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## Research Article

# DEVELOPMENT PROSPECTS OF THE POSTAL SERVICE IN THE FOURTH INDUSTRIAL REVOLUTION

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## ABSTRACT

This article is called "Theoretical and organizational-legal basis of application of digital technologies in postal communication services". It focuses on the theoretical foundations of the application of digital technologies, the needs of the development of the postal service in the Fourth Industrial Revolution.

## KEYWORDS

Postal companies, the fourth industrial revolution, postal services.

## INTRODUCTION

Today, the postal communication system is an important sector that has its own infrastructure for the delivery of goods, banking, financial and state services in the regions of the country, along with letters and postal shipments. Among the services provided by the postal service, the service of receiving and delivering international mails occupies one of the most important places in the profitability of the industry, and it is worth recognizing that the postal service has been

formed in its own way at each stage of development. At the same time, optimization of the provision of this type of service, improvement of the logistics system for this type of service and effective use of new technologies used in its implementation, as well as the decree of the President of the Republic of Uzbekistan on December 14, 2020 "Provide postal communication services Resolution PQ-4921 "On measures to fundamentally improve the delivery

system" states: "Improving the quality of services, delivery of mail and periodicals and courier shipments in a short period of time" improvement of delivery" and the tasks of achieving the position of our country in the ranking of the integrated index of the development of postal communication of the Republic of Uzbekistan in the first 50 by 2025 determine the relevance of the chosen topic.

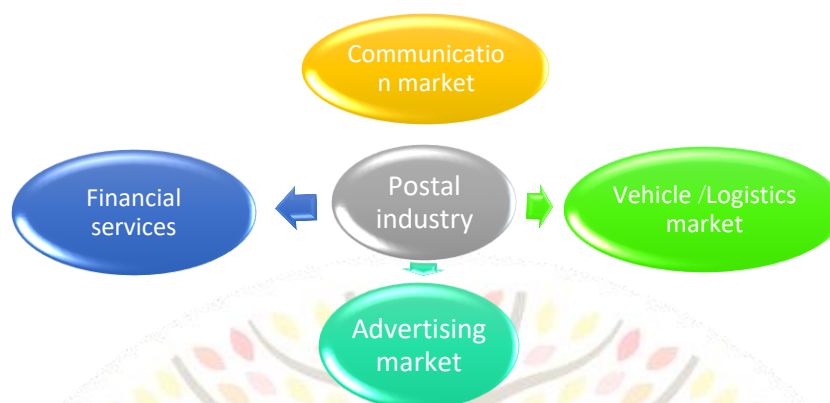
Analysis of the literature on the topic: Today, it is important to accept and maturely use technology and digital transformation in order to transform the postal service from its traditional status to an innovative problem-solving, highly competitive service provider, and become a leader in the field. The rise of the digital revolution of the 21st century and the fourth industrial revolution has pushed the postal sector around the world to expand its services far beyond the original service of postal operators to deliver physical mail in the form of letters and letter boxes. Realizing this, a number of scientists have conducted theoretical and practical research on the digitization of the postal service and postal operators.

Research methodology. In the preparation of this article, statistical data provided on the official website of the Republic of Uzbekistan, articles published by foreign and Uzbek scientists, and information provided in training manuals were

analyzed. In addition, in studying the role of the postal system in the development of the country, the activation of postal processes, economic phenomena and processes were considered in a systematic way. Logical analysis, synthesis, generalization, induction and deduction methods were used to draw conclusions from the data.

Analysis and discussion of results. The fourth industrial revolution and its application supported by Industry 4.0 present both challenges and opportunities for the postal sector, the main challenge being that the post offices can no longer operate using the business models of the past, as the digitization of the post is mandatory rather than optional. , if the mail is to live another 100 years of course.

Postal services play a unique role in each country, as they have a dual impact from a social and economic point of view. Postal services change every day. In recent decades, a number of important changes have taken place in the postal market. Currently, the postal industry is located at the intersection of four markets that are important for economic development: communication, advertising, transportation (including logistics), and financial services markets. In the future, the viability and economic role of the postal network must develop in harmony with these closely related markets.



**Figure 1. Strategic position of the postal services market**

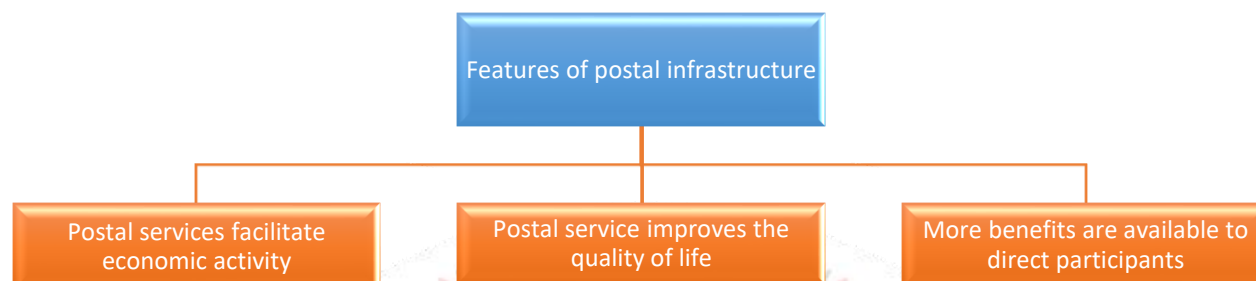
In a rapidly changing world, the role of postal services in ensuring the right to communicate by sending messages, transporting parcels or sending money is now more important than ever. Postal services are essential to the development of e-commerce, which ensures the delivery of millions of parcels every day. Postal services play an important role in the development of trade, especially for small and medium-sized enterprises. In addition, more than 1.5 billion people worldwide have access to financial services through the post office (Universal Postal Union, 2019).

The postal network is an important infrastructure that facilitates the functioning of the global economy. The sector has the largest integrated distribution network in the world and can

physically connect everyone around the world. On the other hand, the e-mail network allows postal operators to play a key role in e-commerce. Finally, the postal sector is the second largest contributor to financial inclusion.

About 1.5 billion people around the world send money, pay bills or receive social security payments through postal operators. The provision of basic postal and financial services contributes significantly to global economic and social development and plays an important role in improving living standards. The postal sector can play an important role in the payment market and financial inclusion of the population, reducing consumer risks related to the use of informal networks and money laundering (UPU, 2019).





**Figure 2. Features of the postal infrastructure**

In many countries, the postal network is the largest network in rural areas, providing financial, communication, logistics and other retail and government services.

At the same time, the postal industry is one of the largest employers in many countries. The main features of postal services can be summarized as follows:

Postal services - services that include collection, transportation and delivery of all types of letters, documents, printed products (books, newspapers and periodicals), parcels by all types of public and private operators.

- Postal services are services of general economic interest (more precisely, Universal Postal Service (UPS)).
- Postal services are an important means of communication and information exchange.
- Postal services promote social, economic and territorial integration.
- UPS is a set of postal services that are provided continuously (on all working days, at least 5 days a week) during the specified

working hours, in certain quantities and at low prices, and which can be used by each user. country regardless of residence.

- The element of time is of great importance in the marketing of postal services.
- Postal services are built around four main activities – collection, transport, sorting and delivery. These activities are traditionally labor intensive.

The modern concept of postal services (especially courier services) defines them as a type of logistics services.

- ☐ Demand for postal services is highly volatile.
- ☐ Postal services consist of a number of "partial" services arranged temporally and spatially to fulfill their ultimate purpose. Regarding their quality, the above means that composite services are formed as a specific synthesis (summation) of quality characteristics and their optimal spatial and temporal order.
- ☐ Provision and consumption of postal service occurs as a combined process of time and space,

which means that its quality cannot be evaluated at the time of sale (purchase). The customer "buys the promise of the next service" and takes a certain dose of risk.

Postal services are personalized services. They arise from the interaction of two or more entities. In terms of quality, this means that a lot of it depends on the human factor (communications staff, back office staff, dispatchers and customers).

Postal service is a complex and diverse service from the point of view of operators and consumers. It is a dynamic, integrated service and, last but not least, a data-rich service. This is what makes the postal sector particularly suitable for the application of modern information and communication technologies (ICT).

The use of ICT is a source of efficiency in the provision of postal services. For example, in a self-service environment, customers perform a specific task, which increases the efficiency of the process, resulting in labor cost savings for the postal service provider.

Postal services are characterized by high flexibility and orientation to specific needs of consumers. Customer responsiveness refers to the need and ability to modify the service to meet the requirements and needs of each customer.

Postal services are services with a low level of customer contact, which determines the expected high efficiency of the service delivery process. However, due to the possibilities of modern technologies, providing tracking, rerouting, etc.,

customers play an important role in service delivery.

Postal services are a combination of physical sites and services. Therefore, service satisfaction can be called the sum of satisfaction with individual elements or attributes of all services that make up the service.

The fourth industrial revolution is defined as a series of new technologies that combine the physical, digital and virtual worlds. It is characterized by high levels of automation and data exchange.

Now, the postal sector finds itself in the midst of a disruptive transformation:

- globalization, liberalization and corporatization have increased competition from alternative communication channels (e-exchange);
- The growth and spread of other emerging technologies such as IoT, social media, and cognitive computing.

Postal services play an important role in the world economy even in the new information society characterized by information technologies. For example, when people communicate and make purchases over the Internet, goods must be physically delivered to the consumer. In this case, the postal service can be considered as a connection between the virtual and the physical world.

The Fourth Industrial Revolution, combined with liberalization and globalization, has brought about new customer needs, increased and

changing competition, and new business models in the postal sector.

Information technologies are not only a driver for the business processes of postal operators, but they are becoming a core part of the postal business.

The biggest driver of cloud computing in the postal industry is Supply Chain Management (SCM). As the complexity of the postal sector increases, there is a need for solutions that facilitate supply chain management between companies. Cloud computing is becoming increasingly popular in the postal industry. However, its potential is still not fully utilized. According to AXIT research, only 50% of postal operators already use cloud-based solutions. Most of them use SCM, Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) solutions. According to the results of the same study, the main advantages of using cloud computing in the postal sector are:

- location-independent access to information,
- easy integration of partners,
- quick access;
- increasing flexibility;
- elimination of administrative actions;
- easy integration of external systems and easy collaboration.

Quantum-related technologies have the potential to massively disrupt a number of IT

industries. The postal market is one of the most globalized markets, and it is one of the most dependent on IT markets. Its high reliance on security and process regulation, and the relentless need to deliver differentiated services, means that disruption brings both risk and opportunity. Quantum technology encompasses four main areas: imaging, sensing, computing, and communication. Computing and communication include potential applications in algorithmic trading, fraud detection, encryption, and transaction security. Technology is now having a positive impact on various stages of the postal process, mainly sorting and delivery operations. For example, barcodes speed up the sorting of mail because they can be sorted automatically. Many postal operators use information-rich 2D codes that include additional information such as routing instructions, personalized special offers, discounts, and more.

3D printing refers to a technology that builds a physical object from a virtual image. The greatest potential of 3D technology lies in its ability to simplify the production of highly complex and customized products and parts. Companies in many industries are increasingly interested in 3D printing for manufacturing because of the opportunities for greater customization, less waste, and localized production and delivery. In the postal sector, 3D printing plays a very important role in the logistics of spare parts and the production of individual parts. As manufacturers adapt their manufacturing processes and supply chains, this opens up new



opportunities and encourages postal providers to find new customer-centric solutions.

Self-service mail centers offer 24/7 access, making delivery more efficient by avoiding failed delivery attempts and saving on delivery costs. Mail lockers, autonomous containers that can be used to receive or send mail, are among several popular alternative solutions that customers can choose to manage the delivery or shipment of their online purchases. For postal operators, investing in mail lockers can reduce costs in the logistics chain, improve delivery efficiency and create new market opportunities.

Postal operators can use IoT to create new data-driven businesses, deploy new digital technologies within the organization, and extend the current system to a broader digital ecosystem of customers, partners, and connected products to improve the customer experience.

The Internet of Postal Things (IoPT) provides the postal infrastructure with low-cost sensors that enable the collection, communication and movement of various data. IoT can help postal operators improve operational efficiency, improve customer experience, and develop new services and business models.

In the past five years, significant progress has been made in the use of autonomous drones in the postal sector. In the near future, drones may play an important role in other solutions that postal operators will need, such as tracking delivery conditions. The advantage of autonomous drones, which are fully controlled by software only, is that there is no need to hire, train and manage pilots.

Software-controlled drones offer a safer, more reliable and on-demand scalable solution at a much lower cost.

One of the challenges of the fourth industrial revolution is that quality management expands from product quality to service quality and brand quality. Using a business platform is an important step towards customer satisfaction for all postal operators.

Postal operators have started to introduce new digital services in order to expand their portfolio and find new markets where the traditional postal market has expanded. Most digital postal services are directly linked to traditional postal services, increasing their convenience and value or adding a distribution channel.

## CONCLUSIONS

New technologies have helped to make postal services more customer-centric. Not only do consumers have better information about the delivery status through tracking, but they can now reschedule the delivery by rerouting the package to another delivery point, or reschedule the delivery if they are not at home. has the possibility to delay giving.

The fourth industrial revolution fundamentally changed social and business relations. In response, postal operators are diversifying new electronic services to their customers. E-mail services are communication services delivered to customers through ICT tools, such as: e-mail box, e-stamp, online direct mail, hybrid mail, postal

address verification, online change of address, tracking, electronic notifications, mobile applications, bill management, electronic funds transfer, e-commerce web customer service, communication and more.

From the above, I conclude that the postal sector has adopted innovations to respond to the rapid evolution of consumer needs and to remain competitive in the face of the Fourth Industrial Revolution. Postal operators have to make great efforts to adapt their organizational processes to digital business.

Technologies are increasingly important to postal services. New digital tools cannot replace physical delivery, but they can improve process efficiency and flexibility and reduce transaction costs. New digital technologies are having a strong impact on the operations and service delivery of postal operators and will continue to have a major impact in the future. The capabilities of different postal operators to do witchcraft using digital tools are very different and their potential is still not fully exploited.

Today, the postal communication system is an important sector that has its own infrastructure for the delivery of goods, banking, financial and state services in the regions of the country, along with letters and postal shipments.

Joint-stock company "Uzbekiston pochta" is the national postal operator of our country on the republican scale

It has about 2,000 postal facilities and covers all settlements. At the same time, the development of the National operator network

due to the insufficient measures taken, Uzbekistan remains in 93rd place in the global rating of the Postal Development Index of the Universal Postal Union.

In order to include our country in the top 50 in the global rating of the Postal Development Index by fundamentally improving the system of providing postal communication services, introducing modern technologies in the field, and fully automating the activities of providing postal communication services:

1. The following should be defined as the main directions of improving the system of providing postal services:

a) on the development of mail and courier services:

introduction of the "final address" service in cooperation with local and foreign companies engaged in providing postal and courier services;

providing modern services to the population, businesses and government agencies by improving traditional postal services, digitizing them, introducing information technologies and systems to the processes of receiving, tracking and delivering parcels;

Double the number of "Hybrid mail" delivery and reception services;



b) on the development of activities in the electronic commerce market:

creation of an electronic trading platform information system that enables online sales of local manufacturers' products and delivery to customers;

establishment and development of services including the organization of logistics centers, storage and delivery of goods;

v) on the development of postal services in the services market:

modernization of the automated system of receiving payments online through postal facilities and development of its mobile application;

To double the number of financial services, in particular, the acceptance of payments from the population, and to establish the provision of banking services on the basis of outsourcing in at least 1,000 post offices of the republic, especially in remote and remote areas;

establishment of public services at the post office in remote and remote areas;

taking into account the new types of services being introduced in the field of postal communication, retraining and upgrading the skills of personnel working in the National Operator System.

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