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# THE CONTROLS OF THE URBAN TRANSPORT SYSTEM

### Abstract

Urban passenger transport consists of many elements that are differently interrelated. Changing one of the elements leads to several possible outcomes. Urban transport problems are among the most important in the spectrum of problems faced by municipal authorities. With the entry to the market of transport services for passengers of enterprises with different forms of ownership, the control over compliance with the standards and parameters of the technological process has deteriorated, which leads to a deterioration of the conditions of passengers' transportation. The scattered industrial and dormitory areas of Nur-Sultan and their significant distance from each other cause a longer travel distance of one passenger than in other cities of Kazakhstan. All passenger transportation is carried out by one public fleet  $N \ge 1$ , and 7 vehicle fleets, which are private legal entities. The article deals with the object of management of the urban passenger transport of Nur-Sultan, as well as subjects of the urban passenger transport system, their interests and goals of these subjects. The models of urban passenger transport management are considered. This article is devoted to the interrelations between the organizational structures of urban public transport and the whole systems of urban transport, to the description and typification of the organizational structure and transport systems are given.

Key words: urban transport, governing bodies, transport services, organizational structure, passenger transportation, transport problems.

Kazakhstan should become part of the global transport and communication system, therefore, the development of the entire transport infrastructure of the country is required. It is necessary to adopt a long-term transport strategy, logically linked to territorial development. It is necessary to create a network of modern highways that allow for continental and transcontinental transit in the North-South and West-East directions" – these words of the President of the Republic of Kazakhstan N. Nazarbayev served as the basis for developing the country's transport strategy until 2015 [1]. The transport strategy, logically linked to territorial development, is the transport strategy of the cities of Kazakhstan and, first of all, its regional centers.

Urban passenger transport is one of the key areas of the city's economy. This is the main branch of life support, on the normal functioning and development of which depends both the work of the economic complex and the social situation in the city as a whole, and therefore the organization of its management is one of the priorities of local government.

At the same time, in recent years, the level and quality of transport services to the population is slowly improving. Among the consistent negative trends should be noted: the physical and moral aging vehicles, increasing the operating costs of their operation and reduce transport safety; reducing the quality of passenger service, urban passenger transport, which primarily impact on reducing operating speeds and increased utilization of capacity; increase of transport costs of people paying for their own travel; reducing the efficiency of municipal enterprises in the absence of effective incentives to reduce their own costs.

The ongoing changes in the transport policy of the municipality necessitated the use of new management decisions in organizing the work of public passenger transport. This requires the creation

of qualitatively new control systems that can flexibly respond to rapidly changing environmental conditions and priorities of consumers of transport services.

The development of market relations is uneven, both in various sectors of the national economy, and within a specific industry. We can say that in the field of urban passenger transport (UPT) there has long been competition.

In the market of transport services in Nur-Sultan are active carriers of various forms of ownership: joint-stock companies (JSC "Bus fleet No. 1"), a limited liability partnership (LLP) (for example, LLP "Bus Park No. 2", LLP "Bus fleet No. 3 SK, LLP "Bus fleet No. 4 Astana", LLP "Bus fleet No. 5 BUS", LLP "Zhorga MT No. 6, LLP "AP–7", LLP "Yrys Bus fleet No. 8"). With their larger capital, they are able to update rolling stock on a regular basis and carry out operations of higher quality than individual owners. The scope of their activities is not only cars, but also bus transportation [2].

The reform of the passenger transport market has led to mixed results. On the one hand, the carriers have the possibility to develop and offer customers appropriate services, to plan incomes and determine the direction of investment, on the other hand, many carriers the main part of the material-technical base has considerable wear, some transportation tariffs are regulated by non-market methods, and passengers have the right to benefits in payment.

Transport problems of cities are one of the most important in the spectrum of problems faced by municipal authorities. With the entry into the market of passenger transportation services of enterprises with different forms of ownership, the control over compliance with standards and parameters of the technological process has deteriorated, which leads to a deterioration in the conditions of passenger transportation.

Reducing overall costs while maintaining the established quality of service parameters is the main task of improving the work of the UPT. One of the ways to solve this problem is to choose a model of organization of work that ensures the profitability of transport and forces transport companies to reduce costs and fight for the market.

The model of organizational structure of the passenger motor transport enterprise visually displays structure of governing bodies, divisions and performers with administrative communications between them. Departments of Public Administration "Department of passenger transport and highways of Astana": Department of construction and repair of roads; Department of organization of passenger transportation; Department of traffic management; planning and economic Department; Department of legal, staffing and public procurement; Department of design; Department of capital construction of transport infrastructure facilities; Department of control and linear service; Department of internal control.

The problem of urban transport system management. The object of management in urban passenger transport is passenger transport production (transportation of passengers; maintenance and repair of rolling stock, providing transport enterprises with all kinds of resources). The subjects of the urban passenger transport system are:

• a passenger who uses the services of urban passenger transport and determines the requirements for transportation;

• municipal and private transport companies that carry passengers;

• the city administration-the customer of services on transportation of passengers of city passenger transport.

The interests and objectives of these actors are different. The passenger is interested in fast, comfortable and safe movement around the city with an acceptable fare. Transport companies and private carriers aim to obtain the maximum possible profit for their services. The city administration is designed to provide transportation for residents of the city, taking into account all economic, legal, technical, social and environmental requirements and restrictions. In addition, it is the city government that must balance the interests of passengers, carriers, as well as the interests of the city and the prospects for the development of urban passenger transport.

Urban passenger transport is a complex system consisting of various elements that are ambiguously interrelated, so that one can always expect that a certain impact will lead to several possible outcomes.

Effective functioning of route urban transport as a subsystem of urban infrastructure should take into account the requirements of unconditional compliance with the four technological units: the unity of the transport network; the unity of the route system; the unity of schedules and traffic safety.

Almost all countries of the world faced the problems of functioning of urban passenger transport. Despite the differences in the economy and political system, the level of development and organization of functioning of urban passenger transport in different countries, there are three basic models of organization of public transport [3]:

- administrative management model (USA, Canada, France);
- regulated market (London, some capitals of the Scandinavian countries);
- free market (UK except London, Santiago Chile).

The analysis of the experience of reforming urban passenger transport abroad shows that the transition from the model of administrative regulation to the models of regulated market and additional regulation has both positive and negative consequences. The positive results include a decrease in the volume of budget subsidies observed in all cities that are adherents of the corresponding model. The negative consequences of the transition to these models include the emergence of social problems: passengers lack confidence in the stability of the route network; the development of competition was accompanied by a reduction in the personnel of transport enterprises and a decrease in wages.

For large cities, the issues of ensuring the consistent integration of all types of infrastructure, as well as maintaining the social unity of the spatial environment of the urban agglomeration, are paramount in the strategic planning of urban agglomerations. One of the main city and system-forming factors ensuring the unity of the city is urban passenger transport. The work results of almost all spheres of the city's life and economy depend on the quality and efficiency of urban passenger transport [4].

Since the problems in improving the functioning of the UPT management system are relevant for all large cities, one of the directions of reforming the management system is the introduction of strategic management elements. The UPT strategy should take into account the strategic priorities for the development of the city agglomeration, so the development strategy will be one of the many functional strategies of the city. A change in the UPT management strategy will require reforming the management system itself, which is formalized as a change in the system management model. There are four UPT management models in General (Table 1).

Name of management	Centralized management	Competition in the transport	Operating (by own	-	Type of market	Model of organization
model	of the UPT system	services market	Public	Private		of the UPT
1. Hard guide						
passenger	NO	NO	YES	NO	monopolistic	administrative
transportation						
2. Manual operator	YES	NO	YES	YES	oligopoly	
3. Management of	YES	YES	YES	YES	free	regulation
many operators						
4. Termination	NO	YES	NO	YES		free
regulirovaniya						

Table 1 – Urban passenger transport management models

Initially, in the cities of Kazakhstan, strict management of passenger transportation was used, in which the management of the administration was reduced to the organization of state-owned enterprises. The companies did not compete with each other and provided service to certain routes. The rigid scheme of transportation management over time placed a heavy burden on the local budget and did not meet the increasing demands of the population. In order to improve the level of services provided and reduce the costs of the UPT system, the conditions for competition in the UPT market began to be created. The management model has been transformed into a regulated market. The attempt to create a free market for passenger transport showed that there are market failures, the occurrence of which brings considerable damage to the system of transport services to the population. The free market of passenger transportation requires a high level of self-organization of the UPT system itself, which is quite difficult to achieve in real conditions.

The new strategy for the development of the UPT system in case of inefficiency of the current system provides for the creation of adequate economic and organizational mechanisms for the management of urban passenger transport.

It is necessary to analyze the state of the UPT services market: analysis of supply and demand characteristics. When analyzing the market of passenger transportation in the conditions of Nursultan it is necessary to take into account the specifics of a particular market. Its peculiarity lies in the existence of such a segment of demand for UPT services as passengers entitled to preferential travel. Transport mobility of this segment is provided at the expense of different levels of budgets. The growth of motorization of the population further raises the question of increasing the attractiveness of the UPT to the population with a private car.

Thus, the city administration and other levels of government are interested in improving the quality and level of service, combined with the availability and attractiveness of prices for the population. In practice, price regulation is formalized in the form of a tariff policy.

Problems of management of transport system of Kazakhstan considered as the most important functional subsystem of system of management of economy of the country or separate region, in the context of search and adoption of the most expedient decisions at all hierarchical levels, are paramount today that is closely connected with the role performed by transport as the most important infrastructural branch of economy on which effective functioning welfare and economic growth of all national economy depends. Transport is a necessary condition for the life of the economic complex and the social sphere [5].

The transfer of management and regulatory functions of the transport industry from the macro-to the meso-level of the economy, associated with increasing independence and expanding the competence of the subjects of Kazakhstan, the development of local governments, necessitates the development of appropriate tools to address the problems of management and development of regional transport systems (taking into account the natural, geographical, industrial and social characteristics of each region).

The solution to the problem of development requires the use of the whole complex. methods of program-target and normative-target management of regional socio-economic processes. The program-target approach, first of all, is connected with strategic planning as strategic plans have not only perspective, but also problem character.

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The purpose of strategic planning of development of transport system of the region is to identify the key predictive indicators of transport system for making optimal managerial decisions in the innovative development of its individual subsystems and change in General structure it-based management adaptation to the respective economic conditions. Implementation of this goal requires the formation of rational interaction of all modes of transport in the region, that is, the optimal organizational structure of the regional transport system [6].

The most important factor determining the effectiveness of strategic planning is the formation of a system of strategic management of the transport system of the region.

The process of strategic management of the regional transport system begins with the preparation of the concept of strategic management, which determines the functioning of its main subsystems. The subsystem of marketing and forecasting receives the objectives of the functioning of the transport system of the region, including the adopted concept of marketing activities of transport in the region.

As another approach that allows to solve a complex of economic problems of the transport system development in the region, the normative-target approach can be considered. Normative-oriented approach of management of regional socio-economic processes associated with the development of regional transport minimum standard, which is a set of indicators of optimal functioning and development of the regional transport system, reflecting the satisfaction of consumer demand of transport in the transportation services of the highest quality, based on interaction and competition of actors of the transport process in real conditions of life and economy of the region. It is a methodological basis for the harmonization of norms of resources and profit distribution between the participants of the transport process, depending on the quantity and quality of work performed, formed on the basis of the target settings of the transport system.

Thus, an effective solution to the economic problems of the development of the regional transport system should be based on a comprehensive, interrelated use of the possibilities of program-target and regulatory approaches.

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### Аңдатпа

Қалалық жолаушылар көлігі әртүрлі өзара байланысты көптеген элементтерден тұрады. Элементтердің бірін өзгерту бірнеше мүмкін болатын нәтижеге әкеледі. Қалалардың көлік проблемалары муниципалдық билік алдында тұрған маңызды мәселелердің бірі болып табылады. Әртүрлі меншік нысанындағы кәсіпорындардың жолаушыларды тасымалдау көліктік қызмет көрсету нарығына шығуымен технологиялық процестің нормативтері мен параметрлерінің сақталуын бақылау нашарлады, бұл жолаушыларды тасымалдау жағдайларының нашарлауына әкеп соғады. Нұр-Сұлтан қаласының өндірістік және шалғай аудандарының шашыраңқылығы және олардың бір-бірінен едәуір алыстығы бір жолаушының жол жүру қашықтығының үлкен себебі болып табылады. Барлық жолаушылар тасымалы бір мемлекеттік автопаркпен және жеке заңды тұлғалар болып табылатын 7 автопаркпен жүзеге асырылады. Мақалада Нұр-Сұлтан қалалық жолаушылар көлігіндегі басқару объектісі, сондай-ақ қалалық жолаушылар көлігі жүйесінің субъектілері, олардың мүдделері мен мақсаттары қарастырылған. Қалалық жолаушылар көлігі басқару моделі қарастырылған. Қалалық жолаушылар көлігі басқару моделі қарастырылған. Қалалық жолаушылар көлігі басқару моделі қарастырылды. Бұл мақала қалалық көліктің ұйымдық құрылымы мен қалалық көліктің тұтас жүйелері арасындағы өзара байланыстарға арналған, ұйымдық құрылымы сипаттамасы мен типизациясына арналған. Соңында зерттеудің негізгі бағытына байланысты қысқаша талқылау – ұйымдық құрылым мен көлік жүйелері арасындағы сындағы қатынастарды қарастырған.

Тірек сөздер: қалалық көлік, басқару органдары, көлік қызметі, ұйымдастыру құрылымы, жолаушылар тасымалы, көлік мәселелері.

#### Аннотация

Городской пассажирский транспорт состоит из множества элементов, которые взаимосвязаны между собой. Изменение одного из элементов приводит к нескольким возможным исходам. Транспортные проблемы городов являются одними из наиболее важных в спектре проблем, стоящих перед муниципальными властями. С выходом на рынок транспортных услуг перевозки пассажиров предприятий с различной формой собственности ухудшился контроль за соблюдением нормативов и параметров технологического процесса, что приводит к ухудшению условий перевозки пассажиров. Разбросанность промышленных и спальных районов города Нур-Султана и значительная их удаленность друг от друга является причиной дальности поездки одного пассажира. Все пассажирские перевозки осуществляются одним государственным автопарком и 7 автопарками, которые являются частными юридическими лицами. В статье рассмотрены объект управления на городском пассажирском транспорте города Нур-Султана, а также субъекты системы городского пассажирского транспорта, их интересы и цели. Приведены модели управления городским пассажирским транспортом. Данная статья посвящена взаимосвязям между организационными структурами городского общественного транспорта и целыми системами городского транспорта, посвящена описанию и типизации организационной структуры. В заключение приведены краткие обсуждения, связанные с основным направлением исследования – отношениями между организационной структурой и транспортными системами.

Ключевые слова: городской транспорт, органы управления, транспортное обслуживание, организационная структура, пассажирские перевозки, транспортные проблемы.