

# Digital Business Transformation and Digital Culture

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**Abstract** — The article is devoted to the analysis of the process of digital transformation of business, which has become even more in the context of the pandemic. As with any social process, the digital transformation of business is controversial and affects many different aspects of the company. Quite often digital transformation is understood as a purely technological implementation of IT processes, but it is necessary to take into account the social and psychological aspects of digital transformation, in particular - the digital culture. The article presents data from various studies (both Russian and foreign) aimed at studying digital culture as a factor of digital business transformation.

**Keywords** — Digitalization, digital transformation, labor market, digital culture.

## I. INTRODUCTION

Modern society is becoming more and more digital: it is already difficult to imagine many familiar processes not being carried out digitally. This trend has been evident before, and the coronavirus pandemic has made the digitalization process much more demanding. Probably there is not a single sphere that the digitalization would not be affected is not an exception and the labor market. The attitude of Russian companies to digital transformation has changed qualitatively over the past two years: in 2020, twice as many companies as in 2018 are approaching the issue systematically and modifying the business as part of a special strategy [1]. It was important for us to understand the attitudes of actors in this process towards digitalization, including possible biases that are barriers to the digital transformation of society in general and business processes in particular.

## II. PROBLEM STATEMENT

The digital transformation of society implies a significant restructuring of all elements of the environment, although quite often in the minds of actors it is reduced only to IT-technology. But without transformation of skills, a system of values, rules of interaction, any changes in technology will not produce the desired effect. Therefore, "digital culture" is one of the key success factors of digital transformation: "If you build a completely digital business model, but the employees themselves do not change - the digital transformation will not happen [2].

- the introduction of digital technology is causing significant changes in both staffing needs and requirements for specialists;
- decrease in demand for occupations involving formalized, repetitive operations;

- a reduction in the life cycle of professions due to the rapid change in technology;
- transformation of the competence profiles of certain staff categories (risk analysts, HR managers, marketing analysts, contact center operators, etc.) due to changes in the tools of work
- the emergence of new roles and professions;
- increased requirements for flexibility and adaptability of personnel;
- increased requirements for "soft skills" - the possession of social and emotional intelligence, i.e. ultimately those abilities that distinguish a person from a machine;
- increased demand for specialists with not only certain digital skills but also digital dexterity - the ability and willingness to use new technologies to improve business results [3].

Changing values, willingness to innovate, the availability of the necessary personnel competencies are important factors in the transformation of digital culture, the formation of which is one of the priority areas of personnel training and requires close research attention.

## III. DETAILS

Digitalization was originally based on digitization, multimedia, interaction, and ubiquitous presence. The development of digital technologies and integration systems in the 1970s marked the beginning of the digital world, and with it of the digital society. This process entailed the formation of new, previously unknown social institutions, phenomena, and social phenomena, one of which is digital literacy [4]. Digital literacy refers to the set of knowledge, skills, and abilities needed to use digital technology and Internet resources safely and effectively.

Such literacy in the context of the digital economy becomes «over-professional» in nature: it is necessary for all members of society and forms an important part of the information culture of the person [5, 6].

Digital Literacy is seen as one of the domains of Digital Intelligence (DI) (DQ Global Standards Report 2019. Common Framework for Digital Literacy, Skills, and Common Readiness, 2019), which is characterized by a set of social, emotional, and cognitive abilities that enable people to face today's technological challenges and adapt to the demands of digital life:

1. Digital identity (the ability to create and manage one's online identity and reputation: awareness of one's online persona and management of the short- and long-term impact of an online presence);
2. Digital consumption (the ability to use digital devices and media, including mastery of controls to ensure a healthy balance between online and offline life);
3. Digital security (ability to manage online risks (cyberbullying, radicalization, etc.); problematic content (e.g., violence and obscenity); avoid and limit these risks);
4. Digital emotional intelligence (the ability to be empathetic and build good relationships with others online);
5. Digital literacy (the ability to find, evaluate, use, share, and create content; algorithmic thinking);
6. Digital communication (ability to communicate and collaborate with others using digital technology and media); digital rights (ability to understand and uphold personal and legal rights, including rights to privacy, intellectual property, free speech, and protection from hate speech).

But it would be wrong to reduce the concept of digital literacy only to technical skills. In our opinion, an important component of digital literacy is the psychological readiness of individuals to digitalization. The psychological readiness of society to the changes brought about by digitalization implies the presence of appropriate social attitudes, an important component of which is trust in the changes taking place and the factors causing them. We will consider "trust as a specific subjective phenomenon, the essence of which consists in a certain attitude of the subject to various objects or fragments of the world, consisting in the experience of actual importance and a priori safety of these objects or fragments of the world for a person" [7; P.37].

It is trust that allows the individual to overcome the risks and threats in the context of information uncertainty. At the same time, researchers note several threats of the digital society, relevant to the individual [8; P.56]:

1. Socio-economic (primarily the so-called "digital divide," i.e., differentiation concerning access to ICTs and information resources. The extent of this access is an indicator in the information society of a higher professional and standard of living, and therefore the digital divide is a threat to the sustainable development of society).
2. Economic and technological (the threat of cyber-fraud, spam, cyber-attacks, and economic espionage).
3. Communication (threat to a person's mental health ("sectarian preaching, distribution of mystical and esoteric teachings and practices, magic, healing, shamanism..." [8; P.57]), danger of violation of users' civil information rights, manipulation of public consciousness).

Logically, the presence and awareness of these threats affect the level of confidence of the individual in the digitalization of society.

But a significant part of the business community is aware of the inevitability of digitalization and psychologically ready for it. According to the results of a study by the headhunting company KONTAKT INTERSEARCH RUSSIA, "Digital Transformation and Competencies of E-com Executives" [9], 93% of Russian companies believe that digital skills are a

must for CEOs when transforming a business. And these skills are required not only for core executives (directly related to digitalization) but also for executives in many other areas. According to the respondents [9], the most demanded positions in the digital market are (top 5):

- Director of E-commerce (opinion of 82% of respondents)
- CEO (opinion of 76% of respondents)
- Director of Customer Service (opinion of 74% of respondents)
- Director of Logistics (opinion of 68% of respondents)
- CEO Business unit (opinion of 67% of respondents).

As we can see, not all of the above-mentioned proper positions are directly related to the IT-sphere, but they are related to it. And this is logical, because modern business processes, on the one hand, lead to a substantial complication of most professions, and on the other hand, the active use of digital technologies, promotes the release of employees' time to solve a lot more creative tasks that require, as a rule, a highly qualified employee and a lot of professional experience. Therefore, developed digital skills are becoming vital for managers in various fields and activities.

But digital skills are needed not only for managers but also for middle and lower-level staff. According to a report by the European Commission «ICT for Work: Digital Skills in the Workplace» [10], most jobs require basic digital skills, such as communicating on social networks and via e-mail, creating and editing digital documents, protecting personal information, etc. According to the European Commission, this is relevant to 98% of managers, 90% of professionals (doctors, engineers, lawyers, etc.), 80% of salespeople, 50% of construction workers. The use of ICT has increased significantly over the past five years by more than 90% of jobs, and the pandemic has accelerated this process many times over. As the results of the company's research show McKinsey & Company «How COVID-19 has pushed companies over the technology tipping point—and transformed business forever» [11], there has been a rapid shift toward companies interacting with customers through digital channels, with respondents three times more likely than before the pandemic to say that at least 80% of their interactions with customers are digital. Digital transformation has accelerated since the pandemic began, with changes such as the shift to remote working, customer preferences for remote interaction, and investments in data security and artificial intelligence. These changes were expected, but the speed of adoption would probably have been different: the virus led to "forced digitalization" and served as a catalyst for the need for phenomenally fast adoption of technology in marketing, HR, operations, management, and other areas of business. In a couple of weeks, video, online learning, and teamwork services have moved from being ancillary to essential mass-market tools. As a consequence, changes in consumer behavior have been observed, legislation is changing, and value chains are being restructured [2].

It is important to note that, according to respondents [11], a key success factor in digital transformation (especially taking place in crisis conditions) is the corporate culture, which encourages experimentation and willingness to change. It is a properly built corporate culture, the presence of values

and norms of digital culture in the organization allows you to build trust and psychological readiness for the processes of digital transformation. Therefore, it is very important to train staff both tactically, in the process of making specific changes to the business (which technologies to execute and how), and organizationally (how to manage change at a rate that far exceeds previous experience). Both types of training will be critical in the future, as the pace of change is unlikely to slow down. One of the main challenges of developing the digital economy [12] is the need to focus on ensuring that all people have the skills necessary to participate in the digital economy and digital society, including promoting the capacity of education and training systems to identify the demand for general and specialized digital skills and to teach those skills, increasing digital literacy.

But it can be assumed that not everyone will be willing and/or able to improve their skills, to master new technologies. People are quite often rigid, not ready for innovation, do not consider it necessary to spend their time and intellectual resources to adapt to the new (and in the situation of digitalization, even technically complex). Consequently, employees have an explicit or latent resistance to innovation, caused by a lack of understanding (and all the incomprehensible part is alarming) of the consequences that the introduction of artificial intelligence may have on the professional functions they perform [13].

The burden of training, or rather retraining employees, falls largely on companies. But not all companies are willing to teach digital skills [10]: 88% of respondents note that employers have taken any action to address their employees' lack of digital skills, most likely due to the high cost of such training.

Russian employers have the following attitudes toward training their employees in digital skills [9]: an equal number of respondents (38.5%) recruit employees with already developed skills and train them internally (internal training program), a smaller proportion (23.1%) train employees with the help of external contractors (external courses and training). Companies are willing to pay more to executive candidates who have the necessary digital skills [9]: 63.3% of respondents are ready to pay 10-30% more, 19.4% - up to +10%, 7.2% - 30-50% (about the same number - 7.1% "prefer to take an executive without skills and teach him everything"). If we consider not only managers but all employees, it is planned to solve the problem with the lack of staff and competencies as follows [2]:

- Creating new positions and hiring new employees from the market (63% of respondents)
- Professional development of current employees (60% of respondents)
- Engaging external consultants (34% of respondents)
- Replacement of insufficiently competent employees with new ones from the market (31% of respondents)
- Buying specialist teams (17% of respondents)
- Robotization and application of artificial intelligence (10% of respondents)
  - The company has enough competencies (6% of respondents)

15% of respondents-employees of Russian companies note that their companies do not plan educational programs in the field of digital competencies, which correlates with the above data of European researchers. If companies do plan to

train employees, then the priority areas of training will be the following:

- Technologies (37%)
- Digitalization of business processes (36%)
- Working with data (36%)
- Customer experience management (28%)
- Product development and value management (28%)
- Digital transformation strategy (27%)
- Digital culture and digital thinking (19%)
- Innovation management (18%).

Digital transformation is noticeably changing the labor market both in the direction of the disappearance of certain professions and the emergence of new ones, for example, such as E-com BD director, Data science director, managers of individual data streams, infrastructure manager [9].

We can see that, on the one hand, the life cycle of professions is decreasing due to the rapid change of technologies, and, on the other hand, new professions are emerging, or the content of a profession is being modified up to the complete change of competencies (so-called "dynamic portfolios", "portfolios" of transforming profiles appear. So-called "paraprofessional competencies" are becoming increasingly important, including those resulting from the use of modern ICT). In addition, the requirements for employees to develop "soft skills", the development of emotional and social intelligence (we should not forget that "soft skills" are the skills that distinguish humans from machines, and thus increase the competitiveness of an employee in a situation of active digitalization) are changing markedly. Employee skills such as flexibility and adaptability are in demand. Employees who have not only digital user skills but also digital dexterity - the ability and willingness to use new technologies to improve business results - are competitive [14].

The priority areas of Russian companies' digital transformation are the digitalization of business processes and work with data, as well as customer experience management.

As mentioned above, an important factor in the success of the digital transformation is a digital culture (although, as mentioned above, only 19% of respondents are willing to teach it) - a set of principles and values in corporate culture that characterize the use of information and communication digital technologies to interact with society and solve problems in professional activities. The values and principles of digital culture are [2]:

- Basic knowledge of modern digital technologies and the ability to apply them.
- Technological adaptability. Ability to learn new technologies quickly.
- Digital Thinking. A high priority of using digital technology to solve problems.
- Working with data. Making decisions using data analysis.
- Communication. Effective use of digital channels for internal and external interaction.
- Ethics. Understanding the principles of behavior in the digital environment.
- Security. Knowledge of information security principles.

According to respondents [15], the main obstacles to digital transformation are as follows:

- Difficulties in organization-wide implementation (40%)
- The lack of specialists (38%)
- Lack of a coherent strategy (38%)
- Lack of support from management (38%)
- Failure to demonstrate ROI (38%)
- Budget problems (31%)
- IT department unpreparedness (18%).

This data can be supplemented by the results of another study [9], in which the key obstacles to digital transformation according to respondents are:

- Lack of competence and knowledge (53%)
- Internal resistance in the company, fear of change (45%)
- Lack of strategy (42%)
- Shortage of qualified personnel (41%)
- Risks of getting a low return on investment (40%)
- Lack of funding (37%)
- Lack of management support (29%)
- Lack of necessary infrastructure (26%)

As we can see, factors related in one way or another to the digital culture occupy a prominent place in this list.

According to the same research [9, P.24] "it is worth noting that respondents are increasingly mentioning the need to implement the principles of digital culture in the company. Among the success factors of digital transformation, respondents named the following:

- Employee's competencies and knowledge (64%)
- Management support (59%)
- Existence of a strategy (47%)
- Culture in the company (46%)
- Availability of investments (45%)
- Digital Partnerships (32%)
- Data and analytics (28%)
- Developed infrastructure (24%)

#### IV. CONCLUSION

For a radical transformation of business, it is not enough only technological transformation, the readiness of all actors of the business process to these transformations plays an important role: top management, ordinary employees, consumers, infrastructure. Digitalization is constantly changing the existing workplace, dictating requirements for the possession of increasingly new skills, the development of which implies the need for continuous professional development. These dynamics require either the prompt retraining of personnel or their replacement with employees with more relevant networking skills. According to experts, "The need for new personnel for digital transformation can be as high as 30% of the current staff of companies." [1]. That is why systematic work on training both existing and potential employees, the formation of key digital skills is necessary.

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