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The Marketing of River Forwarding and Freight Services

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Abstract: River forwarding and freight contain, on the one hand, the movement of goods on the river and on the other hand, services related to handling, storage, issuance of documents and payment of all rendered services. Currently, inland navigation in Europe and on other continents has an increasing share of the overall transport of goods. From the statistical published data it results, for example, that in Central Europe the inland waterway has nearly 1/3 of all traffic, with a constant growth tendency. The volume of goods handled on the river is directly related to the degree of development of material and technical base of the river transportation system, respectively, it depends on the number and capacity of the used vessel, size and level of equipment of ports, and the navigability of the waters.

Keywords: fluvial transport; inland ports; waterways

Currently, inland navigation in Europe and on other continents has an increasing share of overall freight services. The statistical data published result, for example, that in Central Europe, inland waterway has nearly 1/3 of all traffic, with a constant growth trend. (Modiga, 2012, p. 21)

In appreciating the importance of this transport system, there are taken into account several factors, among which the most important are:

a) very low level of operating expenses, the river transport represents one of the cheapest modes of transport for foreign trade of goods (e.g. 2-3 times cheaper than rail, on medium and long distances);

b) higher economy level in general river freight services due to lower investment spending for developing their infrastructure, compared with the investment in the infrastructure of other transport modes (e.g. the river fleet is comprised of a serial vessels without propulsion, with a complexity of much smaller constructive nature, achievable with minimal investments);

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c) high capacity of transmission, which ensures the reduction of transport costs per unit of cargo; the loaded barges can form convoys of up to 40,000 tons moved by a single tug or pusher, which allows attracting the international economic circuit also of some cheap goods insufficiently profitable in the case of their transportation by other means (marble, limestone and other construction materials);

d) presenting lesser risks and with less tension during transportation, compared to shipping, which allows the use of less expensive packaging and pay lower insurance premiums;

e) ensuring progress in various economic sectors in river traffic areas, especially industries that use raw materials or goods transported by water (the steel industry and metallurgy, petrochemical and chemical industry, power industry, shipbuilding, etc.).

Certainly the river transport also has limits that need to be taken into account:

a) forwarding speed is slower compared to other means of transport, hence achieving greater transport duration at approximately equal distances;

b) the existence of international river transport also on other inland waters is conditional on the actual presence of those routes, which limits usually the action area adjacent to an area in its vicinity;

c) inland river navigation and other inland waters may become temporarily impassable, especially during periods of frost, war, etc.

Currently, inland navigation in Europe (Stancu, 2005, pp. 83-85) and in on other continents has an increasing share of overall freight services. From the published statistical data it results, for example, that in the Central Europe, the inland waterway has nearly 1/3 of all traffic, with a constant growth trend.

Conducting the river transportation presupposes a suitable technical-financial infrastructure, mainly comprising three basic elements:

a) the river fleet itself,

b) the river ports,

c) the river channels.

The Inland waterway vessels and barges practice from 500 dwt to 5,000 dwt, with which there are created convoys, in some cases, with bigger vessels up to 10,000 dwt on the lower Volga, 6000-15000 dwt on the maritime Danube, 25,000 dwt on the Great Lakes, etc.

Extending European fluvial transport channels imposed performing extensive repairs that will ensure the opening of large trans-European waterways, such as Constanta - Rotterdam, Marseille – Rotterdam, etc.

In Europe, the freight services are conducted on many inland rivers and streams, but most important in terms of international traffic being the Danube, Rhine and Elbe. The first European river channel was built in the 17th century in France between the Seine and Loire Valley, with a length of 59 km. Subsequently, the expanded number of channels, the most numerous ones are in the Netherlands, Belgium, France and Germany. The longest canal in the world is the Grand Canal of China, the 1782 km long, stretching between Beijing and Huagzhou1.

For river transport activity in Romania, the most important waterway is the Danube. It runs through the territories of eight countries, with a length of 2,850 km, of which 2378 km are navigable. Danubian countries bordering Romania holds the most favorable geographic position to conduct their own transportation and especially the transit ones, the position is due to the Romanian section of the Danube (1057 km) which is the most spread of the 8 national sections containing the Danube therein.

The river is exploited in international navigation regime from Ulm (Germany), for small tonnage vessels. Basically, the beginning of the navigation on the river is marked by the old bridge in Regensburg, where from where the necessary special installation begins, in order to conduct river traffic of goods with which the ports that come first are equipped, Regensburg, Passau and Deggendorf. From here to upstream Braila, sailing conditions only allow the movement of river vessels; and that is why the Danube is called the river. Between Braila and the Black Sea there can navigate also higher tonnage ships, including maritime ships, so the sector is called maritime-river.

Danube has 34 tributaries navigable waterways, the total length of the Danube basin is more than 5,000 km. Over time, the two sides of the river have grown and prospered on over 90 ports. All this data gives a great importance to international economic Danube. Expanding the transport on the Danube being favored by the achievement of large projects, such as creating navigable channel Danube-Oder-Elbe, with a length of 550 km, linking the industrial areas of Hungary, Czechoslovakia, Poland and Germany; the Sava-Dunube canal, which facilitates traffic between Yugoslav ports and it allows greater use of the Danube-Tisa-Danube canal; Rhine-Main-Danube canal with a length of 677 km.

The longest waterway network belong to China (160,000 kilometers), the US (152,000 km) and Russian Federation (145,000 kilometers), followed by those in Ukraine, the Netherlands, Belgium, France and Germany. (Gramam, 2007, p. 27)

Currently, the Iron Gates offer navigation conditions on the Danube, by the existing floodgates, allowing the upstream river passage of vessels with a capacity of up to 4,000 tons, putting into circulation a river way of 3,500 km - total length, halving the distance between major ports of Northern Europe and East compared to the way across the Mediterranean Sea. It is expected that on this huge waterway

transport, the volume of transport will reach 20 million tons annually, of which 6-7 million tons will return to the international river traffic on the Rhine-Main-Danube, which will have access the river vessels with a capacity of up to 1,500 tons. (Caraiani, 2006, p. 54)

The economic importance of the Danube, in all European inland waterways, has dramatically after the inauguration in May 1984, of the Danube-Black Sea Canal. By its nature constructive it stands third in the world; after the Suez Canal and Panama Canal, the Danube-Black Sea Canal is part of an extensive complex navigation system that includes, in addition to the channel itself other works of great importance. Firstly, the new seaport of Constanta South, created mostly due to the wide territory won over the sea by the deposit of soil and rocks resulting from excavations for making the channel bed. This new port, able to provide berthing and operation of ships up to 165,000 dwt and a direct connection through the Danube-Black Sea Canal with major trans-European waterways will become one of the largest in Europe.

Romanian flagged vessels and the foreign ones that pass through the channel in accordance with the law, are obliged to respect the rules of navigation, of river inspection, sanitary and customs, transit, the use of basins and port facilities to prevent and combat pollution and other rules of the Romanian legislation on the operation and maintenance of the canal.

In the new port Constanta South there has been created a free customs zone, which makes the channel's growing economic importance not only for Romania but also for other interested companies.

The main Danube ports Romanian with traffic export, import and transit are in the maritime-river sector of the Danube: Sulina, Tulcea, Galati and Braila and in the river sector itself: Cernavoda, Calarasi, Giurgiu, Turnu Magurele, Calafat, Orșova and Moldova Noua.

The importance of the river Danube ports for the foreign trade cargo traffic will increase even further in the coming years as a result of the authorized used of the navigable Danube-Black Sea Canal and their traffic capacity development.

In the Danube-Black Sea Canal, with a length of 64.2 km, width 90 m and depth of 7 m, can transit ships with a draught of 5.5-6.5 m in length and standard convoys of 296 m lengths, consisting of 6 barges of 3,000 tons each, with a pusher tug of 2,400 or 4,800 hp.

For arranging shipping lanes, river and ocean there are not necessary investments, the navigability of which is provided by nature. But in the case of river transport, waterways on rivers and canals which only partially have natural feature, require investment and human efforts.

The waterways are classified in several ways. In terms of the character of navigation, there are distinguished: the natural waterways (rivers, lakes etc.) and artificial waterways. In terms of navigation period there are permanent operating waterways and waterways with regular operation.

In terms of construction and barring the bed to enhance the depth, there are: the free-flowing waterways and lock waterways. (Modiga, 2010, p. 41)

In the current traffic on the Danube, vessels of different types and sizes are sailing, including modern “river”, “maritime” vessels, transporting cargo without transshipment on the two sections.

Some ships are built and adapted for special transport. Thus, there are no “tanks” to transport liquids (usually oil) barges refrigerated for the transport of perishable barges, port containers for the transport of goods in containers, barges (with barns closed) for general cargo clay (barges with barns open) or barges to transport bulk goods (grain, sand, gravel, coal, ores etc.). (Capatana, 2002, p. 86)

Most part of the carriage, in other words, in the case of inland transport, the water path may be natural (rivers, lakes), designed (dams, deepening of the fairway, etc.) or specially constructed (waterways, harbor locks etc.).

Harbor locks are used to link the two basins separated by hills (tops) and they are part of the constructions of a waterway canal. Basically it consists of a concrete basin located along the long edge of the canal and two metal gates that allow water retention for increasing the level and its evacuation; the share of moved vessels using pushers, the river traffic modern method, by which the speed increases is between 15-30%.

The Market of the Transportation Firm and the River Freight Services

The of the transportation firm is defined by the general sale-buy relations which are conducted in the river freight services domain, as a sphere of confrontation of the demand services with the offer of transport capacities.

The service offer is made up of whole benefits by means of which it is achieved the movement of goods or passengers from one place to another. It includes the actual transport of goods or passengers from one place to another, which has as support the transport means and the additional activities and it includes adequate infrastructure, without which it is not possible to achieve proper performance.

The offer is influenced by some factors such as: production of transport means, import and export of transport services, demand, prices for the purchase of vehicles, the level and quality of staff.

A special importance by its complexity has the determination its supply capacities. The quantification of offer capacity takes into consideration the infrastructure, processing centers convoys, the tractive motor ability, traction and rolling capacity of the material, and it is achieved in the same way for all modes of transport.

With regard to transport by rail, a special place has the ability to quantify the supply network of the ways and of the marshaling yards and the capacity of locomotives and wagons fleet. Offering river transport services requires the existence of an appropriate technical infrastructure, mainly comprising three basic elements:

- river fleet itself;
- inland ports;
- river channels.

Using pusher, the waves caused by the propeller no longer hit the convoy of barges to give less friction and consequently fuel economy and an increase in speed. Also, navigation and push barges have a simpler construction and are cheaper by approximate 30%.

Inland waterway is practiced by vessels and barges from 500 dwt to 5,000 dwt, with which there are created the convoys, in some cases, with vessels up to 10,000 dwt higher on the lower Volga, the 6000-15000 dwt on maritime Danube, 25,000 dwt on the Great Lakes, etc.

Extending European fluvial transport channels has imposed performing extensive repairs that will ensure the opening of large trans-European waterways, such as: Constanta - Rotterdam, Marseille – Rotterdam, etc.

In Europe, the freight service is carried on many inland rivers and streams, but the most important ones in terms of international traffic are the Danube, Rhine and Elbe.

The first European river channel was built in the 17th century in France between the Seine and Loire Valley, with a length of 59 km. Subsequently, the number of channels expanded, the most numerous are to be met in the Netherlands, Belgium, France and Germany. The longest canal in the world is the Grand Canal of China, the 1782 km long, stretching between Beijing and Huagzhou. (Stanciu, 2008, p. 103)

From Regensburg and up to upstream Braila the sailing conditions only allow the movement of river vessels; and that is why the Danube is called the river-maritime.

Between Braila and the Black Sea can browse and higher tonnage ships, including ships, so the sector is called sea-river.

Currently, the Iron Gates offer navigation conditions on the Danube, by the existing floodgates, allowing the upstream river passage of vessels with a capacity of up to 4,000 tons, compared to the classic ones, except that it requires fewer personnel (sailors) on board of the convoy.

Expanding transport on the Danube is favored also by the achievement of large projects, such as creating navigable channel Danube-Oder-Elbe, with a length of 550 km, linking industrial areas from Hungary, Czechoslovakia, Poland and Germany; Danube-Sava canal, which facilitates traffic between Yugoslav ports, allowing greater use of the canal Danube-Tisa-Danube; Rhine-Main-Danube canal with a length of 677 km, puts into circulation a river main line in total length of 3,500 km, halving the distance between major ports of Northern Europe and East, compared to the way across the Mediterranean Sea. The longest waterway network belong to China (160,000 kilometers), the US (152,000 km) and Russian Federation (145,000 kilometers), followed by those in Ukraine, the Netherlands, Belgium, France and Germany.

It is expected that on this huge waterway transport, the volume of transport will reach 20 million tons annually, of which 6-7 million tons will return to the international river traffic on the Rhine-Main-Danube, which will have access the river vessels with a capacity of up to 1,500 tons.

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Because of this, it will become one of the largest seaports in Europe. Some ships are built and adapted for special transport ("tanks" for transporting liquids, refrigerated barges, barges port containers for the transport of containerized cargo transport, barges for transporting bulk goods.

Most transport companies of navigation of Danube is performed by towed vessels, although in the recent years there has been a rapid increase in the share of vessels moved with the help of pushers, the share of moved vessels using pushers, the river traffic modern method, by which the speed increases, is between 15-30%.

The demand for transport capacity, in the market, the river freight needs, its features are reflected accordingly in the peculiarities of the application. The application presents a low degree of elasticity, and therefore the measures adopted

to stimulate them or reduce them by modifying some factors of influence, has not lead to satisfactory results.

Using pusher, the waves caused by the propeller no longer hit the convoy of barges to give less friction and consequently fuel economy and an increase in speed. Also, navigation and push barges have a simpler construction and are cheaper by approximate 30%, compared to the classical ones, except that it requires fewer personnel (sailors) on board.

The products with elastic demand are very sensitive to price changes. The degree of elasticity of the demand depends on the extent to which the payments with the transport participate in the final price of the product.

There are some cases when the sender of a particular product from a production area can put pressure on carriers in order to reduce the price, the alternative being that the market of that product where the products of the same kind compete, as from various sources do not select the product obtained by area of production and consequently the carriers would lose the freight circuit, on which the relay.

When the demand for the final product is inelastic, and the demand for transport is inelastic, for example, the demand for transport of crude oil tanker is inelastic because: crude oil has an inelastic demand; ocean transport of crude oil is highly specialized and from the technical point of view it cannot be substituted; the transportation costs represent a small fraction of the final price of the product.

In transport domain, the supply-demand ratio is in constant imbalance, alternating periods of oversupply of capacity with a high demand, being determined by the variability of both supply and demand. (Grama, 2007, p. 78)

Worldwide, the volume of goods transported by rivers is directly related to the degree of development of material and technical base of the river transportation system, respectively, it depends on the number and capacity of used vessels, size and level of equipment of ports, and the navigability of the waters.

As a result of the collaboration and in order to regulate the conditions of transport of goods on the Danube, the enterprises of navigable waterways in the coastal countries met in Bratislava in 1955, on which occasion they concluded the "Convention Bratislava." This Convention regulates mainly:

- the relations between the parties to the contract of river transport;
- the rights and obligations of the parties in the contract of river transport;
- the procedure for carrying out the contract of river transport.

After the entry into force of this Convention, its provisions have been reviewed and modified during the annual conferences of the managers of Parties to the Convention.

At the conference in Bratislava (1955) the participants have perfected an understanding on establishing common terms for towing and granting assistance in case of emergencies to river vessels in the Danube ports on the basis of reciprocity, currently participating all eight signatories of the Convention in Bratislava.

Subsequently, they agreed and other conventions and agreements, thereby aiming at appropriate regulation, to the mutual benefit, of the legal framework and the conditions for international Danube river traffic.

Of these, the most important are:

- Agreement on Danube international tariffs of transport (MGDT), signed in Stara Lesna (RSC) in 1979, which sets unique tariff of transport available across all the navigable waterways involved, and ports and points of loading / unloading in international Danube traffic and their sequencing by geographical areas, the nomenclature of goods and their fee classification and tariff fees per tonne and the tariff class.

Initially (1955), the Convention was signed by “the Bulgarian Navigation Company – BRP”, the “Hungarian shipping company on stocks MAHART”, “The Romanian Civil Navigation Company NAVROM,” “Soviet Danube navigation enterprise – SDGP” “Czech Company – SPDC”. Later, it joined the Convention in 1967, “The Yugoslav river navigation Company – JRB” and KRAAJINA (RBK); DUNAISKILOYD; the Company on Stocks of R.F.G. - BAVARSKILOYD (BL).

The annual conferences of the managers of river navigation participating in the Convention held in turn by each enterprise, aimed at analyzing the conducted activity and on how well is the collaboration between them, the conference being able to establish some improvements and changes to the conditions of transport of goods on the Danube.

- The Agreement on towing, rendering assistance in case of emergency to vessels and ships (Bratislava, 1955).
- Convention on repairing the reciprocity of ships by navigations companies sailing on the Danube, signed in Budapest in 1965, which regulates the general conditions for Mutual compensation of river vessels in the Danube ports and it was signed by six Navigation companies (BRP, MAHART, NAVROM, SDGP, CSD, JRB, DL).
- Convention on the general conditions for the transport of containers on the Danube signed in Regensburg in 1978, regulating traffic and it establishes the conditions and unique tariffs on container transport on the Danube river traffic. It was signed by all eight companies participating in Bratislava Convention.
- Agreement on International Transport on the Danube signed in the city DONI-Milanovic in 1984 by MAHART; NAVROM; DGP; SPDC; DUNAISKI LOYD

(DL) and KRAAJINA, showing a uniform working way and agreed by the participants.

Conclusion

For proper conduct of fluvial transport of goods, also in our country there have been adopted a series of laws, resolutions, ordinances, which provide the necessary legislative framework. In general, they have the intent of respecting the international agreements to which Romania is a signatory, adapted, however, to the complex range of service benefits in ports.

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