

## **DEVELOP MANAGEMENT STRUCTURAL MODEL MARITIME PORT COMPLEX ECOLOGICAL RISK ECONOMIC CONDITION**

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**Abstract:** *Transport industry must become a source of budget revenues. This requires the strengthened organizational role of the state. The basis for the proposed strategy should be adopted that postulate about using the favorable geographical position, Romania can make money essential to its territory in transit transport cargo and passengers.*

*It is now very acute question of reorganizing the load terminal of the third generation. Generation III terminals are some shopping centers and transport services are the most efficient market economy. Such trading terminal, in addition to the work of loading / unloading, in developing critical and other productions to create added value cargo. It is very important that the technologies used to transport various types of intersection correspond to the level of information technology and management.*

### **1. INTRODUCTION**

Analyzing the transport activity for the past years, the phrase that reminds you involuntarily echoed in the distant past, but are present today. Francis Bacon, English philosopher (late XVI - early XVII century) said: "Three things can make a nation great and prosperous: the soil fertile, active industry and facilitating the movement of people and goods". Therefore, one of the main goals of the transport system of Romania, is currently integrating the international transport routes based on contemporary principles of interaction with regional transport complexes. The international practice shows, that the Romanian transport addressing requires new concepts based on scientific and technical innovations.

Disregarding the pessimism about the state transport policy can be noted that hope is only in recent years to optimize the tax burden and duty to address energy problems and problems of privatization, national interests in policy priorities prices and tariffs, the appearance government management strategic market economy.

### **2. TRANSPORT STRATEGY IN ROMANIA**

In 2009 Romania's transport complex stable work. He does not present a factor to stop the trend to revitalize the economy and fully satisfy demand of goods and passenger transport. The total volume of shipments increased by 6.4% a year and freight traffic with 5.2%. Most important achievement of 2009 was the turning point in the trend of decreasing multi-volume transport. However, up to one third of the total volume of shipments of our country predestined trade passing through ports in other countries. Situation is subject to the influence of many factors, including lack of capacities specialized transshipment and specialized ships deficit and a heavy automobile fleet for international traffic. Therefore, based on the strategy of Romania's integration in international transit transport corridors International (CIT) and entry into the world trade organization (CMO), is created using the following assumptions for complex regional maritime port-terminals (CMRPT) in Romania.

As a result of geopolitical changes, the southern Black Sea region has become the strength of economic, border area of the country, which made foreign economic ties with Black Sea countries, Europe, Central Asia and South-East. Activation of Romania's foreign trade links and their decentralization, rapid growth of export-import transport, need to take appropriate measures motivated from the state [Act 528 17/07/2002 for approval of Government Ordinance no. 22/1999 on the management of ports and waterways and shipping activities in ports and inland waterways].

In 2003 he was drafted and approved by the Government to develop innovative program Constanta seaport, according to which priority directions of state policy, and development was complex transport nodes and form a single system by forwarding service of cargoes [ Regulation of operation of seaports Romanian port.

In 2003 the decision was approved to create a new route, more favorable for the transportation of cargoes through

the territory of Romania. In this, there was talk about expanding the territory of the country's largest existing transport corridors. Currently, the programs listed above, particularly the current development problem is the port of Constanta. This, primarily, is that conditional activation of external relations of the country have led to an increase in export-import freight flows.

This situation finally forced state authorities to pay greater attention ports: a greater importance being given to the latter, for the following reasons:

- port has a favorable geographical position and climate;
- port has a natural shave with a relatively stable deep sea;
- port is multifunctional, ie able to work with any load.
- port areas for future development has

In the above-mentioned factors, the primary aim is the reconstruction of the transport hub as one of the most economically active, which has a favorable geographical position in the structure of geo-economic linkages at different levels, and developing and training these new terminals transport of technology nodes, which serve as centers of the future system maintenance support forwarding territorial, regional and state.

Node has a full consignment consists of companies, active in transport within the port. The basic components of transport node are the following companies:

- port of Constanta;
- Mangalia port;
- Midia port;
- Socep SA Constanta;
- Rada oil
- Auto transport companies;
- Railways;

Currently, there are a number of ideas on the development of Constanta transport node, belonging to different organizations. In world practice the idea about creating transport hubs of different types is particularly popular and applied. Transport nodes creates mostly around major sea ports, because currently most of the cargo is transported by sea, as a way less expensive and safer. Transport node development state that one of the most economically active, which has a favorable geographical position and natural resources structure geo strong ties in view of ecological development, farm development interests spa, is the most advantageous.

When choosing one of the main port of Constanta in Romania, around which will form a transport hub, have considered the following criteria:

1. Port location should not jeopardize the spa - recreation;
2. Peculiarities of self natural (groundwater, etc.);
3. The specific entry and exit shipping port;

4. Arranging transportation engineering and planning;
5. The existence of territories for the organization of the port land infrastructure;
6. Possibility of future development of the household port;
7. Ecological justification of decisions;
8. The advantage of the new port construction and operation.

Such a decision is conditioned on the following resources:

1. Basin natural port that does not freeze;
2. Developed land infrastructure, operating after modernization will enable traffic growth of 2-3 times;
3. Territories for land port infrastructure;
4. Workforce resources.

Priorities - the economic geography of the proposed transport hub location Constanta, offers the possibility to organize a free port here with an area of production and export of commercial storage areas, an area of international transport of passengers, as well as a commercial center the business.

Constanta Port - the most important port on the Black Sea and the fourth largest in Europe, has a total area of 3926 ha, of which 1312 ha - 2614 ha dry - water, and is located on the west coast of the Black Sea, from 179 nM of the Bosphorus Strait and 85 nM of the Danube Bend Sulina which flows into the sea.

Located at the crossroads of trade routes linking the developed countries of Western Europe and emerging markets of Central Europe for raw materials suppliers from the CIS, Central Asia and Transcaucasus, the Port of Constanta offers several advantages, among which the most important are:

- multipurpose port with modern facilities in the port basin water depths sufficient for mooring ships of 220,000 dwt with a capacity;
- direct access to the Pan European VII - the Danube, the Danube - Black Sea, providing an alternative transport to Central Europe shorter and less expensive than the routes that use ports in northern Europe;
- good connections with all modes of transportation: rail, road, river, air and pipeline;
- new container terminal on Pier II S, the operating capacity of containers in the port of Constanta have increased considerably;
- Ro-Ro Ferry Terminal and Boat suitable for development of cabotage shipping serving the Black Sea and Danube riparian countries;
- status of "port with customs facilities";
- integrated environmental management;
- programs planned for future development of the port. With a total length of 29.83 km of quays, Constanta Port has 145 berths, of which 119 are operational and have depths between 8 and 19 m, allowing access to tankers and bulk cargo ships of 220,000 dwt.

In terms of river traffic in the port of Constanta, which is about 10 million tons / year and represents 24% of the total annual traffic. Every day, more than 200 barges under operating or moored awaiting loading or unloading goods.

One of the advantages offered by the Port of Constanta is the connection with all modes of transport: road, rail, air, waterways and pipelines. These good transport links are made through a major infrastructure, facilitating the transport of any kind of cargo in the port of Constanta.

The port is connected to the national road and rail and international airport is located near MK.

It is also connected to the national network of pipelines and related to the Danube - Pan-European Transport Corridor VII - Danube-is through the Black Sea. As regards economic activity port of Constanta Port operating companies providing all types of general cargo handling services. Thus,

Constanta Port can transit food, beverages and tobacco, pulp and paper, laminated, spare parts, cement bags and other goods.

The main terminal in the port of Constanta:

- Grain

Grain terminal in Constanta North Port has a total capacity of 2,400,000 Operating theoretical tons / year for piers 31-33 and 1.5 million tons / year (almost) the same berth, railway wagons and park because of the limited opportunities beneficiaries receiving. 17 to 18 berths operating capacity is 1,200,000 tons / year. Storage capacity is 90,000 tons in 3 silos. The terminal has 5 operational berths, with depths ranging from 6 to 10.1 meters. Loading / unloading is done with 5 Pneumatic 150 tons each, two elevators, floating 300 tons each, 5 quay cranes, underground and overhead conveyors.

Operator: Port Silo and Romtrans Agroexport;

The grain terminal of Constanta South Port is building a new silo, with a capacity of 100,000 tons. Annual traffic capacity is 2.5 million tons. The terminal has an operational berth (berth no.114) with a length of 200.5 m and a depth of 11.5 m, equipped with pneumatic installations with a maximum operating capacity of 800 tons / hour. Port of Constanta South - Agigea has 2 silos for storage of 500,000 tonnes of grain dried or each and a silo with a storage capacity of 500,000 tons of dry cereal and a grain drying plant with a capacity of 500 tons operating / day. Operator: SiloTrans.

- Construction materials (particularly cement)

The terminal has a storage capacity of 40,000 tons bulk packaging and palletizing with opportunities and possibilities for transshipment of bulk cement from barges to ships. The terminal has 7 specialized berths, with depths between 7.3 and 12.7 m. The annual traffic capacity is 4 million tons. Operation is performed with 2 chargers of 250 tons / hour and 2 wheel pneumatic floating, with a capacity of 7000 tons / day. There are also quay cranes and mobile cranes.

Operators: Sicim and Decirom.

- **Petroleum products**

Specialized oil terminal for the import of crude oil, fuel oil, diesel, gasoline and export of refined products, petrochemicals and liquid chemicals. It has a capacity of 24 million tons / year to download and 10 million tons / year in charge. It has a maximum storage capacity of 1.7 million tons of oil products. Has 9 berths, with depths between 11.3 and 17.1 m, which can receive tankers with a capacity of up to 165,000 dwt for loading / unloading, is linked by pipeline with the main oil processing areas in the country. Coupling facility berths have 12 inch diameter and 16 inches (Woodfield and Flexider type), fire-fighting equipment and pollution. Operator: Oil Terminal.

- **Chilled products**

Refrigerated cargo terminal is located in the Dana 53, with a length of 219 m and a depth of 13.5 m. The goods can be stored in a refrigerated warehouse with a capacity of approx. 17,000 tons and an area of 2.4 ha. The terminal has 3 gantry cranes 5 tf x 32 meters. Also, perishable goods can be stored appropriately and warehouse stores located in berth no. 11, with a storage capacity of approx. 1,500 tons and an area of approximately 4600 sqm.

**Operator: Frial**

- Ore, coal, coke

Constanta Port has 13 berths specialized for handling ore, coal and coke, of which:

4 berths are specialized in tranship goods from bulk ships to the river;

10 berths have depths between 9 and 17.1 m, allowing entry and operation of ships with a full load displacement of 200,000 dwt;

3 berths have depths between 3.3 and 4.3 m for operating barges arriving on the Danube - Black Sea.

Operating equipment includes 13 bridges of 20-52 tons, 14 mobile cranes of 16-50 tons. Charging is done with 4 chargers barges with a capacity of 700 tons/hour. There quay cranes, floating cranes, conveyors and forklifts. Storage capacity is 4.5 million tons deposits. The maximum rate of discharge is 95,000 tons/day and the load 16 200 tons/day. Operators: Comvex and Minmetal.

**- Chemicals, fertilizers, phosphate, apatite**

Most chemicals are handled by Chimpex (80%) as cargo bags, pallets, big bags or in bulk, 10 berths (54-63), with depths between 8.6 and 10.5 m and equipped 17 shore cranes of 5-25 tons, 4 mobile cranes 12-45 tons, 3 bridges of 200-250 tons / hour. Products of this type are handled by operators: Socep, Decirom, Romtrans, Emancipation and Comvex.

Apatitul phosphate and stored in a covered silo with a capacity of 36,000 tons, and urea in a warehouse of approximately 30,000 tons. Both the operator Chimpex deposits. Chemicals are stored in bags in 8 covered warehouses with a total capacity of 48,000 tons.

**- Ro-Ro**

Constanta port has 2 Ro-Ro terminals:

- North Constanta Port with a berth of 364 m with a depth of 13 m and 2 parking with storage capacity of 2,000 vehicles (1.7 ha) and 2,800 vehicles (2.5 ha), operation is ensured by UMEX;

- The port of Constanta South 121 berth length of 214 m, a depth of 13.3 m and a parking for 1800 vehicles (1.5 ha).

- Railway Terminal (ferry boat)

Facility is located in ferry berth 120, has a length of 227 m and a depth of 13 m and is designed for loading and unloading of wagons, locomotives and trucks standard gauge. The terminal has a traffic capacity of one million tons / year. Constanta port has international links type ferry routes: Constanta-Derince/Turcia (generally, four race / month) and Constanta - Batumi / Georgia (fortnightly races) that is made with two vessels, each with a maximum capacity 108 trucks and 92 trucks. For the near future, it is expected the opening of the ferry-boat and other Black Sea ports of Georgia - Poti.

**- General Goods**

General goods are operated with 50 berths, with depths between 4.5 and 13.8 m, located mainly in North Constanta Port. Operation of goods is done with the 16 bridges of 20-36 tons, 86 tons 3-50 quay cranes, 44 mobile cranes of 12-250 tons, 9 floating cranes of 16-35 tons. There is also, forklifts and tractors. Operators: Romned Port Operator, Frial, Minmetal, Phoenix, Socep, UMEX.

**- Edible oil and molasses**

Edible oil and molasses handling is performed in berth 19 which has a length of 113 m and a depth of 7.4 m. edible oil storage tanks are made in July, with a capacity of 25,000 tons each. Molasses is downloaded directly from the ship in trucks and tanks. Operator: Frial.

- Containers:

The existing terminal is located in North Constanta Port, with two specialized berths with a length of 467 m and depth of 8.7 m. The terminal has a storage platform of 11.4 ha, with a storage capacity of 3000-4000 container . Handling is made with 3 cranes of 45 tons, 2 transtainere 32 tons trucks (2x3, 5T, 1x6, 9t, 1x42t) and trailers of 20 tons. Operators of North Constanta Port containers are SOCEP and UMEX. Maximum operating capacity of this terminal is 200,000 TEU / year. The Constanta South port berths are operational 12 served by Romtrans free zone Mast SA. In Constanta Port South Agiea landscape appeared a new and modern container terminal, located in the Free Zone area, namely, container terminal of one of the world's largest operators of container - AP Moeler (Maersk).

Schema location and development of Constanta seaport, railways and motor roads is aimed at developing transport node south, spread across the coastline. That program involves the formation of a transport hub not only around a large port, but would include all ports in Black Sea node to distribute the flow of goods in different types of loads to each port.

Currently Constanta port cargo traffic looks like this (see Table 1)

**Table 1. Traffic transport node port of Constanta**

Type of goods	2004	2005	2006	2007	2008	2009
	tons	tons	tons	tons	tons	tons
Grain	4659	3744	3884	6010	7171	4258
Potatoes, other fresh or frozen vegetables and fruits	112	131	156	169	180	179
Live animals, sugar beet	17	73	35	20	40	75
Wood and cork	992	995	1101	1012	906.36	971
Textile products and other raw materials of animal or vegetable	24	19	14	0	6.19	6.19
Food and animal feed	741	714	888	551	537.58	302
Oil seeds, oleaginous fruits and fats	219	422	446	454	877.07	896
Solid fossil fuels (coal, coke, etc.).	629	1088	2424	3472	3413.82	4798
Petroleum	6152	5357	7185	8683	8567.46	8543
Petroleum products	4707	4209	4558	5295	4978.2	3772
Iron ore, scrap iron and steel furnace slag	7653	11,942	12,534	12,626	8670	10,794
Non-ferrous ores and waste	1491	2137	3139	3442	3127.3	999
Metal products	3753	3434	2352	4163	2804.7	3694
Cement, lime, prefabricated building materials	2296	1761	2263	2302	1605.6	1134
Raw or processed minerals (career)	2418	660	478	651	610.51	674
Natural and chemical fertilizers	1565	2065	1854	2311	2093.17	1864
Chemicals derived from coal and tar	A	7	212	253	410.14	372
Chemicals other than coal and tar	1202	1714	1748	1355	1039	1561
Pulp and waste paper	2	0	0	5	9.2	4.8
Equipment, machinery, transport equipment	30	166	53	92	88.31	137
Articles made of metal	471	544	861	12	9	6
Glass, glassware and ceramic products	31	28	3	0	5.3	22
Leather, textile, clothing and various manufactured articles	A	6	3	A	6	8
Other products	1358	2029	4242	7753	9979	12,723
Total	40.524	43.245	50.433	60.632	57.131	57.783

Data analysis reports for recent years indicate an overload of the main piers of the port: the coefficient of employment, which is 0.55 to 0.66 according to de facto makes up 0.8 to 1, ie 40-50% more than time.

For transshipment cargo included at the ends of jetties naval auxiliary bays wide, originally designed for stationary transport vessels of the fleet. Overuse piers is subject to an increased flow of goods and generally not fully justified because of retardation in growth indicates crossing port capacity at the expense of building new parking complex and lead to unproductive fleet, which reflected negatively on competitiveness Black Sea port.

Basic reserve enhancing port crossing is rebuilding, upgrading and respecializarea transshipment complexes, with proper development of external transport links the inner regions of the country.

The main bulk liquid goods are represented by crude oil and petroleum products. The terminal can operate oil tankers with capacities up to 165,000 dwt, are equipped with

specialized equipment for loading and unloading and having access to the network of conduits (Table 2).

There is a specialized terminal for crude oil and gasoline imports and exports of refined petroleum products, petroleum products and other liquid chemicals. Oil Terminal and Rompetrol Logistics Constanta Transport Branch are the most important companies operating this type of merchandise.

In Constanta port there is a specialized terminal for imported crude oil and petroleum products and export of refined petroleum products, petroleum products and other liquid chemicals.

Also, liquid bulk cargo can be transhipped to barges to various European destinations or transported by pipeline in the hinterland. National network of pipelines connecting the port with the main refineries in the country, providing a quick and safe transport.

Oil terminal is equipped with the most modern and effective anti-pollution facilities and fire fighting.

**Table 2. Ability to pass the port of Constanta.**

Data traffic	2004	2005	2006	2007	2008	2009
Total Traffic (thousand tons)	50.433	60.632	57.131	57.784	61.838	42.014
Bulk cargo (tons)						
Bulk liquid	11.356	31.144	14.681	14.010	14.404	11.749
Bulk solid	26.098	15.484	27.619	24.736	29.595	20.692
General cargo (tons)	12.979	14.004	5290	6119	4809	3590
Containers						
Quantity (tons)	3878	7404	9815	12.643	13.030	5898
Number	249.090	493.214	672.443	912.509	894.876	375.293
TEU	386.282	768.099	1037077	1411414	1380935	594.299
Number of ships stops	5302	5510	5049	5663	5905	4961
Number stops river vessels	7593	8778	8115	7135	8018	6808

#### **Terminals / Bulk solid**

Constanta port in the top ranks of European ports that operate bulk solid. Bulk solid is represented in the Port of Constanta mainly ferrous and nonferrous ores, grain, coal and coke. These goods are made in specialized terminals located near the river-maritime basin, which can operate both ships, and vessels, with direct transshipment on barges. Other solid bulk goods made in Constanta Port are: cement, construction materials, phosphate, etc..  
Ore, coal and coke.

The two specialized terminals, operating ore, bauxite, coal and coke include 13 berths, with depths reaching up to 19 m. The terminals can operate both ships and river discharge at a rate of over 45,000 hours to/24 ( that 2,000 tons / hour / per pod) of ships and barges loading rate of 2,000 tons / hour. The storage capacity is 4.7 million tons at a time, and annual operating capacity of over 27 million tons. Minmetal Convex and are the main operators for this type of merchandise.

#### **Chemicals and Fertilizers**

There is a specialized terminal where it operates: fertilizer, phosphate, urea, apatite and other chemicals. The terminal has 10 berths with depths of up to 13.5 m where it operates bulk goods and general goods. There is storage capacity of 100,000 tons and the operating capacity of 4.2 million tonnes per year.

Operator and Chimpex TTS are the main companies opereaza these categories of goods, providing adequate space dedicated to operation and storage of chemicals and fertilizers, phosphate and urea bulk. Can accommodate vessels of 30,000 dwt and total operating capacity is 30,000 tons of phosphate.

#### **Grain**

Constanta Port is a traditional partner for countries in Eastern and Central Europe with high agricultural production for the transit of goods to other destinations in the world.

There are many facilities for operation and storage of grain in the Port of Constanta, which are served by 14 specialized berths, with depths between 7 and 13 meters are operated both river vessels and Panamax ships. Facilities include storage silos and warehouses, which provide a total storage capacity of 350,000 tons at a time.

Also, high-capacity ships are operated at the buoy at a depth of 16 m, making the direct transshipment to and from river vessels.

The most important companies operating in the Constanta Port cereals are TTS Operator, North Star Shipping, United Shipping Agency, SiloTrans, Chimpex and Socep.

#### **Bulk cement and building materials**

There are two specialized terminals operating in bags and bulk cement in the Port of Constanta.

Bulk cement terminals are equipped with facilities for bagging and deposits covered and can be operated 24 hours / day. Tranship of bulk cement can be done directly from barges to ships with Pneumatic floating. The main operator who operates the Port of Constantza is Sicim cement.

#### **Other solid bulk cargoes**

In 2005 they were operated in the Port of Constanta significant quantities of other goods in bulk solid, the most important operators are Romned Port Operator, European Metal Services, Decirom, TTS and Agroexport Operator.

#### **Terminal / Containers**

In Constanta port there are four container terminals, which are operated by the Constanta South Container Terminal, Socep, and APM Terminals UMEX. In the past decade, operating capacity recorded an upward trend, reaching one million TEU about the entire port.

Constanta South Container Terminal was opened in late 2003 and is operated by Dubai Ports World. The ships accommodate Post-Panamax type portcontainer and led to the establishment of new records on the operating rates of containers.

Thus, the entire port, container traffic has registered new records in recent years, and transit traffic increased to over 50% of all operated container port of Constanta to become a distribution center for the Black Sea region of containers.

Explosive growth in traffic caused by new equipment operating ordering containers for the next period, and DP World Constanta South Container Terminal visa extension until the capacity of 1,000,000 TEU per year.

Fast trains depart daily container to various destinations within the country and the launch of the first container transport on the Danube in 2005 is considered a promising start for the river traffic of containers. The major container lines provide fast and efficient connection between Constanta Port and the ports of the world known. Launched direct services between Constanta Port and ports in the Far East in recent years have resulted in a transformation of the port of Constanta port distribution for the Black Sea region and Central and Eastern Europe.

With 276% growth of container traffic in only two years, from 206,449 TEU in 2003 to 776,594 TEU in 2005, resulted in the hiring of ships with a capacity of 5500-6000 TEU for stopovers in the port of Constanta.

Transit container traffic increased to 62% of the total in 2005, serving the ports of Constanta Port Black Sea through feeder vessels. Also, the upward trend was maintained for the period 2006 - 2007, the increase is 36%, from 1,037,077 TEU 2006-1411370 year in 2007. For the year 2008 saw a traffic of 1,380,935 TEU.

Since 2005, with container shipping lines were opened container transport services on the Danube, between Constanta Port and Port of Belgrade. In the future, is scheduled to launch a new line between Constanta Port and new ports of Austria and Hungary.

#### **Terminals / General Goods**

Any category of general merchandise goods can be operated by specialized companies in the port of Constanta. In the category of general cargo in Constanta Port are operated: food, beverages and tobacco, pulp and paper, laminated, spare parts, cement, chemicals and fertilizers in bags, metal products and other goods.

#### **Chemicals and Fertilizers**

Chimpex, Socep and Romtrans are the main operators for this type of merchandise, which have dedicated operating and storage areas in bags of chemicals, fertilizers, phosphate and urea. Can accommodate vessels up to 30,000 dwt, and total storage capacity is 30,000 tons for phosphate.

#### **Food**

Constanta Harbor provide competitive facilities for storing perishable goods and refrigerated containers. They can be stored in appropriate conditions in cold stores and are usually operated by two companies operating specialist: Frial and Romned Port Operator. Lumber and other wood products. Significant quantities of wood products are made of Decirom, Rotrac, Romtrans and Phoenix, which are stored in appropriate areas for export.

Metal products Romtrans Minmetal, Socep and UMEX are some of the leading companies offering specialized services operating efficiency of these goods.

Other goods generaleAlte quantities of general merchandise were made in 2005 in Constanta Port by: Decirom, UMEX, Romtrans and North Star Shipping.

The transport node development Constanta port capacity is necessary to implement taking into account the structure of cargo handled. Given the transport node needs analysis and development of reserves, it can be concluded that the transport hub to be developed in two ways: the

reconstruction of existing capacity and maximum use of reserves and implementation of new capabilities by taking into account the elements of the node needs of transport. Existing capabilities must be developed first by rebuilding piers because some of them are in poor technical condition at the moment, or can not be exploited at all. Reconstruction of existing capacities must contain the following decisions:

- Technical restore the piers;
- piers with columns of water equipment and electro, to supply ships with water and charging batteries in the battery charging, etc.
- develop a new specialization of the piers in line with future specialization capabilities implemented;
- endowment with new complex specialized quays for loading / unloading for transshipment acceleration.

Special attention in the development of the port, should be given reorientării piers. Currently these piers, originally aimed at stopping and repairing ships, lack of practical commands are not used, so they can be reoriented to serve freight vessels for transshipment. Today the building project is analyzed within a given complex for general cargo processing capacity of 1.5 million. tonnes per year. One of the characteristics of the piers is the ability to receive ships of various types. This feature is determined by the depth around piers. For a more efficient work of piers needed to get up to a depth of 13-14 m, which would enable most piers to serve heavy ships.

#### **3 CONCLUSIONS**

Currently the closest view of the port development should become the general reconstruction of quays. First of all, it is necessary to rebuild all the docks to the technical condition required for vessels more accurately and safely be able to install the load, then organize all the bays water supply, heat and electricity. But increasing the flow of goods based on existing capacity optimization work will result in an insignificant increase in traffic and this should be done not only to increase traffic, but more reason to avoid the destruction of existing capacities and their removal worldwide. The main direction of development of the port of Constanta, in order to increase freight base must be set to port expansion dams beyond barriers and implementation of new capabilities. An additional reserves may be domestic water use and river transport routes, which would provide feeder transport between river ports. But this possibility does not ensure full realization of future freight traffic of the port. Further increase transport capacity of the port is related to the reconstruction of railways and the construction of new highways and railways.

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