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THEORETICAL PRINCIPLES OF USE OF INFORMATION COMMUNICATION TECHNOLOGIES IN THE DEVELOPMENT OF THE DIGITAL ECONOMY IN THE ENTERPRISE

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Abstract

The article examines the concept of the digital economy, the definition of the digital economy, the technological developments characteristic of the digital economy, the impact of the digital economy on the employment of the population, the creation of a national digital economic system, the share of ICT in GDP, the analysis of some indicators of communication andinformation, the number of special software, used in this area.

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INTRODUCTION

The digital economy is characterized by the emergence of new types of services and the growth of their share in GDP, new business models, the capitalization of companies conducting business on the Internet, the number of users - content consumers, participants, the appearance of aggregators and other new types of companies on the market. describes the dependence on the nature of competition. The introduction of Industry 4.0 technologies into the production cycle, the reduction of horizontal chains of value creation, the transition to customized products and services, personalized service, the reduction of the innovation life cycle and the difficulty of predicting new technologies are important. Among the signs of the digital economy are also the growth of the role of social networks in the formation of opinions about products (services) in the minds of consumers, the emergence of new technologies that allow the use of collective consciousness, the joint use of material resources, warehouse-free and so on according to the dropshipping model. including doing business based on intellectual property rights, the use of new licenses for intellectual property, the rate of attrition of educational institution graduates, and real jobs.

Today, a lot of work is being done to create conditions for specialists in the field, develop IT entrepreneurship, especially startup projects in the ICT field. For this purpose, a technopark of software products and information technologies has been created. Currently, 392 organizations employing four thousand specialists are residents of the IT park [1]. “We need to develop a National Concept of the Digital Economy, which provides for the renewal of all sectors of the economy based on digital technologies. On this basis, we need to implement the Digital Uzbekistan 2030 program. The digital economy allows us to increase the gross domestic product by at least 30% and sharply reduce corruption. This is confirmed by analyses conducted by authoritative international organizations. Therefore, the government has been tasked with developing a “roadmap” for the transition to a digital

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economy within two months. In this regard, it is necessary to pay special attention to ensuring information security," the head of state said.

LITERATURE REVIEW

In the world, the information business is the basis of the economy of many developed countries and is considered the fastest growing sector in the next 50 years. In particular, artificial intelligence, big data, digital technologies and services create new startups. Information products and services are the main goods in the information and communication market. That is, it is necessary to provide more information services to users using information and communication technologies (ICT). Information products are interpreted differently by experts.

A scientist who studied the market of information products and services I.I. Rodionov defined it as follows: "We can say that various produced forms of information are services or developments in the form of goods aimed at satisfying various consumer needs, information products or information services" [1]

According to V.P. Tikhomirova, an information product as an economic category describes the relations of production, creation, exchange and consumption of specific information collected and defined on various media, between physical, legal and economic entities [2].

In particular, Mark Porat is considered one of the American scientists who distinguished between the primary and secondary sectors of the economy. The primary sector can be clearly assessed from an economic point of view, since it creates direct market value. Although the secondary sector is considered important for the economy, its economic assessment is a very complex task, since it includes information activities within companies and state enterprises.

F.M. Mulaidinov in his work "The growth of the digital economy is associated with the growth of a number of markets directly related to digital and mobile technologies. At the current stage of technological development and the current state of the markets, it is necessary to consider the digital economy not as a goal, but as a means of increasing the efficiency of economic activity" [6].

One of the economists of our country S.S. Gulomov considered the importance of using information and communication technologies in the digital economy as "the use of the results of technological analysis and processing of large volumes of data based on various industries, technologies, equipment. They say that it would be correct to define it as "economic activity that allows you to seriously increase the efficiency of storage, sale and delivery of goods and services, and information in digital form is considered the main". factor of production. At the same time, noting that this definition is inconvenient to use, they gave the following functional definition: "In the digital (electronic) economy, information and communication technologies - information, including personal information, satisfies the needs of all participants to the greatest possible extent." Satisfaction is possible at the level of the economy using digital technologies, which is its characteristic "[11].

In our opinion, it is appropriate to summarize the interpretations of information services as follows, that is, information services are the provision of information products, regardless of where they are, in accordance with the requirements of users, providing information search and presentation, and information needs. is to satisfy.

The emergence of types of information services increases the demand for information products, because they offer information based on the personal needs of users, as a result, the information space of producers and users is created. Thus, information services and products (AMX) are one of the main factors of modern information business.

RESEARCH METHODOLOGY

Economic statistical indicators of the development of the digital economy in our country were analyzed.

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The activities of the digital economy were closely studied and a database was compiled. Based on the collected data, methods such as observation and comparison of economic analysis, systematic approach and logical approach were used effectively.

ANALYSIS AND RESULTS

The formation of information services on a global scale dates back to the middle of the 19th century. In the developed countries of the world, these services are mainly provided by non-commercial information services of academic, professional, state enterprises, educational institutions, scientific and technical societies. This prompted the formation of commercial information services in the economy.

By the mid-1970s, the creation of national and global networks of data transmission, the creation of technologies that allow users to search for the necessary information based on communication by entering a database located at a distance were created. Most of the information products began to be occupied by economic information. In this period, information intermediaries serving users also began to operate widely.

Information and communication technologies and systems later penetrated not only the developed countries, but also the remote areas of the developing countries, creating the basis for social and economic benefits. For example, interactive services enable farmers to have accurate information about the prices of agricultural products on the market, people living in rural areas can receive advice from city doctors based on telemedicine tools, and rural children can access knowledge that they could not get before using information networks. began to be able to select and use . In creating an information business environment based on such innovations, special attention should be paid to the following:

information business environment based on such innovations, special attention should be paid to the following:

a) to encourage wide involvement of private investments in this sector of the national economy;

b) creating opportunities for integration into global computer networks for users and suppliers of all information;

c) continuous improvement of the legal framework that adapts to the dynamic changes in the information and communication market;

d) ensuring diversity of ICT services provided;

e) protection of intellectual property rights.

The main subjects of the market of information products and services are all organizations, state and non-profit organizations, trade associations and social service providers, regardless of ownership forms and network characteristics.

The digital economy is characterized by the emergence of new types of services and the growth of their share in GDP, new business models, the capitalization of companies conducting business on the Internet, the number of users - content consumers, participants, the appearance of aggregators and other new types of companies on the market. describes the dependence on the nature of competition. The introduction of Industry 4.0 technologies into the production cycle, the reduction of horizontal chains of value creation, the transition to customized products and services, personalized service, the reduction of the innovation life cycle and the difficulty of predicting new technologies are important. Among the signs of the digital economy are also the growth of the role of social networks in the formation of opinions about products (services) in the minds of consumers, the emergence of new technologies that allow the use of collective consciousness, the joint use of material resources, warehouse-free and so on according to the dropshipping model. including doing business based on intellectual property rights, the use of new licenses for intellectual property, the rate of attrition of educational institution graduates, and real jobs.

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In the digital age, the countries of the world can enter the global market based on the formation and integration of information and communication infrastructure. Countries that ignore these processes will harm the entire production activity, entrepreneurs, and the development of society in various ways. That is why the large-scale use of modern production, agriculture or information and communication technologies in countries is a strategic task. Because they serve as a "core" that attracts foreign investments in the creation of additional jobs and retraining of employees.

Many experts attach great importance to the development of infrastructure for the wide development of the information business industry, but these processes require large financial resources. According to the calculations of the World Bank, at the beginning of the 21st century, modern information and communication technologies will cost 60 billion annually to build the entire global information infrastructure necessary for collecting, transmitting, processing and presenting the necessary information. You will need US dollars.

Representatives of the manufacturing, financial and telecommunication sectors make the largest investments in the ICT sector. For example, their share in Central and Eastern Europe was 48 percent. Similar trends can be observed in other countries.

Western economists equate free access to information products with free competition. It is no coincidence that the share of activities related to information products and services in the world gross domestic product and national profit is 10%, therefore, 90% falls on the USA, Japan and Western European countries.

In our opinion, the environment of the digital economy should equip workplaces with modern cloud technologies and create an opportunity for consumers in the business environment to use communication services at a high level:

a) every person should be able to connect with another person at work, at home or in transport from any point of the globe;

b) implementation of communication "one person - another person" regardless of the type of information being transmitted;

c) opportunity to hold conferences and business councils, regardless of whether it is in the city or country desired by business circles and business representatives;

d) the possibility of accessing various information in the automated data bank developed by specialized organizations;

e) the ability to provide medical, legal, consulting services from home;

f) implementation of various web services and interactive communication.

The use of ICT in all aspects of society creates great opportunities for economic growth, increasing labor productivity and ensuring employment of the population. Also, the level of informatization of the country serves as a measure of assessing its economic competitiveness and power.

After years of growth, according to research, while ICT spending has remained relatively stagnant in 2020 due to the COVID-19 pandemic, global traditional ICT spending has grown over the past decade. It can be observed that it is growing in line with GDP growth. It is expected that new technologies will begin to take more market share, which will lead to more than 2 times the share of information business in GDP in the countries of the world. First of all, the emergence of the Internet of Things (Internet of Things) has created a new wave of market development, and secondly, information business entities are investing in robotics, artificial intelligence, and AR/VR for the next 5-10 years. it is also explained by the fact that they are focusing on new technologies and that these indicators make up 25% of the total costs. Figure 1 shows the changes in ICT sector development costs.

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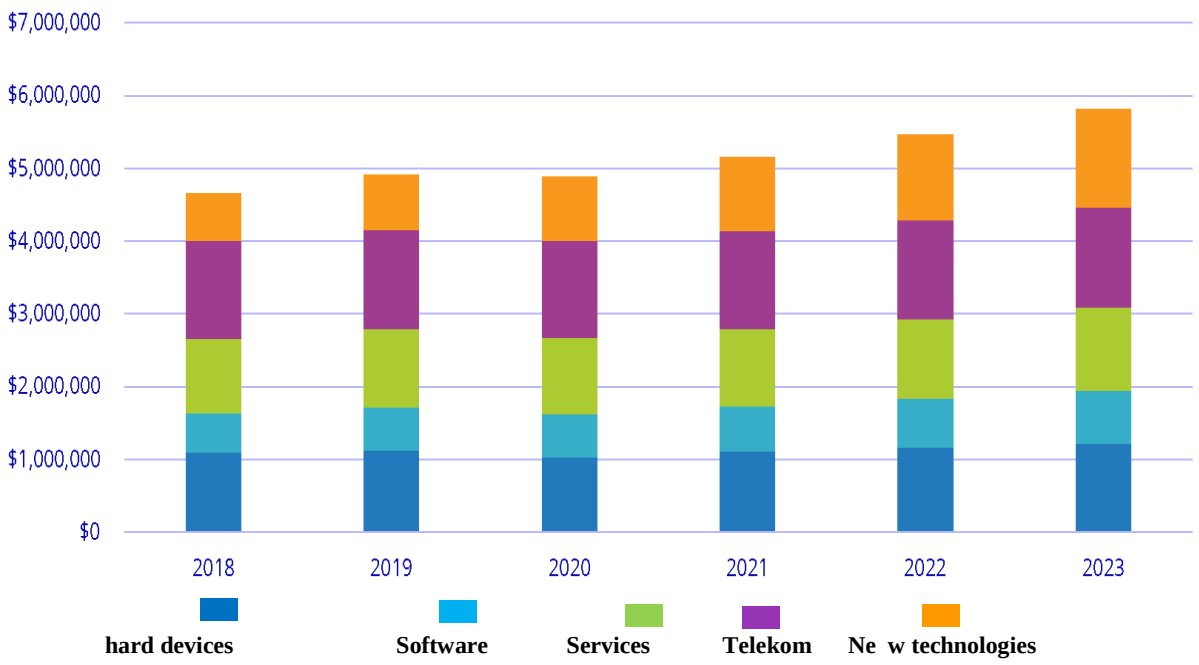

Figure 1. Global ICT spending for 2018-2023,[1]

(*in million US dollars* **)**

According to Figure 1, in the global information business, traditional spending on infrastructure, software, services, and telecommunications will tend to decrease in the overall share in the coming years, as companies and consumers are expected to focus ICT spending on narrow platforms and new technologies. Looking ahead, growth in traditional technology spending will be driven by only four platforms, with cloud, mobile, social, and big data/analytics platforms growing at a high rate. It's important to note that the cost savings offered by the cloud and automation will drive more spending towards new technologies such as artificial intelligence, robotics, AR/VR and blockchain. Next-generation security solutions associated with new technologies will also drive significant growth.

Table 1 shows the technology expenditures of the countries of the world in terms of traditional and new technologies.

1 - table. Spending on technologies of the countries of the world i.[2]

(*in millions of US dollars*)

Technology costs	2018	2019	2020	2021	2022	2023
Traditional digital technologies	4005 , 011	4146 , 194	4005 , 032	4130 , 413	4277 , 843	4453 , 674
Innovative digital technologies	653,808	766,521	891,760	1,030,455	1,189,208	1,362,017

In the global information business, traditional spending on infrastructure, software, services and telecommunications is expected to decline in the coming years as companies and consumers focus ICT spending on narrower platforms. The COVID-19 pandemic has only served to accelerate these efforts.

[1] Presented by research firm Gartner on January 15, 2020 information.: www . Gartner . com

[2] Research provided by Gartner: https://www.gartner.com/en/newsroom/press-releases/2020-01-15-gartner-says-global-it-spending-to-reach-3point9-trillion-in -2020

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Some regions take time to catch up with developed countries when it comes to adopting certain technologies, especially if they are software-based, dependent on old infrastructure or limited by local factors. However, businesses in emerging markets are proving to be paying off quick investments, such as adoption of IoT and robotics solutions by their companies in China and other Asian countries. For developing countries, investment in new technologies, initiatives to create smart cities, and integration of information business with the economy are expected to achieve greater results in the next 10 years.

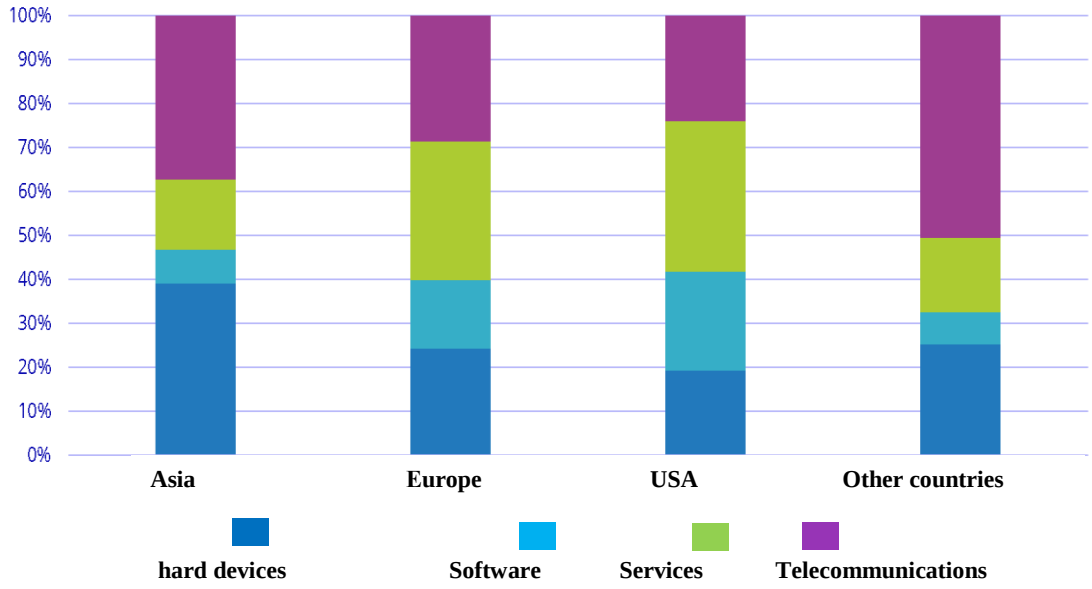

Figure 2. The share of information business by region, (2021-2023 years, in percent)

The COVID-19 pandemic is causing ICT spending to be relatively flat over the years and maintained by the growth of new technologies (Figure 2). From 2021 to 2023, total ICT spending is expected to increase by at least 5 percent annually due to the continued expansion of new technologies, while traditional ICT continues to grow proportionally as part of GDP. Growth in the traditional areas of hardware, software and services is driven by cloud and mobile devices and is expected to maintain a steady share of total business and consumer spending. While certain categories are declining, businesses continue to use traditional technologies as key components of digital strategies.

Traditional hardware has been one of the most affected segments of the ICT market by COVID-19. While traditional industries continue to see software as a major contributor to productivity and benefit from ICT cost savings, investments in mobile and cloud devices have led to the creation of new platforms that enable rapid deployment of new software tools and applications.

Traditional ICT services will continue to see a slight decline, but cloud and mobile will also create opportunities for ICT and business services firms. Organizations are increasingly finding it necessary to transition to new platforms and integrate new digital strategies with existing operations and metrics. Digital transformation will drive much of the growth over the next 5-10 years, which will continue to drive steady demand for professional services.

CONCLUSIONS

There is a natural fit between emerging technologies and traditional cloud, mobile, social and analytics technologies that continue to grow. Cloud and mobile enable rapid performance and connectivity while reducing costs and complexity in legacy operations, allowing businesses to focus on new digital innovations. Analytics, blockchain, social, and artificial intelligence represent traditional software applications that bring significant economic benefits from new technologies. At the same time, new technologies such as robotics and artificial intelligence will see rapid growth as end users apply the new technologies in real-world use cases.

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Although the main focus is on new categories within these new market opportunities, there is a growing connection between traditional technologies and emerging platforms such as the Internet of Things and robotics. Traditional software applications and system infrastructure solutions benefit from organizations' need to use new technologies to save costs or gain a competitive advantage. And large firms will continue to attract professional service companies with the introduction of revolutionary new ICT solutions. The overall impact of new technologies is far greater than the revenue associated with discrete categories such as IoT sensors, 3D printers or drones.

From the above-mentioned points, it can be concluded that today in the economy, there are innovations that significantly change the relations between companies in the market. The emerging Internet of Things is moving all market participants - from companies to consumers, products, services and processes - into a common world. And this is happening thanks to the emergence of new "digital ecosystems" that unite manufacturers, platforms and applications, device manufacturers and service providers.

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