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Внедрение цифровых технологий в работу отраслей социальной сферы регионов Северо-Кавказского федерального округа

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Аннотация: Цифровая трансформация социально-экономических систем является опасным вызовом большей части российских регионов. Учитывая долю депрессивных и отсталых территорий в России, переход на «цифровые рельсы» будет болезненным и может повлечь за собой целый ряд отрицательных последствий. Мировое сообщество уже на протяжении нескольких десятков лет ведет крупные аналитические исследования, группируя страны по выбранным критериям готовности к переходу в эпоху цифровой экономики. Российская Федерация с учетом своего административно-территориального деления и лидерскими позициями некоторых регионов занимает «золотую середину». Однако значительный разрыв между успешными регионами и периферийными территориями заставляет точечно подходить к процессу цифрового развития. Проблемной зоной России являются низкие показатели способности рабочей силы трудиться в технологически насыщенной среде и готовности учиться.
Ключевые слова: цифровизация, телематические услуги, передача данных, здравоохранение, образование, культура, человеческий капитал

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INTRODUCTION OF DIGITAL TECHNOLOGIES IN THE WORK OF THE SOCIAL SPHERE OF THE REGIONS OF THE NORTH-CAUCASIAN FEDERAL DISTRICT

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Abstract: The digital transformation of socio-economic systems is a dangerous challenge for most Russian regions. Considering the share of minor and provincial territories in Russia, the transition to “digital rails” will be painful and may cause a number of negative consequences. For several decades, the world community has been conducting large-scale analytical studies, grouping countries according to selected readiness criteria for transition to the digital economy era. Due to its administrative-territorial division and the important role of some regions, the Russian Federation occupies the “middle ground”. However, a significant gap between successful and peripheral regions requires a specific approach to the digitalization process. The problem area of Russia is low indicators of the ability of the workforce to work in a technologically rich environment and willingness to learn.
Keywords: digitalization, telematics services, data transmission, healthcare, education, culture, human capital

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Introduction

Digitalization of economy and social relations is becoming one of the most significant areas in public policy. Digital technologies are aimed at reducing the cost of resources of many processes, simplifying specific systems, allowing to take into account the opinions and wishes of each individual and legal entity.

Today, the development of processes of the digital transformation of economy is associated with both high expectations (economic growth, improved quality of services, increased competitiveness, etc.) and fears (job cuts, increasing inequality, rising threats to information security) [Schwab, 2016]. Many countries have developed digital strategies and action plans aimed at implementing the development of digital technologies of the third wave (artificial intelligence (AI) technology, distributed registry, Internet of things, analysis and storage of big data) and managing problems connected with digital transformation. In these conditions, the task of correct information and analytical support for managing digital transformation processes at the national, regional and industry levels, as well as creating the necessary tools for this, becomes urgent.

Developing information society

Free access to the Internet for individuals and legal entities is a significant indicator of the information society development. But, in addition to increasing the general informatization of society, it becomes possible to obtain state and municipal services in electronic form, which in turn considerably simplifies their receipt and improves the quality of state and municipal administration [Burov, Petrov, Shklyaruk, Sharov, 2018].

In 2017, Russia spent 55 billion rubles to protect digital data, since it is known that working with information is one of the main factors of economic success[1]. The study showed that banking, industrial, and government sectors are particularly interested in investing in IT security.

An additional factor in the development of digitalization was the attendance and successful administration of TASED (Territory of Advanced Social and Economic Development) – special economic zones, industrial and technology parks, as well as the activity of Russian development institutions.

According to open-source data, the main factors affecting the uneven development of digitalization are:

Lack of qualified personnel and further development of educational programs.

Lack of funding. It is especially difficult to fund digitalization in those regions of the Russian Federation, which do not have enough funding for current economic problems.

Presence of digital inequality. In the absence of the Internet access, it is impossible to use either public services or the services of "Smart Cities".

Gradual formation of the new regulatory environment that provides favorable legal framework for the rise and development of digital technologies. This process has not yet ended in most regions.

Considering that the digitalization level of various industries objectively varies in all countries (as a rule, the most developed practice is in the field of information and communication) [Rogers, 2018], it provides an additional opportunity to consider the digitalization level of various industries in Russia compared to other countries.

In Russia, the problematic sectors are the social sphere, construction, and the hospitality industry (hotels and catering), as well as the sphere of information and communications – the 16th leader of digitalization in Russia looks relatively worse than the similar fields in other countries. Closer to the level of leading countries are the digitalization processes in wholesale and retail.

The widespread introduction and development of digital technologies create new requirements for the qualification of the personnel: the mastery of digital and related competencies becomes obligatory for any professional activity. Each employee must be able to work in a high-tech digital environment, quickly retrain, and think creatively.

The problematic point for Russia is the low desire of personnel to work in a technologically saturated environment (27th place out of 30 countries studied under the PIAAC) and lack of eagerness to continually develop their professional skills and think creatively (29th place out of 30 countries)[2]. This shows a certain unwillingness to adapt to changes that are related to digital transformation. Russia is distinguished by the reluctance of enterprises to invest in the development of human capital, in particular, in the advancement of digital literacy of personnel.

According to the Rosstat, the Federal state statistics service, as part of a study of medium-sized enterprises (with the number of employees from 50 to 249), only 6% of such enterprises carried out specific training of their employees to improve the ICT skills.

At the same time, for the most part of the EU, this indicator was equal to 40%. In the countries of Northern Europe (Norway, Finland), it is nearly 60%. This is a severe risk factor for enterprises in the fast-changing technological environment of doing business and organizing business processes.

In addition to the low development of the ICT sector and the digital transformation of business, there is a shortage of qualified ICT specialists in the public sector. Highly skilled ICT specialists prefer to work in the commercial sector, where salaries are higher. There is a "luring" of university graduates who prefer to work in

1 "Digital Russia" Index. SKOLKOVO Centre for Financial Innovations and Cashless Economy of the Moscow School of Management, 2018: https://finance.skolkovo.ru/downloads/documents/FinChair/Research_Reports/SKOLKOVO_Digital_Russia_Report_Full_2019-04_en.pdf

2 National Digital Economy Development Index: Pilot Edition. M., Rosatom State Corporation, 2018. P. 92: http://digitalrosatom.ru/wp-content/uploads/2019/01/Index_development_CE.pdf

the business sector to teaching, for example, in educational institutions or work in healthcare, science and cultural sectors.

Comparative analysis of the current situation on the social sphere digitalization

The digitalization of social-related sectors in the Russian regions is carried out mainly on the initiative of the heads of institutions. To identify readiness for the introduction of digital technologies, we surveyed the heads of healthcare (20 people), education (25 people), and culture institutions (20 people) in the regions of the North-Caucasian Federal District.

None of the respondents rated the situation with the introduction of digital technologies in the organization as positive. Most institutions are at the initial stage of introducing digital technology.

The negative aspects include the low interest of the heads of social institutions to successful digitalization practices in their own and other regions. According to the survey, no more than 20 percent of executives possess such information. About 30% of executives in educational and cultural sphere and about 50% in the healthcare sector didn't study this issue. It is worth saying that the introduction of such practices is hardly possible without benchmarking.

There is an alarming fact that the least interested in studying the introduction of digital technologies is the healthcare sector. It is in the healthcare industry that digitalization has high hopes to improve the quality and accessibility of medical care to the population, especially in hard-to-reach areas.

It should be noted that when we asked respondents about the obstacles to the introduction of digitalization, most respondents said they lack funding. Can this be considered as the real reason not to introduce digitalization? After all, it is also worth considering the insufficient study of this problem by the executives, there is a need to study the practice of other institutions while making managerial decisions.

Respondents from the healthcare sector especially note the unwillingness of the population to work with digital technologies. Here we see an opportunity to work and carry out outreach with the population about the benefits of advanced digital technologies. To do this, we can resort to the help of socially oriented non-profit organizations.

It is also necessary to improve infrastructure conditions in regions that are still not at the proper level.

At the same time, during the survey, digital technologies were introduced in less than half of the institutions.

While finding out the initiators of the introduction of digital technologies, it turns out that most often the beginning of digitalization depends on the director's will. But sometimes proposals for transformation to digital methods of doing business came from ordinary employees. The results of the survey indicate that the introduction of digital technologies is carried out purely for the implementation of regulatory documents. Consequently, this reduces the efficiency of the processes of transition to a new business model, as well as decreases the interest of personnel and consumers of services in this work.

Figure 1. How would you rate the situation with the usage of digital technology in your organization?

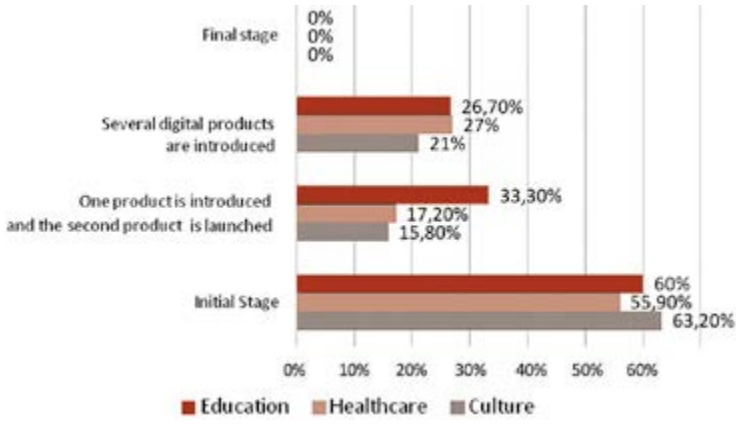


Figure 2. Do you know any successful examples of specific organizations implementing digital technologies in our region?

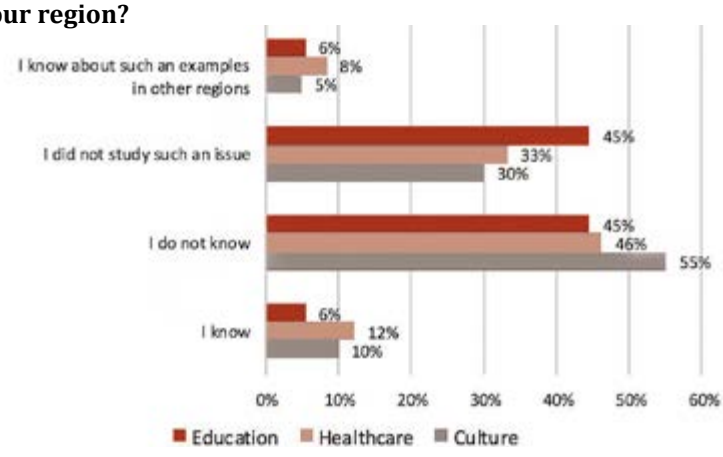


Figure 3. What in your opinion impedes to a greater extent the implementation of digital technologies in your organization?

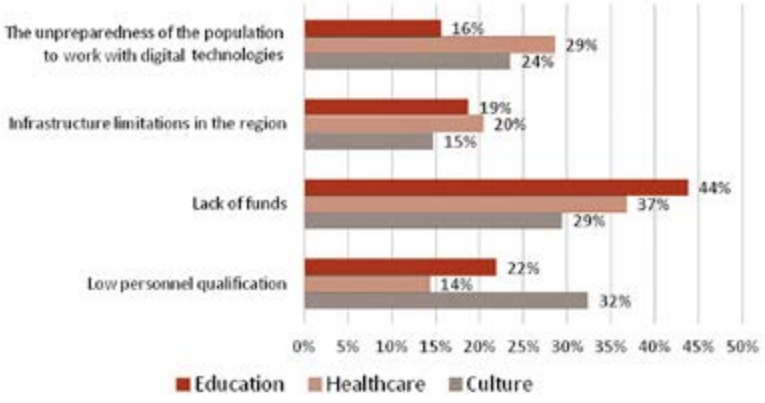


Figure 4. Have digital technologies been introduced in your organization?

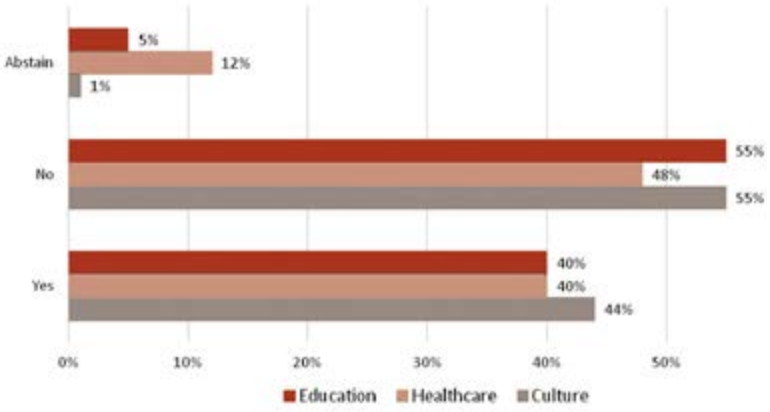


Figure 5. Who was the main initiator(s) of the implementation of the digital solutions in your organization?

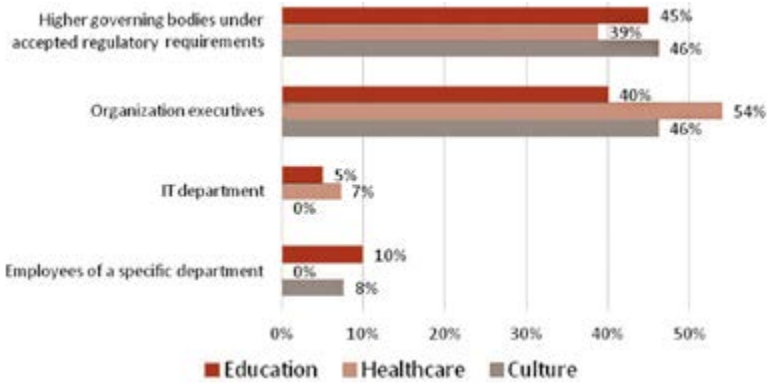
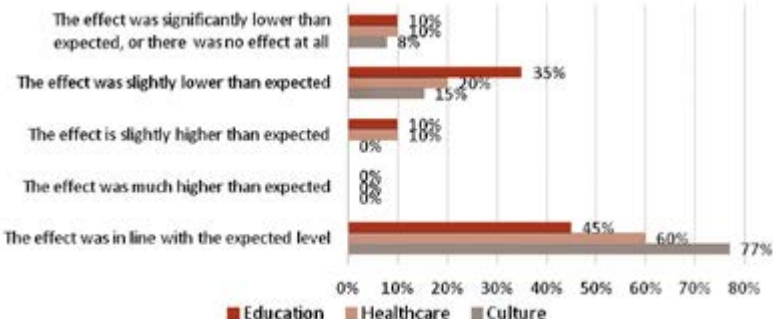


Figure 6. What conclusions did your organization draw after digitalization? Did the effect differ from the expected?



It can be concluded that the forced nature of digitalization explains the low degree of returning on these processes. Executives of cultural institutions are most disappointed in the possibilities of digital technology.

Among the respondents, the heads of educational institutions most often spoke positively about digitalization; they drew attention to the simplification and acceleration of processes in their organizations.

Only a few respondents found opportunities for the appearance of completely new services. It is necessary to note the fact that digitalization did not contribute to the growth of the organization's focus on customers. This is especially true for the healthcare and cultural sector. Most likely, executives see the potential of digital technologies only in simplifying internal administrative and business processes.

The employees were asked about the specific digital technologies, which they use in their work. The majority of respondents noted social networks, remote access technologies, digital design, and modeling.

The readiness of the population to live and work within a new reality is of great importance in the formation of the digital economy and the introduction of digital technologies in society. Given tables demonstrate the low spread of the Internet in the regions of the North-Caucasian Federal District and, accordingly, less data transfer volumes.

According to the estimates in the table, it can be seen that the North-Caucasian Federal District has a very high degree of mobile Internet usage in the country in general. This can be explained by the Internet's condition in the region, it has low speed and expensive for the price, and a smartphone or tablet for most of the region's population is the only way to access the Internet. If we compare the cost of the Internet with the average wage in the region, then the North-Caucasian district takes the last place in the country in terms of the availability of the fixed Internet, and next to the last place in the availability of the mobile Internet.

The exception is the Republic of North Ossetia-Alania; the other six subjects of the North-Caucasian Federal District have the lowest level of Internet access. This situation is due to both geographical reasons (according to statistics, a lower share of Internet users is inherent to the southern regions), and the level of infrastructure development, the high cost of the Internet, low incomes of the population and other features. In this regard, the problem of the population's readiness to introduce information and telecommunication technologies arises.

The information and telecommunication technologies are being introduced in the North-Caucasian Federal District rather slowly. In our opinion, it is necessary to accelerate the introduction of hardware and software solutions for telemedicine and other social spheres, the formation of single information space for the entire social sphere. The widespread introduction of telematics services, based on a unified technological and technical policy, will significantly increase the efficiency of public services for the entire region, and people will be able to receive the necessary help faster.

Thus, to accelerate the implementation and increase the share of active users of information and communication services, the following measures are necessary:

- explanatory and educational work with the popula-

tion about the usefulness of digital technologies in the social sphere (attracting volunteers and socially oriented non-profit organizations, the Internet and television community, the work of healthcare/education/culture institutions with their category of people on digitalization features that will be useful in all three sectors);

- advanced training of employees in the field of digital technologies' use;
- stimulation of employee initiatives (competitions for best practices, etc.). Formation of a portal of the best digital solution practices for the experience exchange by specialists from different regions;
- stimulating the most successful executives in digitalization. It is important to support the effects of improving the quality and accessibility of services, to increase the institution's customer focus. Digitalization should not be implemented just because it is mandatory or to simplify internal business issues.

Figure 7. How can you describe the positive result from the implementation of the digitalization project in your organization? (Rank it on a scale from 1 to 3)

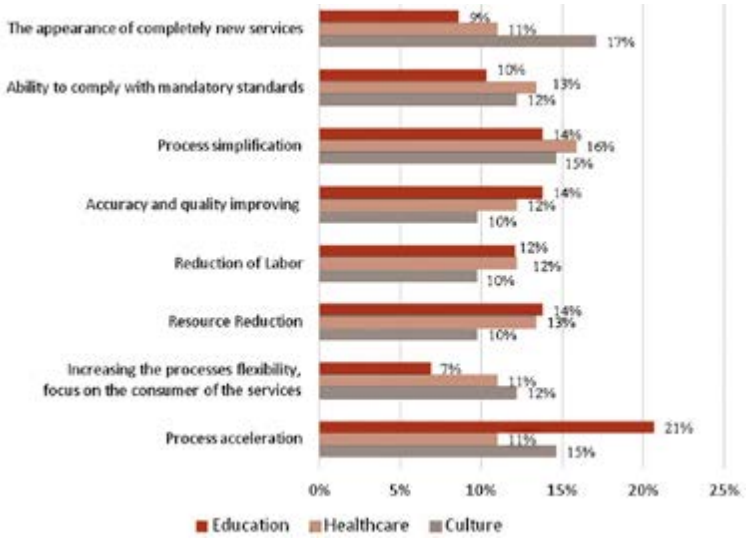


Table. The main indicators characterizing the development of telematics and data services in 2017 per capita, as a percentage to the average Russian level

	Number of active subscribers of fixed broadband Internet access			Number of active mobile subscribers using Internet access services	Amount of information transmitted from/to subscribers using the operator while working with Internet access
	Total	Including			
		Individuals	Legal entities		
North-Caucasian Federal District	39,7	40,3	30,8	81,8	24,0
The Republic of Dagestan	11,4	11,5	9,0	67,9	4,4
The Republic of Ingushetia	4,7	4,6	4,8	75,8	1,7
The Kabardino-Balkar Republic	45,2	46,1	31,0	87,8	38,5
The Karachay-Cherkess Republic	48,0	48,5	38,9	77,1	39,2
The Republic of North Ossetia - Alania	60,4	62,1	34,8	89,9	68,3
Chechen Republic	18,9	19,6	7,1	82,9	24,8
Stavropol Region	79,2	79,9	68,7	94,3	30,7

The development of the digital economy at the national level has the goal of strengthening the economic potential of the state and improving the living standards of its population.

It should be considered that even with all the conditions for the emergence and popularization of digital technologies in the social, business, and consumer sectors, the effects of digitalization have major importance.

The absence of positive trends in the social and economic spheres cannot bear a strong effect on the entire process of digital transformation. Integrated, interconnected, and systematic work in all these sectors, will allow for the phased implementation of the state program for the development of the digital economy, create the necessary conditions for digital transformation, specify the list of priority industries in which a transition to new innovative management is required.

Conclusion

The digitalization of the social sphere of the North-Caucasian Federal District is of great importance because it will increase the speed, quality, and accessibility of services provided to the population of the region. According to the results of the study, the work on digitalization is carried out more under the influence of the need to comply with the mandatory requirements of the law, rather than on the initiative of employees or head of an institution. In our opinion, it is necessary to stimulate the motivation of managers and employees to conduct on this process and actively involve the non-profit sector in the educational work with the population.

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