

# *Directions of development of digital economy and information society in Russia*

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**Abstract** — The article is devoted to the study of the implementation of the state program of development of "Digital economy" in Russia on the basis of analysis and evaluation of statistical data. Separate sections of the state program of development of digital economy at the present stage are covered; possible proposals on the basis of processing of statistical data on improvement by the mechanism of development of information society and separate clusters of development of digital economy are made. The calculations of the absolute growth and relative growth rates of the digital economy according to Rosstat data in four groups of statistics of the digital economy: households; cultural institutions; health care and education institutions; commercial and state enterprises; the data of the study were taken in Russia as a whole relative to the beginning of 2018 in comparison with 2010 (year of the beginning of tracking by Rosstat of data in the section of digital economy of Russia), or year of the beginning of fixing of separate indicators in system of the statistical accounting. Since the program of development of the "Digital economy" in Russia was put into effect in mid-2017. Rosstat data in the field of Informatization were collected and processed no more than the last eight years, the present study reflects the state of the digital economy of Russia at the stage of the start of its development program.

**Keywords** — *digital economy, e – Commerce, information society (key words)*

## I. INTRODUCTION

Some objects related to the digital economy emerged at the end of the XX century, which coincided with the development of global networks, including the Internet. At the dawn of global networks, users could find their book, magazine, news portal, etc. Then the network began to appear commercial offers for the sale of users of books, magazines, subscriptions to the news, the purchase of the necessary software, with the development of technology World Wide Web (WWW), the development of specialized sites began to appear real proposals for the purchase of goods and services (clothing, food, household goods, etc.), which could be bought on the Internet. The development of distance trade (e-Commerce) has given impetus to the development of the courier service and logistics companies (companies specializing in the delivery of goods / cargo) and courier services, and today the buyer can also track the route of delivery of his order through global networks. Currently, online trading is developing very dynamically, and without leaving home, any buyer can buy anything he wants or almost everything under the laws of the country where he lives or made his order on the Internet.

## II. THE GOAL OF THE STATE PROGRAM OF DEVELOPMENT OF THE «DIGITAL ECONOMY»

### *A. Background of the establishment of state control in the sphere of the digital economy*

Services such as Internet marketing, Internet advertising, and Internet banking have been developing almost simultaneously with e-Commerce. Then there were blockchain technologies, Internet of things, cloud services (which also find their application in the virtual economy); the market of software and digital devices (tablets, phones, laptops, iPhones, etc.) is rapidly developing. Along with the development of Internet Commerce and Internet banking, there are forms of unfair competition, fraud, tax evasion mechanisms. Thus, there is a need for state intervention in this area, for the purpose of legal regulation and control of compliance with the law; protection of the rights of citizens and legal entities in Russia.

### *B. Digital economy in the concept of the information society*

In Russia, the program "Digital economy in the Russian Federation" was officially approved by the legislator: decree of the Government of the Russian Federation of July 28, 2017 № 1632-p; which declared the following: "in order to implement the Strategy of development of the information society in the Russian Federation for 2017-2030, approved by the decree of the President of the Russian Federation of may 9, 2017. № 203 "The Strategy of development of the information society in the Russian Federation for 2017-2030" (hereinafter - the Strategy of development of the information society in the Russian Federation for 2017 - 2030), this Program is aimed at creating conditions for the development of a knowledge society in the Russian Federation, improving the welfare and quality of life of citizens of our country by improving the availability and quality of goods and services produced in the digital economy using modern digital technologies, raising awareness and digital literacy, improving the availability and quality of public services for citizens, as well as security both within the country and abroad" [1].

## III. THE INTEGRATION OF THE "DIGITAL ECONOMY" IN THE SOCIO-ECONOMIC SPHERE OF RUSSIA

Also in the program of digital economy of Russia it is designated that " digital economy is presented by 3 following levels which in the close interaction influence on life of

citizens and society as a whole: the markets and branches of economy (spheres of activity) where interaction of specific subjects (suppliers and consumers of goods, works and services) is carried out; platforms and technologies where competences for development of the markets and branches of economy (spheres of activity) are formed; an environment that creates conditions for the development of platforms and technologies and effective interaction of market participants and economic sectors (spheres of activity) and covers regulatory regulation, information infrastructure, personnel and information security". It should be noted that the program "Digital economy in the Russian Federation" covers socio-economic spheres much wider than just Internet trade, coupled with Internet logistics, the program is aimed at the scientific and technological development of the Russian Federation in the period up to 2030, contains goals and objectives to improve the processes of organization of medical care and education system based on the introduction of information technology, the strategy of development of the information society and accessible environment for persons with disabilities [1]. Attention is paid to the use of information and telecommunication technologies at the level of local governments: the development of relevant sites (portals) of local governments; despite the fact that many legislative, judicial and Executive authorities have long had their sites (sites) in global networks with integration into the system of digital public services to the population: the sites of the Federal service for state registration, cadastre and cartography, police, prosecutors, courts, governments of subjects of the Russian Federation, ministries and departments, medical and educational institutions, etc. are updated since 2015 with the development of a unified site map for a single Agency (in order to facilitate the perception of information and its search by users). The program takes into account that in 2015 the Treaty on the Eurasian economic Union was ratified, which provides for the creation of an integrated information system of the Union and a cross-border space of trust. The market of "cloud" technologies is steadily growing and developing-by about 40 percent per year [1].

The Federal state statistics service has been monitoring the development of the information society in the Russian Federation since 2010 in the following sections: 1. Factors of information society development; 2. Use of information and communication technologies (ICT) for development [2].

According to Rosstat:

#### *A. household Statistics in the digital economy*

The share of households with Internet access in the total number of households, the chain growth rate at the beginning of 2018g. in comparison with 2017. this indicator was:  $76,3 / 74,8 = 1,02$ , i.e. 2% (absolute increase was:  $76,3 - 74,8 = 1,5\%$ ); basic growth rate in comparison with 2010.:  $76,3 / 48,4 = 1,58\%$ , i.e. 58% (absolute increase:  $76,3 - 48,4 = 27,9\%$ ) comparison of 2018 to 2010 [2].

The number of Internet users per 100 inhabitants, the absolute increase in the rate at the beginning of 2018. made:  $76 - 64 = 12$  users per 100 people (base growth rate were:  $76 / 64 = 1,19$  i.e. 19%) comparison of 2018 to 2013, because earlier data was not measured [2].

The share of the population using the Internet to order goods and (or) services in the total population absolute growth rate at the beginning of 2018g. was:  $29,1 - 15,3 = 13,8\%$

(growth rate:  $29,1 / 15,3 = 1,90$  i.e. 90%) comparison of 2018 to 2013, previously, the data has not changed [2].

#### *B. Statistics of cultural institutions in the digital economy*

The number of available online items included in the electronic catalog and having digital images for 10,000 items total Museum Fund absolute gains indicator for the beginning of 2018. were as follows:  $454 - 49 = 405$  exhibits 10,000 items of General Museum Fund (underlying growth rate was:  $454 / 49 = 9,27\%$ , or nine times) were comparison of 2018 to 2011, because earlier data was not measured [2].

Amount of the electronic library catalogue is available online:  $171737,1 - 71404,9 = 100332,2$  (base growth rate amounted to:  $171737,1 / 71404,9 = 2,41$  i.e. 241%, or nearly 2.5 times) comparison of 2018 to 2011, previously, the data has not changed [2].

#### *C. Statistics on health and education institutions in the digital economy*

The share of health institutions had a website in the total number of the surveyed health facilities, the absolute increase in the rate at the beginning of 2018. made:  $78,5 - 18,1 = 60,4\%$  the percentage of institutions that had a website in the total number of the surveyed health care institutions (base growth rate amounted to  $78,5 / 18,1 = 4,34$  i.e. 434%, or four times) comparison of 2018 to 2010 [2].

The proportion of health facilities with local area network in the total number of the surveyed health facilities, the absolute increase in the rate at the beginning of 2018. made:  $86,3 - 80,4 = 5,9\%$  percentage of agencies with local area network in the total number of the surveyed health care institutions (base growth rate amounted to:  $86,3 / 80,4 = 1,07$  i.e. 7%) comparison of 2018 to 2010 [2].

The share of educational institutions of higher professional education connected to the Internet over broadband access (256 Kbps and above) in the total number of the surveyed institutions of higher education, the absolute increase in the rate at the beginning of 2018. made:  $90,6 - 84,3 = 6,3\%$  percentage of institutions of higher education connected to the Internet over broadband access (base growth rate amounted to  $90,6 / 84,3 = 1,07$  i.e. 7%) comparison of 2018 to 2010 [2].

The number of personal computers used for training purposes, 100 of students in state and municipal educational institutions, the absolute increase in the rate at the beginning of 2018. was  $14 - 7 = 7$  computers used for training purposes, 100 of students in state and municipal educational institutions (base growth rate was  $14 / 7 = 2$  i.e. 200% or two times) comparison of 2018 to 2010 [2].

#### *D. business and public enterprise Statistics in the digital economy*

Share of organizations, using the Internet in the total number of the surveyed organizations, the absolute increase in the rate at the beginning of 2018. made with  $88,9 - 82,4 = 6,5\%$  of the organizations that used the Internet in the total number of the surveyed organizations (the base growth rate was with  $88,9 / 82,4 = 1,08$  i.e. 8%) comparison of 2018 to 2010 [2].

Share of organizations, using ERP systems in the total number of the surveyed organizations, the absolute increase in the rate at the beginning of 2018. made: the  $12,2 - 5,1 = 7,1\%$

of the organizations, using ERP systems in the total number of the surveyed organizations (the base growth rate was:  $12,2 / 5,1 = 2,39$  i.e. 239% or two times) comparison of 2018 to 2010 [2].

The share of bodies of state power and bodies of local self-government using the Internet in the total number of the surveyed organizations state power bodies and bodies of local self-government, absolute growth rate at the beginning of 2018. made:  $94.8 - 86.8 = 8\%$  increase in state power bodies and bodies of local self-government using the Internet in the total number of the surveyed organizations state power bodies and bodies of local self-government (base growth rate amounted to  $94.8 / \text{up } 86.8 = 1,09$  i.e. 9%) comparison of 2018 to 2010 [2].

The share of organizations that used the means of protection of information transmitted over global networks in the total number of organizations surveyed, the absolute increase in the indicator at the beginning of 2018g. was:  $87,2 - 70,7 = 16,5\%$  of the organizations using means of protection of the information transferred on global networks in total number of the surveyed organizations (the base growth rate was:  $87,2 / 70,7 = 1,23$  i.e. 23%) comparison of 2018 to 2010 [2].

The volume of investments in fixed capital for equipment for information and communication technologies, in actual prices, the absolute increase in the indicator at the beginning of 2018 amounted to:  $389698.3 - 170255.2 = 219\,443,1$  million RUB. the volume of investment in fixed capital for equipment for information and communication technologies (the basic growth rate was:  $38969.3 / 170255.2 = 2.29$  i.e. 229% or twice) comparison of 2018 to 2010 [2].

#### IV. EVALUATION START OF IMPLEMENTATION OF THE "DIGITAL ECONOMY" IN RUSSIA

Thus, the use of modern computer technology and information security in terms of statistical evaluation increases and improves qualitatively, both in the social and economic sphere of society in the Russian Federation. Integration into the digital economy of the tax control authorities, as well as the financial sector (primarily Internet banking) in Russia is not inferior to Western systems, and in some cases even surpass the indicators of Western digital development and integration. At the same time, household members use the Internet more for interpersonal communication, and less for solving pragmatic issues of their education, health care, cost optimization, etc. Mechanisms of motivation of the population in different age groups for the study of the latest software environments, service applications on mobile devices, the development of knowledge in terms of data transfer protocols and principles of computer networks are not developed today, so there are difficulties in integrating the use of electronic services of public services among the population, especially its older age category (over 60 years).

Electronic document in the outline of economic and financial interaction between the counterparties, including international financial and economic cooperation between legal entities and entrepreneurs of the Eurasian economic Union in conditions of contemporary global change, provides high speed and accessibility of the handling of documents accompanying trade agreements in the framework of barter, production, etc. In this way, the use of "cloud" services, not

based on a specific operating system is very convenient and efficient.

The main providers of "cloud" infrastructure these days are Amazon, Google and Microsoft. However, many business entities of small and medium-sized businesses due to the low information and technical literacy in their work do not use cloud technologies and services, which slows down and complicates the electronic document flow in the contour of economic and financial interaction of contractors.

In view of the above, the author highlights the following provisions and possible prospects for the development of the digital economy and information society.

1) *Processing of programs to increase not only information, but also financial literacy among the population, including older age groups.* Programs of financial and information literacy in Russia exist, but among the population are not widespread, as the population is not motivated in terms of increasing their literacy in the financial and information spheres, are wary and suspicious of such activities; often the population is not informed about the activities to improve their financial and information literacy or uninterested in it.

2) *Carrying out actions for increase of financial and information literacy among the population in game easy forms with elements of modeling of situations and ways of their decision.* Dissemination through the media of information on the time and venue of financial and information literacy programmes. Educational institutions (universities, technical schools, schools, etc.) with the involvement of narrow specialists in the information and financial spheres, capable of organizing and conducting educational events for the population with different levels of knowledge, but wishing to gain new knowledge can act as platforms for such events.

3) *Blockchain Technology can be useful in the conditions of sanctions policy.* The recent confirmation of this action by Venezuelan President N. Maduro, who is under severe sanctions from the United States, is trying to implement calculations in the national cryptocurrency "El Petro". Therefore, must raise awareness in the area of the possible use of national cryptocurrencies.

4) *The Financial sector was one of the first to use mobile technologies to simplify banking services for the consumer.* ATMs are an example of the connection between the Internet of things and the banking industry, if ATMs are equipped with sensors, then in the future, the person who will need to use it will be able to do it with the help of their biometric data, without using a card. Looking into the future, the Internet of things promises to combine the financial activities of the consumer with other aspects of his life.

5) *The Internet of things, an area of the digital economy that is developing dynamically, and with great potential for its application.* For example, with regard to the energy industry, it is already benefiting significantly from the use of Internet of things technology. At the consumer level, users have the opportunity to reduce energy consumption with additional devices, thereby reducing their costs. Companies can also implement these technologies at a higher level, for example, in an office building with several tenants, it is possible to record and control energy consumption on each floor. After that, the management company, after analyzing the data, can determine the areas of irrational energy use and reduce costs. The

Internet of things is involved in the logistics sector, transport, there are its prospects in the medical care of the population, in the field of public safety, etc.

6) *Creation of mechanisms to support domestic developers in the field of information and communication technologies.* Implementation of programs to support and stimulate work in the development of security tools for work in information networks, development of modern software, development and creation of the latest hardware of information and communication technologies.

7) *Development of training mechanisms for the use of cloud technologies and services among business entities.* Development and distribution of motivation system for the use of electronic document management in small and medium-sized businesses through the "cloud" services, given the fact that many modern accounting systems allow to prepare financial statements in the "cloud" services.

8) *Integration of the Internet of things, blockchain technology in the field of public health services.* Given the direction of the development of digital devices used for the diagnosis of diseases, correction of the human body and others, the integration of specialized digital medical devices in the circuit of the Internet of things today is in demand, it is also necessary to improve the document management system among medical institutions, in compliance with medical secrecy, which can be itspolzovany blockchain technology.

9) *Monitoring the use of traffic and visits to Internet resources by children.* Development of mechanisms for the protection of children's mental and moral health at work of children on the Internet. The ban on visiting Internet resources the information of which in its semantic content can harm the child's psyche and is prohibited by the legislation of Russia, including publications in social networks.

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