

CLEARING THE BOTTLENECKS: THE SETTING OF THE CZECH REPUBLIC AS A CENTRAL EUROPEAN LOGISTICS PLATFORM – CONCEPTUAL PAPER

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Summary: Within the research project itself, the detailed literature review focusing on global research projects together with those available at the PortEconomics academics initiative will be supplemented with local and regional information and research sources. The research key objective is to assess factors that could help mitigate bottlenecks within CEE logistics platforms and the Czech Republic in particular.

Key words: carrier; container; intermodal transport; shipping industry.

BACKGROUND AND INTRODUCTION

Due to the global financial crisis and the corresponding reduction in transportation demand and container traffic turnover in 2008-2009, the motivation for developing long-term solutions within the container shipping industry market to the logistics and transport bottlenecks has largely been postponed in Central and Eastern Europe (CEE). However, the necessity of solving the inefficiencies remains particularly salient. Globally, the key market layers in the container shipping industry are the shipping lines originally focusing on maritime transport. Multimodal transport operators (MTOs) carry out the transport and accept the corresponding liability for door-to-door services, rail operators offer services between the container terminals in the ports and intermodal terminals located in the hinterland. According to the Organization for Economic Cooperation and Development (OECD), Central and Eastern Europe consist of the countries of Albania, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Romania, Slovakia and Slovenia (1). The research will focus on the Czech Republic. Conducting research for transport structures and container flows for the whole region would exceed the project's timeframe and available financial and data resources. Moreover, since all European countries have, based on history, geography and current economic developments, different trade and transport characteristics, any degree of generalization for the region as a whole can be misleading too.

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1. RESEARCH INTRODUCTION

1.1 Significance

In spite of existing research about the technical aspects of intermodal transport in the Czech Republic, there is paucity of locally conducted research focusing on management, market and economic aspects of the intermodal transport with a wider perspective to the CEE and its comparison to other regions. Moreover, the literature, including policy documents, is not in English but mostly in local (Slavic) languages, Czech in particular, for instance (2), (3),(4) or (5) limiting their potential and information applicability internationally. This research project aims to fill the gap, making a step forward in terms of a broader research perspective while still focusing on the CEE. The core value of the project is to contribute to the development of knowledge and expertise in the field of transport research in the CEE by analyzing regional intermodal transport bottlenecks within emerging logistics platforms and consulting those with academics abroad, mostly overseas (e. g. Jean Paul Rodrigue, Hofstra University or possibly Sean M. Puckett, Volpe National Transportation Systems Center, U.S. Department of Transportation Research and Innovative Technology Administration).

1.2 Methodology, Data Collection and Duration

The research will use qualitative case-based methodology together with quantitative data analysis where possible. The comparative case study approach is selected as an appropriate method (6) focusing on the research field, its dimensions and it is motivated by goals of contributing to management and economics theories (7) and (8).

Regional upper management representatives of the shipping lines and MTOs were identified as the appropriate units of qualitative data collection. They were selected through the following criteria:

- The shipping line's or MTOs share (by twenty-foot-equivalent (TEU) volume) of international container traffic having the Czech Republic as origin or destination of trade routes including the maritime leg, for the USA, selected managers of the companies providing shipping service on Transatlantic routes and/or rail service,
- Existence of shipping line's subsidiary or agent office in the Czech Republic.

The survey questionnaire applied in this research project (9) will be distributed to the managers of shipping lines and MTOs. In addition, open interviews will be made with the managers both in the Czech Republic and in USA during the author's stay at Hofstra University in fall semester - from October to November 2013. The survey is targeted at identifying capacity, customer service delivery and operational bottlenecks in intermodal transport systems. In case of the Czech Republic, the interviewed companies (shipping lines) may include Maersk Line, MSC, Hapag-Lloyd, HANJIN, and COSCO, which represented around 60 per cent of the TEU-based import and export market (Association of Forwarding and Logistics of the Czech Republic seminar, 5 April 2012). In case of USA, the top market players in maritime shipping are quite similar (respective rankings will obviously differ).

Data collection in the USA will be undertaken in cooperation with professor J.-P. Rodrigue of Hofstra University (Hempstead, New York) who has widely published on the

topic of logistics zones (10), (11) and (12). For the Czech Republic, data collection will be based on networking via my home university department with relevant companies in Czech Logistic Association and the Association of Forwarding and Logistics of the Czech Republic in which, together with the research field companies my home faculty department is an associate member. Upon drawing the contact list of the managers, those offices will be contacted via phone and email and if possible complemented with interviews in person.

With restricted sample size and qualitative nature of the data collected, it may be challenging to identify robust indicators of statistical significance. Therefore the results will be discussed together with the motivation of managers' responses on a case-by-case basis to learn from diverging points of view.

2. SUBJECT AND RESEARCH DIMENSIONS

The research itself will be focused on bottlenecks and their mitigation in the context of the Czech Republic. It will be conducted over the following dimensions that were identified and will be researched in cooperation with Dr. Jean-Paul Rodrigue, Hofstra University, Department of Global Studies and Geography:

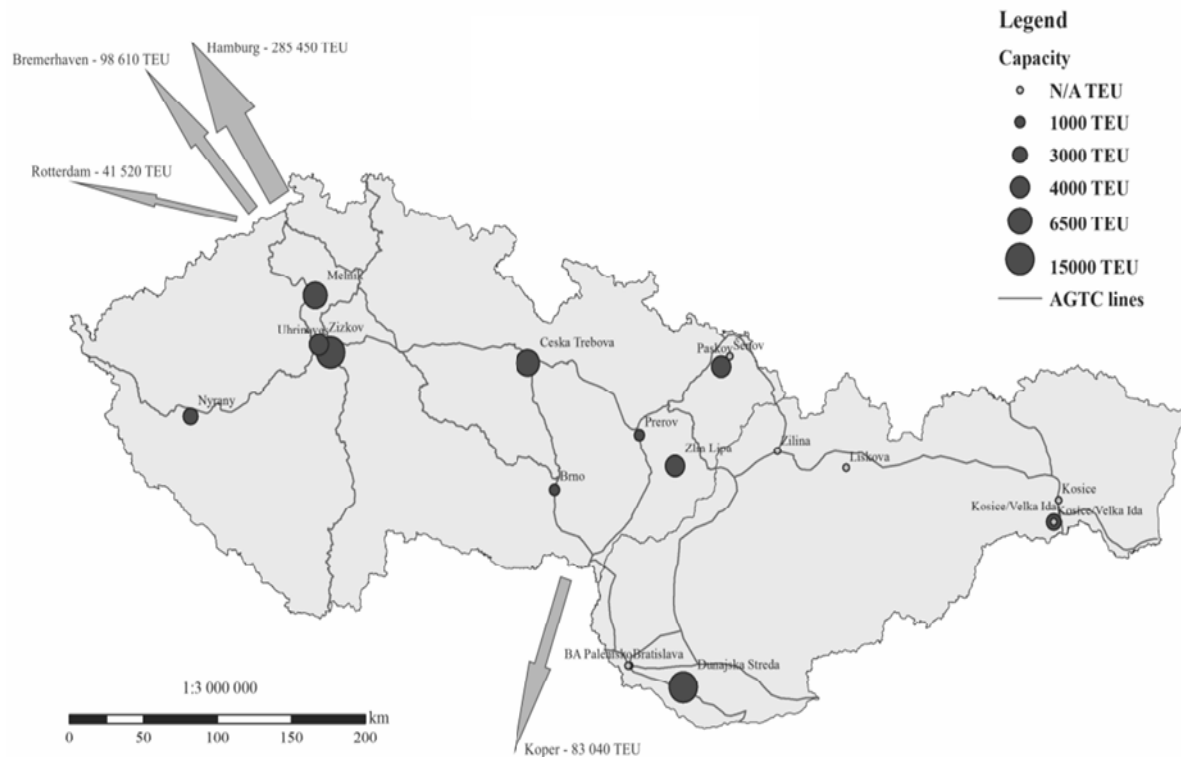
- Layers of logistics activity,
- Intermodal infrastructure,
- Road infrastructure and drayage operations,
- Rail corridors and operators,
- Transport and supply chains
- Inland ports: bringing the massification inland,
- Relations between carriers and freight forwarders,
- Intermodal transport policy,
- Conclusions and recommendations.

For the purposes of the research project, the dimensions are briefly outlined in this conceptual paper.

Within the layers of logistics activity dimension (13); the commercial and logistics context of the Czech Republic and its integration within the European economy will be presented. The research will focus on the origins and destinations of containerized cargo movements, transport nodes and links, transport service operations and transport chain organization. In terms of logistics activity, the current dynamics are influenced by the European Union (EU) integration and enlargement processes and its geographical position between the mature production, distribution and consumption markets of Western European countries such as Germany and Austria on one side and emerging markets such as Russia, Ukraine, Romania or Bulgaria on the other.

With the focus on intermodal infrastructure, an overview of intermodal terminals and their linkages is provided, highlighting their importance. For the basic overview of key intermodal terminals in the Czech Republic and Slovakia together with container traffic

volume to the most important seaport for the Czech Republic (Hamburg, Bremerhaven, Rotterdam and Koper), please, see Figure 1.



Source: Ministry of Transport of the Czech Republic consultations, 2012; Association of Forwarding and Logistics of the Czech Republic seminar, April 10, 2013.

Fig. 1 – Intermodal Terminals in the Czech Republic and Slovakia

Within the dimension of intermodal infrastructure, the basic goal is to provide an overview of the intermodal network structure by modes and terminals, in addition to the main logistics zones servicing them (14). For instance, these were partially researched with the EU support within the project Flavia No. 2CE189P2 focusing on freight and logistics advancement in Central/South East Europe in the past (15). Project report and data are available at <http://www.flavia-online.de/> (data accessed April 12, 2013).

In the area of road infrastructure and drayage operations, the network of roads and motorways will be characterized in detail together with capacity and quality issues within the European framework (16) since most highways and main roads in the Czech Republic are part of the international E-road network with the key role of the D1 motorway connecting the major economics centres - the capital of Prague, city of Brno and Ostrava and those being directly linked to key trimodal and bimodal container terminals. Due to the simplicity of the network structure, it is challenging to link economic centres within the country and to the European system, underlining the insufficient highway infrastructure capacity of the Czech Republic. Since motorway network construction is still solely financed by the state (State Fund of Transport Infrastructure) and that available budget is challenged by the lack of concrete public private partnership (PPP) projects, road infrastructure improvements remain a

salient issue. Due to the insufficient highway capacity network, containerized road movements in the Czech Republic and the CEE in general are fragmented (17).

With the focus on rail corridors and operators dimension, the enduring European constraints of freight versus passenger transport will be reviewed. The privatization and deregulation approaches by the Czech Republic and other CEE countries will be discussed together with the emergence of external interests (German) seeking a better access to the CEE markets. The main rail operators in the Czech Republic are METRANS, CSKD Intrans, ERS and CD Cargo (Czech Railways subsidiary) providing rail services and linking the container seaports with bimodal and trimodal terminals..

Within transport and supply chains, the roles of shipping lines active in the region, their agents, non vessel operating common carriers (NVOCC) and the main challenge in their effective realization will be underlined (18). The top 5 carriers by their TEU volume share and agents in the country are Maersk Line, Hanjin, Hapag Lloyd, CMA CGM and Hapag-Lloyd. The top 5 freight forwarders (by the same statistics unit) consist of Kuhne Nagel, DHL, Schenker, CS Cargo and Czechoslovak Ocean Shipping (COS) (Association of Forwarding and Logistics of the Czech Republic seminar, 5 April 2012). The freight forwarders market is mostly dominated by German headquartered companies.

The review of inland ports and their function (10) will focus on the ongoing massification of container flows through a concentration of cargo on limited set of ports of call. Two different port clusters relevant for imports and exports from the Czech Republic can be identified. On one hand, there are the most important European ports within the Northern Sea Range between Le Havre and Hamburg. On the other hand, several of the North Adriatic ports deserve some consideration. In case of the Czech Republic, only four ports have a significant market share in terms of exported and imported containerized cargo: Hamburg, Bremerhaven, Koper and Rotterdam (Hafen Hamburg Presentation, Association of Forwarding and Logistics of the Czech Republic seminar, 5 April 2012). Regarding the balance of container flows, the Czech Republic is characterized with more containerized cargo being imported than exported, leading to additional logistical challenges related to the repositioning of empty containers.

The research dimension concerning the relation between the carriers and the freight forwarders will discuss the trade power between these market players (19) and identify the beneficial cargo owners (shippers and consignees). The key final customers (shippers and consignees) of the carriers and freight forwarders present in the Czech market are automotive industry manufacturers (Skoda Auto – VW Group, Hyundai – the company's biggest capacity production plant in Europe and TPCA joint-venture by Toyota and Citroen/Peugot), clothing companies (Bata, Alpine Pro etc.), beer producers (Budejovicky Budvar, Pilsner Urquel), companies producing machinery parts (engines, trams equipment exported overseas – USA) and air craft industry suppliers (Sikorski, light air craft manufacturers) and retail companies (Ahold, Tesco Stores, Makro and Kaufland).

The intermodal transport policy dimension will deal with the existence and implementation of public policy in transport stressing the strategies and tools the state government and its bodies have (16), (19) and (20) to promote the intermodal and combined

transport concepts in the Czech Republic. The Ministry of Transport of the Czech Republic is the key body of the state government. The Ministry has recently introduced a new project that aims to shift cargo from road to rail and inland waterways. The strategy is based on the financial support of public logistics centres (PLCs). The funds available by the Ministry to support intermodal and combined transport originate from the State Fund of Transport Infrastructure.

In the conclusion and recommendation research section, the most suitable (technically possible and cost feasible) ways to connect freight transport infrastructures of the Czech Republic to the CEE and European network to reduce the bottlenecks and improve the competitiveness of the national economy while comparing to U.S. one will be suggested.

ANTICIPATED OUTCOME, RESEARCH RESULTS DISSEMINATION AND FURTHER DEVELOPMENT

The research outcome will be primarily co-authored by Dr. Kolář, Dr. Šourek and the project academic supervisor (J.-P. Rodrigue), submitted as a presentation to the International Association of Maritime Economics (IAME) conference taking place in Norfolk in 2014. The research paper will be submitted to first tier peer reviewed journals such as the Journal of Transport Geography, Transport Reviews, Transportation Research Part E: Logistics, Transport Review, Journal of Business Logistics or European Transport Research Review (pending the form of the paper and if special issue contribution are solicited by a specific journal) in 2014. The ongoing research results and their implications will be presented at a UTRC (University Transportation Research Center) seminar in New York during the author's stay as a visiting research at Hofstra University from October to November 2013.

Moreover, the project outcomes will relate to the current research team projects the author is conducting at the University of Economics, Prague too; focusing on the customer orientation and marketing perspectives in the containerized freight distribution market in the Czech Republic.

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