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EUROPEAN TRANSPORT NETWORK EFFECTS ON REGIONAL GEOGRAPHY

ABSTRACT. The transport network policy aims to create a network of roads, railways, airlines, inland waterways and maritime transport and intermodal platforms extended to all European States. It has to improve connections between different modes of transport establishing a European network by 2050. When it will be completed the great majority of Europe’s businesses will be no more than 30 minutes’ travel time from this comprehensive network.

KEY WORDS: Economic Geography, Firms Strategies, Management, Europe

INTRODUCTION

In 1990s EU Member States decided to realize a trans-European network policy in the transport sector (TEN-T) in order to promote and strengthen transport chains for passenger and freight. The need of such network has been enhanced by the geographical extension of EU as a result of four enlargements, Europe’s increasing responsibility at global level and revolutions in the field of Information and Communication Technologies.

The first guidelines for the development of TEN-T established a master plan connecting national networks of all transport modes. These guidelines constituted a reference framework for Member States infrastructure policy. In 2009 the European Commission launched a new policy framework, established as a result of several reviews, with several progress in the areas of governance, legal and network. In 2011 the European Commission adopted a package for a new transport infrastructure policy that comprises a proposal for the revision of the TEN-T guidelines and a proposal for a Connecting Europe Facility (CEF). Since 2014, the European Union has a new transport infrastructure policy that connects the continent between East and West, North and South. This policy aims to close the gaps between Member States’ transport networks, remove bottlenecks that hamper the smooth functioning of the internal market and overcome technical barriers such as incompatible standards for

![Fig. 1. Factors affecting European Transport Network Policy](image-url)
railway traffic. It has several effects on regional geography and firms’ strategies. However, despite of the relevance of such topic few articles have been developed from researchers. At the aim to fill this literature gap next sections evidence European Transport Network effects on regional geography and firms strategies.

REGIONAL GEOGRAPHY

In the 80’s, transport systems in Europe was developed along national lines with poor interconnections among Regions [Abraham and Roumpuy van, 1995, Barker and Kohler 1998, Beaverstock 2002]. It affected economic growth of both regions and firms. Since the 90’s, Transport European (TEN-T) Network policy was aimed to support the development of key European infrastructure projects. This projects aims at fostering the social, economic and territorial cohesion of the EU and inure to the benefit of its population [Alderighi et al. 2007, Camagni 1997, Allen 1999, Antonelli 1999, Aydalot 1986, Bakis 1981]. The policy fosters the implementation of a comprehensive network to be completed by 2050 and a core network to be completed by 2030 [Ashworth and Voogd 1995, Bathelt and Glukler 2003, ASSOCIAZIONE ITALIANA GEOMARKETING 2005]. The first one aims to ensure full coverage of the EU and accessibility of all regions, while the second one aims to prioritize the most important links and nodes of the TEN-T. Both of them include road, rail, air, inland waterways and maritime transport, as well as Intermodal platforms [Batowski and Pastuszak 2008, Capello 2004, Batten 1995, Bramanti and Ratti 1997]. They will affect 83 main European seaports, by rail and road links, 37 airports by rail links to major cities, 15000 km of rail lines converted to high speed and 35 large cross-border projects to reduce bottlenecks.

The Core Network has been intended to eliminate bottlenecks, to modernize infrastructure and to streamline cross-border operations of passenger and freight transport throughout the EU, in order to improve the links between the different modes of transport. The implementation of the core network can be facilitated using a corridor approach. Corridors provide the basis for the co-ordinated development of infrastructure that bring together the Member States as well as the users. Each corridor must include three modes; three Member States and two cross-border sections [Beckmann and Thissé 1986, Benner 2003, Berry 1976, Berry et al., 1993]. Specifically, the Scandinavian-Mediterranean Corridor is the largest of the TEN-T core network corridors. It covers seven EU Member States and Norway linking the major urban centres of Germany, Italy and Scandinavia that represent the nodes of a crucial axis for the European economy. The regions along this corridor constitute an important socio-economic area within the European Union.

Linear modes of transport that are assigned to the corridor are mainly rail and road while the connections Finland and Italy cross the sea. The other dimension of the corridor is composed of airports, seaports and road-rail terminals of the core network. For modal interconnection as well as the connection of the trans-European transport network with infrastructure for local and regional traffic, urban nodes are of specific importance. The North Sea–Baltic Corridor is 3,200 km long. With 16 airports, 13 seaports, 18 inland ports, and 17 railroad terminals, it has the potential of becoming one of the most economically diverse corridors in the European Union. It connects Helsinki, Tallinn, Riga, Vilnius, Warsaw, Berlin, Brussels and Amsterdam. It connects also Europe’s leading seaports in the west to the fastest developing region in the EU—the Baltic Sea Macro Region in the north-east. It has an effective inland waterways network stretching from the North Sea ports to Berlin and includes several of the leading logistics hot spots in Europe [Bonavero et al. 1999, Caepelin and Batey 1993, Brunet 1989, Derudder et al. 2007, Bonrich 2007].

The North-Sea Mediterranean Corridor connects UK and Ireland to the Continent. It is an extensive and complex corridor containing densely populated regions of long-standing economic importance and with a high degree of urbanization, along with more peripheral and less densely populated regions in the west and north. There are also contrasts in relation
to cultures for infrastructure investment within the Corridor. The continental Member States and Ireland tend to invest in transport infrastructure using public sector resources. It overlaps with the North Sea Baltic and Rhine-Alpine corridors in the Netherlands and Belgium, the Atlantic Corridor in Northern France and the Mediterranean Corridor in Southern France, and it is the only core network corridor reaching the UK and Ireland.

The Baltic-Adriatic Corridor involves six Member States, Poland, Czech Republic, Slovakia, Austria, Italy and Slovenia. The 1,800 km long Corridor allows for more possible itineraries between the Baltic and Adriatic Basins. The Baltic-Adriatic axis is one of the few corridors that do not include inland waterways. Excluding inland waterways at present, the backbone of the Corridor is therefore based on its railway and road routes, its urban nodes and ports, airports and rail-road terminals being interconnected only by rail and road infrastructure. The Corridor encompasses a total of 13 urban nodes and airports, 10 ports and nearly 30 rail-road terminals. The BA Corridor railway network corresponds mostly to the Baltic-Adriatic Rail Freight Corridor [Bugayevskiy and Snyder 1995, Derudder 2006, Burrough and McDonnel 1998, Cohen et al., 2002].

The length of Orient / East-Med Corridor infrastructure sums up to approximately 5,900 km (rail), 5,600 km (road) and 1,600 km. The number of core urban nodes along the Orient/East Med corridor is 15, with the majority located in Germany and Greece, as well as one per other Member State. The same number applies for core airports, from which 6 are dedicated airports to be connected with high-ranking rail and road connections until 2050. Furthermore, 10 Inland ports and 12 Maritime ports are assigned to the corridor, as well as 25 Road-Rail terminals. Several segments of the Orient/East Med Core Network Corridor are coinciding with other of the 9 Core network corridors, such as the Rhine-Danube Corridor and on shorter sections, the North Sea/Baltic corridor, the Scandinavian-Mediterranean corridor and the Baltic Adriatic corridor [Crevoisier and Carnagni 2000, Cohen-Blankshtain and Nijkamp 2004, Castells 2001, Choi et al. 2006, Castells 1989].

The Rhine-Alpine Corridor stretches from the northern seaports in The Netherlands and Belgium to the Mediterranean basin in Genoa right through most of the important and economically strong urban regions of Europe. Countries directly involved are Netherlands, Belgium, Germany, Switzerland, Northern Italy and the eastern part of France, namely the Strasbourg area and Luxembourg. Altogether, more than 70 million people are living, working and consuming in the catchment area of the Rhine-Alpine Corridor. Lading manufacturing and trading companies are located along the corridor with production plants and distribution centres. Important industries are the steel industry, chemical and petroleum industry, car producers as well as power plants. The river Rhine is an important route for the containers and the transport of bulk commodities especially between the North Sea ports and Germany, France and Switzerland [Derudder and Taylor 2005, Gastner and Newman 2005, Doyle et al. 2005, Friedmann 1986] The Atlantic Corridor links the Iberian Peninsula ports of Algeciras, Sines, Lisboa, Leixões (Porto) and Bilbao through western France to Paris and Normandy and further east to Strasbourg and Mannheim. With a priority attention given to high speed rail lines and parallel conventional ones, the corridor will provide for the continuity of the rail network between the Portugal, Spain, France and Germany. The Atlantic Corridor has a relevant maritime dimension since it is linked to the crossroad of global maritime routes notably toward North and South America, Neighbourhood countries and Africa.

The Rhine-Danube Corridor is the main east-west link between continental European countries connecting France and Germany, Austria, Slovakia, Hungary, Croatia, Romania and Bulgaria all along the Main and Danube rivers to the Black Sea by improving rail and inland waterway interconnections. The parts in the Czech Republic and Slovakia are also
covered by the Rail Freight corridor. The Member States Bulgaria and Croatia are only included in the Inland Waterways corridor. This concerns ports and inland waterways of the rivers Danube and Sava [Derudder et al. 2003, Gorman and Kulkarni 2004, Derudder and Witlox 2008, George 1968]. The Mediterranean Corridor will link ports in the south-western Mediterranean region to the Ukrainian border with Hungary, following the coastlines of Spain, France, and crossing the Alps towards the east. Given its nature, the Mediterranean corridor is expected to become a major European corridor, linking South-Western and Eastern EU countries. In particular, it represents a key access gateway to Ukraine and therefore it has a high potential in diverting part of the Western Europe-Asia traffic flows, which presently are ensured by the road mode. Therefore, the traffic development along this corridor has to be interpreted also in terms of significant potential increase in the rail market share and the consequent reduction of environmental externalities in terms of reduction of gas emissions and roads and highways congestion [Derudder and Witlox 2005, Gillen and Morrison 2005, Gottmann 1983].

**FIRMS STRATEGIES**

As a center of intersection of several Corridors, Hungary can become a global hub. This connection has a potential to develop a partnership between the two convenient Intermodal freight hub, the airport and sea port, for the inter-modality of transport of goods. In fact, the two intermodal freight hubs are reciprocally connected for both the inter-modality and partly because the goods that arrive at the port of Trieste can be routed on the intermodal freight hub of Budapest where they can be processed and distributed later. The rail corridors for the interconnection between the EU Countries and Eastern Countries will give Budapest the role of bridge between the old and the new Europe. Another element of high strategic value is represented by the existing connection between Budapest and the port of Trieste [Grubesci and O’Kelly 2002, Hendricks et al. 1995]. Long-distance flights could arrive in Budapest where the discharged goods could be sent to final destinations through regional flights or trains or other conveyances. At the aim Cargo Airports will be able to fully meet the needs of many airlines and many logistics operators because, not having to share the space with services for passengers, there is more availability of free slots for the storage of the goods, and the surrounding transport infrastructure such as rail or roads, they are fully dedicated to the support of logistics activities [Malecki and Wei 2009, Townsend 2001, Salvatori 1987].

Another important element of high strategic value is Cargo City. It’s a great strategic infrastructure for managing and handling of new freight traffic volumes expected in an area of strong growth as Budapest. It is an innovative structural, logistic, security and technology project [Graham 1998, Grubesic and Murray 2006, Hepworth 1989, Cantwell and Lammers 1999, Chon 2004]. Another relevant element is Distripark and European Distribution Center. The Distripark has to be an advanced logistic platform that can also be a link between industry and services. Inside the Distripark there must be warehouses, management services, information technology and telecommunications services, but also sheds where manufacturing activities can be carried out to transform semi-processed and final products to enter foreign markets [Haggett 1965, Peet and Thrift 1989, Keeling 1995, Williams and Bala 2009]. The last elements are Free Trade Zone aimed at promoting import/export, trade and the opening of the national economy to the outside world. The free trade zone serves to encourage trade and foreign investment [Salvatori 1994, Malecki 2002a, Salvatori 1991, Li et al. 2005, Trans and Gillespie 2009, Shy 2001]. It must provide business well-endowed of comfort, services and communications infrastructure needed to open a business and meet the needs of investors, in addition to the exemption from taxes and customs duties and no duties on exports and imports. The main objective of free trade zones is to attract foreign direct

As Budapest will become the center of a new route, there will be a host of opportunities for logistics service providers of all European countries. The creation of the intermodal freight hub Budapest and its regional production and logistics platform can really change the face of logistics, generating great investment opportunities for all companies wishing to settle and participate in this project [Lee 2009, Wheeler and O'Kelly 1999, Zook and Brunn 2006]. Through this the intermodal freight hub products and goods arrived from many areas of the world may be processed, re-exported and distributed in the markets of Central and Eastern Europe, with considerable savings on duties and customs procedures [Patuelli et al., 2007, Rutherford et al., 2004, Malecki 2002]. Companies have to adapt to the local markets where they wish to expand. Logistics service providers have to take a targeted approach, which will require taking an active part in the design process of new transport corridors, developing adequate structures and pricing systems and initiating and building logistics clusters. Logistics service providers should adapt their firms to changes driven form TEN-T (Rimmer 1998, O'Kelly and Grubesic 2002, Malecki 2004). However, not every firm will be able to increase its range of value-added service offerings, due to financial restrictions or lack of capabilities. Multinationals will accelerate the increase in professionalism of the logistics industry. Through cooperation, joint ventures or by following the lead of competitors who have established such practices, even small and medium size firms can increase their level of automation and implement a broader range of value-added services.

CONCLUSIONS AND DISCUSSION

The Trans-European transport network provides the basis for the balanced development of all transport modes in order to exploit their respective advantages, thereby maximizing the network’s value added for Europe. One of the key components of the TEN-T is the concept of comprehensive network and core network. The first one aims to ensure full coverage of the EU and accessibility of all regions, while the second one aims to prioritize the most important links and nodes of the TEN-T. Both of them include road, rail, air, inland waterways and maritime transport, as well as intermodal platforms. They will affect 83 main European seaports, by rail and road links, 37 airports by rail links to major cities, 15,000 km of rail lines converted to high speed and 35 large cross-border projects to reduce bottlenecks.

Core network corridors should be intermodal and cross at least three Member States, and if possible, they should establish a connection with a maritime port. The Core network corridors should help to develop the structure of the core network in such a way as to address bottlenecks, enhance cross border connections and improve efficiency and sustainability. They should also address wider transport policy objectives and facilitate interoperability, modal integration and multimodal operations. As Hungary becomes the center of a new route, there will be a host of opportunities for logistics service providers of all European countries. Companies must be willing to adapt to the local markets where they wish to expand. Logistics service providers will need to take a targeted approach, which will require taking an active part in the design process of new transport corridors, developing adequate structures and pricing systems and initiating and building logistics clusters. The creation of the intermodal freight hub Budapest and its regional production and logistics platform can really change the face of logistics, generating great investment opportunities for all companies wishing to settle and participate in this project.
REFERENCES


7. Aydalot P. (1986); Milieux innovateurs en Europe – Innovative environments in Europe, Paris, GREMI.


50. George P. (1964), La Géographie active, Paris, PUF.

51. George P. (1968), L’Action Humaine, Paris, PUF.


81. Williams A.M., Bala V. (2009), Low-cost carriers, economies of flows and regional externalities Regional Studies 43, 677–691.


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