ORGANIZATIONAL AND ECONOMIC FOUNDATIONS FOR DEVELOPING AN INTEGRATED SERVICES SYSTEM IN RAILWAY TRANSPORT

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Abstract. The article substantiates the organizational and economic foundations for developing an integrated services system in railway transport under the ongoing reform of Uzbekistan's railway sector. An integrated services system is defined as a set of freight, passenger, logistics and ancillary services offered to the customer as a single, coordinated product through common organizational, information and pricing mechanisms. Based on the analysis of sector statistics, reform documents and international experience, the study identifies the main problems that hinder integration - fragmentation of services between structural units, cost-insensitive tariffs, limited digitalisation of the customer interface, and insufficient involvement of private capital. A model of the integrated services system is proposed, comprising organizational foundations (service-oriented structure, single customer window, digital platform, partnership with logistics operators) and economic foundations (cost accounting by service, cost-reflective and package tariffs, investment and public–private partnership mechanisms, a system of performance indicators). The results can be used by Uzbekistan Railways JSC and regulatory bodies in designing service strategies.

Keywords: railway transport, integrated services, logistics, organizational mechanism, economic mechanism, tariff policy, digital platform, public–private partnership, Uzbekistan.

Introduction. Railway transport is a backbone of the economy of Uzbekistan, a double-landlocked country for which access to external markets depends on overland transit corridors. The national rail network is about 4,700 route kilometres long;

railways carry around 60 million tons of freight and about 15 million passengers a year, and the transport sector as a whole contributes nearly 8% of GDP and employs about one million people [1; 2]. The country's position in the World Bank Logistics Performance Index improved from 129th place in 2014 to 88th in 2023 [2], yet logistics costs remain high, and customers still have to deal separately with carriage, terminal handling, forwarding, customs and last-mile delivery.

The railway sector is undergoing deep reform in line with the Development Strategy of New Uzbekistan for 2022–2026 [10]. With the support of the World Bank, a programme of legal separation within Uzbekistan Railways JSC, financial restructuring, tariff reform and the attraction of private investment is being implemented [1; 2]. The company moved from a net loss of about USD 188 million in 2023 to break-even in 2024 [1], and plans for 2026–2030 envisage renewal of 1,000 km of track, 15 new intercity routes and at least a doubling of passenger and freight volumes [3]. In these conditions, competitiveness with road transport and with alternative transit routes depends increasingly not on the carriage itself, but on the ability to offer the customer a complete, convenient and transparent set of services.

In theory, this shift is described by the service-dominant logic, according to which value is created in use through integrated service offerings rather than by a single product [4], and by the logistics concept of door-to-door supply chains [5]. Nevertheless, the organizational and economic foundations of integrated services in railway transport of transition economies remain insufficiently developed. The aim of this article is to substantiate these foundations and to propose a model of an integrated services system for Uzbekistan's railway transport.

Methods. The research is based on systems, process and institutional approaches. The following methods were used: (1) analysis of scientific literature on service management, logistics and transport economics; (2) analysis of secondary data from the World Bank, Uzbekistan Railways JSC and specialised media for 2023–2026

[1–3]; (3) comparative analysis of the organisation of services in European railways under the EU railway packages [6; 7]; (4) structural and functional analysis of the service chain; (5) modelling and the abstract-logical method for formulating proposals.

An integrated services system is understood here as a set of services (carriage, terminal and warehouse handling, forwarding, customs brokerage, information and financial services, passenger ticketing and connections) that the customer receives from a single point of contact, under one contract and one price, with a single responsibility for the result. The analysis of foundations was carried out in two dimensions — organizational (structure, processes, information systems, partnerships) and economic (costs, tariffs, investment, incentives and control).

Results. The analysis of the current state of the sector allowed us to identify the key indicators that form the starting conditions for integrating services (Table 1).

Table 1

Key indicators of railway transport in Uzbekistan

Indicator	Value	Source
Length of the rail network	≈4,700 route-km	[1]
Annual freight volume	≈60 million tons	[1]
Annual passenger volume	≈15 million passengers	[1]
Electrified share of the network (current / target 2030)	52% / 70%	[1]
Financial result of Uzbekistan Railways, 2023 / 2024	≈USD –188 million / break-even	[1]
Net profit, 9 months of 2025	857.4 billion UZS	[3]
Logistics Performance Index rank, 2014 / 2023	129 / 88	[2]

Plans for 2026–2030	1,000 km track renewal; 15 new intercity routes; at least a doubling of traffic	[3]

Source: compiled by the author on the basis of [1–3].

The data show that the railway has reached financial stability and has an ambitious investment programme, but the growth of volumes planned for 2030 cannot be achieved by infrastructure alone: it requires attracting cargo that currently goes by road and transit flows that choose competing routes. For such customers the decisive factors are total delivery time, reliability, the number of intermediaries and the transparency of the total price.

The structural and functional analysis revealed four groups of problems that hinder the integration of services: (1) organizational fragmentation — carriage, terminal operations, forwarding and passenger services are managed by different units and companies with separate contracts and responsibility; (2) economic — tariffs have historically been set without full cost allocation, cross-subsidisation between freight and passenger traffic persists, and there are no package prices for door-to-door services; (3) informational — the customer interface is only partly digital, and data on the location of wagons and containers are not always available to shippers in real time; (4) investment — limited participation of private logistics operators in terminals, rolling stock and value-added services.

On this basis, a model of the integrated services system is proposed, the organizational and economic foundations of which are summarised in Table 2.

Table 2

Organizational and economic foundations of the integrated services system

Block	Content	Expected result

Service-oriented structure	Separation of infrastructure, freight and passenger business units; creation of a customer service centre responsible for the whole service chain	Clear responsibility for the result; customer focus
Single customer window	One contract, one invoice and one contact for door-to-door freight services; single ticket for rail and connecting transport for passengers	Fewer intermediaries; shorter processing time
Digital platform	Online ordering, electronic waybill, real-time tracking of wagons and containers, integration with customs and ports	Transparency; lower transaction costs; data for management
Partnership with logistics operators	Public–private partnership in terminals and logistics centres; access of private operators and forwarders on non-discriminatory terms	Attraction of private capital and competencies
Cost accounting by service	Activity-based costing for each service and route; gradual reduction of cross-subsidisation	Economically justified prices; profitability control
Tariff policy	Cost-reflective, rules-based tariffs; package (bundled) prices for integrated services; discounts for volume and regularity	Competitiveness with road transport; loyalty of shippers

Investment mechanism	Priority investment in terminals, containers and digital systems; use of capital markets and PPP	Growth of capacity and service quality
Performance indicators	Door-to-door delivery time, reliability of schedules, share of integrated contracts, customer satisfaction, revenue from value-added services	Measurable management of the system

Source: developed by the author.

Discussion. The results show that the integration of services in railway transport is not only a technological but primarily an organizational and economic task. The European experience confirms this: the EU railway packages separated infrastructure management from transport operations and opened markets to new operators, while at the same time strengthening passengers' rights to through-tickets and information [6; 7]. Leading European rail groups developed integrated logistics subsidiaries that sell door-to-door solutions rather than carriage alone. This corresponds to Porter's value chain concept [8], in which competitive advantage arises from the coordination of linked activities, not from any single activity.

The ongoing reform in Uzbekistan — legal separation, financial reform and tariff reform [1; 2] — creates the preconditions for such integration. However, separation alone may even increase fragmentation for the customer if it is not accompanied by a single customer window and a common digital platform. Therefore, in our view, structural reform and service integration should be designed together: the more the functions are divided internally, the more important becomes a single interface for the customer. The planned use of artificial intelligence-based

management systems, which is expected to reduce service costs by up to 20% [3], can serve as the technological basis for this interface.

From an economic perspective, the transition to cost-reflective tariffs is a prerequisite for package pricing: without knowing the real cost of each service, it is impossible to set a justified price for a bundle or to evaluate the profitability of new services. For passenger services, where full cost recovery is not always possible, transparent public service obligation contracts with the state are needed so that social objectives do not distort the economics of commercial services. Service quality should be measured not only by operational indicators but also from the customer's perspective, for example by adapting the SERVQUAL methodology [9].

The limitations of the study relate to the use of aggregated and partly forecast data. Further research should quantify the economic effect of integrated services on specific routes and corridors.

Conclusion. The development of an integrated services system in railway transport requires the simultaneous formation of organizational and economic foundations. The organizational foundations include a service-oriented structure with clear responsibility for the whole chain, a single customer window, a digital platform for ordering and tracking, and partnership with private logistics operators. The economic foundations include cost accounting by service, cost-reflective and package tariffs, investment and public–private partnership mechanisms, and a system of performance indicators oriented towards the customer. For Uzbekistan, whose railways have achieved financial stability and plan to at least double traffic by 2030, the implementation of the proposed model will help attract cargo from road transport and transit flows, increase revenue from value-added services and strengthen the country's role as a regional transport and logistics hub.

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