

ЦИФРОВИЗАЦИЯ

DOI: 10.14515/monitoring.2019.5.06

Правильная ссылка на статью:

Добринская Д. Е., Мартыненко Т. С. Цифровой разрыв в России: особенности и тенденции // Мониторинг общественного мнения: Экономические и социальные перемены. 2019. № 5. С. 100—119. <https://doi.org/10.14515/monitoring.2019.5.06>.

For citation:

Dobrinskaya D. E., Martynenko T. S. (2019) Defining the Digital Divide in Russia: Key Features and Trends. *Monitoring of Public Opinion: Economic and Social Changes*. No. 5. P. 100—119. <https://doi.org/10.14515/monitoring.2019.5.06>.



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DEFINING THE DIGITAL DIVIDE IN RUSSIA: KEY FEATURES AND TRENDS

DEFINING THE DIGITAL DIVIDE IN RUSSIA: KEY FEATURES AND TRENDS

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ЦИФРОВОЙ РАЗРЫВ В РОССИИ: ОСОБЕННОСТИ И ТЕНДЕНЦИИ

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Abstract. The article considers the key development trends of Russian society within the context of strategic goal of digitalization in all spheres of public life and, consequently, the reduction of the digital divide. The analysis of theoretical developments in the study of the digital divide allowed identifying the main challenges in defining this term. The authors attempted to systemize the basic approaches to its interpretation given the evolution of this phenomenon. The survey allowed the authors to highlight the specifics of the sociological study of the digital divide and digital inequality, including traditional forms of social inequality. The article considers three levels of the digital divide: the material basis providing primary access to information and communication technologies, digital skills, the level of digitalization of life, as well as life chances defined as the opportunities or advantages of technology use. Proceeding from statistics and secondary studies for 2017-2019, the authors conclude on the prospects for bridging the digital divide in modern Russia.

Keywords: social inequality, digital divide, digital inequality, Information and Communication Technologies (ICTs), digital capital, modern Russian society

Acknowledgments. The survey received financial support from the Russian Foundation for Basic Research under project

Аннотация. В статье рассматриваются ключевые тенденции развития российского общества в контексте стратегической задачи цифровизации всех сфер общественной жизни и, как следствие, сокращения цифрового неравенства. В результате анализа теоретических разработок, посвященных исследованию цифрового разрыва, обозначены основные проблемы в определении этого термина, а также осуществлена попытка систематизации основных подходов к его интерпретации с учетом эволюции данного явления. Проведенный авторами анализ позволяет обозначить специфику социологического изучения цифрового разрыва и цифрового неравенства, в том числе относительно традиционных форм социального неравенства. В статье анализируются три уровня цифрового разрыва: материальная база, обеспечивающая первичный доступ к информационным и коммуникационным технологиям, навыки использования современных технологий, уровень цифровизации жизни, а также жизненные шансы, определяемые как возможности или преимущества использования технологий. На основе данных статистики и вторичных исследований за 2017—2019 гг. делается вывод о перспективах преодоления цифрового разрыва в современной России.

Ключевые слова: социальное неравенство, цифровой разрыв, цифровое неравенство, информационные и коммуникационные технологии (ИКТ), цифровой капитал, современное российское общество

Благодарность. Исследование выполнено при финансовой поддержке РФФИ, проект № 18-011-01106 «Но-

No. 18-011-01106 "New modes of social inequality and its peculiarities at the case of contemporary Russia".

вые формы социального неравенства и особенности их проявления в современной России».

Disclosure statement. The article was revised and supplemented on the basis of the Russian-language publication: Dobrinskaya D. E., Martynenko T. S. (2019) Perspectives of the Russian information society: Digital divide levels. *RUDN Journal of Sociology*. No. 1. Vol. 19. P. 108–120. <http://dx.doi.org/10.22363/2313-2272-2019-19-1-108-120> (In Russ.)

Конфликт интересов. Статья доработана и дополнена на основе русскоязычной публикации: Добринская Д. Е., Мартыненко Т. С. (2019) Перспективы российского информационного общества: уровни цифрового разрыва // Вестник Российского университета дружбы народов. Серия: Социология. Т. 19. № 1. С. 108—120. <http://dx.doi.org/10.22363/2313-2272-2019-19-1-108-120>.

Introduction

New forms of social inequality often accompany the traditional ones, such as economic, gender, racial, and ethnic inequality [Dobrinskaya, Martynenko, 2019; Martynenko, 2018; Polyakova, 2014; Osipova *et al.*, 2017]. This article focuses on the digital divide, which has become one of the key consequences of entering the new digital era. In modern sociological literature, there is conceptual and methodological incoherence between the existing approaches to the definition of the digital divide. The concept of the digital divide is often identified with the concepts of digital inequality, information divide, information inequality, etc. Furthermore, most researchers distinguish different levels of the digital divide.

Being part of the global digitalization in all spheres of public life, along with other countries, Russia benefits from the use of information and communication technologies (ICTs). The negative effects of the digital divide are the other side of the coin. Achieving the goals of sustainable development ("Transforming Our World: The 2030 Agenda for Sustainable Development") is possible only in the context of the widespread use of ICTs and global networks that bridge the digital divide and promote further development of the information society¹. The article considers three levels of the digital divide: the primary access to ICTs, digital skills, and life chances. The authors describe the scale of the digital divide at each level of its manifestation in modern Russia. This may be done based on a comprehensive study of the entire scope of theoretical and empirical developments devoted to the problems of the digital divide.

From the digital divide to digital inequality

Most researchers agree that discussions on the digital divide started in the mid-1990s. The first reference to the digital divide is often associated with the series

¹ UN (2015) Transforming Our World: the 2030 Agenda for Sustainable Development. A/RES/70/1. URL: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf> (accessed: 5.05.2019).

of publications by journalist Gary Andrew Poole in the *New York Times* in 1995—1996. At the same time, the US government officials began to announce the urge to address the digital divide in American society [DiMaggio, Hargittai, 2001]. In the fundamental work “The Information Age: Economy, Society and Culture” [Castells, 1996], Manuel Castells defined unequal access to the Internet from a sociological point of view as a “digital divide” [Warschauer, 2010].

In the context of widespread digitalization of society, the problem of the digital divide is widely discussed in modern sociological studies. However, there are obvious gaps in the sociological understanding of this category. It is remarkable that the term “digital divide” is not listed in sociological dictionaries and encyclopedias [Warschauer, 2010]. Experts are convinced that any attempt to define the digital divide must be flexible and consider the speed, the forms and the spread of new technologies [Epstein, Nisbet, Gillespie, 2011; Ragnedda, 2017]. As for the analysis of the digital divide, one must admit the specifics of studying this phenomenon [Dobrinskaya, 2016]. The studies aimed at explaining the social consequences of ICT development often lag behind the real situation in this area. The impact of new information and communication technology is ground-breaking. Therefore, the study of the digital divide issues must not be limited to sociological sciences and should incorporate a multidisciplinary approach.

The existing definitions of the digital divide generally focus only on specific aspects of the problem. This is not surprising due to the changing perspectives on the issue. For example, the Organization for Economic Cooperation and Development (OECD) defines the term “digital divide” as “a gap between individuals, households, businesses and geographic areas at various social and economic levels, considering their access to information and communication technology (ICT) and a wide range of activities”². The Russian Institute of the Information Society defines the digital divide as “a new type of social differentiation associated with the possession of various potential uses of modern information and communication technologies” [Glossary, 2009: 62].

Using the metaphor of the digital divide, van Dijk points to the so-called pitfalls of this metaphor and notifies that its usage often simplifies the essence of the inequality phenomenon in access to digital technologies and their application. In the end, van Dijk argues that the digital divide is not a static social phenomenon, but is changing over time³.

There are different methodological provisions regarding the analysis of the digital divide. Several researchers distinguish three dimensions of the digital divide: global, national, and individual. “At the individual level, «the Internet» is not just one technology, but different things for different people and is used differently for different purposes” [Selwyn, Gorard, Furlong, 2005: 7].

Norris defines global, social and democratic gaps differently. She considers the *global divide* at the level of individual states (for example, developed and developing countries); *social gap* along with the digital divide between those who have and those

² OECD (2001) Understanding the Digital Divide, OECD Publications. URL: <http://www.oecd.org/sti/1888451.pdf> (accessed: 7.05.2019).

³ Van Dijk J. The pitfalls of a metaphor, A Framework for Digital Divide Research. URL: https://www.utwente.nl/en/bms/vandijk/research/digital_divide/Digital_Divide_overigen/a_framework_for_digital_divide/#the-pitfalls-of-a-metaphor (accessed: 5.05.2019).

who do not have access to the ICT within the same country; *democratic gap* which relates to the differences between individuals who actively use or, conversely, do not use ICT to participate in social and political life [Norris, 2001].

Wellman and Chen analyze the digital divide at the global level and at the level of individual states. They emphasize that the digital divide is a multilevel and multidimensional phenomenon. They suggest an analytical model which on the one hand is related to a qualitative analysis of the Internet activity, and on the other hand, considers the fact that the digital divide is mainly determined by social factors rather than technical performance [Wellman, Chen, 2005]. However, sociologists most frequently allocate three levels of the digital divide related to access to ICT, digital skills and life chances.

The first level of the digital divide

As it noted in our previous study, “today, the evolution of the digital divide is a generally accepted fact, as well as the transforming conceptualization of this phenomenon [DiMaggio, Hargittai, 2001; Wellman, Chen, 2005; Hilbert, 2011; Ragnedda, 2017]. At the first stage of the Internet expansion, the digital divide was studied within the framework of technology and innovation diffusion [Rogers, 1995]. In this deterministic approach, most studies were conducted from the perspective of binary logic of Internet accessibility (access/lack of access), or the amount of time spent on the Internet, which indicated the difference between those who have and those who do not have access to the Internet” [Dobrinskaya, Martynenko, 2019]. This approach is still relevant for studying the diffusion of new media. In this case, the relationship between traditional forms of social inequality and the digital divide (mainly seen as a gap in access to the Internet at this stage) is perceived within the context of how the position in the social structure relates to access to the Internet.

To measure the first level of the digital divide, scientists use various benchmarks and indicators, such as the number of devices (smartphones, laptops, etc.) per population, the Internet penetration (in %), and the cost of the Internet, which determines its availability to the public, the spread of the mobile or broadband Internet, etc. Thus, the conceptualization of the first-level digital divide implies the presence/absence of a technical device and the availability of Internet access (mobile, broadband, etc.). Access to the Internet was defined in this context as the availability of a physical device (computer, smartphone) and communication channels (mobile Internet, broadband Internet). The main source of information in the analysis of the first-level digital divide is statistics (for example, data from the State Statistics Committee of the Russian Federation), findings of research institutes, consulting agencies and educational institutions. However, this simplified division into “haves” and “have-nots” is insufficient to assess the social impact of technological expansion [Helsper, 2012; Jung, Qiu, Kim, 2001; Brandtzaeg, Heim, Karahasanovic, 2010]. This refers to the deepening digital divide [Van Dijk, 2005].

The second level of the digital divide

The digital divide has evolved from a gap in physical accessibility to the Internet and other ICTs into a gap which includes differences in digital skills [Van Deursen, Van

Dijk, 2010]. Due to the growing amount of information on the Internet and the growing dependence of people on information, digital skills should now be considered as vital assets. Social inequality increases when these skills are unevenly distributed [Van Deursen, Van Dijk, 2010]. It is equally important to find out who uses the Internet and to distinguish different levels of digital skills [Hargittai, 2002; Van Deursen, Van Dijk, 2010]. The purpose is not simply to demonstrate the availability or lack of ICT access, but also to analyze the wide range of implications of these technologies and the different options for their use [Wellman, Chen, 2005]. Researchers create multidimensional analytical constructions to analyze complex variables, describing different types of ICT usage and considering various levels of digital literacy, the level of education, gender, age, English proficiency, etc. [DiMaggio, Hargittai, 2001; Hargittai, 2002; DiMaggio et al., 2004; Robinson et al., 2015]. Thus, apart from indicating access to the ICTs, the second level of the digital divide studies the differentiation of ICT application practices and outcomes through the analysis of different ICT usage [DiMaggio, Hargittai, 2001; Hargittai, 2002].

According to Van Deursen and Van Dijk, Internet skills involve not only the ability to use technical devices to access ICTs (*operational Internet skills*) but also the ability to search for, select and process information (*formal Internet skills*), to use the information obtained for personal purposes (*information Internet skills*), and to estimate the opportunities of computer technology to improve personal social status (*strategic Internet skills*) [Van Deursen, Van Dijk, 2010].

Along with the approach presented above, there are several benchmarks and indicators for measuring digital skills. In 2017, within the framework of the G20 Summit, a group of experts suggested an integrated approach to assess the level of digital literacy (digital literacy index). They developed a system of indicators (subindexes), which allows assessing the overall level of digital literacy through the analysis of information, computer, and communicative literacy, as well as media literacy and attitude to technological innovations [Chetty, Liu, Wenwei, 2018]. Information literacy is the ability to find the necessary data on the Internet, to compare several sources of information in decision-making, to determine the benefit or harm of certain messages. The indicators of computer literacy involve knowledge of computer components and various gadgets, and ease of handling similar technical devices. Media literacy involves the ability to navigate in the media space, to search for the necessary news, while assuming the presence of fake information. Communicative literacy means the ability to express one's opinion on the network, to analyze the position of the interlocutor, to use modern digital communication channels (instant messengers and social networks). The subindex "Attitude to technology innovation" demonstrates the knowledge of current trends in technology, skills with gadgets and applications, as well as attitudes towards the use of technological innovations⁴.

The Russian regional public organization Center for Internet Technologies has also developed an index for measuring digital literacy⁵. This index includes three subindexes (digital consumption, digital security, and digital competencies). Digital consumption

⁴ NAFI. Digital Literacy of Russians Is Increasing. March 2019. URL: <https://nafi.ru/en/analytics/uroven-tsifrovoy-gramotnosti-rossiyan-rastet-en-digital-literacy-of-russians-is-growing-/> (accessed: 20.05.2019).

⁵ Digital Literacy. URL: <http://цифроваяграмотность.рф> (accessed: 13.05.2019).

includes the ability to use technology for life and work (for example, public services, telemedicine, social networks, cloud technologies, etc.). The indicators are the number of users registered on portals (for example, public services), the number of search queries, the volume of cloud platforms used, the number of social network sites users, etc.

Digital competencies imply the presence or absence of skills for effective use of technologies (for example, information search, financial transactions, online purchases, content production, etc.). The measurement is carried out using such indicators as the number of online purchases on the Internet, the turnover of online retailers, the number of users involved in content production, etc. Digital security implies the knowledge and ability to provide basic security on the Internet (for example, personal data protection, data backup, culture, etc.). The indicators for the digital security subindex are the number of viruses and hacks, awareness of antivirus and protection tools, and skills to create complex passwords and backups).

The main source of information at the second level of the digital divide is public surveys, as well as statistics on the number of users of social network sites, data from financial organizations, government agencies, online retailers and other institutions. The gap in the level of Internet skills, as a rule, is greater than the gap in physical access availability. Although the divide in physical access is narrowing, at least in developed and developing countries, the divide in skills tends to widen [Van Dijk, 2005].

The third level of the digital divide

It is important to emphasize that “the digital divide has become a social problem as it is directly related to end-users of ICT products, their skills and competencies, specific purposes of ICT products use, etc.” [Dobrinskaya, Martynenko, 2019]. Thus, there is an issue of great interest: how does the digital divide affect social inequality? This is the key issue at the third level of digital divide analysis [Ragnedda, 2017].

Some social groups, such as elderly people, lower-income citizens, certain ethnic groups and citizens with low levels of education, have fewer benefits from the access and use of Internet resources and “digital capital” [Ragnedda, 2017]. Digital capital is a complex of experience, skills, knowledge, computer literacy and access to ICT [Ragnedda, 2017]. As we pointed out earlier, “there is a tendency to accumulate benefits from different levels of access and use of ICT among the privileged social groups. Thus, access to ICTs and their use can provide users with a wide range of opportunities to improve their living” [Dobrinskaya, Martynenko, 2019].

In this regard, several researchers suggest moving to the third level of the digital divide, which is a gap in the availability of certain life chances, opportunities or beneficial outcomes [Stern, Adams, Elsasser, 2009; Ragnedda, 2017; Scheerder, Van Deursen, Van Dijk, 2017], which appear upon obtaining certain benefits from the effective use of ICT products. In sociology, life chances are understood as “the material advantages or inconveniences that a typical member of a group or class can expect in a particular society” [Glossary, 2009: 208]. Based on Dahrendorf’s definition of the “life chances” category (the term was introduced by Max Weber), this study considers life chances broadly as containing two components — options and ligatures; in other words, the opportunities and social connections of individuals [Dahrendorf, 1979]. The analysis of life chances includes objective and subjective indicators.

Possibilities are realized with the appropriate infrastructure, which provides digitalization of different spheres of social life. Digitalization allows creating complete technological “habitats” (ecosystems, platforms) creating a user-friendly environment (technological, instrumental, methodological, documentary, partnership, etc.) [Khalin, Chernova, 2018: 47]. There are various indicators for measuring the level of digitalization, such as digital economy development, e-government, e-healthcare and e-education, etc.

The digitalization measurement index (Digital Society Index) is of particular interest. The Digital Society Index captures not only the level of economy digitalization but also people’s attitudes to these processes. The Digital Society Index consists of three elements and includes the dynamism or speed of the digital economy, inclusion or providing access to the digital economy, trust or creating a favorable environment for participation in digital life⁶. A survey of about 20,000 people from 10 countries (the world most rapidly developing digital economies) showed that in general people are optimistic about the spread of digital technologies and are more likely to attribute positive influence on society to them. In 2018, the leaders were the UK, USA, and China.

Based on the data from social studies, scientists receive information on the percentage of users included in the digitized spheres of society (for example, activities on tax service platforms, government agencies, financial and educational institutions, etc.).

The third level of the digital divide is defined as the presence of life chances related to the implementation of opportunities available to those with access and the corresponding digital skills, on the one hand, and a subjective assessment of the ICT capacity and their impact on users’ life, on the other hand⁷. The presence of social ties and certain cultural attitudes are factors contributing to the implementation of ICT opportunities. These life chances affect the individual’s ability to take a certain social position, build a life trajectory and achieve certain social success. This context allows revealing differences between the concepts of “digital divide” (as a form of differentiation) and “digital inequality” (as a new form of social inequality). It should be stressed that notwithstanding the fact that these concepts are often used as synonyms, the authors consider the concept of “digital inequality” to be broader than the concept of “digital divide”. In fact, differences in access to devices and the Internet alone do not create social inequality. However, when new technologies form new social relations or provide an opportunity for social mobility, there is social inequality.

Thus, it should be noted that there are several methodological challenges in the analysis of the digital divide and digital inequality. This article attempts to resolve some of them. So, one of the methodological issues is the substitution of the concepts “digital inequality” and “digital divide”. The authors of this article demonstrate the specifics of conceptualization of each concept and indicate the features of their use. Furthermore, there are various options for determining the levels of the digital divide, which questions the difference in the definition of all three levels of the digital divide.

⁶ Digital Society Index 2018. Framing the Future. URL: https://dan.hu/wp-content/uploads/2018/03/DAN_Digital-Society-Index-2018.pdf (accessed: 23.05.2019).

⁷ Babynina L. S. Digital Inequality: Causes and Consequences. URL: https://digital.msu.ru/wp-content/uploads/Л.С.Бабынина_Цифровое_неравенство_причины_и_последствия.pdf (accessed: 15.05.2019).

The article examines various options for dividing the digital divide into levels. For the purposes of this study, it seems advisable to use an approach in which the levels of the digital divide are related to ICT access, specialized digital skills, the level of digitalization, and life chances related to the Internet use.

Digital divide and digital inequality in modern Russia

The empirical grounding for the study includes data on access to the Internet obtained from the Internet World Stats and the results of secondary research on access and use of the Internet and social network sites obtained from open sources of NAFL, RAEC, Digital Literacy Index, Web Index, Digital Society Index. The authors used statistical data for 2017—2019. Comparative and comprehensive analysis forms the basis of this study. The researchers analyzed data about the three dimensions—physical access, digital skills and the level of digitalization, and life chances.

The first level of the digital divide in Russia

According to the latest data, the global share of Internet users is 57 % (4.38 billion people) of the total world population. According to the agency, 109.5 million people (76.1 % of the total population) have access to the Internet in Russia. In comparison, in Denmark, the figure is 96.9 %, in Germany—96.2 % and 70.1 % in Greece. Users from Russia account for 15.5 % of the total number of Internet users in Europe. Besides, the number of Facebook users in Russia is around 13.1 million, which is much lower than the indicators for the most developed European countries⁸.

The number of mobile Internet users in the world is almost equal to the total number of Internet users: 52 % of the world population (3.98 billion people) are mobile Internet users. Today, access to the web from mobile phones accounts for almost half the time spent by users on the Internet. The leaders in Internet penetration are the North American and North European regions, where almost 95 % of the population are Internet users. In Western Europe, 94 % of the region's population currently use the Internet. Eastern Europe, including Russia, ranks 4th in terms of Internet penetration, which accounts for 80 % of the region's population⁹.

In modern Russia, a smartphone is the main type of device for accessing the Internet. According to the Mediascope data, by April 2019, 66.5 % of Internet users accessed the World net from mobile devices (data for the period from November 2018 to April 2019), which is an increase of 6.2 % compared to last year (November 2017—April 2018). On the contrary, the number of Internet users connecting to the Internet through stationary devices has decreased (from 54 % to 52.6 % in November 2018—April 2019). Users spent more time on the web using mobile devices than stationary devices¹⁰.

High rates of mobile Internet use in the Russian Federation are explained, inter alia, by its low cost of use. Today, Russia ranks 12th among countries with the cheapest

⁸ Europe Internet Usage Stats Facebook Subscribers and Population Statistics March 2019. URL: <https://www.internetworldstats.com/stats4.htm#europe> (accessed: 23.04.2019).

⁹ RAEC. Internet in Russia in 2018. State, trends and development prospects. Branch Report, 2019. The Russian Association for Electronic Communications (RAEC). URL: <https://raec.ru/upload/files/190617-fpmk-2019.pdf> (accessed: 17.05.2019).

¹⁰ WEB-Index. Total Internet audience. April 2019. URL: <https://webindex.mediascope.net/general-audience> (accessed: 23.05.2019).

mobile Internet (the average cost of 1 GB is \$ 0.91). India ranks first — \$ 0.26, while the most expensive mobile Internet is in Zimbabwe, where 1 GB of mobile Internet costs \$ 75.20¹¹.

According to the Global Connectivity Index 2018, the strength of Russia, which ranks 36th, is the 5G network deployment program. The 5G networks will allow users to exchange information in real-time at speeds exceeding 10 Gb/sec, which is 30 times faster than the speeds currently available in 4G networks¹².

The second level of the digital divide in Russia

The second level of the digital divide studies the differentiation of ICT practices and their results based on the analysis of various ways of applying ICT [DiMaggio, Hargittai, 2001; Hargittai, 2002]. Digital skills are a digital divide parameter that is difficult to calculate.

There are controversial data on the digital skills of Russians. According to the latest survey of the Russian Public Opinion Research Center, the number of Russians who use the Internet daily is 67 %; several times a week — 11 % of the population; several times a month — 3 %; occasionally, but at least once every six months — 1 %. At the same time, 18 % of Russians never use the Internet, others use it to various extents¹³. “Furthermore, the practice of Internet use is not accidental, as it is associated with social and demographic characteristics which form social and economic inequality (income, sex, age)” [Volchenko, 2016: 165].

As part of the research project “Digital literacy for the economy of the future”, the NAFL analytical center studies the level of digital literacy of Russians. NAFL experts implement the digital literacy assessment approach suggested in 2017 at the G20 Summit.

The research findings published in the spring of 2019 demonstrate a positive trend in the level of digital literacy among Russians (52 p. p. out of 100 in 2017, 60 p. p. in 2018). Russians have become more competent in the search for information and in its analysis, and more confident when working with digital devices. More Russians began to use modern means of communication, such as instant messengers and social networks. The study notes that 45 % of Russians currently have a high level of digital literacy. However, a quarter of the adult population — 28 million Russians — show low digital literacy rates. The main barriers to improvements are little interest in technological innovation and a relatively low level of digital literacy¹⁴. When calculating the digital literacy index, NAFL researchers separately examined its components. Thus, the information literacy subindex in 2018 was 66 p. p. (which is 8 p. p. higher than the previous year). At the same time, the computer literacy subindex showed a positive trend — from 46 p. p. in 2017 up to 55 p. p. in 2018. NAFL experts note a slight increase

¹¹ Worldwide mobile data pricing: The cost of 1GB of mobile data in 230 countries. URL: <https://www.cable.co.uk/mobiles/worldwide-data-pricing/> (accessed: 13.06.2019).

¹² Global Connectivity Index 2018. URL: <https://www.huawei.com/minisite/gci/en/country-rankings.html> (accessed: 13.05.2019).

¹³ VCIOM. Internet Use. 2019. URL: https://wciom.ru/news/ratings/polzovanie_Internetom/ (accessed: 13.05.2019).

¹⁴ NAFL. Digital Literacy of Russians Is Increasing. March 2019. URL: <https://nafi.ru/en/analytcs/uroven-tsifrovoy-gramotnosti-rossiyan-rastet-en-digital-literacy-of-russians-is-growing-/> (accessed: 20.05.2019).

in media literacy—from 65 p. p. to 67 p. p. Communicative literacy, on the contrary, showed the highest growth (from 46 % in 2017 to 59 % in 2018). The “Attitude towards technological innovation” subindex showed insignificant growth (4 p. p. compared to 2017); it amounted to 51 p. p. Experts note that the level of digital literacy differs for different socio-demographic groups. Its value is highest among young people aged 18—24 (82 p. p.), residents of Moscow and St. Petersburg (78 p. p.) and those with permanent employment (67 p. p.)¹⁵.

Similar data on the digital literacy of Russians were obtained by ROCIT. Stressing the importance of the “digital security” subindex, ROCIT notes the reduction of digital literacy in 2018 compared to 2017 (14.7 %), due to the diffusion of digital risks (weak passwords, data preservation, virus protection, etc.)¹⁶. The threat of information security is becoming an increasingly urgent problem for Russian users. The problem of access to personal data on the Internet worries 59 % of all users (which is 5 % more than in 2018). Nearly 69 % of Moscow and St. Petersburg residents believe that their personal data on the Internet are vulnerable. Compared to 2018, the share of users who faced various threats to information security has increased (spam—from 49 % in 2018 to 54 % in 2019; intrusive advertising—from 32 % in 2018 to 44 % in 2019; hacking of a social network account, mailbox, electronic wallet—from 24 % in 2018 to 32 % in 2019). At the same time, the results of the NAFI survey show a decrease in the share of those who believe that they have enough knowledge and skills to protect personal data (from 38 % in 2018 to 34 % in 2019). The number of Russian users ignoring the risks of using the same passwords for different accounts on the network has increased from 29 % in 2018 to 36 % in 2019. The number of users who do not back up important information to external media has also increased (from 62 % in 2018 to 77 % in 2019). These are mainly women and older people¹⁷.

The conclusions made by the NAFI experts based on the results of a study conducted in mid-2018 on the attitudes of parents and children towards the Internet are of particular interest. In most cases, the Internet education of adolescents is limited to restrictions and control from their parents, rather than competent immersion in the network space. Moreover, the study revealed a clear contradiction between the parents’ attitudes to the use of the Internet by their children and the actual education and control. Most parents (91 %) consider it necessary to control their child’s activity on the Internet. At the same time, 57 % of parents do not use the “parental control” function, while 51 % of the surveyed parents only “observe from the side” what their child is doing online¹⁸.

The sectoral report “Internet in Russia” prepared by experts of the Federal Agency for Press and Mass Communications and Analysts of the Russian Association of Electronic

¹⁵ NAFI. Digital Literacy of Russians Is Increasing. March 2019. URL: <https://nafi.ru/en/analytcs/uroven-tsifrovoy-gramotnosti-rossiyan-rastet-en-digital-literacy-of-russians-is-growing-/> (accessed: 20.05.2019).

¹⁶ Digital Literacy. URL: <http://цифроваяграмотность.рф> (accessed: 13.05.2019).

¹⁷ NAFI. Russians have become more likely to face security threats on the Internet. May 2019. URL: <https://nafi.ru/analytcs/rossiyane-stali-chashche-stalkivatsya-s-ugrozami-bezopasnosti-v-Internet-e-en-russians-face-security-/> (accessed: 25.05.2019).

¹⁸ NAFI. Fathers and children: how parents and teenagers relate to the Internet. December 2018. URL: <https://nafi.ru/analytcs/ottsy-i-deti-kak-roditeli-i-podrostki-otnosyatsya-k-Internetu/> (accessed: 13.05.2019).

Communications (RAEC) highlights the following key trends in the development of digital literacy in 2018:

- the development of infrastructure and involvement of Russians in information processes in an online environment are becoming more conscious;
- the growth and expansion of the range of digital competencies;
- the increase in critical thinking.

The Research of Digital Literacy in 2018 demonstrated preservation of regional disparities and the uneven spread of digital literacy in the federal districts. The North-West, Ural and Volga Federal Districts show the greatest stability in the development of digital literacy. The Far Eastern and Siberian Federal Districts showed the greatest growth. In particular, the Far Eastern Federal District moved from the third to the second place. It maintained its leadership in digital security and increased digital consumption from the 3rd place to the 2nd. However, the Far Eastern Federal District managed to get ahead of the Central Federal District primarily due to significant development of digital competencies (from the 7th place to the 2nd). It is also worth noting the positive dynamics of the Siberian Federal District, which has moved from the 7th place to the 5th place over the 4 years of research due to the leveling of imbalances between subindexes of digital competencies, digital security, and digital consumption¹⁹.

According to the Dentsu Aegis Digital Society Index 2018, only 37 % of Russians do not believe that the existing education system meets the modern digital requirements (by contrast, in one of the fastest-growing economies of the world, China, this rate amounts to 68 %).

The level of English proficiency is a factor greatly influencing the possibility of using the Internet. Today, the Runet is significantly limited in terms of resources and opportunities if compared to the English Internet. According to the Education First Company, which annually compiles the English Proficiency Index (EPI), Russia ranked 42nd among 88 countries in terms of language proficiency in 2018²⁰.

Mediascope researchers note that the preferences of Russian Internet users have been constant over the past few years: social networks, instant messengers, online shopping, information search, video and TV services, and online banking²¹. Thus, it becomes obvious that Russian citizens use the Internet mainly for entertainment. This factor shows that in Russia, the Internet is used inefficiently, which results from the lack of digital skills. It is worth noticing that various programs are currently being introduced in Russia to improve digital literacy and digital skills of the population. For example, in May 2019, the first Digital Dictation took place — the all-Russian educational campaign to determine the level of digital literacy of the population. In 2019—2021, the Russian authorities plan to issue and distribute personal digital certificates to train Russians in IT competencies.

¹⁹ RAEC. Internet in Russia in 2018. State, trends and development prospects. Branch Report, 2019. The Russian Association for Electronic Communications (RAEC). URL: <https://raec.ru/upload/files/190617-fpmk-2019.pdf> (accessed: 17.05.2019).

²⁰ EF English Proficiency Index 2018. URL: <https://www.ef.com/~/media/centraefcom/epi/downloads/full-reports/v8/ef-epi-2018-english.pdf> (accessed: 13.06.2019).

²¹ Achkasova K. (2019) Internet Audience in Russia (Mediascope) / Materials of the Russian Internet Forum RIF + KIB 2019. Available at: <http://files.runet-id.com/2019/rif/rif19—open-mediascope.pdf> (accessed: 25.06.2019).

The third level of the digital divide in Russia

According to the Digital Society Index, Russia, along with the USA, China, Great Britain, Germany, Japan, France, and other countries, is one of the 10 countries leading in the development of the digital economy²². Among the three index components (dynamism, inclusion, and trust), Russia takes 10th, 7th and 9th place (ranking 10th in the overall rating). This indicates that the most intensive activity is related to providing coverage of the population with digital services and services. Yet, Russia is significantly behind the leading countries for all indicators — Great Britain, the USA, and China. Moreover, as noted by the authors of the report, countries in which digitalization began earlier experience increasing distrust of new technologies. Nearly 50% of Russia's population believes that modern technology will create new jobs, help in solving social problems, and will have more positive consequences for society than negative ones in general²³.

Physical infrastructure and digital skills do not guarantee the development of the information society and bridging the digital divide. The general level of life digitalization plays a key role in this regard. It can be defined as the inclusion of the latest information technologies in the functioning of the most important social spheres: education, economy, politics, healthcare, etc. There have been serious positive changes in all these spheres in the past few years. For example, the “Gosuslugi” (“State Services”) portal, which is part of the e-government system, is widely known. According to the statistics for 2018, over 86 million Russian citizens (74.8%) are registered on the portal (the number of users increases by 21 million per year)²⁴. On average, 1.6 million users visited the portal in 2018 daily.

Table 1. Access of the Russian population to the “Gosuslugi” portal in 2014—2018, %²⁵

	2014	2015	2016	2017	2018
% of the population using the “Gosuslugi” service	35.2	39.6	51.3	64.3	74.8
Increase, %	—	4.4	11.7	13.0	10.5

As we found in our research, “similar processes may be observed in the healthcare and education system with widespread electronic diaries and online medical appointment booking. Serious changes may be observed in the service sector, including the tourism sector and banking services” [Dobrinskaya, Martynenko, 2019].

²² Digital Society Index 2018. Framing the Future. URL: https://dan.hu/wp-content/uploads/2018/03/DAN_Digital-Society-Index-2018.pdf (accessed: 23.05.2019).

²³ Digital Society Index 2018. Framing the Future. URL: https://dan.hu/wp-content/uploads/2018/03/DAN_Digital-Society-Index-2018.pdf (accessed: 23.05.2019). P. 16.

²⁴ Gosuslugi. 74.8% of Russians use e-government services. June 2019. URL: http://zdrav.expert/index.php/Статья:Единый_портал_государственных_услуг_-_www.gosuslugi.ru_%28ЕПГУ%29#.D0.90.D1.83.D0.B4.D0.B8.D1.82.D0.BE.D1.80.D0.B8.D1.8F_D0.B8_D1.81.D1.82.D0.B0.D1.82.D0.B8.D1.81.D1.82.D0.B8.D0.BA.D0.B0_D0.BF.D0.BE.D1.80.D1.82.D0.B0.D0.BB.D0.B0_D0.B3.D0.BE.D1.81.D1.83.D1.81.D0.BB.D1.83.D0.B3 (accessed: 13.06.2019).

²⁵ Source: Gosuslugi. 74.8% of Russians use e-government services. June 2019. URL: http://zdrav.expert/index.php/Статья:Единый_портал_государственных_услуг_-_www.gosuslugi.ru_%28ЕПГУ%29#.D0.90.D1.83.D0.B4.D0.B8.D1.82.D0.BE.D1.80.D0.B8.D1.8F_D0.B8_D1.81.D1.82.D0.B0.D1.82.D0.B8.D1.81.D1.82.D0.B8.D0.BA.D0.B0_D0.BF.D0.BE.D1.80.D1.82.D0.B0.D0.BB.D0.B0_D0.B3.D0.BE.D1.81.D1.83.D1.81.D0.BB.D1.83.D0.B3 (accessed: 13.06.2019).

The Ministry of Digital Development, Communications and Mass Media of the Russian Federation announced the launch of digital services for voters in the fall of 2019 (voter's personal office with the choice of a polling station, voting at a digital polling station, targeted information to the users about election campaigns, candidates, electoral associations and the election results)²⁶.

On May 22, 2019, the National Center for Informatization (which is part of the "Avtomatika" concern belonging to Rostec State Corporation) announced that in 2024 all state and municipal medical institutions will provide citizens with access to electronic medical documents in the "My Health" personal account on the public services portal. In 2019, the share of such organizations will be 4%, and in 2020—20%. It is reported that these indicators should be achieved within the framework of the Federal project "Creating a single digital circuit in healthcare based on the EGISZ portal", implemented by the Ministry of Health of Russia and the National Center for Informatization.

Several educational programs are being implemented aimed at creating a continuing education system based on digital technologies. Examples of such programs include the "National Platform of Open Education"²⁷, which has been operating since 2015, as well as the state project "Modern Digital Educational Environment in the Russian Federation" (2017)²⁸.

As we emphasized, "according to the Strategy for the Development of the Information Society in the Russian Federation for 2017—2030 adopted on May 9, 2017, the basic areas of development include an increase in the share of the digital economy, providing the population with access to Internet resources, communicating the general idea of using digital resources through online education and online healthcare systems to the public²⁹. Thus, the government is trying to minimize the existing gap between the availability of adequate physical infrastructure and the lack of practical skills and knowledge for its full implementation through the compulsory digitalization of the main social institutions: education and healthcare" [Dobrinskaya, Martynenko, 2019]. At the same time, as of May 28, 2019, only one of the 20 priority projects were reviewed and adopted, which indicates a slow implementation of the Digital Economy national project³⁰.

At the same time, e-commerce volumes are increasing. According to the sectoral report "Runet Economics", the contribution of the Internet economy to the Russian economy in 2018 amounted to 3.9 trillion rubles, which is an increase of 11% compared to 2017.

²⁶ Ministry of Digital Development, Communications and Mass Media of the Russian Federation. Digital services for voters will be available on the portal of public services in 2019. URL: <https://digital.gov.ru/ru/events/38998/> (accessed: 13.06.2019).

²⁷ National Platform of Open Education. URL: <https://openedu.ru> (accessed: 31.05.2019).

²⁸ Modern Digital Educational Environment. URL: <http://neorusedu.ru> (accessed: 13.06.2019).

²⁹ On the Strategy for the Development of the Information Society in the Russian Federation for 2017—2030. President of the Russian Federation (2017). URL: <http://www.kremlin.ru/acts/bank/41919> (accessed: 05.06.2019).

³⁰ Digital economy of Russia. 2019. URL: http://tadviser.com/index.php/Article: Digital_economy_of_Russia (accessed: 25.06.2019).

Table 2. **Volumes of the main sectors of the Runet economy in 2018 31**

	Marketing and advertising	e-commerce	Infrastructure	Media and entertainment
2018, billion rubles	262.9	1953.4	106.2	75
Increase compared to 2017%	17.3	13.2	13.3	7.1

As noted by the report authors, the e-commerce segment is the largest segment of the Russian Internet economy in terms of volume. The number of goods and services that can be bought or ordered on the Internet is growing, the number of payment methods is increasing, delivery times are gradually being reduced, despite the presence of problems in the logistics infrastructure. With the growing financial and digital literacy, the number of online customers is growing, while experienced users do more online shopping in more categories. Experts note considerable market growth for servicing and services: transport services and food delivery; tickets to events; professional and domestic services. The market of electronic payment services is the growth leader — in 2018, its volume has increased by 37.7 % and is estimated by experts at 1125 billion rubles³².

However, at present, the Russian economy is not digital. It is assumed that the implementation of the digital economy program will increase the volume of the digital economy from 3.2 % in 2015 to 9.6 % by 2025³³.

New data confirm that “the obvious tendency to digitalize the life of contemporary Russian society requires certain skills and material resources, offers new opportunities for self-realization, improving social status, etc. The rate of digitization is rather high in different sectors of life. That is why the current extension of knowledge on new information technologies and their effective use is completely insufficient. Access to ICT and its effective use create one of the main competitive advantages in the labor market, which allows receiving better offers from employers. Moreover, effective information search allows people to participate in public life, which is quickly moving to cyberspace, where one can express one’s own political views, express oneself through personal blogs, web pages and profiles in social network sites.

It is obvious that the current digitalization level of modern Russian society provides insignificant life chances to Internet users. For example, the implemented e-government system still assumes using a lot of paper forms and documents. However, the rapid digitalization, proactive government policies, automation, and labor robotization will help to increase the importance of this sector” [Dobrinskaya, Martynenko, 2019].

³¹ Source: RAEC. Internet in Russia in 2018. State, trends and development prospects. Branch Report, 2019. The Russian Association for Electronic Communications (RAEC). URL: <https://raec.ru/upload/files/190617-fpmk-2019.pdf> (accessed: 17.05.2019).

³² RAEC. Internet in Russia in 2018. State, trends and development prospects. Branch Report, 2019. The Russian Association for Electronic Communications (RAEC). URL: <https://raec.ru/upload/files/190617-fpmk-2019.pdf> (accessed: 17.05.2019).

³³ RIAC. The Digital Economy in Russia. Part 2. August 2018. URL: <https://russiancouncil.ru/en/blogs/leenders/the-digital-economy-in-russia-part-2/> (accessed: 13.05.2019).

Conclusion

This article examines methodological problems associated with the lack of a unified approach to the conceptualization of the concepts “digital divide” and “digital inequality” and their constant equation. The authors propose a clear distinction between these two concepts, which is possible with an adequate division of the digital divide into three levels, each of which is characterized by a whole set of indicators. Digital inequality is a new form of social inequality resulting from the third-level digital divide, which is associated with the general digitalization of society and its areas and the life chances of individuals with access to the Internet and a set of special digital skills for the full and effective use of digitization products.

The above analysis leads to the conclusion regarding the further growth of the digitization level of Russian society. “The specific nature of the formation of the Russian information society is determined, on the one hand, by active government policy towards its formation, and, on the other hand, by current social and structural issues. Aging physical infrastructure, an ineffective system of implementing new technologies, and lack of educational technologies aimed at the diffusion of digital skills are among the main limiting factors in the development of the information society. The main strategic task in this context is the search for measures to reduce and prevent the growth of the digital divide in modern Russian society” [Dobrinskaya, Martynenko, 2019].

In conclusion, it seems important to point out new trends in the analysis of the digital divide. Today, media often refer to the information overload, the need for a “digital detox”. They also mention the appearance of the so-called “new Luddites” [Penn, 2019], who are tired of using new technologies and are also worried about privacy and cyber threats. The digitalization of modern life does not allow a person to abandon the use of new technologies in general. However, the idea of reducing the online presence and returning to rotary phones instead of smartphones or paper books instead of tablets is becoming more popular. The new interpretation of the above trends is also interesting: if a person can afford not to check constantly the email and text messages, then most likely he or she has a high social status and income and therefore does not need to remain online to conduct electronic correspondence and communication via instant messaging. Thus, a phone with a limited set of functions becomes a kind of a new “status accessory” indicating that its owner is a too important, famous or rich person, while “network inaccessibility” allows restoring one’s prestige, becoming a new fashion trend [Penn, 2019].

As noted by Bowles, live human communication becomes a luxury in a digital world of universal connectivity through information and communication technologies³⁴. The rapid spread of smartphones and other gadgets as a result of their affordability, as well as the intensification of the widespread penetration of the Internet, provides opportunities even for the poorest people to use medical services, educational and numerous entertainment services (including audio and video content, social networks, online dating and cybersex, virtual travel, etc.). Digitalization mediates human experience with the screens of smartphones, tablets, and laptops. Due to the relatively low cost of devices, the cost of services that can be accessed through these

³⁴ Bowles N. (2019) Human Contact Is Now a Luxury Good. *New York Times*. March 23, 2019. URL: <https://www.nytimes.com/2019/03/23/sunday-review/human-contact-luxury-screens.html> (accessed: 13.05.2019).

devices is also declining. However, this results in numerous questions regarding the quality of online services, while offline communication with specialists is becoming more expensive and less accessible for those whose income does not allow them to purchase these services offline. Since more and more gadgets appear in the life of the poor, they disappear from the life of the rich³⁵. Rotary phones, mailboxes on unpopular servers, and paper books have become new status accessories. The issues discussed above require further sociological research of the digital divide and digital inequality in their new manifestations.

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³⁵ Bowles N. (2019) Human Contact Is Now a Luxury Good. *New York Times*. March 23, 2019. URL: <https://www.nytimes.com/2019/03/23/sunday-review/human-contact-luxury-screens.html> (accessed: 13.05.2019).

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