**IGOR TRUPAC**, D. Sc.
**LIVIJ JAKOMIN**, D. Sc.
**RATIMIR DOVEČAR**, D. Sc.
Fakulteta za pomorstvo in promet
Pot pomorščakov 4, 6320 Portorož, Republika Slovenija

Traffic Planning
Review
U. D. C.: 656.615:65.012.34(4)
Accepted: Oct. 3, 2000
Approved: Mar. 13, 2002

# DEVELOPMENT POSSIBILITIES OF THE PORT OF KOPER

*ABSTRACT*

*The extent to which Slovenia will exploit its good geographic transport position, whether it will be merely a transport corridor or assume an additional quality (e.g. a distribution centre or a logistic centre) will depend on a cluster of circumstances. The importance will also be laid on how Slovenia will present itself and what it will offer to Europe and the rest of the world. One of its best assets is the Port of Koper (favourable position, good condition, capacities) in the frame of the whole logistic system.*

*A larger volume of transport and consequently better exploitation of the Port of Koper will in the future depend on increased transit. However, to acquire new cargo, the mere installation and modernisation of port infrastructure and rise in the quality of services may not be sufficient: it will also require good connections to the hinterland.*

*KEY WORDS*

*port of Koper, Slovenia, transport, logistics, trade, development*

## 1. INTRODUCTION

The feature of modern economic activity is the abundance of products, a great number of shipments (for supplies and sales), tougher competition, and transportation to all major geographic areas which presents a challenge to the whole transportation (and logistics) line of business. Therefore, ports will retain a relevant/special position within the transport chain. They are part of it, vital hubs between different modes of transportation, and a link between the sea and the land.

Traditional industrial production (and trade) was going on mainly across national territories, whereas modern economic activity is becoming global. Today, globalisation requires countries (and enterprises) to co-operate and compete in wider areas. Economy has now become a world-wide process and every process going on in national economies may no longer ignore the global component.

The fact that the globalisation is underway is highlighted by the figures currently achieved in the world-wide international trade, which reflect a significant growth in general and in particular areas. The data on the world-wide trade achieved in the past (between 1991 and 1996) showed an average growth rate of 6.4%, and envision a similar growth rate in the coming 15 years (DRI/McGraw-Hill).

In the same period, the international trade of Asia was growing by the rate of 11.6% on the average. It is anticipated to grow faster than in the rest of the world, that is, at a rate of 8.7% by the year 2010. In addition to the well-known »tigers«, there are new ones emerging. The growth in international exchange in these fast-growing countries is above the average of Asia: in 1997, the figures for Malaysia were 16% above the preceding year, and in Vietnam as much as 47%.

It is estimated that China will become the world's second exporter (immediately following the USA) by the year 2020, and its purchasing power will outgrow that of the united Europe. Between 1978 and 1995, China's economic growth averaged 9.4%; the anticipated annual growth in the coming 20 years will be 6.5% (estimate by the World Bank, Sept. 1997).

In OECD members, the trade was growing at the rate of 5.3% (from 1991 to 1996) and it is estimated to reach the level of 5.8% by the year 2010.

## 2. SOME CHARACTERISTICS OF THE DEVELOPMENT OF TRANSPORTATION (AND LOGISTICS) IN EUROPE AND IN THE MEDITERRANEAN

The growth of international trade is reflected in the higher volume of transported goods. Above all, the transportation of containers is growing from year to year: in 1995 it reached the figure of some 130,000,000 TEU.

Between 1985 and 1995, the European container transport grew to 30,000,000 TEU, the feeder services increased threefold to 6,300,000 TEU, whereas the growth in the intra-European transport (national traffic within Europe) achieved a lower rate and resulted in 7,000,000 TEU.

According to some forecasts (Drewry Report), the annual growth in feeder containers will reach 10% in the next five years, primarily in the Mediterranean feeder market. This will result from a higher inclusion of minor and small ports and from developing /emerging markets (chiefly East European countries).

According to the forecasts of Ocean Shipping, the share of West Mediterranean ports in the volume of European container transport will grow from 6,000,000 TEU in 1995 to 8,000,000 TEU in the year 2000, and to 14,000,000 TEU in 2010 (optimistic scenario). For the North European ports it was estimated that they will achieve the volume of 18,000,000 TEU in 2000, and 35,000,000 TEU by the year 2010.

The development of ports in Europe and in the Mediterranean is going on in an extremely competing environment.

We distinguish between:

- regional competition of ports,
- competition of ports in different regions,
- competition of Mediterranean and North European ports, and
- competition of ports and terminals in hinterlands.

The competition among ports is especially explicit when distance is no longer a prevailing factor, and other factors come to the fore. Competition will be displayed primarily in the field of quality of services, prices, inter-port connections (forefront), and connections to the hinterlands.

Nowadays, the »one-stop shop« hub system (strategies), the »hub and spoke« systems enable better effects. The term »one-stop shop« comprises activities such as transport feeder system, block trains, road transport, port services. Therefore, the leading shipowners/ ship operators (e.g. Sea-Land – the global ocean carrier, which is part of the American group CSX, and specialised in transport and logistics) invest in port installations, terminals and also in railway and road transport. An example of a new type of integrator who employs all transport modes and hence optimises the transport chain is the US Intermodal Marketing Company.

At present, such development is not possible in Europe in the same form due to fragmentation, even though there is a significant trend of association (forming alliances, joint ventures of various big operators - also American, who would render that possible).

The joint European transport policy and European Directives show movement to a positive direction.

The White Paper on Railways (1996) speaks about the »Freeway« concept (corridors) for the first time: more information about this was published in »trans-European Rail Freight Freeways« (1997). This refers to international railway infrastructure corridors. The document »Communication, Intermodality and Intermodal Freight Transport in the European Union«, COM (97) deals with systems and actions taken to increase efficiency of intermodal transport and outline the starting points.

Competition among ports will be even tougher in the future, at all levels. The struggle for survival in competition will force the ports to seek strategic alliances (partnerships) with other ports (the process of connection of the ports Koper - Trieste - Rijeka?) and also with terminals in the hinterland.

A good example of how to work in altered conditions even in small countries like Slovenia is the anticipated merge of two Slovenian giants - the Port of Koper and Intereuropa of Koper (freight forwarder, agent and carrier). The aim that the two companies pursue is joining of activities into a complete supply of logistic services, in particular for buyers in Central and Eastern Europe. What they aim at is a concentration of capital due to the need for globalisation of marketing, thus achieving an increase in capital and market power of both companies.

## 3. DEVELOPMENT DETERMINANTS FOR TRANSPORT (AND LOGISTICS) OF SLOVENIA

At the global level, the goal of economic (and also political) integration of the EU is to retain the present economic power and above all, to enhance it. Undoubtedly, the latter will largely depend on the quality of transport and communications (i.e. the transport and communication infrastructure).

The priority goal of the European Union in this respect relates to the equilibration of regional development within individual member states and the community as a whole. A major role is assigned to the Mediterranean.

Slovenia is a European and also a Mediterranean country. Therefore, its development strategy is affected by the events and on-going processes in the European Union, Central and Eastern Europe, as well as in the Mediterranean area. The adaptation to these developments and the vision (both at the level of the state and enterprises) will significantly influence future development of Slovenia (and the port of Koper).

The following relevant processes are in full swing in Europe:

- the transition of the Eastern countries, going through difficult transitional period, which in the long run affects the changes in political life, as well as in the economy;

- an increasing economic and political associating of the EU-countries (changes which strengthen the political and economic unity);
- approaching of the EU and Eastern European countries closer together (links are established in various fields, however, special importance is laid on transport connections).

In the coming ten years, the growth of GDP in eastern countries of Central Europe is expected to reach 5% on the average, freight transport will exceed the current volume by 90%: in some directions such as the Fifth Corridor by 100% or more.

The possibilities that already exist, and will be developed in the future within this scheme, can significantly influence the development of transport (and logistic) activities in Slovenia, and will be reflected in particular in the progress and higher valorisation of the port of Koper.

The explicit comparative advantages of Slovenia may be its geographical position and its natural beauties. The valorisation of geographical transport position is in the interest of the whole country and its entire economy, particularly of its transport sector. The railway infrastructure is an important factor of the conservation of environment and space (taking into account the increasing traffic by road) and is indispensable for a higher valorisation of the Port of Koper.

The strategic goal of Slovenia is the accession to the European Union. The transport (and logistic) system of Slovenia needs to be integrated into the transport (and logistic) system of Europe in such a way that the development interests of Slovenia would not be endangered. Slovenia should structure its strategies so as to highlight its very specific role in this part of Europe.

In the past, one of the most important tasks of the railway in the Alpine-Adria Region was to provide an efficient, fast and cheap transport between the Adriatic ports and their hinterland (major economic centres). However, over 120 years old railway connections can no longer satisfy today's needs, therefore modernisation of railway infrastructure is the key to an efficient integration in the European transport network.

The performance of the Port of Koper (the ports of Trieste and Rijeka) does, and will depend on the carried and handled goods. Therefore, all the countries in this area endeavour to attract as much cargo as possible. On the other hand, the quantity of cargo (and the utilisation of the railway and ports) will depend on the economic development of the neighbouring countries, development strategies and strategic connections, the construction of infrastructure, etc. The currently used connections among the states, modernisation and infrastructure construction are in the function of these efforts.

The geographical hinterlands of the North Adriatic ports comprise the markets of Slovenia, Hungary, Austria, Bavaria, Czech Republic, Slovakia, Italy, Switzerland, and Croatia. This is an area of exceptional economic potential, in which the GDP amounts up to 34,000 USD per capita (Switzerland).

The North Adriatic ports control a substantial share of total overseas potential cargo from the above listed countries. The shares relating to the container transport lie significantly below the potential, and the North Adriatic ports handle less than 50% of the available volume. This proves that the actual hinterland does not only depend on the geographical position, but also on the features of various cargoes and markets, or of each logistic chain passing through the port (the growing container transport by rail between Rotterdam and Northern Italy illustrates this).

## 4. MACROLOGISTIC SYSTEM OF SLOVENIA

A larger volume of transport and consequently better exploitation of the Port of Koper and the railway depend and will depend in the future on the increased transit.

The Port of Koper envisions its possibility of further development in highway and railway connections in the direction Ljubljana-Maribor with a branch to Austria and Hungary.

Direct railway connection to Hungary would increase the turnover in the Port of Koper, whereas a more appropriate road connection would increase the volume of traffic from the countries oriented chiefly to road transport (Hungary, the Czech Republic, Slovakia, Bulgaria).

Taking into consideration all this, the geo-transport position requires a more rapid construction of the highway and railway network, chiefly in the main transit connections through Slovenia – the 5th and 10th Pan-European traffic corridor (Fig. 1) for which the European Union is interested as well (and also prepared to provide the funds for the construction). The Slovenian traffic cross comprises two legs: Šentilj/ /Spielfeld - Maribor - Ljubljana - Koper, with branches towards the Hungarian border and in the South-West to Nova Gorica; then direction Jesenice - Ljubljana - Dobova towards Zagreb. The first leg signifies the connection with the international line Barcelona - Milan - Ljubljana - Budapest - Kiev (5th corridor); the second leg denotes further connection with Zagreb - Belgrade - the Balkan states - the Near East (10th corridor).

The geo-transport position requires also a more rapid acceleration of development of interports in Ljubljana and Maribor as well as the Port of Koper

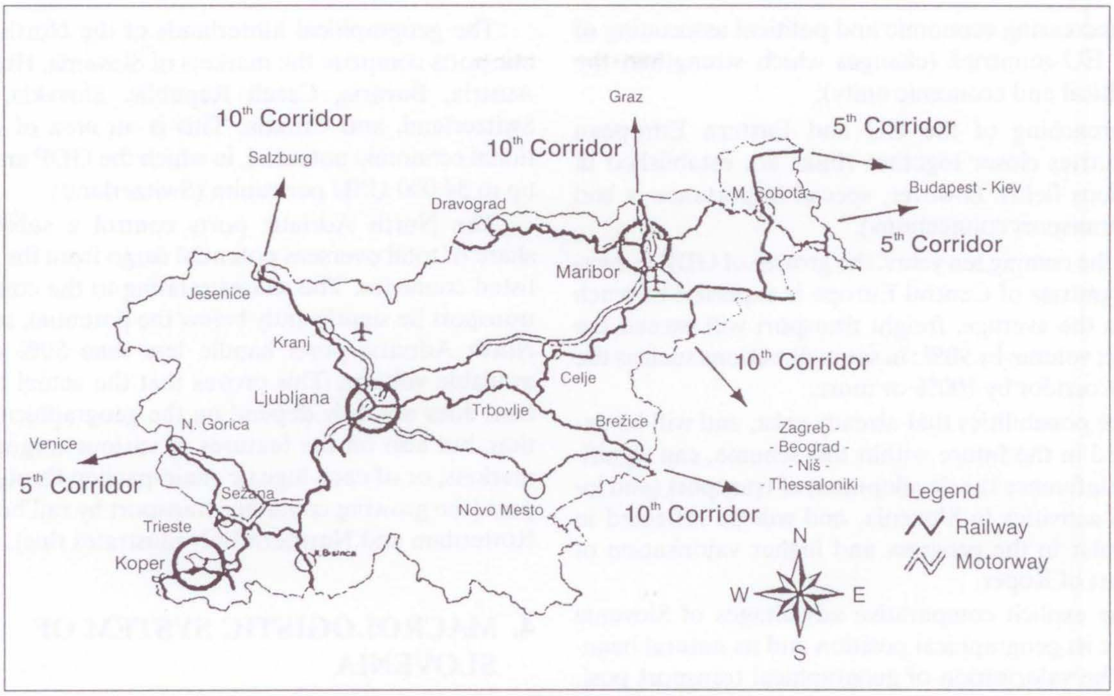


Figure 1 - Macrologistic system of Slovenia

Source: Traffic Institute of Ljubljana

(Fig. 1). The mentioned interports and the Port of Koper should completely fulfil their functions as organic complex of integrated structures and services with the aim of transporting cargo combining various transportation modes which includes the railway discharging yard capable of making up and receiving complete train compositions, including piggyback ones. This yard should be connected with seaports, airports and large communication networks. Simultaneously, the related subcentres of interports will have to develop (Fig. 1).

Ljubljana and Maribor are the most important national and also relevant international E-transport hubs of Slovenia. The Port of Koper is one of the most relevant generators of transport development. The economic effects of port activity are multiply reflected in immediate surroundings and wider environment. These effects are most visible in the activities of maritime, road and railway carriers, in freight forwarding, agencies, and in trade, catering, tourist, financial and other services. Per one unit of generated value in a direct port activity, eight additional value units are generated in the whole Slovenian economy.

## 4.1. Port of Koper

The Port of Koper is a public limited company and operates as a holding.

The Port of Koper will try to assert itself as an international commodity centre. The strategy of the port company, as well as the changes in functional policies should contribute to building up higher competitiveness and more efficient operation.

The strategy of the Port of Koper should be based on the following basic directions:

- the universality of the range of port services offered at the highest quality level;
- the Port of Koper company ('Luka Koper') - a commodity distribution centre;
- an efficient information network and logistic connection with the world;
- stability and profitability of the operation in the long run.

The strategic goal of the Port of Koper is to become one of the best ports in southern Europe, to develop from a handling port into a commodity distribution centre (with regard to attracting also the economies of the Far East, such as India, Indonesia, Australia, Japan, China, Africa, America, etc., in addition to the European ones).

Today, the Port of Koper performs most of its services for hinterland countries such as Austria, Hungary, the Czech Republic, Slovakia, Poland, southern Germany, Italy, Switzerland, Croatia, Bosnia and Herzegovina, Yugoslavia and also for Macedonia, Albania, Bulgaria, Ukraine and Russia.

From Koper there are regular and reliable shipping container lines to all major world ports. Land transport from Koper by road and by railway to the main industrial centres in Central Europe is approximately 500 km shorter than from the North European ports.

The entire area of the Port of Koper including the development area cover 1,600 hectares. The Koper port is designed for the handling of various types of goods such as general cargo (coffee, cacao, metals & non-metals, iron, paper, wooden products, fruits and light-perishable goods, etc.) livestock, containers, cars & Ro-Ro, timber, dry bulks, ores & coal, liquid cargo, alumina, cereals. The basic activities are performed by eleven specialised and highly efficient terminals, i.e.: Container and Ro-Ro Terminal, Car Terminal, General Cargo Terminal, Livestock Terminal, Fruit Terminal, Timber Terminal, Silo Terminal, Bulk Terminal, Alumina Terminal, Terminal for Soya, fertilisers and other bulk cargoes, Liquid cargoes Terminal, Multi-purpose Terminal. All terminals are located alongside the berths and are equipped with up-to-date loading, transport and storing technology. At each terminal special warehouse facilities are available: silo, shore-tanks, air-conditioned and deep-freeze storage areas. All of them are directly linked with railway.

Exports and imports through the Port of Koper represent a minor share, whereas the traffic in transit has the major share: this proves that the port of Koper has a predominantly transit character. Significant shares of traffic of the Koper port are with Austria and Hungary. 70% of land traffic is transported by railway and 30% by road.

The turnover of Port of Koper in 1996 and the estimated turnover in the year 2010 show the following values:

**Table 1 - The turnover of Port of Koper in 1996 and the estimated turnover in the year 2010, according to classes of goods:**

| | 1996 | 2010 |
|---|---|---|
| Total turnover of the Koper Port, in mio tonnes | 6.5 | 10.0 |
| General cargo | 0.7 | 0.8 |
| Containers, vehicles | 0.9 | 3.5 |
| Bulk cargoes | 3.5 | 4.2 |
| Liquid cargoes | 1.4 | 1.5 |

Source: Port of Koper

Table 1 reveals that by the year 2010, the greatest increase in turnover of containers and vehicles is expected: from 0.9 to 3.5 million tonnes (ca. 4x!).

The container transport reached a peak in 1990 (ca 95,000 TEUs) and has been stagnant since then (due to unstable political circumstances); in the years 1993, 1994 and 1995 it settled down to some 60,000 TEUs. In the year 1999 it rose again to 78,204 TEUs.

The container terminal is equipped with shore container cranes and numerous movable mechanisation. It is qualified for all kinds of handling with ordinary, reefer, groupage and other special containers. Besides the containers handling the terminal also provides other additional services such as stuffing, unstuffing, cleaning, container washing, container repair and other works related to container traffic. The terminal is qualified for handling project and heavy cargoes as well as for handling floating craft. Within the container terminal Ro-Ro traffic is also performed (capacities: terminal area - 250,000 m$^2$, sea depth - 12 m, quays- 500 m, berths for container vessels - 3, berths for Ro-Ro vessels - 3, railway tracks - 2x671 m, single storing capacity - 11,500 TEU, electronic connections for reefer containers - 175).

In addition to investments in technological modernisation, in connection with the further development of container services, the preparations for the construction of a new container terminal on Pier III will be accelerated.

The port of Koper will be profiled as a feeder port. It looks like Europe will need large container ports (intercontinental hub-ports) for intercontinental transports, and minor ports for environmentally friendly intra-European transport.

The transport of vehicles is on the rise from year to year (ca. 300,000 in 1999). The increase in the volume of car cargo was matched by an increase in warehouse capacities which has already surpassed 566,000 m$^2$ and currently allows for the warehousing of 37,000 vehicles. In 1999, the open warehouse areas were complemented with a parking house for 3,350 vehicles.

The Port of Koper is qualified for import and export car-handling operations. Besides quick and quality car handling performed by a skilled group of drivers, the Car terminal offers car storage on controlled asphalted and fenced areas illuminated at night. The high level of security is guaranteed 24 hours a day by an integrate video-system. The operational work is supported by a fully computerised system. The storage area is linked by two railway tracks with wagon ramps.

Modern workshop is properly equipped for performance of deconservation and conservation of vehicles, PDI service, optional equipment of vehicles upon customers' request, various repairing - mechanical, paintwork - car-body repairs of damages during transport. Located close by the terminal are the roofed warehouses offering the possibility of spare parts storage, disassembling and packing of car parts (capacities of the car terminal: quays - 500 m, sea depth - 12 m, berths - 5, unloading ramps - 4, wagon loading platform - 5, storage area – 500,000 m$^2$.)

The entire territory of the Port of Koper has a status of a Free Trade Zone, a part of which is used for storage, distribution and processing, remaking of commodities, a part is intended for performance of various industrial, trade and financial activities. The Port of Koper has the ISO 9002 certificate for quality for complete port services. ATNET - the information exchange network has been established for support and easier distribution of documents between the Port of Koper authorities, Customs, Shipping and Forwarding Agencies.

At the Port of Koper, a lot of attention is devoted to the environmental concern. For several years the Port of Koper has been actively collaborating with the competent institution. In April 2000, the Port of Koper acquired certification of its system according to the ISO 14001 standard.

Based on the survey results, the management of the company decided to initiate a project for establishing a system of human resources development. In 1999, 40 employees were reassigned to other job positions or organisational units. 26 employees were promoted. 584 employees participated in more than 100 various training educational programmes. 17,031 hours or on the average 27.2 hours per employee were devoted to training and education.

The Port of Koper co-operates with the following educational institutions and provides assistance, as follows:

- the Faculty of Economics and Business Administration in Ljubljana (Protocol on co-operation),
- the port is the founding member of the Studies and Development Fund with the Faculty of Economics in Ljubljana,
- co-financing of various studies and research,
- organises professional visits to the Port of Koper,
- assistance in the preparation of study projects, diploma theses and seminars.

## 5. DEVELOPMENT PRIORITIES

Slovenia will have to structure its strategies in such a way as to show the world that it has a very specific role in this part of Europe. One of its best assets is the Port of Koper (favourable position, orderly condition, capacities). This should be the basis for the formation of competitive advantages and strategies.

In a short time, the ports of Koper and Trieste will be operating under equal terms in the same gravitational area. Therefore, the question of forming a single Koper-Trieste Port System will be coming to the forefront.

In the phase of approaching EU, the tasks will be divided between two basic upholders of development, the port enterprise Luka Koper d.d. and the government of Slovenia. The analyses of the operations and development have shown so far that the port of Koper enterprise is achieving its basic orientations. However, the measures and obligations to be performed by the government are lagging behind considerably. The government must be aware of the fact that cross-border co-operation is imperative for the future progress. In order to make good for the time and action lost the state should pay attention to the following:

- adopt an adequate maritime policy at the state level,
- complete the construction of road and railway infrastructure for the connection of the port with the hinterland (AC - Sermin - Divača, a direct railway connection to Hungary, the second track on the route Koper - Divača);
- renew the railway infrastructure and capacitate the railway lines to be fit for higher travel speed (route Koper - Ljubljana - Maribor - border, the Soča Corridor);
- integrate Slovenian traffic network into European traffic connections (the 5th and 10th Corridor);
- introduce traffic policy measures to promote combined transport;
- provide for an adequate legal regulation of the Free Trade Zone (PCC) and Off-Shore Area;
- provide the Port of Koper with the EU Port status for the period before its inclusion in the EU;
- study the possibility and commence the activities for a direct connection of the Port of Koper and Trieste with road, railway and maritime traffic.

Unless the state implements this strategy more actively, it will give up one of the most promising prospectives for development.

## 6. CONCLUSION

Today, globalisation is increasing the importance of ports, which are seen as vital intersections of the transport systems of individual countries and also of their wider environment. With ports playing strategically important roles in national economies, creation of new port capacities is being promoted worldwide. In the Mediterranean, new ports and terminals are emerging and the existing ports are creating new capacities with the purpose of enriching the range of services they have to offer. Today, the logistic approach determines the choice of strategies and the performance of transport activities, both helping consolidate and expand trade currents and providing new opportunities to improve the quality of service and in consequence to develop new income sources.

With its favourable location, the organisation and potential of the Port of Koper should form a basis for the formation of competitive advantages and strategies in Slovenia.

The service providing industries and Slovenia's role as an intermediary in linking the East to the West appear as a practicable opportunity. The Port of Koper could become the main gateway primarily for the countries of Eastern and Central Europe.

The Port of Koper aims to achieve its goals by improving its organisation, offering high quality services and offering opportunities for the acquisition of new knowledge and skills by its workers as well as constant technical and technological progress.

Today, the Port of Koper must direct its efforts more to the hinterland to initiate and organise various participants. Operational efficiency of the transport-logistics cycle is affecting, by all actors involved: linear companies, port authorities, stevedores, forwarders, agents, as well as hinterland transportation modes.


## *POVZETEK*

*V kolikšni meri bo Slovenija izkoristila dobro geo-transportno pozicijo, ali bo le tranzitni koridor, ali pa tudi kaj več (npr. distribucijski center, logistični center) bo odvisno od spleta okoliščin. Med drugim bo pomembno, kako se bo predstavila in kaj bo ponudila Evropi in svetu. Eden od najpomembnejših adutov je Luka Koper v okvirju celotnega logističnega sisitema.*

*Večji transport in s tem boljša izkoriščenost zmogljivosti Luke Koper bo v prihodnosti odvisna predvsem od povečanega tranzita. Za pridobitev novih tovorov ni dovolj samo uvajanje in modernizacija luške infrastrukture in dvig kakovosti storitev, potrebna je tudi kakovostnejša povezava z zaledjem.*


## LITERATURE


[1] **Cooper, J.** et al. (1992): *European Logistics*, Blackwel, Oxford

[2] **Ihde B. G.** (1984): *Transport, Verkehr, Logistik*, Verlag Vahlen, München.

[3] **Porter, M.E.** (1990): *The Competitive Advantage of Nations*, Free Press, New York.

[4] Report of the research carried out on the program URP for the year 1992 (1993), *Defining elements and measures of the traffic policy of Slovenia*, Institute for Transportation and Logistics EPF, Maribor.

[5] **Požar, D.** (1985): *Theory and Practice of Transportation and Logistics*, Publisher Obzorja, Maribor.

[6] **Trupac, I.** (1997): *Transport - dejavnik povezovanja Slovenije in Evropske unije*, (*Transportation - a Factor Associating Slovenia with the EU*), Doctoral Dissertation.

[7] **Trupac, I.** (1997): *Logistics integrates - in theory and practice*. Zbornik del – Proceedings of the Conference I, International Conference on Traffic Science, Portorož.

[8] **Žižmond, E.** (1993): *Ekonomika narodnega gospodarstva, (Economics of National Commerce and Industry)*, DZS, Ljubljana.

[9] **Zelenika R., Jakomin, L.** (1995): *Suvremeni transportni sustavi (Modern Transport Systems)*, Ekonomski fakultet Sveučilišta u Rijeci, (Faculty of Economics of Rijeka) Rijeka.

[10] **Maurizio Maresca** (2000), *International Transport Journal, 19,* 2000, Ports of Trieste and Koper Join Forces.

[11] *Gospodarski vestnik* – Priloga Logistika (Supplement to Gospodarski vestnik), No. 3, March 2000