EAST WEST TRANSPORT CORRIDOR

REPORT

Knowledge development

Position paper

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Since 1st May 2004 the South Part of the Baltic Sea Region (BSR) has become one of the fastest growing economies in the EU. The economies of these countries have grown in the last ten years. Cheap work force and entrepreneurship were basic advantages of the region. EU integration gives a new positive impact for the region's economical growth. There has been an increase of foreign investments, and support of structural and cohesion funds. However, the free labour market which was opened up for people of the new EU member states has a negative impact for region development. One of the strongest advantages; cheap work force, became more expensive because of economic migration. Over time, a lack of work force cause gradually increasing salaries. So **knowledge based economy** is a new look on competitiveness advantages.

New technological approaches and **know how** are very important in the transport sector for best decisions. In the years 1994-2005 the trend of growth of freight transports corresponded to growth of GDP. Furthermore, freight transport demand grew more than GDP. In case of chaotic and unbalanced increases in freight, existing transport infrastructure will be not enough for satisfying the transport demand. The negative environment impact grew too. New intelligent schemes of transport planning and operation are necessary.

The **practical tests** of new transportation schemes are very expensive. The changes in transportation schemes mean changes mostly in the supply chains. If the results of new schemes are negative then nobody will cover losses. That is the reason why manufacturers, logistic and transport service providers don't want frequent changes in logistics chains. The are other ways practical tests could give inadequate results. If in a practical test a small piece of freight is sent by a new route; there may not be enough of a critical mass which could then itself be the reason of failure. This is especially likely to occur when talking about intermodal concepts or long distance transportation. A possible third cause of failure of practical tests is secrecy. Companies don't share experience with others.

Best practice in corridor development collection is an important part of overall knowledge development. Best practice dissemination could help decision makers better understand how a multimodal transport system in corridors works, and how the performance of the specific corridor transport system responds to infrastructure improvements. Clarifying best practices should be a platform for the East West Transport Corridor project.

For the selection of **best practices** for different types of transport modelling, the status of transport modelling in southern part of the BSR will be overviewed and the main obstacles in developing and applying transport modelling along the corridor will be clarified. Review of existing major infrastructure projects is also a part of best practices. Networking with other corridors, hubs and logistics centres and identification of relevant connections to East and West (China, Black and North Sea region, UK and BeNeLux) should be analysed. A common basis is to be used for modelling the infrastructure in the East-West corridor.

Transport **modelling** and **simulation** are the cheapest ways to **check new transport schemas**. For the best results of simulation close collaboration of the research institution, business and public authorities is necessary. Universities and similar research institutions could create the models to adequately determine which business needs should be evaluated. The uncertainty is the main bottleneck in transport modelling. Certain conditions for modelling should be collected. The first part of conditions is physical or technical (roads, terminals, capacities), the second part of conditions is political (protection of markets, national safety interests etc.), the third part of conditions is economical (prices, agreements, discounts), the fourth part of conditions is juridical (legal acts, restrictions etc.). Evaluations of each condition are as important as evaluations of interactions between conditions (e.g. political decision could influence price for using public infrastructure).

Simulation and **visualisation** tools should also support the decision process. Visualisation will illustrate the performance of a multi-modal transport corridor very well. Recommendations on how to integrate the use of the simulation models into corridor planning and inter-regional infrastructure decision making is also a part of the project, which will clearly connect academic, business practice and political decision makers' areas. The other outputs of research activities will be guidelines for business development such as timetables optimisation, pricing policy that could be helpful for transport companies (stakeholders).

The main output of simulation should be increased understanding of the dynamic properties of the corridor. To make the results of the simulation easier to understand, a visualisation of the model, including digital network in geographical information system of the current infrastructure, will be prepared.

Academic cooperation among different countries along the East West Transpoort Corridor should be with a background of wide thinking. Academicians are not involved in business activity; they are disinterested in narrow needs of some business. Business have different goals, different philosophy and are constricted by reticence and commercial secrets. Open thinking should help to **balance different interests** of business and to find better solutions for stakeholders. Moreover, different interests exist not only in companies, but also at the transnational level.

For adequacy of theoretical models practical data are necessary. Cooperation between research institution and business should ensure it. Specifying the demands of business is the starting point of the modelling. Macro level analysis of the corridor should consist of the following tasks: First, in order to clarify business demands, crucial stakeholders and their objectives should be evaluated. The second important task is data collection and analysis of infrastructure along the corridor (terminals, hubs, logistics centres and transhipment technologies, and communication network). It will substantiate possible throughputs of the corridor. The third, is analysis and evaluation of the regulative legal framework for development of the transport sector along East West Transport Corridor. Finally, the fourth step of pre-modelling is analysis of regional profiles along the corridor.

The results of academic activities should be a meaningful part in the strategy of the East West Transport Corridor. The high quality recommendations for improvements of intermodal transport concepts in the corridor should be closely aligned with the overall objectives of the East-West project.

The data necessary for common model such as infrastructure, freight flows are non-standardised in different countries. Seeking a 100% interregional comparability of infrastructure and infrastructure project data for road, rail and sea in the East West Transport Corridor should be the goal. Determination of a suitable number of corridor development alternatives should be based on the project database. Collection and defining of **performance metrics** relevant for the corridor at operational level e.g. time, reliability, and environmental impact, makes for better understanding of the objective of modelling.

Micro-level simulation of the transport corridor is a tool for better understanding the performance of the corridor and the objects which influence it. The performance of the East West Transport Corridor is important to evaluate from the different perspectives of the stakeholders involved and using different measures. The comparison of the corridor to competing transport solutions according to several criteria is also necessary. For the corridor simulation it is important to define the architecture of the simulator model and decide the level of detail including characteristics of objects to be micro simulated. Simulation scenarios for micro based simulation will be refined by researchers taking into account the opinions of practice/business. The results of modelling and simulation should be evaluated by users.

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