

# Maritime Ports Logistics

## Logistika morskih luka

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### Summary

Maritime transport occurs as a main carrier of international trade, so the development of this type of traffic is most connected with the situation on the world market. The main advantages of this form of transport are: lowest cost, the largest transport capacity, unlimited throughput waterways, mass transportation of goods over long distances, dominance in international transport and enormous concentration of capital. This form of transport is shown as more profitable and more cost-effective than all other forms of transportation. The fact is that we have the expansive development of container transport and container ports with growing turnover year in year out. Modern sea ports must be networked with business partners and all stakeholders in the port. Optimal functioning of the port system in the logistics chain means compliance of all important links (logistics operation, port agents...), on the other side it means quality for users at affordable costs, higher profitability and greater competitive advantage in the global marketplace.

### Sažetak

Pomorski promet glavni je nositelj međunarodne trgovine, te je njegov razvoj najviše povezan s okolnostima na svjetskom tržištu. Glavne prednosti ovakvog prometa su: najniže cijene, najveći kapacitet prometa, neograničena propusnost plovnih putova, masovni prijevoz robe na velikim udaljenostima, dominacija u međunarodnom prometu i velika koncentracija kapitala. Ovaj oblik transporta prikazan je kao profitabilniji i isplativiji u odnosu prema svim drugim vrstama prijevoza. Činjenica je da se događa ekspanzivni razvoj kontejnerskog prometa i kontejnerskih luka s povećanjem prometa iz godine u godinu. Moderne morske luke moraju biti umrežene s poslovnim partnerima i svim dionicima u luci. Optimalno funkcioniranje lučkog sustava u logističkom lancu s jedne strane znači usklađenost svih važnih karika (logistika, pomorski agenti...), a s druge strane to za korisnike podrazumijeva kvalitetu po pristupačnim cijenama, veću profitabilnost i veću konkurentsku prednost na globalnom tržištu.

### INTRODUCTION / Uvod

Density of the world's marine traffic is connected with higher rate of goods exchange in the global market; this means that global competition is intensifying. Marine transportation is an essential part of both global economy and international logistics. Therefore, seaports are regarded as meeting points of driving market forces- demand and supply. There, logistics is indispensable, especially for port's operations. Logistics boosts competition (the more effective logistics scheme the higher earnings, it also influences the price of services and it links all items in the chain of transport). If we con-

sider a port to be a goods-transferring centre where all services rely on logistics, than we can realize the importance of its connection to the inland. Thus ports gain a competitive edge.

Logistics system in a port is very important, especially in the process of optimization of cargo transport. This involves many subjects. Every port, inevitably, faces competition and its task is to resist it and to remain stable in the ever-changing surroundings. It takes a great deal of time and effort to set up a system, and it takes even more for it to survive on the global scale. In order to be competitive

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in the long-run, seaports have to be very flexible and adjustable. When we talk about competition, seaports have to be well-connected with land infrastructure and they have to cooperate with other subjects of the logistics system. In the globalization era, ports have to offer efficient and reliable services and those are: communication and information systems, documentation, development of distribution channels, good infrastructure and superstructure and many other operations that facilitate freight flow in the logistics system.

Yet, the question that arises is: 'How

to perceive and make use of all the advantages that emerging logistics has brought along all with the aim of getting better, faster, safer and cost-effective cargo transport, which is, after all, the primary goal of all marine transportation subjects?' Business logistics, both as a study subject and as a series of activities contributes to a better, rational and optimal functioning of a more complex logistics system such as seaport. The paper highlights that without logistics, seaports neither would be able to provide reliable services nor to develop new devices that place them high in the market.

Competition is putting enormous pressure. Sourcing for goods from the global market (Global Sourcing) and distribution of goods have pushed geopolitical boundaries and it is something that has to be taken into account when considering logistics solutions. Information technology is also developing very fast. For logistics, fast exchange of information is of vital importance.[1] Definition of logistics highlights three things: it is non-material, it is dependent on other factors and it relies on information technology.[2] Today, knowledge and information represent a strategic source of profit, where transportation and flow of information is equally important as transportation and flow of goods. Nowadays, knowledge is a powerful weapon and information is priceless in the competitive market.

To put it simply: logistics has a task to 'put every part of an operation in its right place, at the right time and in the right quantity', in a cost-effective way so that every party is satisfied. However, it is not that simple. The question is: 'How can it reconcile contrasting demands?' For this reason, The International Society of Logistics considers logistics to be both science and a skill.[3] Today, people have become more aware of the fact that if there is better networking system in the logistics chain the cooperation between partners will be more successful.

### **MARITIME PORTS LOGISTICS / *Logistika morskih luka***

Seaports are a key factor of maritime and traffic system. They directly influence economic development of a country. Seaports are an acknowledged part of national economy (they generate profit, new jobs, and represent valuable assets), they directly influence the growth of cer-

tain sectors (trade, tourism, productivity, services, processing) and they are a precondition for growth of other branches of industry such as energy industry. Seaports are an intermodal node in the traffic system. To be competitive in the market, a seaport has to meet certain market demands.[4] A well-devised marketing logistics is a key factor for port's development and for its high competitiveness.

According to logistics, seaport operations can be divided into three categories: trafficking operations, trading or commercial operations and industrial or productive operations.[2] Each and every part of them has to be successful so that logistics chain could function. This would not only be satisfactory for the end user but it would also be cost-effective.

Basic services that are expected from every port include: [5] constant upgrade of service quality, high level of flexibility and adjustability, integration with other means of transport, good management strategy and efficient business recruitment.

Logistics, as every other process, has three parts: input, processing and output. Transportation in logistics chain consists not only of series of activities from the point of entrance to the point of exit, but it also deals with technical inventory, technological phases, and subjects of logistics system and communication channels.[6]

### **PORT TRANSPORTATION SERVICES / *Lučke usluge prijeva***

Distribution of goods depends on transportation. This is because transportation services in the region rely hugely on transportation network and its development, integration, charges, assortments and quality service. Transportation, the key link in the logistics system, along with technological and information advances has made economy more dynamic over the past 20 years. Apart from mere distribution of goods, transportation also implies other services which are connected to preparation and realization of distribution i.e. it stands for movement of goods and passengers in time and space, and many other accompanying activities (packaging, coding, marking, pelleting, labelling, stowing goods in containers etc.). The core of logistics is: creating added-value through fast, efficient, and quality transportation of freight by dif-

ferent means of transport that are on disposal.[2]

Transportation comprises[7] not only transportation services but all other services that are connected with its preparation and realization and they refer to: passenger and goods moving, loading, unloading, cargo transfer, storage, changing means of transport, preparation, renting, delivery of new and overhauled means of transport etc. Port transportation services[2] are defined as all activities related to transfer of cargo in any port's space and time as well as performing accompanying port services such as: packaging and/or storage in accordance with physical characteristics of cargo; transferring, labelling, coding, special labelling, formation of measuring units, unified unit of transportation, pelleting, placing goods in containers; choice of ideal form of transport and port's means of transport; use of contracted means of transport; use of modern technology and access when dealing with both cargo and supplies in port warehouses or terminals; and use of modern information technology and computer support.

Logistics operators offer a wide variety of services. The objective of transportation logistics services[2] is to generate added-value through fast, efficient, timely, and quality transportation of freight. Their primary aim, in that respect, is to make end user pleased. Port transportation services are numerous, they vary, and they are necessary to make 'door to door' transportation of goods feasible. Logistics services can be divided into three categories:[7] basic, primary or common services (unloading, cargo transfer, stowing, distribution, arranging, filling containers, emptying containers, mooring, preparation of cargo, supplying of ships, information on cargo, information on ship's arrival and departure, etc.) and auxiliary or additional services (repackaging, quality and quantity control, rearranging, processing, replacing, etc.)

### **LOGISTICS OPERATORS / *Logistički operatori***

In order to intensify competitiveness, seaports have to create a well-connected networking system with their partners and other port subjects. The basic thing for logistics networks in seaports is to establish a good relationship with key port subjects (logistics operators, port agents and other subjects) because they

are a condition for good performance of logistics operations and flows within the logistics chain.[8] In seaports, logistics operators (which are the most important subjects in the global logistics system) create networks. They enable an undisturbed flow of goods, information and money. They also coordinate the links of international and domestic chain of supply.

Outsourcing[9], apart from being an emerging concept, refers to an outer specialized service supplier which deals with strategic operations. Here, operations and logistics management is left to a third-party that becomes competitive in the market through its own work force, information system and special equipment. This has a boost in productivity, efficiency and the cost of it is lower than it is when using your own inventory. This process is therefore referred to as 'third-party logistics' or 3PL. Here suppliers compete to provide better logistics support and they attract buyer with location, price, as well as with goods and services. Thus they enhance competitiveness. Recently, markets have seen the appearance of 'fourth-party logistics' or 4PL as well as 5PL logistics operators.

Globalization has not only removed trading obstacles, but it has also enforced international competition. Some small markets have even grown to the level of global logistics system. This system enables large companies to combine domestic and international sources to improve business dealings. This logistics system increases competitiveness of its participants and it creates many other logistics chains which involve supply and demand on the global scale. This is how global logistics network is created. This is exactly why logistics operators play an important role - they offer complete logistics services. Recently, many companies which deal with logistics services are taking over more activities than their users (outsourcing partnership). Logistics operators make it possible for global logistics chains to find their place in the global market, and they are also involved in all types of transportation, in the maritime as well. We can say that their presence is intrinsic for seaports logistics, because seaports are nodes for various operations. Firstly, in seaports freight concentration is highest. Secondly, seaports are points where many services have to be done in order to meet the need for supply and demand

in the global maritime market. Logistics operators create a network among all global logistics chains. For instance, they ensure fast and safe transfer of various goods from distant Asian countries to the European market (nowadays the number of ships that travel along the Line Services- from Asia to Europe has increased). Port logistics operators deal with market competition of global logistics chains and they are continually improving their efficacy which is for ports as the biggest traffic hubs of high importance.

Third-party logistics strategy (3PL) is a collection of different participants where each one performs its own task and altogether they provide logistics service. In SCM (Supply Chain Management) hardly ever can an operator be found capable of coordinating all activities in the chain, there can only be one leading operator which is able to manage other operators so that end user is satisfied. Were it not for the support of all operators which take part in the process of supply, they would fail.[10] The new concept of 4PL (Fourth-Party Logistics Providers) nowadays refers to both general logistics operators and to the operators in the most modern ports. 4PLs are defined as companies which do not have their own Lorries, warehouses but they provide logistics consulting and they design and control the chain of supply. When it comes to complex chains management, 4PL operators are of inestimable worth. They offer the latest technological solutions in logistics chains and networks operations.[11] 5PL operators are still the latest achievement in the evolution of logistics. An emerging sub sector is the 5PL firm attributed to logistics service providers who plan, organize and implement logistics solutions on behalf of a contracting party (mainly information systems) by exploiting the appropriate technologies (conceptual level). There is actually a company called "5PL Systems". They have developed wireless end-to-end tracking of containers system which will allow government agencies to receive information on container shipments[12] (all part of the process).

### CONCLUSION / Zaključak

To function properly, any logistics chain needs to have its links synchronized. This is especially important for port systems because it is subject to changes more than any other system. If a port, as a system (a collection of all sub systems that

operate together or are linked to it) is incapable of adapting to changes, it will certainly not meet the needs and expectations of the market.

Flawless functioning of port system within the logistics chain reflects cohesion of its links. For end user, however, it means that quality and cost requirements have been met and that high profitability and competitive advantage in the global market are gained. From logistics point of view, port system management is based on large amount of information and adjusting information to fast and numerous changes that arise from interaction between port and its surroundings. Port system is a linking factor for many subjects (road transport company, railway transport company, agents, brokers, customs, freight forward companies, warehouse operators, port workers, the authorities, etc.) which means that their services have to meet demands of all users of transportation services.

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