

PLACE OF POLISH, HUNGARIAN AND SLOVAK LOGISTICS CENTERS IN TRANSPORT SYSTEMS

Beata Skowron-Grabowska

Czestochowa University of Technology, Poland

Abstract: In the paper author depicts functioning of logistics centers in Poland, Hungary and Slovak Republic in the context of European Union economical policy. The method of logistics service interpretation is shown in the theoretical way. Building of logistics centers in Poland, Hungary and Slovakia should be coordinated by the EU as well as transport infrastructure should be modernized.

Keywords: logistics centre, service, transport system

Expansion of logistics centers in new members countries in the European Union is the basic element of development processes in Middle Europe. Constructions of logistics centers are direct factors of country's economy growth as well as improve competitive position on more and more global market. The large number of European Union countries have potential to establish and develop competitive logistics centers of European transport network. The cost of building logistics facilities such as warehouses or terminals needed to start a logistics centre are lower in East European regions in comparison to the West part of Europe [8.]. The European Union requires from its members to lead such economical policy in which improvement of activity effectiveness can be observed. Good effectiveness can be reach by finding common basis for European logistics system. Important task of building new economical system is in new members of the European Union because they will decide about speed of future development of whole union. In this task it is necessary to use technique and science as well as motivate enterprise to introduce innovative methods of organization and production. In order to achieve strategic goals such as establishing new logistics centers as well as excellent functioning of existing ones, one must introduce structural changes and improve management methods. Present solutions in the sphere of logistics centers point at intensive development processes in new member countries of EU. It is necessary to coordinate actions and policy within the EU, with use of funds, which allow establishing new logistics centers and changing existing ones in rational way.

One of the mains tasks is conducting evaluation methods of effectiveness of planed undertakes. Decisions of optimal choices from the point of view of country and EU should be based on results achieved from these methods.

Conduction of effectiveness measurement of logistics centre from above mentioned point of view is very difficult task. Different business units and other organizations with different aims participate in the process of creating logistics centre. It is possible to distinguish: [9.]

- European Commission, which creates economical policy and co-finances basic elements of logistics centre infrastructure i.e. roads,

- Government of given country decides, which particular logistics centre infrastructure will be financed from European funds,
- Local authorities decide about changes in land development plan, which allow to build new logistics centers corresponded to local and national transport networks,
- Business units. The basic meaning for those enterprises has number of logistics operators known as 3PL (third part logistics), financial institutions, customs agencies.

All these companies realize their own goals. One of the most important actions is coordination of logistics centers investment plans in order to ensure effectiveness of their functioning. Performance of logistics centers, located too close to existing ones or without proper infrastructure causes smaller return from investment and time of return is longer than expected at the beginning from the point of investment effectiveness. Low income in logistics centre and small possibility to be over a profitability threshold are two main causes of low investment effectiveness. Constant cost of logistics centre performance are high and not proportional to achieved profits. All kinds of units interested in cooperation with logistics centre must describe their needs in relation to existing ones in given country. One must include different functions and issues in enterprises in the neighborhood counties. Dynamic building of new logistics centers takes place in new member EU countries and it is compulsory to take into consideration needs of all enterprises.

Logistics centers play important role in economy practice of Western Europe. This fact can be confirmed by establishing association Europlatforms. At the beginning over 40 logistics centers named freight villages were grouped in this union. At present there are more than 120 companies in Europlatforms. During last 10 years there has been a double increase in trade exchange in Europe and there is a growing tendency in this sphere [3.].

Meaning of logistics centre in region can be shown from point of view of innovative systems. Logistics centers are one of the enterprise, which influence on regional innovative systems in most sufficient way. Globalization processes such as cooperation within supply chains affect on innovative policy of the region. On the base of empirical research conducted in the European Union one can claim that majority of interactions between enterprises and research and development sphere take place in the regions [7.]. Logistics centers are big and meaningful for regions, where new innovative projects are introduced. Region with a number of logistics centers can benefit much more for European integration than region without them.[2] These benefits can be large if logistics centre is situated properly.

Problems of localization logistics centers in Poland and other 11 new members of the European Union are especially important for economical policy in the EU. Building of logistics centers in Poland, Hungary and Slovakia should be coordinated by the EU including aspects of modernization of transport infrastructure according to European standards. Due to large costs of building of logistics centers and at the same long time of investment for one company it is necessary to support such project from public funds. In many countries there are national plans of logistics centers location, while new locations must be accepted by the government. These kinds of solutions compensate possible losses in logistics centers due to the fact of not using whole company's capacity [4.].

In the years 2003-2006 there were possibilities to gain European subsidiaries from such funds as:

- The European Regional Development Fund (ERDF), financing undertakings in the regions with the development level substantially lagging behind the average one in the EU, as well as in the regions with major restructuring activities in the industry and employment.

- The European Social Fund (ESF) established predominantly to finance the activities counteracting unemployment in the EU member states, particularly assistance to employees threatened with long-term unemployment and young people entering the labor market.
- The Cohesion Fund is a structural instrument that helps Member States to reduce economic and social disparities and to stabilize their economies since 1994. The Cohesion Fund finances up to 85 % of eligible expenditure of major projects involving the environment and transport infrastructure [1.].

In effectiveness evaluation of building or reconstructing logistics centre it is necessary to use financial and economical analyses. In the economical analyses it is essential to include not only profits achieved by the investor but also local authorities as well as given region of the European Union.

All these effects are the consequences of synergic processes due to getting additional development results apart from sum of investor's effects and given region. In this case it is justified to introduce general algorithm of logistics centers' effectiveness evaluation. Such evaluation is based on two elements: investment effectiveness evaluation (i.e. NPV) and judgment of synergy effects after investing European funds into given undertake. In this procedure it is necessary to include such components as: [10.]

- sum of effects of logistics centre project,
- describing methods of evolution of above-mentioned effects,
- prices of resources,
- balance of standard costs and effects (including non-market).

Polish solutions, used in the sphere of logistics centre effectiveness evaluation, do not apply all above-mentioned elements.

Methodology of logistics centre effectiveness evaluation requires including such elements as:

- capital, its structure and average waged costs,
- different variants of investment projects,
- formula and criteria of effectiveness evaluation,
- synergic effects for region,
- additional costs connected with establishing infrastructure.

Special meaning has last two elements from the regional policy point of view. Especially important is last one where the local authorities must co-finance infrastructure for logistics centre.

A number of scientific institutes worked out concept of logistics centers localization in Poland. According to introduced project it was pointed that logistics centers in Poland should be established in those regions where is large number of loads in national and international transport. On the base of many research and analytic works localization of necessary logistics centers was chosen. It was assumed that logistics centers would be build in such voivodships as:

- Mazowsze with Warsaw – Logistics Centre of Central Region, which is the main point of piece-goods cargo for international and national transport;
- Wielkopolska with Poznan – Logistics Centre of Wielkopolska Region, which is the main point of piece-goods cargo for international and national transport;
- Silesia with Katowice – Logistics Centre of Silesia Region, with good railway and road connections can operate with logistics centers in Czech Republic and Slovakia;

- Dolny Slask with Wroclaw – Logistics Centre of Dolny Slask Region, with good railway and road connections can operate with logistics centers in Czech Republic and Germany;
- Zachodniopomorskie with Szczecin – Logistics Centre of Szczecin and Swinoujscie Region, which is important communication node for all kind of transport;
- Pomorskie with Gdansk – Logistics Centre of Gdansk, Gdynia Region, which is one of the most active trade points in Poland;
- East with distinguishing three regions north-east in Bialystok, middle-east near Terespol and south-east in Rzeszow [5].

Concepts of new localizations determine functioning of existing logistics centers. Localization of logistics centers in Poland is shown in the map below.

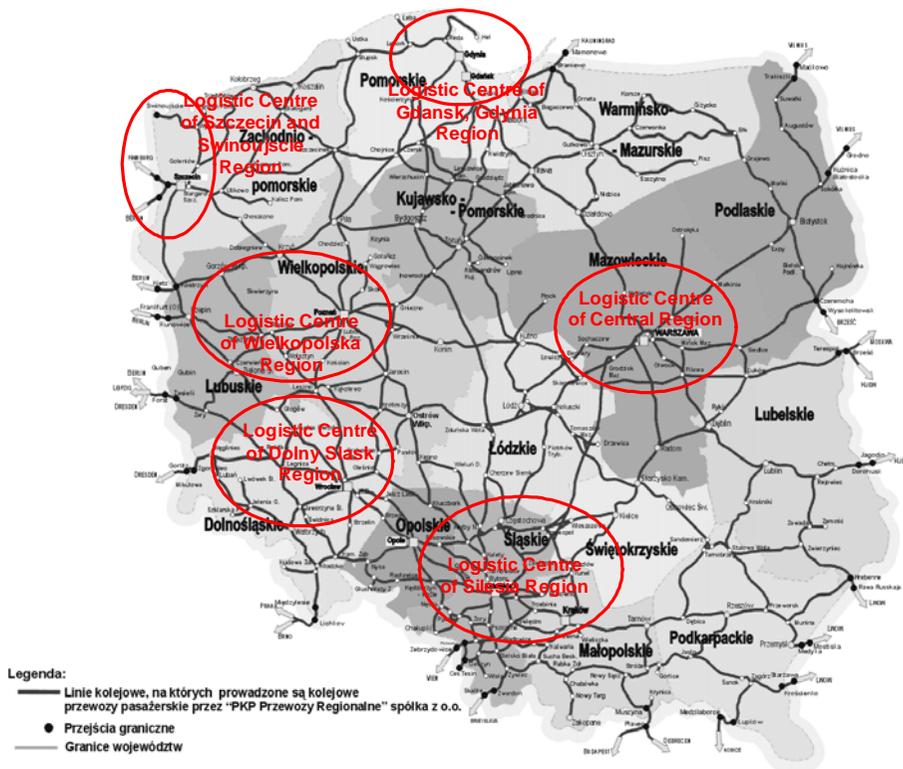


Fig. 1. Logistics centers localization in Poland

Source: based on [12.]

As one can observe in Figure 1. there are six main territory groups, where logistics centers are located in Poland. Three of them are close to border with Germany. Due to this fact it is possible to claim that there is strong cooperation with German companies, which influence on establishing and functioning of Polish logistics centers. Localization problems of logistic centers in Poland, Hungary and Slovakia are similar. Economic development, counted as GDP increase, was shaped similarly in both countries with average about 4% to 6% annually in nineties last century. Rapid economic development was observed at the beginning of twenty first century till end of year 2008 as well. Economic crisis caused that dynamic flow of goods in between companies and logistics centers was slowed down. Due to cooperation

of logistics centers in Poland, Hungary and Slovakia as well as usage of the same European finds it is justified common wide methodology of investment effectiveness evaluation for those companies. Wider formula of this methodology should include synergic effects from cooperation between Polish, Hungarian and Slovakian logistics centers. These effects one can observe not only in cooperation but also in economic processes, organizational structures of logistics centers as well as market practice in all above-mentioned countries [6.]. Slovak Ministry of Transportation presents a table with nine logistics centre but only five in operation.

Table 1. Logistics centers in Slovak Republic

Transshipment point	Operator	Handling devices	Number and length of tracks
Bratislava UNS	SKD Intrans a.s. Zilina	1 rail portal crane 32 tons 2 side handlers 35 tons	3 tracks (290m, 297m, 325m)
Bratislava port Palenisko	SPsaP a.s. Bratislava (Slovak Shipping and Ports JSC Bratislava)	5 portal cranes (2x16, 2x20 and 36/32 tons), 1 stationary RoRo ramp	2 tracks (150m, 300m)
Zilina	SKD INTRANS JSC	2 side handlers 35 tons 1 side handler KLAUS 26 tons	1 track (327m)
Kosice	SKD INTRANS JSC	2 tired cranes 19, 12 tons	2 tracks (2x180m)
Rozenberok	ZSR (Slovak Railways) manager of railway infrastructure, out of order	1 portal crane 32 tons	3 tracks (310m, 2x320m)
Terminal Dunajska Streda	Metrans Danubia JSC, Prague	2 rail portal crane 40 tons 650 m crane track length 2 reachstockers Ferrari, 10 tons	5 tracks (about 650m each)
Sladkovicovo	Lorincz Ltd.	1 reachstocker Luna 45 tons	1 track (290m)
Terminal Dobra	Slovak Cargo, JSC.	2 rail portal cranes 50 tons, 450m crane track length 1 reachstocker Luna 45 tons	4 tracks NG (570m, 595m, 735m, 684m) 4 tracks BG (593m, 588m, 812m, 802m)
Trstena	Slovak Cargo, JSC.	1 mobile loading (RoLa) ramp	1 track (310m)

*Grey colored rows mark terminals out of operation

Source: Ministry of Transportation in Slovak Republic

In Table 1. Ministry of Transportation in Slovakia claim that there are five centers in operation, while four stopped their activity. Bratislava Port, Zilina, Dunajska Streda. Sladkovicovo and Terminal Dobra offer complex logistics services for national and

international enterprises. The biggest Terminal Dobra possesses 8 long trucks. There could be different reasons for suspending functioning of Bratislava UNS, Kosice, Rozemberok and Trstena.

Polish, Hungarian and Slovakian complex logistics services offered in centers can be evaluated in such categories as:

- determination relation between their range;
- quality of realization;
- unfailing realization of services towards customers' expectation;
- price and time of realization.

Transportation system of Middle and Eastern part of Europe join Helsinki with Thessaloniki and Berlin with Moscow. Well developed transportation system helps to broaden services in logistics centers, especially in Poland, Hungary and Slovakia.



Fig. 2. Map of transport corridors in Central and Eastern Europe

Source: [11.] 08.09.2009

In the Figure 2. one can observe 10 transport corridors in Central and Eastern Europe and only corridors with numbers 8 and 9 are outside of territory of Poland, Hungary and Slovakia. This underlines the importance of all three countries and shows perspectives for future development. In order to serve better in Polish, Hungarian and Slovakian logistics centers different activities must be carried out. They involve taking orders, packing and repacking of damaged goods, sorting of aggregate. It is extremely important for the centre to own an appropriate equipment, especially for agricultural goods, which must be handled in

appropriate conditions. Wrapping up of goods in foil and their labelling also takes place within the centers.

The concept of functioning of the centre looks in such way that it offers postal distribution services and aggregate shipping. Also one can find commodity exchange. The logistic centre propose technical service as well as agricultural produce terminal, especially corn-oriented. The loading of TIR-lorries onto double-stack cars takes place in the logistics center. One can find the distribution centre for small-sized goods. Customs area, are also achievable where the clearance of import and export goods takes place [13].

Establishing of the center required many investment activities. One of the most important is modernization toward connection between regular railway track and wide railway track together with building special store for reloading cargo for one freight wagon to another one. In the logistics centre many activities such as packing, segregation and storage of goods and information systems services take place, which can be evaluated. There were several evaluations of the logistics centers made by customers in the form of questionnaires.

To create new logistics centers in this part of Europe, Hungary needs logistics experts with proper, specialized knowledge, which enable them to fulfill the management and operational execution in the different phases of supply chain. There are many scientific institutes that help to educate staff for logistics centers such as Budapest Corvinus University, Budapest University of Technology and Economics and University of Miskolc [11.]. Hungry posses very good transportation system, which can help to develop network of logistics centers.

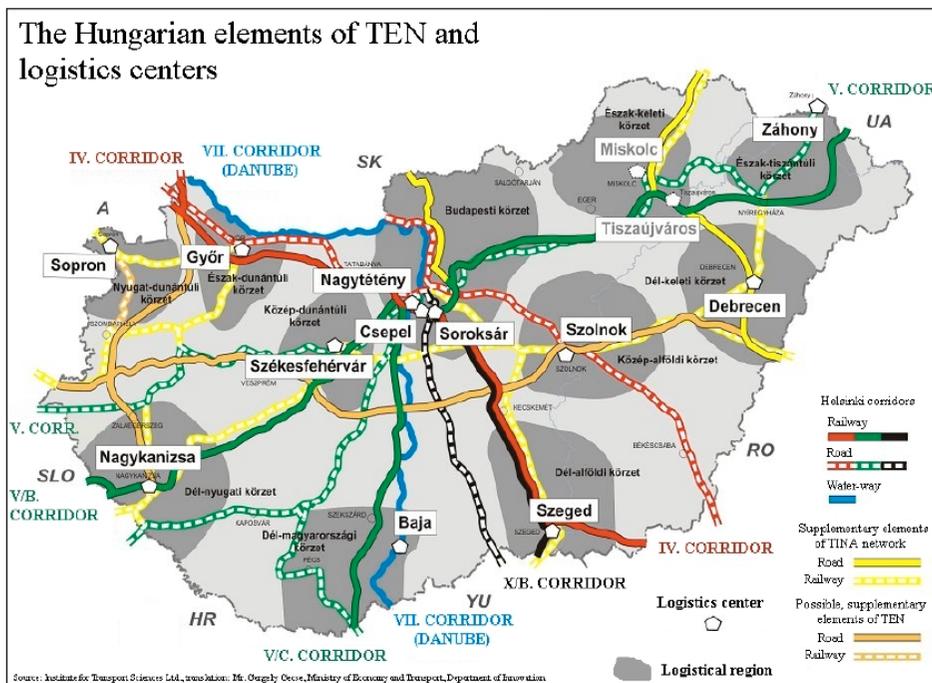


Fig. 3. Hungarian elements of TEN and logistics centres

Source: [11.] 08.09.2009

Three kinds of transport are well developed in Hungary. Joining all of them in one system will help to create system of cooperating logistics centers. The key point is that logistics centers must evaluate their plans and activities with great care. Such evaluation can cost money and time but in long period of time it may be profitable. Creation of optimal transportation

system in Middle and Eastern part of Europe helps to establish new logistics centers, develops existing ones and at the same supports global economical development.

References

- [1.] ec.europa.eu/regional_policy
- [2.] MILEK, D.: **Innowacyjne przedsiębiorstwa jako element regionalnego systemu innowacji: Uwarunkowania wzrostu wartości przedsiębiorstwa**, joint work editor E. Urbańczyk Wyd. Uniwersytet Szczeciński, Szczecin, 2007, p.82
- [3.] MINDUR, L.: **Centra logistyczne**, w: Technologie transportowe XXI w., pod red. L. Mindura, Wyd. Instytut Technologii Eksploatacji, Państwowy Instytut Badawczy, Warszawa-Radom 2008, p. 379
- [4.] MINDUR, L.: **Centra logistyczne**, w: Technologie transportowe XXI w., pod red. L. Mindura, Wyd. Instytut Technologii Eksploatacji, Państwowy Instytut Badawczy, Warszawa-Radom 2008, p. 381
- [5.] MINDUR, L.: **Centra logistyczne**, w: Technologie transportowe XXI w., pod red. L. Mindura, Wyd. Instytut Technologii Eksploatacji, Państwowy Instytut Badawczy, Warszawa-Radom 2008, p. 373-378
- [6.] OTOLA, I.: **Synergy Effects in the Aspect of Local Development of Communities**. International Journal of Public Administration in Central and Eastern Europe nr 1, 2007.
- [7.] PACHURA, P.: **Mapping Regional Potential of Innovativeness**. [in:] Changes and Risk in Knowledge Based Economy. Ed. by Ralph Lescroart, Aneta Pachura, Marcin Kozak. Wyd. Haute Ecole "Blaise Pascal", Arlon 2008, p.273
- [8.] RIMIENE, K., GRUNDEY, D.: **Logistics Centre Concept through Evolution and Definition**, Engineering Economics. 2007. no 4 (54) Commerce of Engineering Decisions, p.87
- [9.] RODAWSKI, B.: **Ocena efektywności centrum logistycznego**, [in:] Rola centrów logistycznych w rozwoju gospodarczym i przestrzennym kraju, PAN Warszawa 2006 ZN nr 225, 92-93
- [10.] RODAWSKI, B.: **Ocena efektywności centrum logistycznego**, in: Rola centrów logistycznych w rozwoju gospodarczym i przestrzennym kraju, PAN Warszawa 2006 ZN nr 225, p. 94
- [11.] www.khem.gov.hu
- [12.] www.pkp.pr.pl
- [13.] reports from research centre