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## NEW FUNCTION OF SEAPORTS: LOGISTICS AND DISTRIBUTION

### ABSTRACT

*The globalization process occurs in all the spheres of our life and its quantitative and spatial dimensions affect the world's development. These trends lead the enterprises to concentrate on their core business and outsource some auxiliary or additional parts of their production or services. It is vital for the operation in such conditions that the logistics functions smoothly and reliably in all its segments.*

*To provide an answer to the given hypothesis, I have dealt with all the major questions linked to the phenomenon of seaports and their role in the development of new logistical and distributional function.*

### KEY WORDS

*logistical and distributional function, seaports, logistical and distributional centres, logistical chain*

### 1. INTRODUCTION

Events and developments in the world economy are exposed to globalization policy, a high rate of technical and technological achievements, and informatics. In these conditions, the role of organizers, as well as of the providers of transport services is changing. A special position in the integral global system has been acquired by logistics, which allows for the management of goods and information flows from the source of raw materials to the consumers of finished products.

The role of sea carriers is changing, too. In addition to their conventional transport function, they are involved in organizing the movement of cargo (in particular containerized cargo). Hand in hand with these changes, the role of ports is also subject to change: apart from their conventional operations (such as loading, transshipment, discharge) the ports are developing into consolidation centres, in which numerous other operations (tallying, sorting, refining/improving the semi-manufactures and products, etc.) are performed. As a result of this altered role, ports are assuming the function of logistics and distribution, along

with their traffic, commercial and industrial function, combining the transportation by sea, road, railway, inland waterways, and air, as the more recent development shows.

In the scope of the problem thus determined, the scientific hypothesis has been set, assuming that »ports with their structure and organization are favourable for the development of the logistical and distributional function as well«.

In accordance with the subject-matter of research and the scientific hypothesis set, the purpose and goal for research have been defined, in which the "relevant characteristics of traffic logistics highlighting sea ports and their logistical and distributional function can be explored".

After the research is completed, we expect the results to "ascertain whether seaports are suitable for the development of the logistical and distributional function, and whether that function is significant for directing the goods flows.«

Theoretically, the expected contribution to the transport technology and transport systems would be:

- to foster the development of scientific thought on logistics and transportation, in particular as regards the distributional logistics of seaports, and
- to develop the scientific studies on the role of the organizers of logistical enterprises in intermodal transportation.

### 2. SEAPORTS

We find the definitions of seaports in legal, economic and technological practice. It is usually the area where the traffic / transport routes on sea and land meet. A port is a place of exchange of goods or passengers between ships, or between ships and land transport vehicles.

Dundović and Kesić have defined the port as »a natural or man-made harbour on the sea, river, canal or lake, where ships find shelter from waves, currents, tides, and ice; shelter from hostile action or attacks; a place providing bunkering, fresh water and provisions;

a place for repairs on the hull, engines and gear, or for cleaning all the parts thereof; a place for safe and fast discharge, loading or re-loading of cargo and passengers; and a place allowing the crew to rest and relax.«[1]

### 3. TRADITIONAL FUNCTIONS OF SEAPORTS

The traditional function of seaports is changing today. In the age of globalization, when there is not a single destination in the world which is inaccessible, the technology facilitates the transmission of information to each destination, and there is no physical barrier to the flow of knowledge, capital, information, persons, goods, etc., the field of logistics is also experiencing constant change. This development brings about a change in the traditional functions of seaports that have so far performed primarily the traffic, merchant and industrial functions.

#### 3.1. Traffic function

The underlying function of a port is the traffic function. Without it, the port operations would die away. To cope with the traffic function, the port needs:

- sufficient capacities, comprising adequate seaport infrastructure and suprastructure;
- good traffic connections with the hinterland, and
- good maritime connections.

The entire potential of a seaport and its optimal performing of the traffic functions can only be achieved by matching seaport capacities, transportation potential of the land infrastructure, and an adequate number of lines and services.

#### 3.2. Merchant function

In ports, there is a big concentration of goods for the national requirements, as well as for other countries without access to the sea.

The merchant function of a seaport depends on its traffic function. To satisfy the commercial function, a seaport needs:

- good land and sea connections,
- concentration of goods in the seaport area, and
- adequate storage capacities.

In the seaport, the merchant functions include:

- the purchase and sale of goods, and
- additional services to the goods, adding to the value thereof.

A visible and more elementary form of the merchant function is the purchase and sale of goods in the seaport area.

Various forms of free trade zones grant the necessary potential for the development of the merchant role of seaports.

#### 3.3. Industrial function

After the World War II, the industrial activities were introduced in seaports. The first industrial branches in seaports were shipbuilding and naval equipment manufacture. These were followed by oil refineries, chemical industries, cement works and production of fertilizers later on.

Today, large international seaports of world importance support the development of industrial zones and various customs facilities which allow them to be competitive in the world market. Large industrial complexes have been built in numerous international seaports, such as in Rotterdam, Antwerp, the area of Le Havre – Rouen, Marseilles – La Fos – Lyon, Venice – Mestre (Porto Marghera), etc...

The concentration of industry in seaports offers numerous economic advantages, and in particular:

- increases the turnover and provides employment,
- facilitates and furthers the inclusion of the country in international exchange,
- improves the competitive potential of the industries based in seaports in comparison with the industry located inland.

The underlying precondition for an adequate industrial function in a seaport is its satisfactory traffic function. Today, industrial seaports or seaport zones with all the basic facilities for efficient performance are planned already at the time of construction of new seaports.

### 4. LOGISTICAL AND DISTRIBUTIONAL FUNCTION OF PORTS

In modern logistics and supply-chain management, a new function - the logistical and distributional function has joined the traditional group of functions. Notably, the seaports are acting not only as the point of handling, or re-loading the goods on their transport route, but also as logistical and distributional centres that function as intermodal hubs in the supply chains, offering door-to-door service to the customers.

The development trend of logistical and distributional centres, and hence the development of the logistical and distributional function within the seaports goes back to the late 80s of the previous century, when entrepreneurs started to seek new production facilities with satisfactory internal infrastructure, connections with the inland territory, facilities in terms of labour, tax and fiscal legislation, and good ecological standards.

Such logistical and distributional centres are organizations coordinating the activities or services for one or several supply chains from the point of origin to the point of destination, adding new value to the goods in this process.

In seaports, the logistical and distributional function is generated in the integral supply and logistical chain, including the organizers of the logistical chain. There are several reasons for that.

A recent development shows that big shipowners are also becoming operators of certain bigger worldwide container terminals. They create bigger consolidation logistical and distributional centres and are able to further supply some minor terminals by feeder lines. In their terminals, the shipowners also develop the distribution to the final consumer. There are two kinds of logistical and distributional centres that are underlying for this function in seaports:

- the logistical and distributional centres from which the goods are not distributed to the final and known buyer, but rather to a smaller logistical and distributional centre, from which the distribution to a local consumer is much more convenient, and
- logistical and distributional centres distributing the goods directly to the final and known buyer. This can be done with local customers who live in the vicinity of the logistical and distributional centre, and the distribution (mostly by land) is effected in a very short time.

The logistical and distributional function can be generated in seaports with adequate organization and management.

Specialized logistical and distributional functions can be further developed as long-term business involving several types of goods, or as short-term specialized distributional projects contributing to the growth of the logistical and distributional function in seaports.

The successful development of this function primarily depends on the functions listed above, and good infrastructure connections of the seaport with its hinterland.

#### 4.1. Elements required for the logistical and distributional function in ports

The logistical and distributional function in seaports must satisfy certain conditions and elements that are the basis for the basic function.

The services rendered with the aim of increasing the added value within the port depend on:

- the type and characteristics of the goods,
- the market to which the goods are bound,
- the requirements of the consignee, and
- the ability and qualification of the staff adding new value to the goods.

In addition to these services that increase the added value to the goods, there are other elements instrumental for the seaport to develop the logistical and distributional function, such as:

- the organization providing for all the documents and the reception of goods,
- storage,
- conservation,
- quality and quantity control,
- packing,
- palletization,
- labelling,
- commissioning,
- personalization of goods or products,
- customs clearing (brokerage),
- inspection by inspectors,
- automatic invoicing,
- consolidation of consignments for delivery to the consignee,
- the organization providing for all the documents and the reception of goods,
- commercial agency for third parties, etc.

In the process of adding new value to particular goods it is vital that taking delivery of goods from the seller is fast, safe and reasonably priced. These factors are all relevant for the quality and quantity of goods to be received in the seaport. Likewise, it is a prerequisite that the goods received in the seaport are delivered to the final consignee promptly. The same attributes apply to this delivery as well: speed, safety and reasonable price.

The concept of applying the logistical and distributional function in seaports contains new strategies of cooperation or participation. The nature and dynamics of business demand from a number of suppliers and buyers, freight forwarders, agents, shipowners, carriers, banks, insurance companies, etc. to participate in a cooperating way in the strategy of advancement of the logistical and distributional function. This is mainly reflected in:

- the operational management of the logistical and distributional centre,
- the operational execution of transportation (by sea, land), and,
- the leadership and defining the pricing policy of a logistical and distributional centre.

In the implementation of these tasks, the main activity must be oriented to the control and tracing the goods flow by information and communication systems, or, in other words, »the process of electronic support to order processing up to delivery of goods.«

The coordination of operations within a logistical and distributional centre, as well as setting up a global logistical network, imposes new functions in particular on the freight forwarder, who will offer a whole range

of new services through the organization of a logistical and distributional centre (such as storage, packing, labelling, fast delivery, etc.), and also be in the position to control the entire logistical process in the course of the organization and coordination of transport from the logistical and distributional centre to the consignee.

In this process numerous factors join in the action: the choice of the fastest, safest and cheapest transportation, adequate for the type and condition of goods, the transportation facilities, customs and other regulations, delivery clauses, delivery terms, as well as other possibilities.

A well-coordinated and balanced logistical and distributional function of seaports, combining various providers of services in its complex structure, facilitates in the network of the logistical process to create a new range of services, the so-called logistical product. This eliminates the need for services from individual actors in the process of distribution, and a new, quality product is generated: the logistical product.

#### 4.2. Criteria for the logistical and distributional function development in a seaport

It is a fact that a larger number of existing logistical and distributional centres are built in the framework of seaports, or in their immediate vicinity; a large volume of work and turnover generates a great deal of the economy of scale. In this new context, seaports no longer represent their traditional function as points of departure or arrival, but are becoming a significant part in the logistical chain, in particular in the door-to-door deliveries.

There are several reasons that have affected the process of restructuring a reorganization of their own distributional network in numerous enterprises over the past years. The greatest contribution has been made by the globalization of markets, the formation, strengthening and expansion of the Single European Market, the reduction in transport costs, the advancement in technology and information science, the attractiveness of new approaches, such as »just-in-time«, »outsourcing«, etc.

In these conditions, the trend of centralization of the distributional systems has become dominant. First in the USA and then in Europe (with 380 million of consumers with a rather high standard of living and GDP), the idea of logistical and distributional centres has emerged aiming to satisfy the demand for certain goods in the whole world, or in wider zones resp. Due to the geographical development of the European continent as well as the differences in the development of certain parts, a few logistical and distributional centres have been formed that supply vast regions.

If we analyze the existing logistical and distributional centres in Europe, we find that they are located in the hinterland zone, not in the coastal area of the seaport. This is logical if we consider that the use of the coastal zone is mostly restricted to the maritime handling, as well as for further development.

The selection of the location for such logistical and distributional centre within a seaport depends on the infrastructure facilities, organization and services offered by such a centre. However, the vicinity of an industrial pool or concentration of consumers is of vital importance.

In addition to that, the major benefit of a logistical and distributional centre is contained in its status of a *free trade zone*. The purpose of such a zone is that the goods, as long as they are kept within this territory, are not subject to customs and other duties and levies. The imports of special types of goods, in the scope of the applicable import quotas are allowed in free trade zones, stimulating the business activities in terms of goods exchange and adding value.

Despite the fact that primarily private enterprises operate within such logistical and distributional centres, public utility enterprises are very important as well. In particular, the Port Authority, which is underlying for planning and development of such a logistical and distributional centre, assumes the leading role of a key promoter of the logistical and distributional function in seaports.

## 5. CONCLUSION

The concept of assigning the logistical and distributional function in seaports can also be viewed in the light of the EU Directive, fostering to strengthen the coastal navigation and transferring a part of cargo from land to seaways, where possible.

The new economic structure has an impact on all the fields of life. Individual economic branches and services assume a new role. Transport systems, informatics and management have contributed to the development of logistics as an independent scientific discipline.

In this paper, thanks to the proven facts and exploring new principles, the hypothesis assumed for our research has been solved. To provide an answer to the hypothesis that "seaports with their structure and organization are convenient for the development of logistical and distributional function", all the functions in seaports and the criteria and elements for the development of the logistical and distributional function within seaports need to be observed and studied.

The globalization of economy has had an impact on enhancing the spatial dimension and cutting the execution time for business operations. Accordingly, some logistical and distributional centres could be or-

ganized for the global, or continental, or regional needs respectively.

As the logistical and distributional centres unite the main transportation carriers, i.e. road, railway and waterway, their locations are most conveniently placed adjacent to large seaports, where the infrastructure facilities and an organization offering storage, control, packing, conservation, products and goods sorting/ selection, customs clearing, inspection and surveying services, issuing or providing documents, the organization of transport and distribution, etc. are available to them. The seaports operate as large intermodal hubs, and these functions are an integral part of their normal operation. This facilitates the development and function of logistical and distributional centres. It is also a prerequisite that logistical and distributional centres are well connected with the markets: this requires modern traffic infrastructure, allowing for efficient door-to-door delivery. All these facts show that seaports with their structure, functions and organization are convenient for the development of logistical and distributional function. All this supports and confirms the set hypothesis.

The scientific contribution of this paper is to re-define the traditional division of functions in seaports, which have primarily involved the traffic, merchant and industrial function, and the possibility of establishing logistical and distributional centres in the vicinity of seaports. These functions have now been extended to the new logistical and distributional function. This enhancement changes the concept of the organization and operation of the broader port space essentially, and assumes new all-comprising tasks.

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### POVZETEK

#### NOVA FUNKCIJA POMORSKIH PRISTANIŠČ: LOGISTIČNO-DISTRIBUCIJSKA FUNKCIJA

*Proces globalizacije se pojavlja na vseh področjih življenja. S svojimi kvantitativnimi in prostorskimi dimenzijami vpliva na dogajanja v svetu. Prav zaradi takšnih vplivov in zaradi vse večje konkurence se podjetja koncentrirajo na opravljanje svoje osnovne dejavnosti, nekatere pomožne ali dodatne dele proizvodnje ali storitve dajo na izdelavo drugim. Za delovanje v takšnih pogojih je zelo važno, da logistika brezhibno deluje v vseh svojih segmentih.*

*Da bi lahko odgovoril na postavljeno hipotezo, so obdelana vsa važnejša vprašanja, povezana s fenomenom pomorskih pristanišč in njihovo vlogo v razvoju nove logistično-distribucijske funkcije.*

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