BUSINESS PROCESS MODELS IN THE GLOBAL TRANSPORT AND LOGISTICS SECTOR

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ABSTRACT

In recent years, transport, possessing huge strategic resource, performs a basic function in stream processes. Today more than ever urgent challenges are focused on increasing traffic volumes, increasing economic efficiency of numerous domestic cargo and passenger carriers and freight forwarders (especially on international routes). As evidenced by international experience, high-quality «jump» in the transport sector can only be achieved through the use of new technologies, which meet the highest international standards.

Keywords: transport, economy, transport and logistics market, operator, forwarder, contract logistics, integrated logistics, competition, profitability.

Background. *Business processes exist in any enterprise, regardless of size and industry. Process nature of activity is an objective reality related to the fact that the staff of any enterprise carries out various kinds of work in a certain sequence, ordered by its predetermined logic. This applies in particular to railways, where specifics of labor imply order and responsibility. National Company «Kazakhstan Temir Zholy» uses in cooperation with suppliers, partners and customers the strictest rules based on statutes, rules, regulations and technologies, implements balanced Development strategy and fulfils its mission which consists of providing relevant transport basis for sustainable development of economics and of creating value for shareholders, customers and society by providing competitive and high-quality transportation and logistics services in freight and passenger carriage and rail mainline services [1].*

Management theory calls for construction of generalized formal domain models that could be used in description of business processes with required characteristics and in the analysis, performance assessment, detection and elimination of «narrow» places.

The efficiency of transportation process and improvement of competitiveness of the company «KTZ» are primarily dependent from performance of business processes, directly affecting the ability to bring into market products of transport activities, improving quality of service, as well as ensuring efficiency when making strategic and tactical decisions [2].

Objective. *The objective of the authors is to investigate business process models in global transport and logistics sector.*

Methods. *The authors use analysis, comparative method and evaluation approach.*

Results. *The key success factors of operating companies, as a rule, are:*

– Dominance at the market or on a particular route (including certain groups of goods);

– Availability of required base of assets and access to infrastructure (e. g. terminals, maintenance depots, warehouses, etc.)

– The ability to provide services of intermodal transportation and storage (by customer request)

– High efficiency of asset utilization

– High availability, reliability and safety of transportation

Product market of logistics services is determined by a variety of business models represented in the form of a pyramid of services in Pic. 1:

Accordingly, business model of transport and logistics company is focused, above all, on a set of services provided to the client. Companies can usually work within a specialized model (i. e. focusing on land forwarding), as well as be present in several segments (in transportation, forwarding and contract logistics).

For the purposes of determining the optimal business model Integrated transport and logistics company [3], established by Russia, Belarus and Kazakhstan, analyzed the experience of transport and logistics systems in the US and Europe, which are two basic models of transport business development as well as business models of transport companies of China and India.

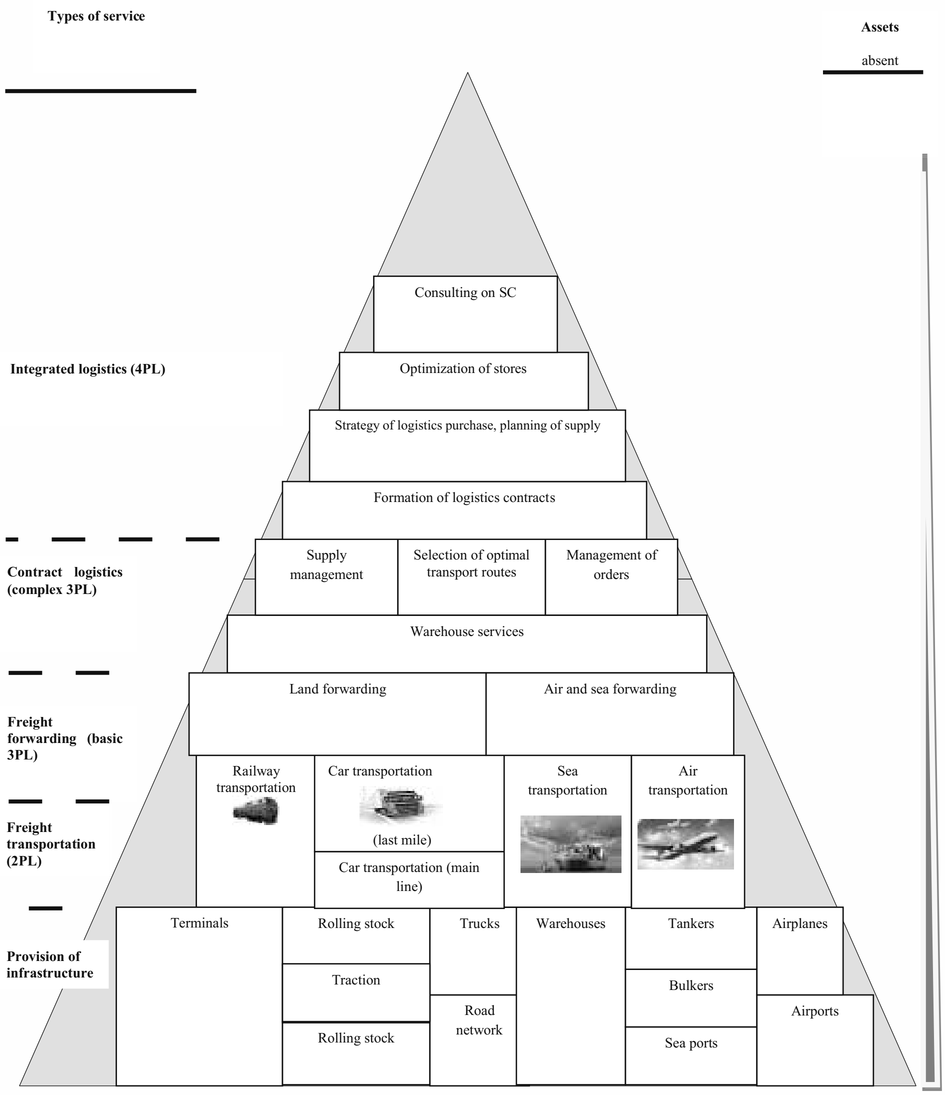
The model of the US market*. To date, the US railway market is consolidated in eight «first class' railways, each of the companies, as a rule, dominates on a limited number of competing routes [4].*

Dominance on the route, possession of railway infrastructure, as well as free pricing create high entry barriers for competitors, which allows rail companies of the United States to focus on provision of transportation services without presence in other sectors of the logistics market, providing additional services (warehousing, customs clearance) in the minimum volume and only at the request of clients (e. g., Wal-Mart).

Despite the high level of competition with railway transport, highways have a high degree of density and development of infrastructure, thus ensuring a sufficient level of quality and reliability of third-party services in the field of transport activities, as well as allowing the logistics and forwarding companies to concentrate primarily on the realization of competitive advantages due to scale and competence in the field of demand forecasting (i. e. without using own transport assets).

Accordingly, taking into account the above factors the United States implement the separation of the functions of operating services, freight forwarding, contract logistics, and concentration of market players in certain segments of the transport and logistics market.

The market model of the European Union. *Unlike the United States, the evolution of rail market in Europe developed on the basis of infrastructure of national railway administrations with liberalization*



Pic. 1. «Pyramid» of logistics services.

of the market of rolling stock and locomotive traction.

On general European transport market barriers to entry are low, and the market of rail carriers is fragmented with a high level of competition between private and public railway operators, which adversely affects the profitability of the operator activities and increases the attractiveness of logistics services (freight forwarding and contract logistics), which are more cost-effective than transportation.

The result is that in Europe, there are two main trends in the transport market:

• Consolidation of forces by smaller competitors (during 2007–2009. DB Schenker [5] has acquired assets of leading national players in the UK, Spain, Italy and Poland);

• Formation of vertically integrated companies, providing a full range of services – from transportation to contract logistics (transaction DB + Schenker, SNCF + Geodis, Norbert Dentressangle and others).

However, the high level of competition between rail operators and trucking companies, as well as competition between modes of transport, due to a relatively short distance of transportation, high quality and density of the road network, as well as virtually absence of natural monopoly in railway infrastructure (since operators are able to use the infrastructure of all the EU countries for laying of alternative routes), allowing development in addition to vertically integrated companies, of specialized service providers of 3PL – 4PL-services (Panalpina, Kuhne + Nagel, DSV, GEFCO, etc.).

*Despite **differences in business models, which dominate on markets of Europe and the USA**, there are **general fundamental factors**, influencing the evaluation of business- model in transport and logistics chain:*

• a developed and highly competitive market of transportation assets (rolling stock), and as a result, the availability of alternatives for cargo transportation with a guarantee of price and quality of service provided;

• availability of developed infrastructure to carry out functions of contract and / or integrated logistics (high storage capacity, etc.);

• high contractual discipline and an effective judicial remedy in respect of third-party services;

• lack or mutual leveling of natural monopolies in the main modes of transport, thus ensuring redundant routes.

The presence of these preconditions allows us to develop the business of providing contract or integrated logistics or without presence of its own asset base by a large logistics operator. However, even in developed markets key assets, providing a competitive advantage of providers of 3PL – 4PL-services and are under the control of logistic companies.

The main factor contributing to the vertical integration of transport and logistics businesses in developed markets is the liberalization of operating rolling stock while retaining ownership of the railway administration for infrastructure, which leads to a drastic reduction of barriers to entry to freight transportation market and, consequently, to profitability of the business operator. It determines particularly leadership of developed countries in Logistics Performance Index – LPI of World Bank [6, 7].

Feature of the organization of the logistics business in the emerging markets of China [8–11] and India are gradually converging, the level of competition reduces substantially, but dominant players are state-controlled Container Corporation of India and China Rail Container Transportation Company.

Road transport market, on the contrary, is very fragmented and competitive, both in India and in China. But at outsourcing of the last mile emerge problems with insufficient availability, reliability and scale of local trucking companies.

The leading freight forwarders in China are multinational companies (Damco, Expeditors, CEVA, Kuehne-Nagel, DB Schenker), which serve as a rule, the production capacity of foreign companies in global contracts, as well as several local players (Sinotrans, APC, APEX).

The main driver of China's logistics market is the presence of large western manufacturers, putting forward strict requirements for the minimum set and the quality of services provided:

• safety of cargo on the route, transparency of goods in the IT-system (to the level of the unit of inventory control);

• minimal set of additional services required for the world's leading electronics manufacturers – the first mile and warehousing services.

A general trend of the growing role of 3PL- and 4PL services providers has been recently noticed in Russia as well [12].

In contrast to developed markets, freight forwarding companies in China are forced to more actively invest in infrastructure or transportation assets to ensure adequate control and compliance with its own standards of quality.

***Conclusions.** Thus, with a low level of competition, availability of natural monopolies (lack of redundant / alternative routes), as well as low-contractual discipline fundamental guarantee of service quality in transport and logistics chain is control over key transport assets. And it is necessary to cope with this reality in modeling management schemes, which should be priority within a uniform Eurasian economic space.*

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