

The Digital Transformation of Russia

Digital Skills and its Potential

65 percent of children entering primary school today will work in employment that does not yet exist; and by 2022 approximately 22 percent of employment in the global economy will be created by digital technologies. 73 percent of company managers say they have serious problems finding specialists qualified in such technologies, compared with 10 percent in 2010. This shows the speed of the changes to which digitalisation is fundamental.

There are opinions about digitalisation. Optimists say it is part of scientific and technological progress, and key to economic

development, to the quality of life, and to democratisation. Pessimists see it as a neoliberal strategy by which market categories such as “efficiency” and “competitiveness” may be realised; and with a negative impact on cultural behaviour (Morgan 2018). The consensus is that digital change is complex and controversial, during which new values, institutions, and relationships are formed.

Its importance for society and economy is now being evaluated (West/Allen 2020). Given the rapid spread of digital technologies, governments now follow policies that provide information communication technology (ICT) specialists and enhance the digital competence of the population. Digital skills open opportunities for employment, promotion, and better salaries, through flexibility, mobility, and interdisciplinarity at work. They also enable social inclusion, civil activity, popular access to information and services, and lifelong education. A core benefit is the capacity to adapt to accelerating social and economic changes. An earlier article considered higher education and the international digital divide (Morgan/White 2017). The present article is a case study of Russia.

New Skills for a Digital Society

Digital developments in Russia have their specific characteristics. In the 1990s market reforms changed the

former Soviet economy. New universities trained managers and administrators, and the training of engineering and technical personnel was greatly reduced. Although the Russian Federation did consider informatics in general, professional, and continuing education, telecommunication networks, and the computerisation of society, market processes prevailed over state policy. Today the problem is the challenge of digital technology at a specific stage in the economic and social development of the country (Morgan/Trofimova/Kliucharev 2019). The digital economy contributes 3.9 percent to Russia’s Gross Domestic Product (GDP), compared with the United States at 10.9 percent, and China at 10 percent. Forecasts suggest that the digitalisation of the Russian economy may increase the Gross Domestic Product (GDP) by 19 to 34 percent (McKinsey 2017, p. 8).

According to the National Agency for Financial Information (NAFI), the common digital literacy index of Russians is 58 percent (NAFI 2020, p. 8). Russians have a high level of digital communication skills, but lower levels for digital security, information literacy, and problem-solving, and the lowest level for creating digital content. The highest indicators are by those under 44 years, and the lowest by those over 55 years. By employment, the highest level achieved was achieved by full-time students, employed in their spare time, and the lowest by non-working pensioners. Competence in digital skills is about keeping up with technological trends: Artificial Intelligence, data analysis, Big Data and data management, software development, and



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cybersecurity. In 2020 the proportion of adult Russians with a high degree of digital competence was 27 percent (NAFI 2020, p. 1).

Those employed in the information and communications technology (ICT) sector, and in financial services, have the highest level of digital skills, while employees in construction, and social sectors, such as public education, healthcare, social care, and culture, are lowest. The former recruit young people with the potential for development in the new digital reality. 37 percent of ICT specialists in business and 36 percent in finance are under 30 years, whereas in the labour force generally, this group does not exceed 22 percent. Digital skills will determine roles and opportunities in the future. They are a basic requirement together with literacy and numeracy and an indicator of social competence. In the 1920s Soviet Russia saw literacy as integral to socialist transformation. Today the situation is similar. Digital competence is key to the transformation of contemporary Russia.

Household and Professional Use

The demand for digital skills has grown significantly. This is due to the wide distribution and accessibility of digital and communication technologies and the growing demand for digital products and services. The proportion of households with Internet access grew from 48 percent in 2010 to 77 percent by 2018. The proportion of the adult population using the Internet to order goods and services reached 35 percent, with 75 percent accessing state and municipal services (HSE 2019b, p. 13-14). However, despite optimistic forecasts regarding Internet access and the development of digital business services, there remain differences among population groups.

The biggest differences are between settlement types and between regions. This is due not only to varying technical capabilities but also to the needs of the households themselves. According to official statistics, 0.8 percent of urban households and 4.3 percent of rural households do not have the technical capacity to connect to the Internet. However, 15 percent of the urban population and 21 percent of the rural population are not interested in using it (Federal State Statistics Service 2019). Households use the Internet for communication, information, banking, buying, and selling

goods and services, entertainment, and, less frequently, for education, training, and blogging. In all cases, urban Internet users are more active than rural ones. There is little difference between urban and rural Internet users in participation in social networks (respectively 77 and 75 percent), downloading audio and video material (49 and 41 percent), and computer games (30 and 23 percent). The biggest differences are in business (48 and 26 percent), financial (55 and 40 percent), and purchasing (60 and 44 percent) activity.

Internet Access and its Use

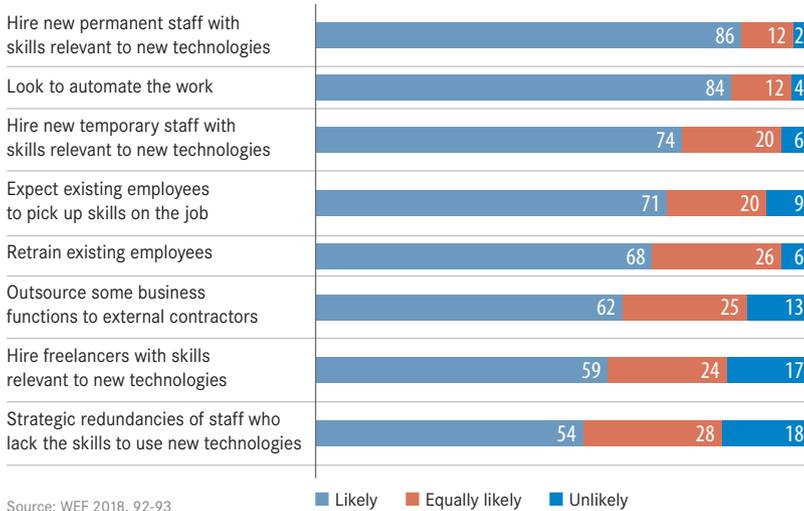
The picture changes among Russian regions as they vary in social and economic development. There are big differences in living standards, income, accessibility, and quality of social services. Access to the Internet and its use is determined primarily by the business interests and financial capabilities of the population, and by what is needed in the distinct regions of Russia. We mean by this a high diversification of production, competition for goods and services, and diversity of cultural, social, and political life, which require searching for and analysing information, choosing and being responsible for the choice made. For example, there is a high level of per capita income in the Chukotka region (Far East), and 92 percent of the population aged 15 years to 72 years have access to the Internet, but only 19 percent use digital services (HSE 2018, p. 198-203). By comparison, the Yamal-Nenets Autonomous Okrug (the largest oil and gas production area in Western Siberia) also has a high level of per capita income, while 97 percent of the population has access to the Internet and 86 percent use digital services. Each region is a specific case and access to the Internet and its use depends on current regional policy.

Again, compared with households, business enterprises have a higher level of Internet access. Today 85 percent of business organizations generally and 92 percent in finance have access to the Internet (HSE 2019a, p. 37-40). The most common reasons for using the Internet are to search for information and messaging (81 percent), banking and other financial transactions (61 percent), cooperation with suppliers (66 percent) and consumers (54 percent), the training of employees (40 percent), video conferencing, and recruitment (each 33 percent), access to databases and electronic libraries (25 percent).

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Fig. 1: Answers to changing skills needs (share of companies surveyed), %



The level of digital skills of employees in business enterprises is, again unsurprisingly, higher than the average for the population. Of course, employers' requirements of employees are also greater, as the higher the level of digital skills, the more opportunities they and their employers have in the market. Given technological trends, companies are exploring and adapting to the possibilities of digital business. This is primarily in information and communications technology (ICT), as well as in large organizations aiming to optimize activities, such as banks, postal services, and railways. Those reliant on state budgets, such as in culture, healthcare, education, social care, and the military, must also adapt to digital technologies. Digitalisation means improving management, for example, in procurement, accounting, and human relations.

ICT Education and Training

There are distinct levels of digitalisation in Russian society: national politics, corporate politics, communities, and individuals. Digital transformation as a means for economic and social development began in the last decade. Several initiatives were made, including some supported by international organizations such as the Organization for Economic Cooperation and Development (OECD), the International Monetary Fund (IMF), and the United Nations Educational, Scientific, and

Cultural Organization (UNESCO). Today, Russian national policy presents digitalisation as a key factor in economic growth. The annual increase of almost 10 percent of students applying to universities for ICT qualifications is a sign of this. In 2019 this totalled 50,000 students. By 2024 it is planned that 120,000 students will take up ICT and mathematics-related places at Russian universities, while 800,000 students competent in the digital economy will graduate from higher education annually, ensuring advanced digital skills in 40 percent of the population.

However, it is also necessary to create appropriate jobs and workplaces, to promote digital education and digital skills more generally, and to remove barriers to digital awareness and competence. In response companies globally are using the following strategies: the hiring of staff with the relevant skills, the improvement of the skills of current employees, and the automation and outsourcing of work. According to a World Economic Forum Report (WEF 2018, p. 92-93), such strategies are also used by Russian companies (Figure 1).

This shows that, while the training policies of companies vary, they can change the structure of the labour market. Individual responses require risk awareness and readiness to improve digital skills. This is shown in that 65 percent of employed Russians are afraid of staff reductions because of innovative technologies, while 24 percent believe they may be unemployed if they do not acquire and develop digital skills (NAFI 2020, p. 1). As a previous study shows, 50 percent of respondents are interested in continuing education to improve their digital competence (NAFI 2019). Russians wish to enhance their capacity to solve technical problems using computers and programmes (38 percent), to find information digitally (37 percent), to ensure information security (37 percent), and to work with electronic files and programmes (35 percent). Russians with an average level of self-esteem about their digital competence are, not unexpectedly, keener to study than others (Figure 2).

Mixed Attitude towards Distance Learning

Yet, as the table shows, 44 percent of Russians are still reluctant to learn new digital skills. They compare the financial and time costs with potential benefits and are not persuaded of the necessity for further learning.

However, 75 percent of those who would like to improve their knowledge and skills in information and communications technology are interested in free distance learning. Russians have a mixed attitude towards distance learning, while 22 percent of respondents do not have devices that can access distance learning (computer, laptop, or tablet). Although 54 percent of Russians regard distance learning positively, 36 percent still view it negatively. The main drawback is the lack of personal contact between the student and the teacher. Almost half of the respondents (42 percent) would prefer video lessons with a lecturer. Distance learning is considered less effective (12 percent), inconvenient (8 percent), hampered by the lack of control and motivation of the student (7 percent). A preference for the traditional format of education affects the interest and readiness of Russians for distance learning.

The most critical digital situation is found in Russian communities. Parental, religious, and teacher communities, and public organizations are focused on maintaining a friendly social environment. They value interpersonal communication as a form of socialisation and inclusion and criticize digital communications for their lack of spirituality, and commonality. These are reasons to make digital technologies less intimidating, more user-friendly, and secure. The value of interpersonal communication and collective activity will grow in parallel with the digitalisation of utilitarian processes. Education is a way of transforming society in both directions. It is not just an effective tool for increasing economic efficiency, but also supports social justice, the public good, and human rights. Given future technological changes, this remains vitally important.

COVID-19 Pandemic and Digital Prospects

The COVID-19 pandemic has highlighted existing problems. First, it has increased uncertainty in the economy and specifically in the labour market. It has increased the demand for digital technologies and shown the problem of an acute shortage of competent specialists in the economy. Against this background, the Russian government will continue to stimulate the ICT industry and finance the training of specialists.

Secondly, the COVID-19 pandemic has compelled changes in the mode of activity of enterprises, organi-

Fig. 2: Russians self-esteem of their digital literacy level and readiness to learn new skills, % among all respondents

Self-esteem	%
Competent and want to study further	5
Competent and that is sufficient	4
Satisfactory and I want to study further	31
Satisfactory and I do not want to study further	21
Not competent and want to study further.	14
Not competent, but do not want to study	19
Studying now	2
Difficult to answer	4

Source: NAFI 2019

zations, and public institutions. Schools and universities switched temporarily to distance learning, the quality, cost, and availability of which were perceived ambiguously by the participants. The sudden switch to distance learning has revealed huge differences in the levels of digital competence. This underlines the need for local authorities to provide digital opportunities and training for citizens, especially low-income families.

Thirdly, the government will support measures to reduce the risks of a new wave of the COVID-19 virus and to cope with it, should it come. This requires active adaptation to digital technologies in public administration, education, and healthcare, through new programmes, employee training, and the encouragement of a new digital culture.

There remain both positive and negative factors. On the one hand, there is a huge market capacity for digital technologies, services and goods, and a great potential for human development. On the other, there are still problems in meeting this growing demand, and in removing regional, social, and cultural barriers to an inclusive digital society. This shows the need for a rapid increase in the numbers of people with basic, standard, and advanced digital skills. The best solutions are in education and training initiatives that are effective and designed for the future.

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