

OUTLOOK AT THE INTEGRATION OF UKRAINIAN SEAPORTS TO THE INTERNATIONAL TRANSPORT-LOGISTIC MARKET

POGLED NA INTEGRISANJE UKRAJINSKIH MORSKIH LUKA SA MEĐUNARODNIM TRANSPORTNO-LOGISTIČKIM TRŽIŠTEM

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Abstract: *development tendencies of Ukrainian seaports container capacities are revealed. Evolution of seaport generations is defined. The priority purposes of strategic innovative development of Ukrainian seaports are established. Ways of reforming of Ukrainian seaports for the purpose of integration to the international transport-logistic market are offered.*

Key words: *seaport, container capacity, innovative development, port generation.*

Apstrakt: *Prikažan je razvoj kontejnerskih kapaciteta ukrajinskih pomorskih luka. Definisana je evolucija generacija pomorskih luka. Ponuđeni su načini integrisanja ukrajinskih pomorskih luka sa međunarodnim transportno-logističkim tržištem.*

Ključne riječi: *pomorska luka, kontejnerski kapacitet, razvoj novih tehnologija, generacije luka.*

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Introduction

There are several international transport passages going through the territory of Ukraine, such as North Sea, Baltic Sea – Black sea, Danube, TRASEKA, Europe – Asia, “silk road”. They make the country attractive for the transportation of freight in transit (first of all in containers) along the direction Europe – Asia and North – South.

Ukrainian seaports could become one of the most important elements of the multimodal chains, playing the role of a center for the transshipment, consolidation and distribution of cargo streams.

Motivation

According to the estimation of experts the main problem in development of the container transportation in the world still remains the fact that the cargo flows increase much faster than the capacity of terminals themselves. The possibilities of Ukrainian ports in the transshipment of containers were exhausted already in 2006. This naturally became a powerful stimulus for the development of old and construction of new terminal capacities.

Research problem

The research work analyses the contemporary situation of Ukrainian container terminals, projects of their development, and main problems on the way of the

integration of domestic ports into international transport network.

The first task of the research work is to estimate trends of more complete integration of Ukrainian seaports to the world transportation network.

The second task is to analyze variants of bringing in of investments in development of seaports capacities.

Research objective

The current containerization of packaged piece goods in the world reaches 55-58 % that gives rise to the world's container traffic by 9 % on *average* per year. Despite the global economic crisis, that caused sharp decrease in transshipment of containers (up to 30 % through the ports of Europe), the ports continue to expand container facilities, expecting to increase their market share as the international economy gets stabile.

There are four seaports in Ukraine, which possess special capacities on handling of container cargoes: Odessa, Illichevsk, Mariupol and Izmail. The linear container service exists in the first three (in 2008 there were 43).

In 2007 the volume of containers' transshipment through the ports of the country crossed the million strong border (see table 1). In 2001 the volume of the transportation of containers through Ukrainian ports amounted only TEU 165.00 thousand.

Table 1. Handling of container cargo in seaports of Ukraine (in TEU)

Port	2005	2006	2007	2008	%(06/05)	%(07/06)	%(08/07)
Odessa	288312	395564	523475	572170	137.2	132.3	109,3
Illichevsk	291137	324036	532766	670556	111.3	164.4	125,9
Mariupol	10253	9574	10749	11198	93.4	112.3	104,2
Total	589842	729397	1066990	1253924	123.7	146.3	117,5

According to the predictions of the branch Ukrainian R&D institutes, particularly of ChernomorNIIprojekt, to 2015 Ukraine shall reach to about TEU 5.00 million per year. The collective throughput

of Ukrainian terminals at the moment is estimated as TEU 1,500.00 per year.

Let's consider the vested situation in ports, which is dealing or is planning to deal with the handling containers (see table 2).

Table 2. Container capacities of Ukrainian seaports

Port	Available capacity	Project of development
Illichevsk (together with "Ukrtrans-container")	Throughput is TEU 850 thousand per year. Berths with total length of 650 and depth of 13.5 m. Gross intensity of handling is 300 cont/vess-day. Storage platform for 7500 TEU. Platform for refrigerated containers.	Program "4M" increase of the terminal capacity to TEU 4 million to 2019. Investments of USD 500 million for updating of available berths and machinery, purchase of new techniques, construction of new terminals, which will be able to receive biggest container-vessels.
Illichevsk (singly)	The throughput is TEU 200 hundred.	Construction of dry port. Construction of container terminal on ferry complex with capacity of TEU 150 thousand.
Odessa (together with "HPC Ukraine" and "Metals-ukraine")	Throughput is TEU 520 thousand. Storage area is 145000 m ² , capacity TEU 8500. it receives vessels of length to 240 m and draft to 12 m. there is a possibility to connect simultaneously 180 refrigerated containers.	Investments in amount of USD 40 million for reconstruction, modernization, updating of technological processes, erection of new container cranes.
Odessa (together with "Brooklyn-Kiev")	-	Construction of a terminal with the throughput TEU 250 thousand. Length of the waterside is 230 m, storage area is 12000 m ² , capacity is TEU 4000.
Odessa (together with other private investors)	Storage transient area of 2.5 hectare for storage and distribution of containers (in frames of construction of dry port)	Dry terminal for TEU 1000 thousand. International container terminal "Peresyp" - capacity is TEU 2.5 million, berth length is 1300 m, area – 62 hectare. The cost is USD 252 million.
Mariupol	Throughput is up to TEU 50 thousand per year, simultaneous storage of 2.5 thousand containers. Berths length is 200 m, depth is 9.75 m. Storage areas are 34 thousand m ² .	Dredging work. Widening of storage areas for keeping empty containers.
Izmail	Productive capacity – 660 thousand ton of cargo per year. Berths with total length of 250 m. can receive vessels with draft up to 6.5 m.	There is a necessity to return containers' streams back to the port. Completion of construction and provision of work of the navigation channel Danube – Black sea.
Yuzhniy	No special capacities	Construction by "Transinvestservice" of the biggest container terminal in Ukraine. Berth 1300 m, depth – 17.6 m to receive vessels of class "Super-Post-Panamax" with the load-carrying capacity of TEU 13 thousand. Design capacity is TEU 1.3 million.
Sevastopol	No special capacities.	Design capacity is TEU 975 thousand. Increase of berth length to 810 m, depth – to 14 m for any container vessel in Black sea.

Berdyansk	No special capacities. Transships containers according to the new schema of return empty containers, collected after delivery of container freight to the neighboring Mariupol port.	Construction of container transshipment complex - investments of USD 22.2 million. The aim is to achieve cargo handling of container freight at the level of 300 thousand ton (TEU 30 thousand).
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High rates of introduction of innovative techniques and progressive technologies in the container transshipment are currently observed in all major ports of the world. The increased tendencies of seaport formation based on multimodal logistic centers to perform a wide range of functions from direct overload to value added services are notable as well. The Asian model of logistic centers even provides for research and development of innovative products.

Thus, it is clear that the role of seaports is eventually transforming into a larger range of services provided by ports; besides, an increasing number of different organizations enter strategic alliances with the ports. This process acquired the name "port generational change". Table 3 shows the classification and characteristics of port generations.

Table 3. Evolution of seaports

<i>Generation</i>	<i>Conditional period</i>	<i>Port functions</i>	<i>Port role</i>
First	Until 60-s	1. Cargo transshipment from sea to land modes of transport. 2. Temporary storage of goods to be transshipped.	Transshipment center
Second	Until 80-s	1. The first-generation port functions. 2. Provision of industrial and commercial services not directly related to transshipment (e.g. ship repair, commercial storage of goods in warehouses, etc.)	Transshipment and service center
Third	From 80-s up to now	1. Port functions of the first and second generations. 2. Logistic servicing of cargo flows. 3. Administrative functions in information support of the transport process. 4. Cooperation between the port and the city and rendering of consolidated services in the port area.	Key link of the logistic chains
Fourth	From 2000 up to now	1. Port functions of the first, second and third generations. 2. Creating of an economically influencing port and harbor community, implying joining of the organizations involved in promotion of cargo flows through the port.	Center zone of the economic impact of the port

According to the above classification of port generations it can be concluded that Ukraine has no ports to fully meet the international requirements of the third generation. Thus, the strategic development direction of Ukrainian ports becomes apparent.

According to the Strategy of development of marine ports for the period up to 2015 approved by the Cabinet Ministers of Ukraine on July 16th, 2008, № 1051-p, the main strategic objective of the Ukrainian seaport development is to achieve the level of port development to provide harmonious functioning as a part of international transport network. The Ukrainian seaport infrastructure is to reach a new level of development that will:

- ❑ provide for advanced development to meet the needs of the economy and society;
- ❑ provide for the improved system of human safety and security from man-made emergency at sea and port area;
- ❑ be based on modern technologies, safe for human and environment to perform any dock work;
- ❑ provide for equal opportunities for transportation process agents of all forms of ownership;
- ❑ permit fuller use of country's transit potential;
- ❑ assist the accelerated integration of the Ukrainian transport system into the global and European transport systems.

To bring the above strategic objectives into effect, the policy of innovative development of the Ukrainian seaports is expected to be aimed primarily at improving the quality of port services and rising of the competitiveness of Ukrainian ports at the international market.

In addition, the strategy of innovative development is able to solve several problems inherent in the Ukrainian ports, e.g. the problems connected with significant physical deterioration of the main parts that need replacement, the use of obsolete technologies in the processes of loading and unloading, the wasteful energy consumption, the low-impact work of the personnel, the environmental damages resulting from imperfect transshipment technologies used in handling dangerous and hazardous cargoes.

Thus, the priority objectives of the innovational strategy of commercial seaport development will be as follows:

- ❑ to improve the quality of transshipment processes and port services;
- ❑ to reduce the cost of transshipment and port services;
- ❑ to raise the technical level and efficiency of the basic production resources utilization;
- ❑ to intensify the loading and unloading operations by means of improved organization and technology of transshipment;
- ❑ to optimize the energy consumption by introducing energy-saving technologies and use of alternative energy sources;
- ❑ to ensure safety of navigation in the port waters and in the approach area;
- ❑ to raise the efficiency of use of labor resources;
- ❑ to ensure environmental safety during transshipment.

The reformation of the interaction forms of ports with other members of transport and logistics chains is to assist strategy implementation of the innovative development of Ukrainian ports.

The second main task of the research work is to choose methods of private sector involvement into the port infrastructure.

Ukrainian seaports are public enterprises, and they are not objects for privatization. To financing expensive projects of development of port capacities it is necessary to apply conception of public-private partnership, because own and governmental funds are not enough.

The most widespread models of such partnership are contract, leasing, cooperation, and concession. Ukrainian ports authorities mainly use such variant of public-private partnership as joint activity (modification of model of cooperation) with private stevedore companies which are interested in expansion of capacities of port productions to maximize own profit.

The increasing role of private enterprise in the port sector exerts a direct influence both on port management and operations, as well as on the way capital projects are financed. The private sector has become interested in financing the construction of entire terminals including quay walls, land reclamation, dredging, super-

structure and equipment. This has given rise to a large variety of financing and management schemes.

Our task to choose the partnership model which mobilize private capital while balancing public and private interests.

Expected results / generated knowledge

The main direction on the way of integration of Ukrainian seaports to the international transport-logistic market shall be widening of available and construction of new capacities for handling of container freights.

The expected result of the research work is methodology of economic ground of model of private sector involvement in development of seaports capacities. For more effective realization of this strategic direction at state, regional, branch level we need to solve also the following tasks:

- ❑ to develop a complex state program for development of port handling complexes, port railway stations and approach ways to them, railway infrastructure, as well as motor ways;
- ❑ to coordinate the domestic legislative basis with the world practice;
- ❑ to provide stability of legislation to attract cargo owners and strategic investors to ports;
- ❑ to simplify the custom clearance of container cargos by means of transfer them from ports to inland, to so called "dry ports";
- ❑ to create common information field for all participants of the transportation process;
- ❑ to create the network of logistic centers on intersections with water and railway routes.

Research methodology

Research methodology is based on analyzing and modeling of different variants of public-private partnership to provide a balance between national economic goals (such as to increase competitiveness of national ports, seamless transport flows and export promotion), local concerns (such as to maximize throughput and provide maximum benefits to the local economy through increased employment, environmental degradation and industrial development), and private economic goals (such as to maximize revenues, cost of funds, and net present value, to minimize the term of return of investments).

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