Ways to increase the efficiency of transport logistics - communication services in Uzbekistan

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Abstract. In the research article, it is emphasized that the logistics information system has a high role in the world and in the economy of the Republic of Uzbekistan, in order to create effective logistics systems and speed up the process of cargo delivery, the author is asked to organize transportation and logistics information centers based in Uzbekistan on information resources in the railway sector. indicates that it occupies an important place in the practice of the main trends in the development of the transport-logistics sector of the Republic of Uzbekistan and the factors hindering the development of the local transport-logistics information system are revealed. The object of research is the transportation logistics information system of the Republic of Uzbekistan and improving its efficiency. The method of analysis, grouping, synthesis, organizational-operational model was chosen as research methods. The model proposed in the study is divided into a number of modules united by the decision of common functional tasks. With this method, it is achieved by expanding the scope of services provided, fulfilling the order on time, increasing the volume of transportation and reducing the overall operational and logistics costs. As a result of the studies, proposals were developed to increase the potential of the transport communication system of our country, to create an effective system of transport-logistics and communication services.

1 Introduction

Logistics is one of the most developing activities. European, American and Asian countries are spending large sums to introduce the principles of logistics into production processes.

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For example, 30% of European logistics costs are in Germany, about 15% in France, Italy and the UK, 10% in Spain. The highest growth rates of logistics costs are in the Pacific region, the lowest cost growth in North America [1-3]. On average, logistics costs in the world have increased by 30% over the past decade [1]. When comparing data across countries of the world, it follows that logistics costs in Uzbekistan are noticeably higher than in developed countries. The main reasons for the high costs are the slow development of the commodity distribution infrastructure, the lag in the use of modern technologies for transportation, storage and packaging.

In world practice, there is a market of logistics operators - PL-providers. Increasingly, organizations outsource logistics operations to logistics operators. There are operators on the market that provide one, two or three types of services, for example, transport and warehouse operators, there are enterprises that provide a whole range of logistics services (3PL-providers), to which some or all non-production logistics functions are transferred (outsourcing). Outsourcing allows the company to concentrate on the core business.

At present, not only in Uzbekistan, but also in many countries, logistics is perceived as a certain set of functions related only to the transportation of goods. Meanwhile, the practice of doing business in developed countries shows that logistics plays a strategically important role in organizing trade flows. Logistics has many forms and directions - these are industrial logistics, trade logistics, information logistics, transport logistics, management logistics, warehouse logistics and others [4-16].

Today, elements of logistical support for trade and transportation of goods are just beginning to appear in Uzbekistan. Measures are being taken to establish a mechanism for the effective use of information technology, transportation and transport infrastructure. However, the pace of introduction of modern methods and technical means of logistics into the practice of organizing and managing cargo flows is still insufficient. Unfortunately, in Uzbekistan there are no examples of operating universal logistics centers that provide a full range of logistics services for transportation, processing, storage and provision of pre-sales services for retail trade. One of the reasons for this is the lack of a strategy for the development of trade and transport logistics in Uzbekistan.

If until recently it was enough for Uzbek entrepreneurs to organize only the delivery of goods from the supplier to the recipient, now there is a steady demand for an increase in the range of services for organizing the transportation of goods - this is the organization of intermodal transportation, delivery on a door-to-door basis, customs clearance, packaging, packaging, storage, goods, etc. In this regard, there was a need for the institutional development of the logistics industry in Uzbekistan, improving the quality of services provided in the field of industrial, trade, information, transport, warehouse, management and other types of logistics. In this regard, another question arises, which is related to the availability of qualified personnel in the field of logistics. Today, the development of logistics services is impossible without training and improving the professional knowledge of entrepreneurs of the republic, as well as teachers of higher educational institutions.

The Government of Uzbekistan attaches great importance to the development of international corridors passing through the territory of the republic, the renewal of transport routes, as well as the improvement of the transport infrastructure of Uzbekistan. For a comprehensive solution to the issues of increasing the volume of international transportation of goods, and attracting transit traffic through the territory of the republic, it is already necessary to begin active work on improving the quality of services provided by transport and logistics companies of the republic today. In this regard, one of the priorities of the economic development of the republic was the introduction of quality management systems at the enterprises of Uzbekistan that meet international standards.

2 Materials and methods

A key role in the formation of effective logistics systems at the micro-, meso- and macroeconomic levels is played by logistics operators from narrowly functional ones (carriers, forwarders, warehouse and customs brokers) to 3PL and 4PL logistics providers - levels - system integrators of logistics business processes. Particular attention is paid to the trend of the emergence of fifth-level system intermediaries, 5PL-providers, or virtual logistics operators in the global transport market. Such a 5PL provider is a service company that performs outsourcing complex services for managing integrated processes in supply chains based on a single information environment. The activities of virtual logistics operators are currently not regulated in any way. According to the "KIA Center" [2], the following picture has developed in the market of logistics services (Pict. 1).

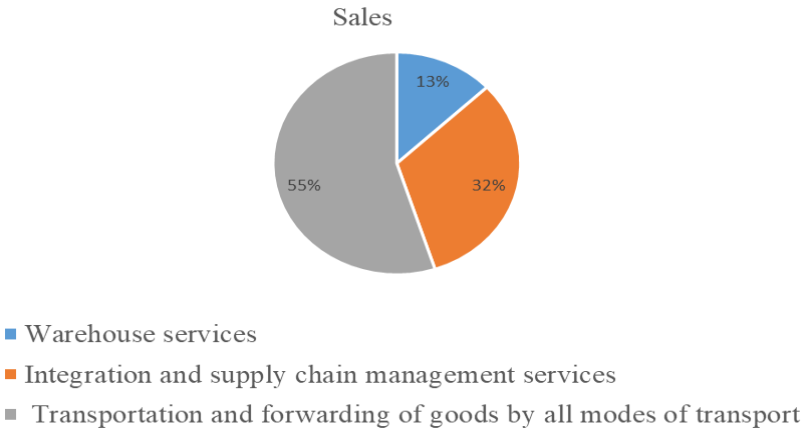

Fig. 1. The structure of the logistics services market.

Uzbekistan lags far behind the world's leading advanced economies in the World Bank's ranking of logistics development - LPI (Logistics Performance Index) in 2018-2019 Uzbekistan took 99th place out of 160 countries of the world. But in the last decade, the logistics services market in our country has been developing at a high pace, outpacing the growth rate in Europe by 1.5–2 times [1].

An active transport corridor development policy has expanded and diversified - international transport route schemes for the export and import of goods. Thus, in 2019, the country's foreign trade turnover amounted to $42.2 billion and increased by 1.9 times compared to 2010, including exports of $17.9 billion (an increase of 37.5%), imports - $ 24.3 billion (increase - 2.6 times). China remains the main foreign trade partner of Uzbekistan, its share in the total trade turnover is 18.1% (2019). Among the main foreign trade partners of Uzbekistan are also the Russian Federation (15.7%), Kazakhstan (8.0%), South Korea (6.5%) and Turkey (6.0%). As for trade with the EU countries, today Uzbekistan's foreign trade cargo transportation with these states is mainly carried out in the directions of the ports of Riga, Liepaja, Ventspils (Latvia) in transit through Kazakhstan and Russia.

However, despite the stable growth of GDP, exports and imports, the share of investments in the transport sector in GDP is declining, which cannot but affect the development of transport industries (see tables). In 2019, the share of transportation, storage, information and communications in the republic's GDP was 7%, including railways - 0.83%, motor transport - 3.7%, air transport - 0.46%, pipeline - 1 .2%.

Table 1. Dynamics of development of the transport sector in Uzbekistan (main indicators of the transport sector)

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
GDP, billion soums	62388.3	78764.2	97929.3	120862	144868	171808	199325	249136	407514	511838
Investments in the transport sector, billion soums	3529.0	2851.0	3385.1	4351.8	4196.4	3739.5	5785.0	6369.0	8487.5	11337
% of GDP	5.66	3.67	6.53	3.53	2.9	2.18	2.9	2.56	2.08	2.21
Export, million dollars	13023.4	15021.3	13599.6	14322.7	14109	14507.6	12178.7	13953.8	14253.9	17901.7
Import, million dollars	9178.8	11344.6,	12816.5	13946.9	13984.3	12416.6	12130.7	13008.3	19555.2	24276.1
Freight shipped, million tons	763.1	827.5	858.7	930	1000.4	1070.5	1132.5	1146.2	1243	1318.9
Cargo turnover, billion t-km	60.4	62.6	66.4	65.8	66.2	65.8	65.3	66.9	71.3	72.9
Passengers carried, mln.	4072	4507.8	4763	4909.9	5469.9	5380	5560.4	5679	5951.5	6109.4
Passenger turnover, billion passenger-km	83.8	92.4	100.2	106.9	113.2	120.1	126	130	135.3	140.9

Source: State Committee of the Republic of Uzbekistan on Statistics

Table 2. Dynamics of the volume of shipments of certain types of cargo by rail for 2015-2019, million tons

Shipping Name	2015	2016	2017	2018	2019
Coal	4.0	3.7	4.4	5.6	5.2
Oil cargo	10.8	10.7	11.0	6.8	6.2
metal ores	4.9	4.9	5.0	5.3	5.5
Ferrous metals, incl. scrap	1.7	1.6	1.6	1.9	2.1
Chemical and mineral fertilizers	4.3	4.4	4.0	3.5	3.6
Mineral construction cargo	11.3	10.1	9.2	5.5	5.7
Cement	5.3	5.5	4.8	4.9	5.1
Timber cargo	0.05	0.01	0.02	0.03	0.03
Grain and milling products	1.3	1.2	1.7	1.7	1.6
Cotton (raw and fiber)	0.6	0.5	0.4	0.2	0.2

Source: State Committee of the Republic of Uzbekistan on Statistics

Since 2009, a modern intermodal logistics center has been operating on the basis of the Navoi airport. It serves mainly international air cargo (bundling and bundling). The terminal's capacities can transship up to 22 containers with storage of 60 containers and handling up to 1500 tons in storage areas. Along with this, the Angren Logistics Center operates on the territory of the Angren FIZ, which includes the cities of Angren and Akhangaran of the Tashkent region. In 2016, the largest modern International Logistics Center "Tashkent" was opened with a total area of 184 thousand square meters. m. All this demonstrates consistent growth and positive dynamics in the development of the transport and logistics industry of the republic.

In general, by the end of 2020, it is planned to build 17 logistics centers in the republic, specializing in the processing, storage and transportation of fruits and vegetables, most of which have already been put into operation. The construction of logistics centers is carried out at the expense of the own funds of Uzulgurzhisavdoinvest JSC and loans from commercial banks. The association's enterprises have 116,000 sq. m of uncooled area and 75 thousand tons of refrigerated storage tanks. Over the past 10 years, the export of fruits and vegetables has increased five times. Until the end of 2020, it is planned to increase the production of fruits and vegetables up to 32 million tons per year.

The new transport and logistics center Orient Logistics Center is being built on the territory of Uztemiryulcontainer JSC. For its construction, a territory with a total area of 16 hectares has been allocated, for a container terminal - 20 thousand square meters. m, closed warehouses - 25 thousand square meters. m. An automated warehouse management system will be introduced in the complex. The new logistics center will take up to 3 million tons of cargo per year.

Table 3. Transportation of certain types of cargo by public road transport for 2015-2019, thousand tons

Shipping Name	2015	2016	2017	2018	2019
Coal	131.7	72.2	36.4	-	4.8
Cotton - raw	392.4	371.6	72.1	127.7	46.4
Cotton - fiber and cotton technical shifts	351.6	184.2	96.9	3.1	58.1
Oil cargo	2206.2	3109.8	2630.7	2874.3	1953.5
Ferrous and non-ferrous metals	340.7	475.0	251.6	155.7	295.5
Chemical and mineral fertilizers	169.8	435.0	109.2	269.3	141.6
Construction cargo	16016.3	10860.9	10899.8	8257.8	11979.5
Cement	184.7	830.7	562.5	122.5	68.4
Vegetables and fruits	50.1	11.7	26.0	656.1	506.8
Other food products	70.8	26.0	75.7	100.0	46.9
Timber cargo	112.8	89.2	45.2	72.6	26.5
Grain and milling products	584.3	599.5	111.6	96.1	139.1
Overburden (including soil)	25962.6	26013.2	22943.4	26672.2	78541.9

*Calculated by the author based on data from the State Statistics Committee of the Republic of Uzbekistan

However, there are currently a number of shortcomings in the logistics industry. There is a low level of multimodal transportation, logistics, customs, forwarding and other services. The share of container traffic in Uzbekistan is much lower than in developed countries. This is partly due to high transport tariffs, indexed according to the “cost + profit” formula.

Despite the fact that new elements of logistics support for trade appear in the country, the pace of introduction of modern methods and technical means of logistics into the practice of organizing and managing cargo flows is still insufficient. Now there is a steady demand for expanding the range of transportation services throughout the entire logistics chain, i.e., "from door to door", covering, along with the transport process, also operations for customs clearance, packaging, packaging, storage of goods, etc. In this regard, there is a need for the institutional development of the entire logistics system of the country, improving the quality of services provided in the field of agrologists, industrial, marketing,

purchasing, transport, warehouse, commercial, information, marketing and other types of logistics.

Table 4. Indicators of provision of regions with a public transport network (as of 2020)

Regions	Territory thousand square meters km.	The length of the public transport network, km			The average density of transp. Networks ks. per 1000 sq. km. territory		
		Railways* (L_{rw})	Road* (L_A)	Integral trans. networks ($L_{ITN} = L_{rw} + 0{,}1\ L_A$	Railways (L_{rw}/ S)	Highways (L_A / S)	Integral trans. networks (L_{int}/ S)
The Republic of Uzbekistan	448.97	4735.1	42695	9004.6	10.5	95.1	19.9
Karakalpakstan	166.59	885.3	4213	1306.6	5.3	25.3	8.1
Andijan	4.30	155.8	2463	402.1	36.2	572.8	93.4
Bukhara	40.32	499.2	4012	900.4	12.4	99.5	22.2
Jizzakh	21.21	274.5	2601	534.6	12.9	122.6	24.9
Kashkadarya	28.57	492.7	3427	835.4	17.2	120.0	29.2
Navoi	110.99	512.4	4006	913	4.6	36.1	7.7
Namangan	7.44	226.7	3377	564.4	30.5	453.9	73.1
Samarkand	16.77	282.9	4097	692.6	16.9	244.3	41.2
Surkhandarya	20.1	425.6	2843	709.9	21.2	141.4	34.4
Syrdarya	4.28	160.9	1450	305.9	37.6	338.8	71.4
Tashkent region (incl. Tashkent city)	15.59	390.9	3965	787.4	25.1	254.3	50.5
Ferghana	6.76	228.6	4031	-	-	-	-
Khorezm	6.05	199.6	2210	631.7	33.8	596.3	93.0

*Calculated by the author based on data from the State Statistics Committee of the Republic of Uzbekistan

Thus, powerful information resources have already been created in railway transport, there are modern communication channels that connect not only the structural divisions of railway transport, but also related modes of transport. The use or development of existing infrastructures is more economically feasible than the creation of new ones. Therefore, the best option is to create transport and logistics information centers on the basis of the Joint Stock Company "Uzbekistan temir yullari" as subsidiaries. Uzbekistan on the basis of information resources of the Joint Stock Company "Uzbekistan temir yullari" has a unique opportunity to create a 5PL provider, develop logistics outsourcing and put into practice the mechanism of virtual supply chain management, as well as virtual management of the transport and logistics complex of services.

3 Results

The technology and system that supports the activities of such a 5PL provider is necessarily an organizational technology and organizational system built on the basis of collective use, i.e., customized to the functionals of not only the operator himself, but also each subject of the controlled logistics chain.

The implementation of this project should be based on innovative components of global information technology with clearly defined corporate standards.

The partners of the center can be various companies, their branches, agencies, structural divisions that form a single set of services, which is comprehensively put on the market

through a 5PL provider. On the basis of standard and specialized contracts and norms of civil and corporate law, a virtual management system is being organized.

In parallel, a set of features and restrictions is formed that accompanies the services. This formalization can be carried out on the basis of international and state standards, on the basis of departmental norms, or based on both.

Methodically, the system of the center (Fig. 2) can be divided into groups of modules united by the solution of common functional tasks. According to the author, all services provided by a 5PL provider can be divided into six categories: reference and information services, services for managing orders, resources, processes, communication and consulting services.

The center's system is focused on creating an up-to-date partner network of a virtual operator and a comprehensive package of services offered on the market. Through the introduction of these information technologies and the creation of transport and logistics information centers, the scope of services provided is expanded, covering the processes for organizing and controlling freight traffic.

In the subject area of the transport and logistics information center, three business objects can be distinguished: a basic product, a service built on a basic product, and a service sales network.

When solving target tasks, the center provides functional mechanisms of a "single window", organizes a single database for access to information resources, a single regulatory environment, which includes sets of directories, algorithms, interfaces, contractual forms, technologies.

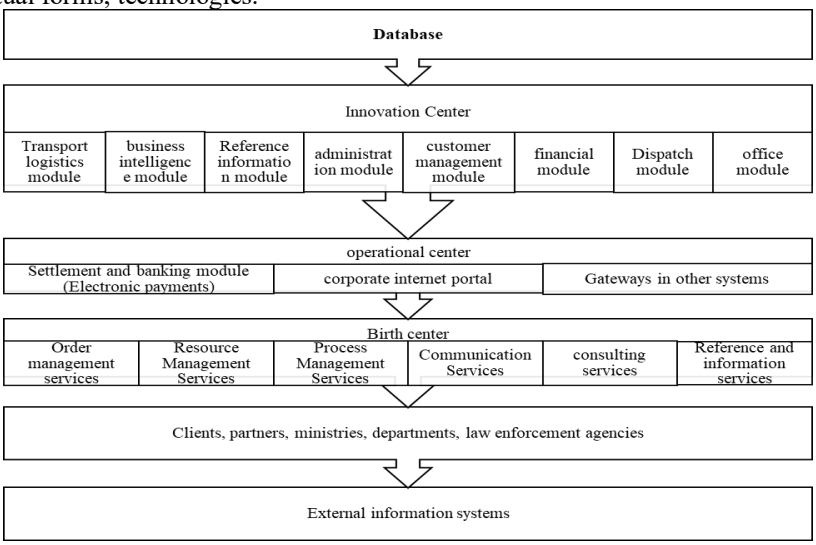

Fig. 2. Organizational and operational model of the functioning of the transport and logistics information center

The integration of existing information technology resources and the practical introduction of advanced technologies are being organized. Joint-stock company "Uzbekistan temir y ullari", being the owner of the basic product (intangible asset), develops a new range of services on its basis in order to increase income, diversify and, as a result, increase the stability of the business. The services of the center are formed on the resources of its basic products, which are understood as any support necessary for the functioning of the transport and logistics information center. The owner of the base product

forms the affiliate network of the center. The author proposes to divide the basic product into two components: informational and service.

Informational is that part of the base product on which the whole range of services is built to create a certain system for the client, for example, a software and technological complex of a carrier alienated from the carrier's functioning system.

Service refers to that part of the base product, the outputs of which are sold to the client. The client can use these service flows to improve the efficiency of the enterprise by optimizing the delivery of goods. The basis of the sale is the reliable, continuous and reliable operation of the underlying product. The author proposes to single out three organizational components of the 5PL-provider system and the subjects of its environment - this is an innovation center, an operational center and a sales center.

in addition, the innovation centers in the

At the moment, large industry projects for the oil, gas and coal industries are being implemented in the country, but in the regions, there are no service and distribution centers on the terms of a multimodal service that can become a framework for a macro- logistics system. Of course, in order to speed up the process of cargo delivery, it is necessary to form effective transport and logistics systems for the implementation of a full range of services based on a single information environment through the “single window” system. The functioning of a network of transport and logistics information centers for organizing the transportation of goods will create a single transport space throughout the country and in the regions.

4 Conclusion

The work of transport and logistics information centers will improve the quality of logistics services by increasing the number of services provided, ensuring order fulfillment on time, coordinating the interaction of all modes of transport and other participants in the supply chain, increasing the volume of transportation and reducing overall and operational logistics costs.

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