amounted to 183.6 million copies. Electronic catalogues of museums have also become much more numerous. During the study period, their number increased from 26.1 million to 44.4 million, that is, by 18.3 million or 70%.

Figure 5 shows the dynamics of public and municipal services received by the population. Every year the number of people who have chosen the electronic form of appeal increases.

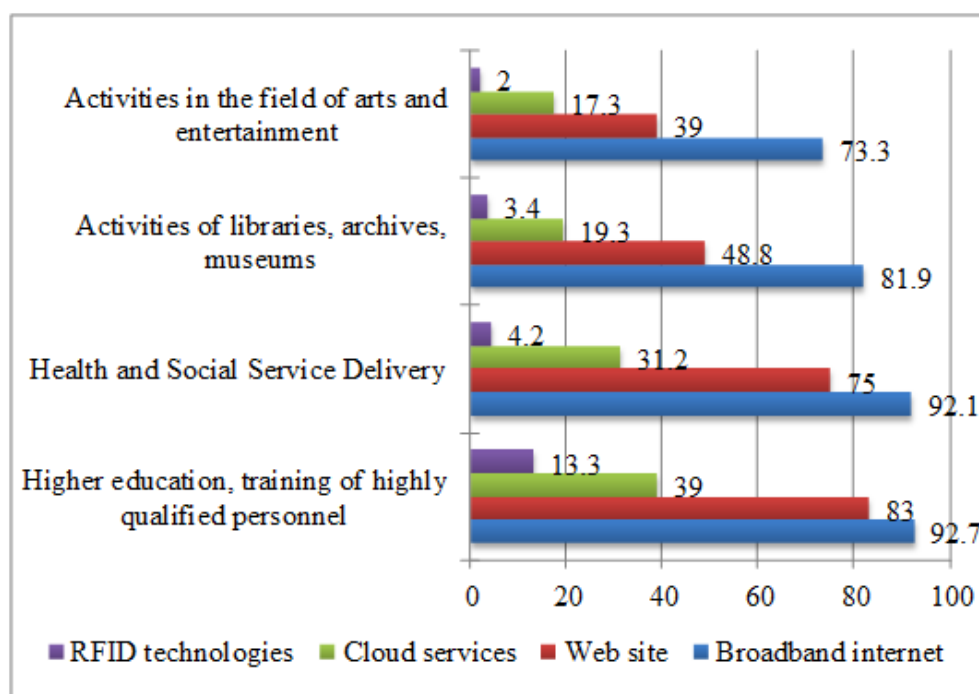


Figure 3: Digitalization of the social sphere by type of activity (as a percentage of the total number of organizations) in 2018

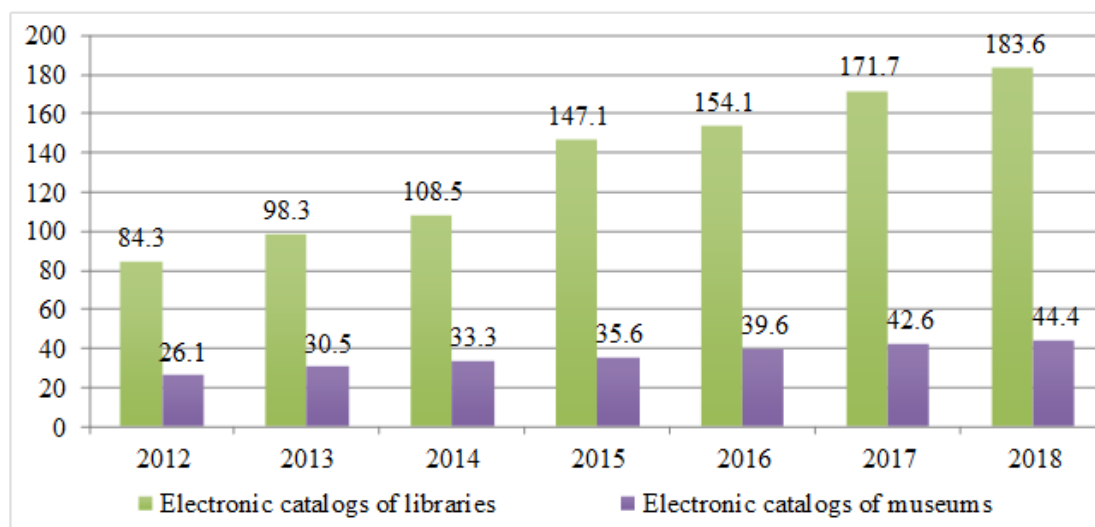


Figure 4: Number of electronic catalogs, million units

Table 3: Absolute deviation and growth rate of state and municipal services received by the population in electronic form [2]

Indicators	2014	2015	2016	2017	2018	2019
Absolute deviations	4.4	4.4	11.7	13	10.5	2.8
Growth rate	14.3	12.5	29.5	25.3	16.3	3.7

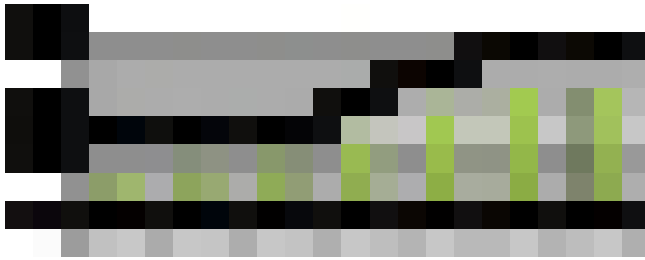


Figure 5: Receipt of state and municipal services by the population in electronic form (as a percentage of the population aged 15-72 years who received services)

Having studied the data in Table 3, it can be noted that the greatest growth was in 2017, it amounted to 13%. In total, in the period from 2013 to 2019, the number of requests in electronic form increased from 30.8% to 77.6%, that is, by 46.8%. Despite the growing popularity of the electronic version of interaction with the state, there are still many people who prefer a personal visit and personal contacts, mostly older people.

4 DISCUSSION

Thus, it can be noted that digital technologies are increasingly penetrating into all spheres of our life. However, it should be understood that Russia is only at the very beginning of the path of digitalization and the formation of new public relations.

Of course, digitalization has many positive manifestations, both for an individual and for society as a whole. But at the same time, the negative consequences of this process are already quite obvious. One of the most widespread threats to social security is the threat of unemployment, as a result of the release of a large number of jobs.

Digital technologies have made it possible to automate many processes, primarily related to simple physical labor. Artificial intelligence systems used in organizations increasingly displace specialists of average qualifications. In addition, digitalization affects workers' wages and leads to its reduction. According to the CMACP, the development of digitalization is able to displace 12.5 million people employed [3].

Also, at the moment, there is a danger of exceeding the pace of digitalization development over the pace of retraining of employees. As a result, the population that has failed to adapt to the new realities will lose their jobs.

Having studied Figure 6, it can be seen that the majority of the population, namely 39.3%, has a low level of digital technology proficiency. 24.5% of the population has a basic level, 22.5% have not used the Internet in the last 3 months, and finally, only 11.9% of the population's skills are assessed above the basic level.

Since the digital transformation of society is directly related to the digitization, collection, processing and storage of various information, the information obtained as a result of these actions needs reliable protection. The rapid pace of digitalization increases the

likelihood of new types of fraud. Cyber attacks on various commercial organizations, government agencies, socially significant objects, which, ultimately, negatively affects the security of an individual. In addition, changes occurring during the transition to the digital economy can potentially lower the existing level of data security. As a result, important information can not only be stolen, but also irretrievably lost.

As can be seen from Table 4, already today a large number of people are facing threats to information security of varying severity and scale.

During the study period from 2015 to 2019, the number of unauthorized spam increased by 3.3%. Virus infection decreased by 9.6%, unauthorized access to a computer increased by 0.4%, the use of a mobile phone by unknown persons increased by 0.4%. The use of e-mail by unknown persons dropped sharply, but then returned to the original mark of 0.6%, the theft of funds using the Internet also did not change and in 2019 amounted to 0.3%.

It is worth noting that the types of crimes committed using information and telecommunication technologies remain the most difficult to solve.

According to the Ministry of Internal Affairs of the Russian Federation, the number of crimes using the Internet is increasing rapidly from year to year. In the period from 2017 to November 2020, the number of crimes increased by 370.635 or by 409%. It should also be noted that there is a huge difference between the number of registered and solved crimes. In 2020, there was the largest gap, which amounted to 375.482 cases [4]. This is explained not only by the difficulty of finding the culprit, but also by the presence of flaws in the legal system and the low level of technical equipment necessary to establish the identity of the subject of the offense.

The disclosure of personal data of citizens in the process of their processing using information technology also poses a significant threat to the security of the individual in society [5]. In offenses related to the disclosure of personal data, the application of sanctions is practically impracticable. In an attempt to protect themselves, there are more and more people who refuse to use the Internet.

Figure 8 shows the dynamics of the percentage of the population that does not use the Internet for security reasons. The vast majority of them take this step because of their unwillingness to disclose personal data on the Internet. In the period from 2015 to 2019, the number of people who do not use the Internet increased by 1.9%. Thus, it can be noted that the processes associated with the digitalization of the country, despite many positive aspects, can cause significant risks. That is why it is extremely important to pay attention to the development of measures aimed at leveling existing threats, preventing future risks, as well as improving the efficiency of using digital technologies and increasing the pace of their implementation.

5 CONCLUSIONS

Trends in the development of the modern world suggest that in the near future, almost every profession will be more or less connected with technology. This means that the importance of owning technologies and skills to work with robots will increase significantly. In this regard, it is necessary to highlight a number of measures

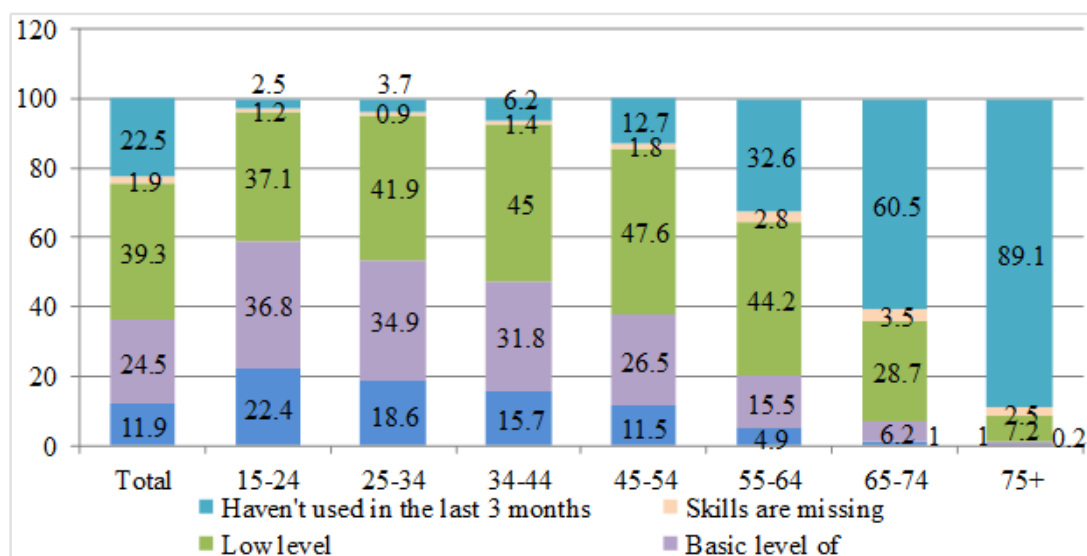


Figure 6: The level of digital skills of the population by age groups in 2019 (as a percentage of the total population of the corresponding age group)

Table 4: Collision of the population with threats of information security when using the Internet (as a percentage of the population aged 15-74 years) [4]

Indicators	2015	2016	2017	2018	2019
Unauthorized mailing (spam)	19	18.4	18.5	19.7	22.3
Infection with viruses	17.1	13.3	11.4	8.9	7.5
Unauthorized access to the computer	1.9	1.4	1.8	1.4	1.5
Use of a mobile phone by unknown persons	0.4	0.7	0.8	0.7	0.8
Use of e-mail by unknown persons	0.6	1.7	0.9	0.7	0.6
Embezzlement of funds	0.3	0.2	0.3	0.2	0.3

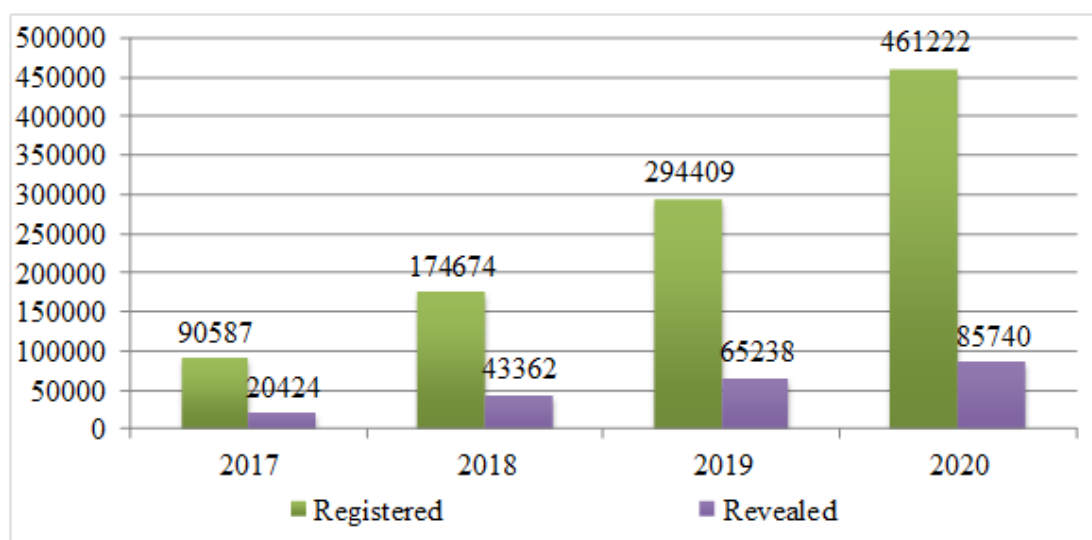


Figure 7: Crimes committed using computer and telecommunication technologies

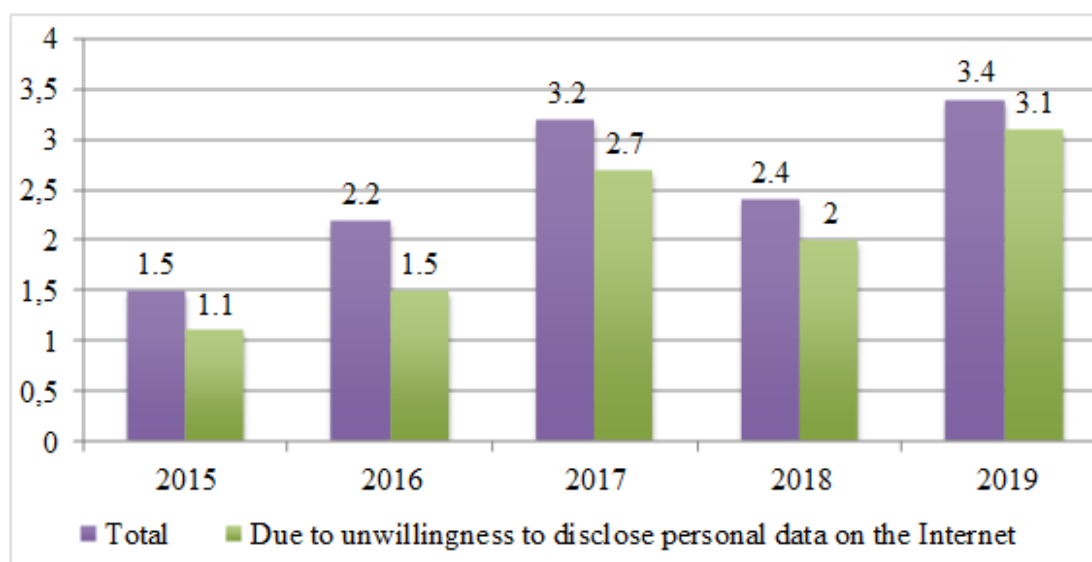


Figure 8: The population that does not use the Internet for security reasons (as a percentage of the population aged 15-74 years who did not use the Internet) [6]

aimed at smoothing out the problems that are potentially possible during the transition to digital economic civilization.

1. It is necessary to increase the amount of funding for research and development, training and education in the field of high technologies, especially at the initial stage.
2. It is necessary to pay attention to stimulating certain areas for more active implementation of digital technologies.
3. It is necessary to support such areas as import substitution, export of information technologies, ensuring equal conditions for Internet companies in Russia, development of access and data storage infrastructure, promotion of all types of mass digital communications and services.
4. Make a number of changes to the currently existing legislative framework. The changes should be aimed at improving the efficiency of regulation of electronic turnover, the formation of an archive of electronic documents.
5. Despite the obvious complexity, it is extremely necessary to make changes in the medical field: complete the introduction of digital technologies, pay attention to the creation of programs that will allow the diagnosis of a patient at a distance, introduce the practice of using electronic patient cards everywhere.
6. It is necessary to pay special attention to the development of domestic virtual reality and artificial intelligence technologies.
7. Not all Russians will be able to quickly retrain and increase their competitiveness in the labor market. Therefore, it is necessary to improve measures to support socially vulnerable segments of the population that have arisen or may arise in the coming years due to changes in the labor market caused by the consequences of the digitalization process:

The introduction of a "basic unconditional income" will partially eliminate inequality in the distribution of income, but the resolution of related inflationary and other problems is required;

It is necessary to develop entrepreneurial activity as an alternative to employment;

Stimulating the active creation of new enterprises will increase the chances of retraining and further employment of the unemployed population;

Introduction of additional taxes. At the end of August 2020, the government Commission for Digital development approved the passport of the federal project "Artificial Intelligence". In this regard, one of the measures may be the introduction of a tax on robots, which will allow collecting the necessary funds and redirecting them to help the population who lost their jobs in the process of automatization of production;

Consider switching to a four-day work week or a six-hour work day.

It should be noted that digitalization is a relatively new, little-studied type of economic relations between subjects. But it is already quite obvious that digitalization will become the locomotive of the development of the modern economic and social sphere. Despite this, the process of digitalization in Russia demonstrates upward dynamics, which positively affects the quality of life of citizens and ensures the economic growth of the country.

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