

## PROSPECTS FOR DEVELOPMENT OF THE DIGITAL ECONOMY IN THE SERVICE SECTOR IN CONDITIONS OF ECONOMIC GROWTH

**Kurbanova Maftuna**

*TUIT named after Muhammad al-Khwarizmi,  
senior lecturer of the department “Management and marketing”*

**Abstract:** The process of digitalization of services improves their security, availability and functionality, and a complex configuration is formed between the traditional properties of products and services and the new “digital” ones. This confirms the relevance of studying the essence of services and the characteristics of ongoing changes in order to identify trends and problems of digitalization and form institutional conditions for the development of this area, taking into account the influence of the digital transformation of the economy. The article examines the content of the “service” category, systematizes and classifies services, characterizes the level of development of digital services abroad, and analyzes the trends and problems of digitalization of the service sector in the EU.

**Key words:** *digitalization, digital economy, digital transformation, services, service sector, trends, problems, information development of territories.*

## IQTISODIY O‘SISH SHAROITIDA XIZMAT KO‘RSATISH SOHASIDA RAQAMLI IQTISODIYOTNI RIVOJLANTIRISH ISTIQBOLLARI

**Kurbanova Maftuna Lazizovna**

*Muhammad al-Xorazmiy nomidagi TATU,  
“Menejment va marketing” kafedراسi katta o‘qituvchisi*

**Annotatsiya:** Xizmatlarni raqamlashtirish jarayoni ularning xavfsizligi, mavjudligi va funkcionalligini yaxshilaydi, mahsulot va xizmatlarning an’anaviy xususiyatlari bilan yangi “raqamli”lari o‘rtasida murakkab konfiguratsiya shakllanadi. Bu raqamlashtirish tendensiyalari va muammolarini aniqlash hamda iqtisodiyotning raqamli transformatsiyasi ta’sirini hisobga olgan holda ushbu sohani rivojlantirish uchun institutsional shart-sharoitlarni shakllantirish maqsadida xizmatlarning mohiyati va amalga oshirilayotgan o‘zgarishlar xususiyatlarini o‘rganish dolzarbligini tasdiqlaydi. Ushbu maqolada “xizmat” atamasining mazmuni ko‘rib chiqiladi, xizmatlar tizimlashtiriladi va tasniflanadi, xorijda raqamli xizmatlarning rivojlanish darajasi tavsiflanadi, Yevropa Ittifoqida xizmat ko‘rsatish sohasini raqamlashtirish tendensiyalari va muammolari tahlil qilinadi.

**Kalit soʻzlar:** *raqamlashtirish, raqamli iqtisodiyot, raqamli transformatsiya, xizmatlar, xizmat koʻrsatish sohasi, tendentsiyalar, muammolar, hududlarning axborot rivojlanishi.*

## ПЕРСПЕКТИВЫ РАЗВИТИЯ ЦИФРОВОЙ ЭКОНОМИКИ В СФЕРЕ УСЛУГ В УСЛОВИЯХ ЭКОНОМИЧЕСКОГО РОСТА

**Курбанова Мафтуна Лазизовна**

*ТУИТ имени Мухаммада ал-Хоразмий,  
старший преподаватель кафедры «Менеджмент и маркетинг»*

**Аннотация:** Процесс цифровизации услуг улучшает их безопасность, доступность и функциональность, а между традиционными свойствами продуктов и услуг и новыми «цифровыми» образуется сложная конфигурация. Это подтверждает актуальность изучения сущности услуг и особенностей происходящих изменений с целью выявления тенденций и проблем цифровизации и формирования институциональных условий развития данной сферы с учетом влияния цифровой трансформации экономики. В статье исследовано содержание категории «услуга», проведена систематизация и классификация услуг, дана характеристика уровня развития цифровых услуг за рубежом, проанализированы тенденции и проблемы цифровизации сферы услуг в ЕС.

**Ключевые слова:** *цифровизация, цифровая экономика, цифровая трансформация, услуги, сфера услуг, тенденции, проблемы, информационное развитие территорий.*

### **Introduction**

The information economy is an economy aimed at minimizing the use of matter and energy in the production, distribution and consumption of goods and services through the efficient use of information resources. This definition specifies and complements the more general definition of the economy as an economic system that ensures the satisfaction of the needs of people and society by creating the necessary goods of life in conditions of limited resources [1].

Digitalization of the economy is an activity related to digital technologies that contributes to every organization, since it is this process that contributes to the promotion of an enterprise in the services market, so it is very important to pay special attention to this. The service sector, like other areas where complex economic processes take place, is closely related to digitalization. Digitalization of the service sector is an indicator of the degree of development of the socio-economic complex of

an organization and reflects the totality of existing “weaknesses”, as well as problems. [2]. The rapid development of digital technologies over the past ten years has radically changed the nature of productive forces and market relations in the world, offering completely different forms and paths of development based on a combination of digital capabilities and resources. To date, a number of digital and information technologies have been created that provide for the transition to a new stage in the development of productive forces (Industry 4.0, a new level of automation of all processes, etc.) [3].

Thus, one of the main global trends in the development of the modern economy is the phenomenal expansion of the service sector, which is significantly ahead of industry and agriculture in terms of contribution to GDP, leads in the number of new jobs and the employment rate, and affects the development indicators of the world economy. The development of the service sector is typical for all countries, but in each of them it occurs differently, which depends on internal prerequisites and the existing level of economic development of the state.

The achieved level of development of digital technologies had the most significant impact on the transformation of the service sector, led to unlimited business scaling and an exponential decrease in the value of creating demand and prices for services for consumers (transport, education, healthcare, tourism, etc.), as well as in the sphere of interaction between market participants, government services and security services. Over the past decades, material production has been actively growing, the consumption of goods has been stimulated, which has led to an excess of supply over demand and, as a result, significant inefficiency of the world economy: the psychological obsolescence of objects today occurs to a large extent earlier than the physical one [4].

Digitalization carries great economic potential that can be realized in the coming years. A number of technologies will become the main source of overall economic growth. As MGI research shows [5], by 2030, global GDP will increase by \$13 trillion due to digital technologies, which open up great opportunities for business; income from their use is reinvested in the economy.

The way firms use digital technologies clearly demonstrates the possible benefits of digitalization. Industries with a high level of digitalization show the greatest productivity growth. Among the industries with a high level of digitalization, one can highlight the service sector, which includes direct communication with consumers and ensures faster capital turnover. In developed countries, sectors with a high level of digitalization include media and financial services organizations, while sectors with a low degree of digitalization include pharmaceuticals and large manufacturing industries.

However, despite advances in new technologies, at the macroeconomic level, labor productivity growth in developed countries was insignificant, declining by an

average of 0.5% between 2010 and 2014 (for more details, see [6, 7]). Studies conducted by foreign scientists indicate that the effect of digitalization is likely to appear only when companies begin to massively introduce digital technologies into work processes. On average, the process of full diffusion of new digital technologies throughout the world can continue until 2045 [8–9].

The information economy is an economy aimed at minimizing the use of matter and energy in the production, distribution and consumption of goods and services through the efficient use of information resources. This definition specifies and complements the more general definition of the economy as an economic system that ensures the satisfaction of the needs of people and society by creating the necessary goods of life in conditions of limited resources [10].

### **Analysis of literature on the topic**

The work of many foreign and domestic scientists is devoted to the study of problems of management of service sector organizations: G. A. Avanesova, T. D. Burmenko, O. N. Balaeva, N. N. Danilenko, T. A. Turenko, V. K. Karnaukhova, T. A. Krakovskaya, A. N. Petrova, M. D. Predvoditeleva, T. N. Tretyakova, D. I. Khlebovich, L. V. Khorevoy, I. V. Khristoforova, K. Lovelock, K. Haksever, R. Russell, R. Murdick, etc. Research in the field of service quality management was considered in the works of such foreign scientists as K. Grönroos, A. Parasurman, V. Zeithaml, L. Berry, E. Gummesson, J. Heywood Farmer, B. Edvardsson, J. Cronin, S. Taylor, J. Svensson, B. P. Pollack, J. S. Swinney, G. N. Soutar, L. W. Johnson, U. Lehtinen and J. Lehtinen, G Philip, S. E. Hazlett, J. Santos, S. Sundstrom, B. Schneider, S. S. White and others.

In domestic science, this area of research was developed in the 1990-2000s and is presented in the works of such scientists as V.V. Okrepilov, E.A. Gorbashko, L.V. Lapidus, T.V. Zvorykina, V.V. Makarov, T. A. Salimova, A. Yu. Kurochkina, G. A. Semakina, T. D. Popova, I. I. Opolchenov, V. F. Yanchenko, G. A. Ivanov and others.

A significant number of studies are related to the study of consumer properties of various electronic services and the construction of a model of their quality. Similar directions are presented in the works of B. Andersen, B. Edvardsson, B. Enquist, K. Grönroos, U. Lehtinen and J. Lehtinen, J. Heywood-Farmer, G. Philip, S. E. Hazlett, V. Zeithaml, L. Berry, A Parasurman, A. Malhotra, J. Santos, J. Zemblait, W. Kim, H. I. Lee, S. Ho, E. Loiacono, R. T. Watson, D. Goodue, I. Zhilin, R T. Peterson, S. Chai, S. Pathera, S. Usabuwer, R. Ladhari, M. Fassnacht, I. Koese, P. Dabholkar, J. Francis, L. White, M. Wolfinbarger, M. C. Gilly , V.V. Makarova, Yu.A. Alekseeva, E.A. Erman, L.V. Lapidus, E.N. Klochko, E.A. Pogodina, R.M. Mingachev and others.

However, despite a large number of publications, including dissertation research on the issues under consideration, many theoretical, methodological and

methodological aspects of service quality management have not been sufficiently studied, they do not take into account the situational basis of the service as an object of management, the influence of digital transformation processes on the consumer properties of the service and consumer experience, which requires improvement of existing mechanisms for managing the quality of electronic services. In addition, additional study requires the formation of institutional conditions for the development of electronic services and the protection of the rights of their consumers.

In the Japanese version of the concept of the information society, two ideologies are combined: informational and post-industrial [11]. The main role is given to telecommunications and cable networks, providing universal two-way communication. Information is presented as the basis for transformations of social structure and social relations. The production and use of information is proclaimed to be the basis of the economy. The value of information as an economic product is valued much higher than the products of material production, energy, and services. The information sector of the economy is represented by four industry groups: information, knowledge, art, and ethics. The self-expansion of capital is being replaced by the self-expansion of information, the joint use of which will lead to the development of new relationships in which the main thing is not the right of ownership, but the right of use. The production of an information product is the driving force behind the education and development of this type of society [12].

### **Research methodology**

The methodological basis of the study was the scientific works of Russian and foreign researchers and specialists in the field of quality management theory, the theory of organization, management and marketing in the service sector, the theory of the digital economy, the theory of managing the development of socio-economic systems; international, interstate and private standards containing recommendations in the field of service quality, quality management, information services management, as well as scientific and practical developments in the field of quality management of electronic services related to various types of economic activities.

Information has always played an important role in the life of mankind. However, in the middle of the 20th century, as a result of the rapid development of science and technology, and social progress, the role of information increased incredibly. There was an avalanche-like increase in the mass of information. This phenomenon is called the “information explosion” [13]. It led to fundamental changes in the interpretation of the concept of information. Information has ceased to be just some kind of information transmitted from person to person.

Information began to be understood as the exchange of data between a person and an automaton, an automaton and an automaton, the exchange of signals in the

animal and plant world. The transfer of signs of heredity and variability from cell to cell and from organism to organism also began to be considered as the transfer of information. Due to the need to measure transmitted messages and to improve transmission conditions, a measure of information was proposed, and quantitative and virtual theories of information were developed.

Thus, modern information theories consider the exchange of messages that have very different contents and relate to various aspects of life as quantitatively measurable quantities that have a common language. The universal measurement created an objective basis for the construction of a general scientific theory of information [14]. The expansion of the concept of information, as well as the emergence of its quantitative assessment, aroused great interest in its study.

The theoretical and practical significance of the article lies in the development of a number of theoretical provisions and methodological aspects of quality management of services in general and electronic services in particular, taking into account the influence of digital transformation of the processes of provision and consumption of services. The formulated theoretical principles and methodological aspects can be used when conducting further applied scientific research on the problems of improving the quality of digital, hybrid, derivative and traditional services. Of particular interest is the development of the provisions of an object-oriented approach to the features of electronic services based on business models of various types: mass services, platforms, projects and solutions, as well as the possibility of adapting the proposed mechanism for electronic services related to various types of economic activities.

### **Analysis and results**

Digitalization carries great economic potential that can be realized in the coming years. The way firms use digital technologies clearly demonstrates the possible benefits of digitalization. Industries with a high level of digitalization show the greatest productivity growth. Among the industries with a high level of digitalization, one can highlight the service sector, which includes direct communication with consumers and ensures faster capital turnover. In developed countries, sectors with a high level of digitalization include media and financial services organizations, while sectors with a low degree of digitalization include pharmaceuticals and large manufacturing industries.

As practice shows, in various countries many companies are beginning to introduce digital technologies into production, but an analysis of various practices of their application suggests that this process remains complex and slow. The experience of companies in introducing digital technologies into production in the USA, EU and China shows that in these countries the level of digitalization is still not high. On

average, the level of digitalization is only about 25% of the total potential of the sector (Table 1).

Table 1

**Level of digital technology use by industry in the US, EU countries and China  
[15]**

Industry	Organizations using digital technologies, %	Factors that support industry development in the context of digitalization		
		Cash flow	Automation and supply chain	Digital workforce
Pharmaceuticals	13,4	+	+	+
Business Services	17,0		+	+
Healthcare	24,3	+		
mass media	25,0			+
Consumer goods	28,5	+		
Financial services	29,7	+	+	
Telecommunications services	31,0		+	+
Retail	46,0	+		
Tourist services	51,0		+	
Average level by industry	25,0			

The results of a survey of companies on the degree of use of digital technologies in production indicate that organizations in the service sector (tourism, financial services) and trade have the highest level of digitalization, and the pharmaceutical industry has the lowest level. The remaining industries have an average level of digitalization – 25%. In addition, the survey made it possible to identify factors hindering the development of the industry in the context of digitalization, namely: a low percentage of sales made using digital technologies, a low percentage of automated operations, a low percentage of the use of digital technologies when interacting in supply chains [16].

1 experience suggests that in the most digitally developed sectors of the economy, the “winner takes all” principle works. Today, the top 10% of companies with the highest digital revenues account for up to 80% of the revenue generated in their sector, ranging from 60% in professional services to over 90% in media and telecommunications (McKinsey data). Digitalization processes have received impetus for development in recent years. In the European Union, private companies have achieved significant success, the labor market is gradually changing, the state is implementing large infrastructure projects, and the Internet, mobile and broadband communications are being widely introduced (Table 2).

Table 2

**Comparative characteristics of the level of development of digital services in EU countries in 2021, % [17]**

Indicator	EU Country
Share of population shopping online	75
Share of organizations using CRM systems	38
Share of e-commerce in total retail trade	14,8
Share of the population receiving government services online	56
Share of organizations with a website	75
Mobile Internet penetration level	68
Internet penetration level	88

A similar situation is observed in terms of the share of people who use the Internet every day: Russia (66%), Japan (81%), South Korea (81%) and the UK (69%), but overall it is at the level of developed countries. countries (Table 3).

Table 3

**Average number of Internet-connected devices and share of people using the Internet daily in selected countries [18]**

Country	Average number of devices connected to the Internet, units.			Share of people using Internet access daily, %		
	2019	2020	2021	2019	2020	2021
Great Britain	3,0	3,1	3,3	63	70	69
USA	2,9	3,1	3,2	66	63	64
Russia	2,1	2,4	2,8	51	66	66
Germany	2,2	2,4	2,6	59	62	64
South Korea	2,8	2,3	2,5	71	73	81
France	2,3	2,2	2,5	60	60	66
Japan	1,8	2,3	2,4	74	81	81
China	1,4	1,9	1,9	44	60	61

The achieved level of development of digital technologies has had the most significant impact on the transformation of the service sector, leading to unlimited business scaling and an exponential decrease in the value of creating demand and prices for services for consumers. An analysis of the dynamics and factors of development of electronic services in the European Union showed that various market participants have a need to study the boundaries, level of penetration and volumes of the digital economy, therefore relevant studies are carried out by independent rating and consulting agencies, individual service organizations, scientific and educational institutions, national industry regulators and the media.

However, the data obtained are not only not consolidated, but are often incomparable due to methodological differences, discrepancies in approaches to

determining the population sample being surveyed, and the lack of uniform terminology. Sometimes the objectives of the study and the choice of indicators or areas of assessment remain unclear.

Thus, the task of developing a methodological approach to identifying electronic services as an object of civil circulation, as well as their classification, comes to the fore. This will make it possible to determine the actual indicators of the Internet economy, its share in the national economy, to develop scientific and practical recommendations for the integration of the material and virtual business environment, the formation of new types of strategies and approaches to the study of markets.

### **Conclusion**

Informatization has a great impact on economic development. The relationship between informatization and the economy is carried out through business communications (business communications), which unite individual local structures with each other. In addition, this is the interaction of subjects of the information system in the process of solving innovative problems. The information sector of the economy is being transformed into a new technological structure. At the same time, continuous technological progress characteristic of the digital economy confronts individuals with the need to develop their creative potential throughout their lives. In this regard, they talk about the transition of civilization to a new stage of development, called the “information society”.

At the same time, in the modern information society, the sense of reality and sustainability is lost, since there is a desire for innovation. This feeling is generated by the constant changes that characterize the leitmotif of the modern era. These changes in society are not external, but of an essential nature, which is manifested in the fact that it changes both the dynamics of social processes and the nature of social and economic reality. Informatization of modern society determines the essence, character, dynamics and prospects for the development of social processes as a whole. The information society sets the special nature of social connections—communication that unfolds through telecommunication technologies [19].

Information and telecommunication technologies have not only generated a variety of social effects, but also led to the emergence of a new trend of social thought, known as the theory of the information society. To date, the basic terms of the information society and its main characteristics have been formulated.

In such a society, the dominant role belongs to professionals, and special theoretical knowledge acquires a fundamentally new meaning. The dominant elements of social development are knowledge and technology, which determine the basis of socio-economic life. In a post-industrial society, the information sector of the economy predominates, which includes all specialists involved in the production, processing and

dissemination of information, as well as those who create and maintain the functioning of the information infrastructure. Information and knowledge, rather than capital and labor, become the main variables shaping post-industrial society. Information controls the behavior of producers and consumers [20].

The achieved level of development of digital technologies had the most significant impact on the transformation of the service sector, led to unlimited business scaling and an exponential decrease in the value of creating demand and prices for services for consumers (transport, education, healthcare, tourism, etc.), as well as in the sphere of interaction between market participants, government services and security services.

The consumption of services, unlike the consumption of goods, has no restrictions. In previous periods, the consumption of services and the growth of their variety were constrained by the local nature of consumption and the locality of their supply due to demand restrictions below the efficient level.

Digitalization is changing the very nature of production and service provision through the introduction of completely new technologies and platforms, digital formats for providing services, eliminating intermediaries, revising the principles of interaction with customers, suppliers and partners, the possibility of creating ecosystems and connecting partners and contractors to the infrastructure using new schemes payment.

Business communications are becoming the main factor in the competitiveness of enterprises, and the digital economy is transforming in a certain way the entire sphere of intangible production and infrastructural processes - education, planning, transportation, sales, service, and so on - as a predominant source of added value. The effectiveness of the public service sector is largely determined by the strategic orientation of the management system, which allows enterprises, institutions and organizations to adapt to changing conditions in the process of their functioning. In the current situation, it is necessary to substantiate strategic approaches to updating and improving the quality of management systems at various levels, as well as to creating mechanisms that make it possible to practically solve these problems.

The information sector of the economy is being transformed into a new technological structure. At the same time, continuous technological progress characteristic of the digital economy confronts individuals with the need to develop their creative potential throughout their lives. In this regard, they talk about the transition of civilization to a new stage of development, called the “information society”.

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