DIRECTIONS FOR DEVELOPING POSTAL DIVERSIFICATION THROUGH DIGITALIZATION OF POSTAL COMMUNICATION ENTERPRISES IN UZBEKISTAN

G‘ulom Rustamovich Mamatqulov

Senior Lecturer at the Tashkent University of Information Technologies

Abstract: This study explores the digital transformation of postal services within the Uzpost system through a unified management approach. It focuses on the integration of identification systems, personal account services, and domestic and international postal operations. The research shows that digital technologies improve service efficiency, enhance user convenience, and strengthen data security through centralized authentication. Additionally, digitalization enables remote service access, reduces physical visits to postal offices, and optimizes operational processes. Overall, the model contributes to improved service quality, revenue diversification, and the development of a modern digital postal infrastructure.

Keywords: Digital transformation; Uzpost; postal services; personal account; identification systems; e-government; logistics; service digitalization; information security.

Introduction

Today, in the context of the digital economy, postal communication enterprises are no longer limited to traditional mail and parcel delivery services; instead, they are undergoing a transformation into multi-service platforms. International experience shows that digitalization is a key factor not only in improving the operational efficiency of postal systems but also in creating new service directions.

In Uzbekistan as well, the modernization of postal communication enterprises based on digital technologies has become one of the priority directions of state economic

policy. The rapid development of e-commerce, the growing demand for remote services among the population, and the expansion of logistics infrastructure have further increased the necessity for postal service diversification. In this regard, digitalization processes serve as a key mechanism for expanding the functional capabilities of the postal network, increasing the range of services, and forming new sources of revenue.

Table 1

Monitoring the Digital Postal Ecosystem: Challenges and Prospects

Problem area	**Current situation**	**Manifestation**	**Aspects requiring digitalization**
Fragmentation of identification systems	Users register separately on different platforms	Service usage becomes complicated	Unified ONEID and MYID-based system
Limited access to services	Postal services mainly provided offline	Time and resource losses	Remote service management via personal account
Lack of integration of local and international services	Services managed separately	Process duplication	Creation of a unified digital platform
Lack of transparency in delivery process	Tracking mechanisms are limited	Decrease in customer trust	Real-time monitoring system
Fragmentation of financial services	Payments are processed through different systems	Difficult control and monitoring	Integrated digital payment system

Ununified databases	Data stored separately	Difficulties in analysis and forecasting	Unified digital information environment
Low speed of customer service	Processes are handled manually	Delays occur	Automated service systems
Slow international postal exchange	Insufficient digital integration	Delivery time increases	Integration with global platforms
Weak control and accountability	Traditional reporting system	Low accuracy and transparency	Digital dashboards and monitoring systems
Underdevelopment of new services	Traditional postal services dominate	Limited revenue diversification	Expansion of digital and financial services

The development of diversification through the digitalization of postal activities is of great importance not only for increasing economic efficiency but also for ensuring the stability of social infrastructure. The introduction of new directions such as financial services based on digital platforms, e-commerce logistics, digital identification, and information exchange transforms the postal system into a multifunctional service hub. This process enhances service quality and speed, strengthens interregional economic relations, and contributes to improving the living standards of the population. Therefore, the formation of a diversification strategy through the digitalization of postal communication enterprises in Uzbekistan is considered an important direction ensuring sustainable development in line with the digital transformation of the national economy.

The problems presented in the table indicate that the traditional management model of the postal system is becoming increasingly inefficient under conditions of the digital economy. The separate use of different platforms for user identification complicates access to services, reduces customer flow, and increases risks related to information security. It also leads to duplication of databases and hinders the full integration of the postal system into the digital environment. Therefore, centralizing identification processes emerges as a key component of the digitalization strategy.

The predominance of offline access to postal services results in increased time and financial costs for both individuals and business entities. The need to physically visit postal offices reduces service accessibility, particularly in remote areas, and weakens public trust in postal services. The insufficient implementation of digital platforms creates a mismatch between service speed and quality. The absence of remote service management through personal accounts limits the adaptation of the postal system to modern service standards, making digitalization essential for expanding access to services.

The separate management of domestic and international postal services leads to inefficiencies and duplication in logistics processes. The reliance on fragmented information systems slows down data exchange and reduces overall management efficiency. Such fragmentation makes it difficult to optimize cargo flows and make timely decisions. The absence of an integrated digital platform limits the postal system's ability to function as a unified system and disrupts service continuity. Therefore, a unified digital management environment is essential for ensuring coordination between domestic and international services.

The lack of transparency in the delivery process and limited tracking mechanisms reduce customer trust. The inability to monitor shipments in real time leads to increased complaints regarding delays and losses. This situation weakens the competitiveness of

the postal system and may result in a loss of market share to private logistics companies. Without the implementation of digital monitoring and automated tracking systems, it is difficult to ensure stable service quality. Thus, transparency in delivery processes is considered one of the key priorities of digitalization.

The fragmentation of financial services across different platforms complicates control and accountability mechanisms. The absence of a unified payment system hinders accurate analysis of financial flows and limits revenue forecasting capabilities. At the same time, the complexity of payment processes reduces service usage among customers. The introduction of an integrated digital payment system would simplify financial operations, enhance transparency, and strengthen the economic stability of the postal system.

The lack of unified databases and the dispersion of information across multiple sources significantly limit analytical capabilities. Inefficient use of large volumes of postal data slows down strategic planning and forecasting processes. Without a unified information environment, it becomes difficult to assess demand, analyze customer behavior, and optimize logistics operations. Given that data has become a key resource in the digital transformation process, centralization of information systems is an essential requirement.

The underdevelopment of new service types limits the revenue base of the postal system. Relying mainly on traditional mail and parcel services makes it increasingly difficult to ensure economic sustainability. Without the development of digital and financial services and logistics solutions integrated with e-commerce, the postal system risks falling behind market demands. Therefore, diversification is an integral part of the digitalization process, enabling the transformation of postal services into a multifunctional service center.

Table 2

Modern Tools and Methods in the Digitalization of Postal Services

No.	Digital tool / method	Description	Application in postal services
1	Artificial Intelligence (AI)	Intelligent data processing and decision-making systems	Demand forecasting, customer behavior analysis, route optimization
2	Big Data Analytics	Processing large volumes of structured and unstructured data	Revenue analysis, service optimization, strategic planning
3	Internet of Things (IoT)	Network of connected smart devices	Real-time parcel tracking, warehouse automation
4	Blockchain technology	Secure and transparent decentralized data system	Secure financial transactions and shipment verification
5	Mobile applications	Smartphone-based service platforms	Online tracking, payments, service requests
6	Cloud computing	Remote data storage and processing infrastructure	Unified data access and system integration
7	Digital identification systems (ONEID/MYID)	Unified user authentication systems	Single access point to all postal services
8	Automated sorting systems	Robotic and AI-based sorting technologies	Faster parcel processing and reduced human error

9	GIS technologies	Geographic information systems	Route optimization and logistics planning
10	E-payment systems	Digital financial transaction platforms	Cashless payments and financial service integration
11	Chatbots and virtual assistants	AI-based customer support systems	24/7 customer service automation
12	E-commerce integration platforms	Systems connecting postal services with online marketplaces	Efficient handling of e-commerce logistics

The introduction of modern digital tools in postal services is leading to a fundamental transformation of operational processes. Automated sorting systems, supported by artificial intelligence, enable rapid identification and routing of shipments while significantly reducing human errors. These processes increase service speed several times and ensure stable performance even under high workload conditions. As a result, congestion in postal centers is reduced and delivery times are shortened. At the same time, automation optimizes labor costs and ensures more efficient use of resources.

The implementation of digital authentication systems simplifies access to postal services while strengthening information security. Through unified identification platforms, users can access various services with a single registration. This not only enhances customer convenience but also contributes to the centralization of postal databases. Automation of authentication processes reduces the risk of fake accounts and illegal operations, thereby increasing trust in the system. Consequently, a strong digital environment is created for expanding service offerings.

The use of modern logistics management platforms elevates the efficiency of postal infrastructure to a new level. Integrated management of warehouse and transport processes ensures coordination of cargo flows and reduces unnecessary movements and costs. Such systems allow precise planning of shipment location, movement routes, and delivery times. This ensures optimal use of resources and stabilizes service quality. Digitalization of logistics processes significantly increases the overall economic efficiency of the postal system.

Modern analytical tools that process large volumes of data play an important role in the strategic planning of postal operations. Based on in-depth analysis of cargo flows, customer demand, and seasonal variations, accurate forecasts can be developed for future periods. This enables proactive resource planning and risk reduction. Data analytics also helps identify weak points and continuously improve operational processes. Thus, postal services become more flexible and capable of responding quickly to market demands.

The introduction of digital monitoring and tracking technologies ensures transparency of services. Shipments are tracked in real time, allowing customers to always know the location of their parcels. This increases trust and reduces the number of complaints. At the same time, postal operators can quickly identify delays and system failures, enabling timely corrective actions and maintaining stable service quality.

Digital interfaces that enhance customer interaction significantly improve service convenience. Through personal accounts and mobile applications, users can place orders, make payments, and track service status. These processes save customers' time and reduce the need to visit postal offices. Digital services also enable personalized offers, increasing customer loyalty. As a result, the postal system evolves into a modern service platform.

The automation of financial operations and reporting improves the economic management of postal activities. Digital payment systems ensure transparent monitoring of all financial flows and enable real-time control. Automated reports and analytical dashboards support management in making timely and informed decisions. These processes strengthen financial discipline and ensure effective balance between income and expenditures, making digitalization a key factor in the stable development of the postal system.

The development of this model is directly linked to the deep structural changes occurring in the postal services market under the influence of digital technologies. As demand for remote services from individuals and businesses increases, traditional postal operations are no longer able to fully meet modern requirements in terms of speed, convenience, and transparency. The need for unified user identification systems, personal account-based service access, and integrated management of domestic and international shipments is growing. In particular, the development of e-commerce requires postal services to evolve into a digitally integrated ecosystem combining logistics and financial operations, which is a key factor in the formation of this model.

At the same time, the need to expand revenue sources and ensure service diversification further justifies the development of this model. Relying solely on traditional postal services makes sustainable economic growth increasingly difficult, highlighting the necessity of developing digital services, financial operations, and international logistics. The introduction of services such as online payments, data management, delivery planning, and integrated service provision transforms the postal system into a multifunctional service platform. Consequently, this model serves as an important strategic foundation for improving efficiency, increasing customer satisfaction, and ensuring competitiveness in the digital economy.

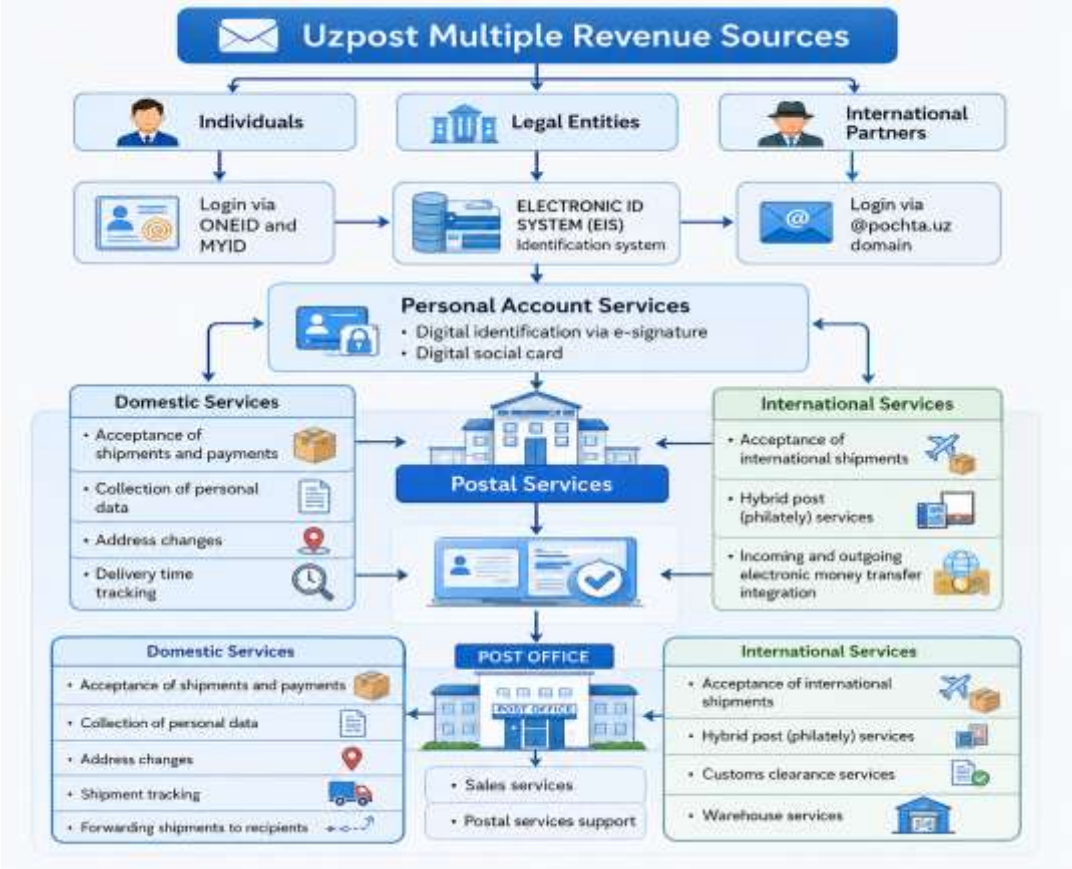

Figure 1. A strategy for digital management of domestic and international postal services through a personal account in the Uzpost system

This figure illustrates, in a step-by-step manner, the mechanism for organizing postal services within a unified management environment of the Uzpost system through digital transformation. At the top of the model, revenue sources are categorized by individuals, legal entities, and guest users, demonstrating that postal services are oriented toward a broad user base. This approach ensures that the postal system is not limited to traditional users only, but also includes the business sector and temporary users. As a result, it creates favorable conditions for expanding the service market and diversifying revenue streams.

The central role of the identification process in the diagram ensures the secure and convenient organization of digital services. Access via ONEID and MYID, along with

the EST ESI unified identification system, centralizes user data and establishes a unified authentication mechanism for all services. This process enhances information security while enabling users to access all services through a single registration. Consequently, the system's speed and convenience are significantly improved.

Conclusion

Personal account services represent the core functional component of the system. Users are able to manage shipments via tracking identification numbers and benefit from privileges through digital loyalty cards. This mechanism strengthens customer interaction and fully shifts service delivery into a digital environment. As a result, physical visits to postal branches decrease, while service efficiency increases.

Through the domestic services module, users are provided with opportunities such as remote payments, quick retrieval of personal data, address modification, and delivery time scheduling. These functions enhance the flexibility of postal processes and ensure service delivery tailored to individual user needs. Such digital solutions improve service quality and lead to a stable increase in customer satisfaction.

The international services section is aimed at integrating the postal system into the global logistics environment. Efficient management of international shipments, development of hybrid mail and philatelic services, and integration with e-commerce platforms significantly accelerate international postal exchange. This, in turn, increases the competitiveness of the Uzbek postal system in the global market and supports the country's active participation in international trade processes.

The lower part of the figure demonstrates the interconnectedness between real postal service operations and digital platforms. Digital orders, payments, and information are directly transmitted to postal infrastructure and integrated with physical service processes. This ensures that online and offline segments of the postal system

function as a unified ecosystem. As a result, operational processes are simplified and resource efficiency is improved.

Overall, the figure represents the transformation of the Uzpost system into a multifunctional digital service platform. The integration of identification systems, personal accounts, domestic and international services, and physical postal infrastructure aligns the postal system with the requirements of the modern digital economy. This model not only enhances service quality but also expands revenue sources and provides a solid foundation for the sustainable development of postal enterprises.

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