TRANSPORT PROBLEMS 2011
PROBLEMY TRANSPORTU Volume 6 Issue 2

Marco Polo, transport services,
logistic, multimodal transport

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OPTIMIZATION OF EXISTING TRANSPORT SERVICES – CASE STUDY OF THE NIKO TRANSPORT D.O.O. COMPANY

Summary. The operational efficiency of the transport-logistics chains is affected by all actors involved: linear companies, port authorities, stevedores, forwarders, agents as well as of the level of integration of terminals and hinterland transportation modes. At the moment, only the company Niko Transport d.o.o. offers the intermodal way of transport in Slovenia. As for any other transportation problem, time window constraints and the availability of alternative routings of intermodal transport poses additional challenges.

The new strategy of the company was named »We select green«. Its main goal is the same effect with lower pollution. They understand they are part of whole logistic chains for which it is typical to become more and more sensible to the demands that concerns the protection of the environment. That is also one of the priority strategies of the EU. Launched in the Freight Transport Logistics Action Plan, Green Corridors support today the EU's agenda towards decarbonising transport while emphasising the need for efficient logistics. The goal of the article is to present the business of the Niko Transport d.o.o. company on the UK market, the introduction of the multimodal transport, the approval of the Marco Polo project, the selection of courses and partners. A research of the students of the Caledonian University of Glasgow as a part of the project is also presented in the article.

OPTYMALIZACJA ISTNIEJĄCYCH USŁUG TRANSPORTOWYCH – STUDIUM PRZYPADKU NIKO TRANSPORT D.O.O. COMPANY

Streszczenie. Operacyjna skuteczność sieci transportowo-logistycznych podlega następującym podmiotom: bieżącym spółkom, władzom portowym, dokerom, spedytorom, agentom, a także poziomowi integracji terminali oraz środkowi transportu zaplecza. Obecnie tylko firma Niko Transport d.o.o. oferuje intermodalny sposób transportu w Słowenii (angażujący więcej niż jeden rodzaj środka transportu). Tak jak w przypadku każdego innego problemu transportowego, ograniczenia okna czasowego i dostępność alternatywnych tras przejazdu intermodalnego transportu stawiają dodatkowe wyzwania. Nowa strategia firmy została nazwana „Wybieramy ekologicznie". Jej głównym celem jest ten sam efekt, ale przy mniejszym zanieczyszczeniu powietrza. W związku z byciem częścią całej logistycznej sieci coraz istotniejsza staje się wrażliwość na zapotrzebowanie rynku, związane z dbaniem o ochronę środowiska. Jest to również jedna z priorytetowych strategii UE. Zapoczątkowane we Freight Transport Logistics Action Plan – Zielone Korytarze (Green Corridors) wspierają agendę Unii Europejskiej, dążącą do dekarbonizacji transportu przy jednoczesnym podkreślaniu

potrzeby skutecznej logistyki. Celem artykułu jest prezentacja działań biznesowych Niko Transport d.o.o. Company na rynku brytyjskim (wprowadzenie multimodalnego transportu, akceptacja projektu Marco Polo, wybór kursów i partnerów). Badania naukowe studentów Caledonian University w Glasgow, będące częścią tego projektu, również są przedstawione w niniejszym artykule.

1. INTRODUCTION

Globalisation is increasing the competitive struggle and enables success only to those companies in the service sector that are capable to respond to new needs and greater expectations of transport users so that they can get lower transport prices, safer transport and of course a clean manner of transport (Mulder 2009). That′s why intermodal transportation is a response to changing marketing and distribution requirements for moving all types of cargo. Some of the advantages of intermodalism include a greater choice of routings, improved services, better pricing and the handling of higher volumes. Use of intermodal containers (containers compatible with two or more modes) has greatly improved the intermodal transfer of general cargo. Reduction of the delay when the cargo reaches the transfer point (a delay which results in an added cost) and minimization of the transfer costs at the modal transfer point are some of the challenges faced by intermadalism (Kasilingam 1998).

The intermodal transport feature comes from the needs of users that demand greater quality of transport services. This is represented mostly in:

- less and less protection while information sharing and awareness among people is increasing. The most decisive fight is held on a market that is globalised to the point that we cannot speak of a local market on which we already have a certain advantage just because it is “ours”,
- greater transport speed; this meaning not only the technical speed of the transport means but the transition speed of the whole transport process,
- uninterrupted transport; which means that the goods are transported directly from the sellers warehouse to the buyers warehouse without reloading,
- greater transport flexibility; it is a demand that transport organizations adapt quicker to their users needs with transport means regarding the sort and quantity of the goods in a chronologic and spatial sense,
- handling quality; this means that the damage and loss of goods must be as low as possible,
- moderate transport expenses; all the expenses that build up in the transport process must be proportional to the terms and quality of the transport services.

These factors caused changes in the business conduct of transport organisations which began to adapt to the markets demands. This means the formation of a complete transport service »from head to toe«. This includes the entire linking of different services in the transport process, from loading at the manufacturer to the unloading at the buyer.

2. THE MARCO POLO PROGRAM

The Marco Polo Program is a high-risk program that, as its predecessor PACT, supports financially a commercial activity of transport and logistics. The purpose of the program is to accelerate the development of intermodality as the main and only alternative to road transport. Research has shown that truck transport is increasing rapidly. This was greatly influenced by the new EU members for whom the truck transport market has opened without permits. Because the transport means of the new EU members were »dirtier« the pollution increased in the most developed economic countries. Every year the EU announces a call for applications for the Marco Polo program where members of the EU and other countries bordering the EU that have signed a special associating agreement can collaborate. A condition for a company from another country is also that it has

collaborated in transport within the EU region and the other country until now. The purpose of the EU financing through the Marco Polo program is that road permeability is met once more, greenhouse gas emissions are reduced and that this does not reduce the quantity of transported cargo.

In 1992 the EU set clear financial directives for the establishment of intermodal transport as an environmentally friendly form of transport. The first program, PACT, lunched in 1992 already encouraged transport means operators to use the intermodal transport and its updates. This program was concluded in 2001 with the last project ending in 2004. With the experience gained from the PACT program, they defined the Marco Polo I program in 2001 which was more open and financially stronger then the PACT program. The first part of the Marco Polo program for which 102 million euros were made available, is expected to last form 2003 to 2010 with the last application till the end of 2006.

In July 2004 the European committee presented the European parliament with a proposal for the introduction of the second part of the Marco Polo II program for the period from 2007 to 2013. In the second part they expanded the area of usage as also the budget of the program. The second part of the Marco polo II program expanded the financing possibilities in the MOS model (*Motorways of the sea*) and the Traffic avoidance actions. The financial support that is determined by the committee on the basis of ton-kilometres (tkm) transferred from roads to short maritime transports, railway and land waterways or combined methods of transport where road transports are shortest, is initially determined at 1 euro for every 500 tkm of road freight transported. This indicative amount can be adapted especially in relation to the quality of the project or actual benefits gained for the environment.

3. PROJECT MARCO POLO IN THE NIKO TRANSPROT D.O.O. COMPANY

Niko Transport d.o.o. is a Slovenian transport company, which was established in 1990. All of their trucks, which are one to one and a half year old, meet the ECO standards and are equipped with a CVS Mobile tracking navigational device that enables the customers to track them over their web page. Because they understand transport as a part of the whole service, they developed a partner relation with their customers and also with the contractors. The targeted market of the Niko Transport d.o.o. company is centred on the EU market. Scandinavia and Spain were already tested as well as southern markets down to Greece. Not long after they started the business they found themselves on the UK market with which they make 40% of their traffic. They are connected with their partner Anglo Overseas from Glasgow and with the introduction of the multimodal transport, with their new partner the TPC Freight Management.

Because of increasing external costs, fuel costs, tolls and incentives, the Niko Transport d.o.o. company decided to make a step forward, a step that would decrease costs and also contribute to a less polluted environment. With the SLO-UK_Combi (Slovenija-United Kingdom combined transport) Consortium project, established in the Niko Transport d.o.o. company, the multimodal transport started to develop. The transport of goods from the existing road transport with loaders from Southern Europe and unloaders in the UK and Ireland, has transferred to multimodal transport. A direct intermodal service is introduced, including a railway line between Slovenia/Moste (Ljubljana) and Belgium/Zeebrugge. Also included in the project there is a short ship course between Zeebrugge and Killingholme (UK) and then delivery by road (Fig. 1). The collected goods in the UK are again taken to Killingholme port and destined mostly for Balkan countries, Italy and Austria (Fig. 2).

The new service is used with existent customers who until now used the existent road transport namely for goods like: furniture wood components (50%), metal products (15%), plastic and paper products (15%), consumer goods (10%) and other (10%). The goods are loaded on swap bodies (Fig. 3) which are used only for the intermodal system. This way the greater part of the goods is removed from the problematic roads and moved to railway lines (579.884.639 tkm).

Fig. 1. UK delivery map
Rys. 1. Mapa dostaw w Wielkiej Brytanii

Fig. 2. Map of Italian, Slovenian and former Yugoslavian loaders and unloaders
Rys. 2. Mapa podmiotów załadunku i rozładunku z Włoch, Słowenii i byłej Jugosławii

Fig. 3. Swap body
Rys. 3. Kontenery transportowe typu swap-body

This demanded change and purchase of the following transport needs:

a) 42 vehicles Iveco Stralis and 35 vehicles for crate towing (35 standard vehicles Iveco Stralis were changed with vehicles for crate towing),
b) 55 trailers Krone (dimensions: 13,6 x 2,80 x 2,48 m), of which the number has also decreased from around 80 to 55,
c) 200 crates (swap body) Krone TYP C-63, VOL: 90 m^3, dimensions: 13,6 x 2,75 x 2,46 m.

3.1. Example of the old road route and the new intermodal route

The old route distance (Tb. 1) from the loading point to the unloading point includes the road connection between Moste and Calais (the route goes over Slovenia, Austria, Germany, Luxemburg, Belgium and France), then the trucks go on a ferryboat in Calais for Dover. The distance between Moste and Calais is 1.481,4 km. Altogether the old route (here without the loading point and distribution) measures 1.515,3 km.

The intermodal transport (Tb. 2) uses trucks for the loading of goods and the delivery of goods door-to-door. For the rest of the distance between Ljubljana and Zeebrugge the train and ferryboat are used from Zeebrugge to Killingholme. The entire distance over railway in the EU territory is 1468 km (the loading and unloading of swap bodies in Moste and in the Zeebrugge terminal).

The new ferryboat crossing between Zeebrugge and Killingholm is 372 km long.

3.2. Second example of the old road route and the new intermodal route

The second example presents the old (Fig. 4) and the new route (Fig. 5) which include the loading in Salgareda (Italy) and the delivery in Birmingham (UK). Example of the old route: the loading of goods in Salgareda (Italy) and the delivery of goods in Birmingham (UK):

- Salgareda - Moste (214 km),
- Moste (Ljubljana) - Scwarzbach/B1 (323 km),
- Scwarzbach/B1 - Kircheim Unter Teck (349 km),
- Kircheim Unter Teck - Luxemburg (390 km),
- Luxemburg - Calais (419 km),
- Calais - Dover (34 km),
- Dover - Birmingham (331 km).

Altogether the route amounts to 2060 km.

The next picture represents the old route way which is calculated taking into account the data of the Salgareda – Birmingham route length.

Table 1

Combined transport / distance + route

Old road route	Mode	Distance (km)
	Road *(Transit time: 43,5 hours)*	
Moste - German Border		403,2 km
German Border through Munich - Stuttgart to Luxembourg		626,8 km
Luxembourg Border to Belgium Border		53,4 km
Belgium Border through Bruxelles to France Border		340,9 km
France Border to Calais		56,7 km
Calais - Dover (Ferry)		34 km
Sub-total		1515 km

Table 2

The new route between Moste and Killingholm

New route	Mode	Distance (km) (Terminal/ DESTINATION)
Moste (Ljubljana) - Jesenice	Rail - (dedicated freight service) Transit time: 32 hours Ship - (dedicated freight service) Transit time: 11,5 hours	71,30 km
Jesenice – Rosenbach		30,88 km
Rosenbach - Salzburg		189,73 km
Salzburg – München		214,76 km
München - Aachen West		679,17 km
Aachen West - Montzen		14,84 km
Montzen - Zeebrugge		267,31 km
Zeebrugge - Killingholme		372 km
Sub-total		1840 km

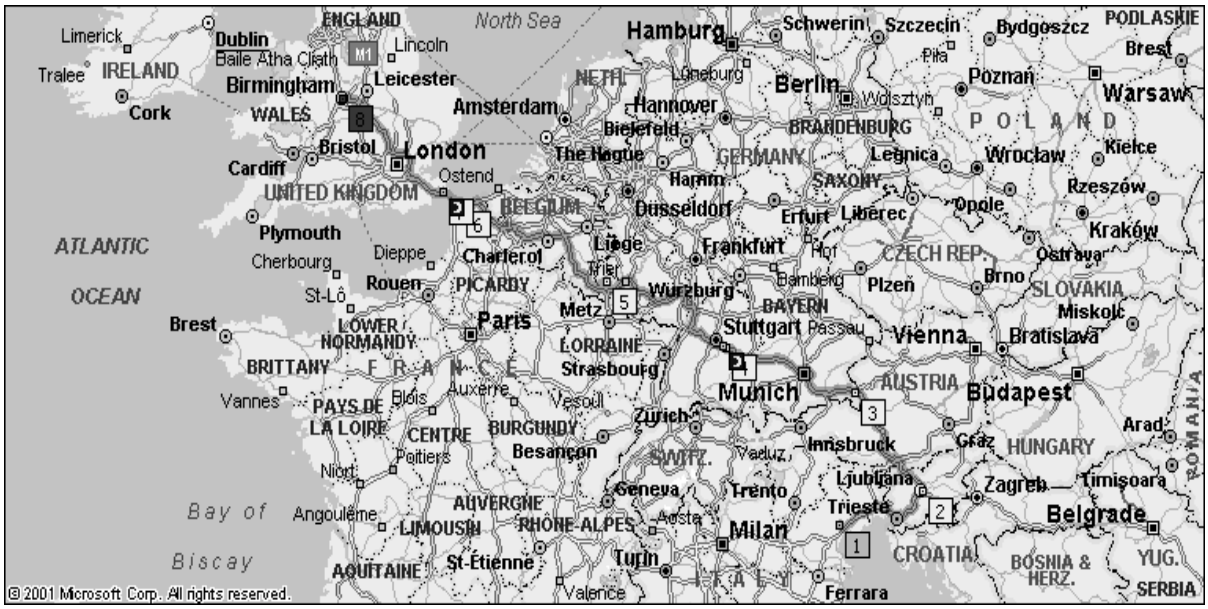

Fig. 4. Salgareda – Birmingham route map
Rys. 4. Mapa tras Salgareda – Birmingham

For the new route (intermodal transport) an example is used where the goods are loaded in Salgareda (Italy) and delivered in Birmingham (UK):

- Salgareda - Moste (214 km by road),
- Moste (Ljubljana) - Zeebrugge (1468 km by railway),
- Zeebrugge - Killingholme (ferryboat, 372 km),
- Killingholme - Birmingham (218 km by road).

Altogether the route amounts to 2272 km.

The next picture represents the new transport way which is calculated taking into account the data of the Salgareda – Birmingham route length.

Fig. 5. Salgareda – Zeebrugge route map
Rys. 5. Mapa tras Salgareda – Zeebrugge

4. A RESEARCH OF THE STUDENTS OF THE CALEDONIAN UNIVERSITY OF GLASGOW

The research of the students related to figuring out the potential quantity of goods for transport or how to increase the existent quantities of goods. Connected to that, a market segmentation and gathering of data for the entire UK market, individual and local regions are done. Many useful data is gathered about transport companies in the UK and about industrial areas in the central region of the UK. It showed for many companies that they export to Slovenia and countries near Slovenia and that they are strongly connected to the Killingholme port. The students have suggested in the research that the company Niko Transport d.o.o. starts advertising its services directly by e-mail or by advertising agencies and newspapers. For the public and the companies in the UK today it is typical to press more and more on the transport companies to use greener ways of transport.

5. CONCLUSIONS

The expenses, greater quality of transport services and care for the environment are becoming one of the key elements for transport. That′s why the company Niko Transport d.o.o. decided for the multimodal (road-train-ship) way of transport which poses additional challenges.
The problem with which Niko Transport d.o.o. is currently facing is in the insufficient quantity of goods referring especially to the export from the UK into Slovenia, Croatia and Italy. The students of Caledonian University from Glasgow are assessing in this context in the research that additional quantities of goods exist and suggest that it would be necessary to connect long-term with manufacturing companies, increase orders of existent forwarding agents and find new forwarding agents.

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Received 19.05.2010; accepted in revised form 9.06.2011