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Polish seaports to face the challenges of modern maritime logistics³

Introduction

Changes that took place during the last few years in worldwide economy, such as globalization, growing competition and rapid development of new technologies, contributed to emergence of new concepts in management. Also, distribution logistics management poses various challenges to the entrepreneurs investing in maritime transport. Economic growth and globally expanding trade cause dynamic development of transport market. Opening of national economies, expansion of European Union and globalization of trade contributed to growth of importance of maritime ports and shipping. Maritime shipping and ports logistics⁴ is a crucial factor determining the activeness of international business, constituting a key element of logistics chain, connecting European market with worldwide economy, and influencing international, global competitiveness of Europe [11].

Globalization of economy and technological progress influenced the increase of dynamics of worldwide turnover and intensification of international trade. Expansive development of international trade increased the intensity of maritime freight streaming creating beneficial conditions for development of maritime logistics infrastructure. European maritime ports had to optimize, in quite a short time, handling of multi-branch maritime-inland transport chains. They started developing/evolving into multifunction links of global supply chain, offering comprehensive logistics services:

“Maritime ports are not only multi(inter)modal transport hub situated in a system of infrastructure networks and, at the same time, integral and conveniently located elements of national transport system, constituting active centers for providing transport and logistics services. They are also important centers for processing and production and trade, etc. [2].”

Maritime transport logistics

“Maritime logistics is a sum of all the operations optimizing the cargo flow by sea and their reloading in ports, including inter-branch integration of maritime transport with inland transport. Through harmonization and rationalization of links between sea and inland areas, it fulfills the needs and requirements of customers, at minimum expenses, minimum capital involvement and maximum quality of logistics services” [11].

Maritime logistics is a process that integrates, in a management system, the movement of various goods on both national and international market, involving maritime transport. It is concerned with organizing, planning, controlling and coordinating, in the aspect of time and space, the network of links between companies directly and indirectly connected with maritime transport and those engaged in logistics processes. On the other hand, logistics processes management aims at delivering particular goods to the right places and in an appropriate amount of time, in the right quantity and condition, while maintaining minimum expenses, capital involvement and high standard of customer service [11].

Maritime logistics management involves a set of decision-making tasks ensuring controlling and supervising processes and resources existing in maritime and inland transport chain. The aim of maritime logistics management is shaping the economic and transport processes, as a part of maritime and inland transport infrastructure system, by systemic integration of maritime cargo movement processes, reloading operations and goods storage in maritime ports and inland logistics services.

The development of management in maritime logistics didn’t take place overnight. The innovative strategies of maritime transport management and provision of maritime ports have been introduced in several stages. In the 70-s there were created the so-called port communities⁵. The next stage in management of maritime logistics infrastructure was called “regionalization

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⁴ A maritime port is “all the buildings, engineering devices supported by appropriate IT systems (technical and management), enabling secure berth of ships in its water area (aquatory), shielded from the open sea area and enabling ship loading and unloading operations” [http://www.portalmorski.pl/porte-morskie].
⁵ As a part of port communities there were created the groups of close cooperation. Cooperation was also established between organizations involved in the operations of ports, that is: companies, port management, terminal operators, shipping, dispatching lines, dockers, customs offices and other [8].
⁶ In this period of time ports began to specialize in a particular kind of activities. There were established, for example, main ports, transshipment ports, secondary ports and other. Ports started to handle not only the local market but also whole regions, becoming international ports. There was developed a network of delivery services, and smaller ports were regionally integrated in order to increase their capacity [8].
of ports\textsuperscript{6}. The driving force of the emergence of this stage was rapidly developing short-distance maritime shipping (in the European Community), increase in average size of ships, weight of transported goods and growing pressure on port capacity. In the 90-s, maritime ports stopped being solely goods reloading centers. They became important logistics hubs with functional distribution communication directed inland [10].

Nowadays, ports are adjusted to handling significantly greater geographical areas. Berth expansion has taken place, leading to increased reloading potential. The availability of ports from land (roads, railroads) and from the sea (i.e. width of port fairways) has increased. There have been developed new information and communication systems. Efficient maritime logistics management, consolidation of regional ports with main ports and conversion of regional ports into important distribution centers resulted in efficient handling of the rising volume of container ships arriving in and development of international maritime trade.

Maritime ports have the following functions: trade, transport, industrial, citygenic and logistics and distribution. They are transport points of international importance and places linking various transport branches. By concentration of capital, knowledge and organization, as well as new technologies, the importance of maritime ports has grown. They are presently considered to be places where the economic growth is concentrated, and, most importantly, logistics and distribution centers. Maritime ports, thanks to their unique technical and organizational structures, perform multiple important economic tasks for national economy [1].

**Logistics in polish maritime transport**

The growth of trade in the Baltic Sea area motivated Polish maritime transport specialists to introduce a series of reform. First of all, the technical infrastructure of ports was in a very poor condition, namely the there was lack of links between land (roads, railroads) and sea (poor condition of water fairways together with functioning of devices and other systems connected with them) [Supreme Chamber of Control, Warsaw, 2008]. There was a significant barrier disabling the improvement of competitiveness of Polish maritime ports, that is the cargo clearance was of more bureaucratic nature than in other European maritime ports. Polish ports, in order to adjust to European standards, were forced to introduce reforms. In 2013 the Ministry of Transport, Construction and Maritime Economy designed a Scheme for development of Polish maritime ports until year 2020 (possibly until 2030), where the main goal, detailed goals and five action priorities facilitating the functioning of Polish maritime ports were established. First goal was to improve the competitiveness of ports, to increase the level their of participation in socioeconomic development of the country, and to improve their position in the international transport network [6].

However, the most important logistics task that Polish maritime ports are facing is the development of port infrastructure and infrastructure enabling access to the ports from the sea, in order to handle larger ships. Next, the goal is to adjust the port infrastructure to changing cargo infrastructure and development of other economic functions, as well as to integrate ports with other transport chain elements through development of infrastructure of access to maritime ports from the land, taking into account the environmental restrictions in the port operations.

Maritime ports, in order not to be excluded from the developing transport system, had to gradually adjust to changes. The dynamic and multifunction development is visible not only in the port sector. Through the development of ports, the industry in the port area and in the near-port areas and various forms of trade are activated.

**The state of logistics infrastructure in polish maritime ports**

The port of Gdańska, Gdynia, Szczecin and Świnoujście are the biggest Polish ports. Currently they are one of the fastest developing regions of Europe and important multinational communication hubs. These ports are of universal nature, offering wide range of port services, connected with the cargo, passengers and means of transportation. According to the strategy functioning in EU, Polish ports have started to be important as a link in the trans-European Transport Corridor.

The most important Polish ports are very well situated in the international transport North-South corridors. However, their weak side remains to be the large distance from the main oceanic shipping routes, as well as a small number of well-functioning transport links (road, railroad and inland) with main European and Polish economic centers [5].

\textsuperscript{6} In this period of time ports began to specialize in a particular kind of activities. There were established, for example, main ports, transshipment ports, secondary ports and other. Ports started to handle not only the local market but also whole regions, becoming international ports. There was developed a network of delivery services, and smaller ports were regionally integrated in order to increase their capacity [8].
Since 2011 Polish ports have gone through a series of administrative and technical reforms\footnote{In the Gdańsk port reforms have been implemented both in the external and internal port. A terminal for transhipment of wheat products, coal, biomass and other goods is being built, fitted with the most modern equipment, which increases the capacity up to 6 million tons. In 2012 expansion of container terminals was initiated. As a result of this investment, the port in Gdańsk can handle the biggest container ships in the world. Moreover, the storage space on the port area is being extended. The Gdańsk port management is planning to spend over 600 million zloty for investment in 2014-2016. A part of the expenses will be covered by EU funds. Gdynia port has been modernizing its infrastructure and IT equipment since 2012. New parking, storage and manipulation spaces are being built there. In 2012 there was granted a permission to rebuild the Swedish and Romanian coastal area. In 2013 an agreement was signed between the Gdynia Port S.A. (Joint Stock Company) Management and Przembud Gdańsk S.A., in order to build a Logistics Center. Moreover, there were new storage areas created. In Szczecin-Świnoujście port there were built new terminals from the southern part of Świnoujście port. The port is finalizing the realization of an investment package for the years 2010-2015 with a budget of 500 million zloty. The amount of money available for the next period is 1 billion zloty. There will be, among others, projects of enabling access both from water and land.}, which enabled them to advance to the title of one of the best EU ports. Although there is observed a significant dynamism in the restructuring operations, Polish ports have to continue to adjust their infrastructure to the far-fetched changes on the worldwide market, as well as widen their economic functions. They cannot stagnate, but in order to face the competition they have to keep modernizing.

The EU politics, supporting maritime transport, gives a chance for further development of Polish ports. The changes taking place in maritime logistics management positively influence the dynamic economic growth of Poland through, among others, increasing balance of trade in the Baltic Sea area.

| Tab 1. Transhipments in the biggest maritime ports (thousands tons) |
|---|---|---|---|
|   | 2010 | 2011 | 2012 |
| Gdańsk | 27 182 | 25 306 | 26 898 |
| Gdynia | 14 735 | 15 911 | 15 809 |
| Szczecin-Świnoujście | 20 843 | 21 354 | 21 237 |
| Total | 62 760 | 62 571 | 63 974 |


In 2012 the transshipment in Polish ports increased by 2.2%, reaching 63974 thousand tons. It was mainly due to the efficiency of operations in Gdański port.

According to the „Polish maritime ports in 2013” report, prepared by Actia Consulting team, four biggest Polish ports noted a total yearly increase in the number of transshipped goods of 10%. In Gdańsk port, the number was over 30 million tons. The biggest rise in transshipment was of 3.53 million tons of coal and coke, 2.73 million tons of general cargo, and 1.93 million tons of ore. The record-breaking, almost two-million result was noted also on the container handling market (1.97 million units). The scored results of transshipment in ports in the 2013 were higher of about 12% in Gdynia and Gdańsk.
In the 2014 Polish ports maintained a high transshipment level. It was due to the economic recovery, increase in trade, as well as new investments requiring transport infrastructure [12]. Transshipment is growing in every group of goods. Rapid transformation of Polish ports brings profit to every sector of Polish economy.

Summary

The present condition of Gdynia, Gdańsk, Szczecin and Świnoujście maritime ports, with majority share capital held by State Treasury, is functioning steadily. The ports are developing well thanks to the investment processes. All three Polish maritime ports show an upward transshipment trend. The limitation of the role of port to just being a communication hub connecting the land with the sea is certainly not enough in order to remain competitive on the European market. The ports that are a key in in the global supply chains and those which generate the added value of national economy have to integrate modern information technologies with innovative management methods in their operations [14].

Abstract

The authors made an attempt to present logistics strategies applied in maritime transport in Poland. First, they review logistics strategies used in great seaports of European Union. Then, they describe the role of Polish maritime ports in global supply chain. Ports, in order to have a strong position in maritime traffic, pursue cooperation with other ports and road traffic. Presently, with their multifunctional nature, ports have become an integral part of transport logistics, and have a great influence on the supply chain management process. The article is closed by deliberations on the position of Polish ports as compared to other European ports and their restructuring measures. The article was based on the literature analysis of logistics strategies. Selected publications on maritime transport have been analysed. Comparative synthesis of logistics strategies applied in Polish and European ports has been applied basing on English, German and Polish literature.

Key words: maritime logistic, transport, logistics strategies.

Polskie strategie logistyczne wobec wyzwań współczesnej logistyki morskiej

Streszczenie

Autorzy podjęli próbę przedstawienia strategii logistycznych stosowanych w transporcie morskim w Polsce. Opisali strategie logistyczne wykorzystywane w wielkich portach morskich w Unii Europejskiej. Następnie przedstawili rolę polskich portów morskich w globalnym łańcuchu dostaw. Porty, aby mieć silną pozycję w ruchu morskim, dążą do współpracy z innymi portami oraz transportem drogowym. Obecnie porty mają wielofunkcyjny charakter, porty stały się integralną częścią logistyki transportu i mają duży wpływ na proces zarządzania łańcuchem dostaw. Artykuł przedstawia stanowisko polskich portów na Tel portów europejskich. Artykuł oparto na analizie literatury dotyczącej strategii logistycznych. Analizie poddano wybrane publikacje dotyczące transportu morskiego. Syntezę porównawczą strategii logistycznych stosowanych w polskich i europejskich portach oparto o literaturę angielską, niemiecką i polską.

Słowa kluczowe: logistyka morska, transport, strategie logistyczne.

BIBLIOGRAPHY


