

NEW REGIONAL CONTEXT OF TRANSPORT FACULTIES COLLABORATION

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Abstract

This paper describes subsidiary objectives of transport related academic and research collaboration. New policy context of implementation of strategic goals of transport development influences also new prospect of transport sciences resources networking. Strategy Europe 2020, regional development framework, especially Danube Strategy, policy extension to South Eastern Europe and Western Balkan region, all of that influence huge need for strengthening of transport faculties network and possible new clustering model of their joint academic and research activities.

Introduction

The role of the transport system in keeping up with the requirements for free movement of goods, people (labour), services and capital is irreplaceable. Therefore, the main function of the transport system is to insure area integration and social cohesion, as well as economic (market) integration. Strategic planning understands identification of relevant goals of long-term development that serve as input-guidelines of the transport policy and the origin of adopting the development guidelines and decision-making in the governmental executive bodies.

Strategic goals of the transport development in Europe are – forming the Trans-European transport network, fair pricing in transport, environmental protection, transport safety, social cohesion and strengthening of the transport market.

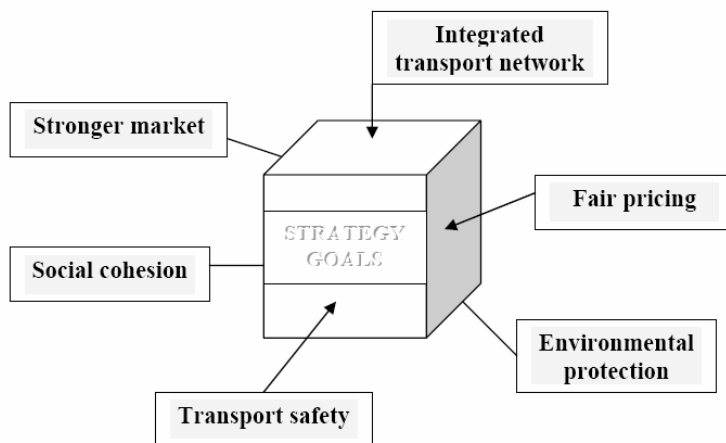


Figure 1. Strategic objectives of European transport development

In the analysis of strategic goals of the transport development some non-transport syllabuses can be observed, e.g. ecological and social. These are subsidiary goals that indirectly dictate the transport system development – targeted development based on the sustainability principle, concretely induction of the transport demand as function of ecological balance and poly-centricity of transport network development.

The problem of social cohesion was actualized in the eighties by Greece and Spain joining EU, so that the establishing of the cohesion funds insured extra means for the transport connection of these allocated member countries, in order to establish equal conditions of market competition and basic movement freedoms of people, goods, services and capital.

Implementation of goals of the transport development primarily assumes regulatory autonomy of the transport sector and consistent inter-sector cooperation, in order to insure efficiency in the key aspects: regulatory policy, transport management, investment policy, tax and price policy, physical planning and social policy.

Strategy Europe 2020 and related flagship initiatives

Europe could not address globalisation processes effectively without joint acting and close economic policy coordination of member states. The Europe 2020 Strategy¹ therefore sets out a vision for Europe's social market economy for next decade, which presents clear and realistic objectives and identifies three key drivers for growth to be implemented through concrete actions at EU and national levels:

- smart growth - fostering knowledge, innovation, education and digital society,
- sustainable growth – assure resource efficient production while boosting competitiveness,
- inclusive growth - raising participation in the labour market, the acquisition of skills and the fight against poverty.

Implementation progress of these objectives will be referred to five representative headline targets, which EU countries need to adopt as national targets:

- 75 percent of the population aged 20-64 should be employed.
- 3 percent of the EU's GDP should be invested in R&D.
- The “20/20/20” climate/energy targets should be met.
- The share of early school leavers should be under 10 percent and at least 40 percent of the younger generation should have a degree or diploma.
- 20 million less people should be at risk of poverty.

¹ Europe 2020: A European strategy for smart, sustainable and inclusive growth - COM(2010) 2020

In responding to desired targets, proposed Europe 2020 agenda including series of flagship initiatives, which implementation is a shared priority, and mutual action is required at all levels - EU organisations, national, local and regional authorities:

- Innovation Union - re-orienting research, development and innovation policy on major challenges, while closing the gap between science and market to turn inventions into products;
- Youth on the move - enhancing the quality and international attractiveness of Europe's higher education system by promoting student and young professional mobility. By concrete action, vacancies in all member states should be more accessible through out Europe and professional qualifications and experience properly recognised;
- A digital agenda for Europe - delivering sustainable economic and social benefits from a digital single market based on ultra fast internet. All Europeans should have access to high speed internet by 2013;
- Resource-efficient Europe - supporting the shift towards a resource efficient and low-carbon economy expressed in terms of energy production, efficiency and consumption.
- An industrial policy for green growth – helping the EU industrial base to be competitive in the post-crisis world, promoting entrepreneurship and developing new skills. This would create millions of new jobs;
- An agenda for new skills and jobs – creating the conditions for modernising labour markets, with a view to raising employment levels and ensuring the sustainability of social models;
- European platform against poverty - ensuring economic, social and territorial cohesion by helping and enabling the poor and socially excluded to be active in society.

The role of transport sector can be recognised as objective element or implementation instrument in all of priority flagship initiatives in both of causal and functional sense.

European Commission Green Paper “From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding”

New Green Paper² opened a public communications on the key issues to be taken into account for future EU research and innovation funding programmes, which will be part of the Commission's proposals for the next Multi-annual Financial Framework (MFF). Delivering on the Europe 2020 objectives of smart, sustainable and inclusive growth depends on research

² Green Paper “From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation funding”, COM(2011) 48.

and innovation as key drivers of social and economic prosperity and of environmental sustainability. This is why the European Union has set itself, in the context of the Europe 2020 strategy, the objective to increase spending on research and development to reach 3 percent GDP by 2020. The Innovation Union flagship initiative³ advocates a strategic and integrated approach to research and innovation.

The future EU funding programmes need to focus more on Europe 2020 priorities, address societal challenges and key technologies, facilitate collaborative and industry-driven research, streamline the instruments, radically simplify access, reduce time to market and further strengthen excellence.

EU Budget Review⁴ proposed that the full range of EU instruments for research and innovation work together in a Common Strategic Framework, and in February 2011 European Council supported this concept to improve the efficiency of research and innovation funding at national and EU levels. In this context there are important links to other EU programmes, notably with the future Cohesion policy funds and Education programmes.

In line with the priorities of the Europe 2020 strategy, the Common Strategic Framework will focus on addressing societal challenges, encouraging the competitiveness of Europe's industries and the excellence of its scientific and technological base.

Public research and innovation funding in Europe is primarily organised at the national level. National and regional governments work according to their separate strategies that lead to costly duplication and fragmentation. Therefore EU actions need to assure better linkage of research and innovation resources, which will provide the opportunity to generate greater efficiencies and synergic impact. This could build on the current joint efforts between member states, industry and the EU, as for instance in the Strategic Energy Technologies (SET)-Plan, the ICT Joint Technology Initiatives (JTIs) and the expected Strategic Transport Technology Plan.

The Common Strategic Framework would cover all relevant EU research and innovation funding currently provided through FP7⁵ and CIP⁶ and EU innovation initiatives such as the EIT⁷ on the basis of coherent goals and shared strategic objectives.

³ Europe 2020 Flagship Initiative Innovation Union - COM(2010) 546.

⁴ The EU Budget Review - COM(2010) 700.

⁵ The Seventh Framework Programme (FP7) with its budget of 53.3 billion euro supports research, technological development and demonstration activities across the EU. Its activities are implemented under four Specific Programmes: Cooperation, Ideas, People and Capacities; it also supports research in nuclear energy (Euratom) and the Joint Research Centre (JRC).

⁶ The Competitiveness and Innovation Framework Programme (CIP) has a budget of 3.6 billion euro and aims to encourage the competitiveness of European industry, with SMEs as its main target. It promotes access to finance and supports the development of better innovation support services and policies. It funds trans-national business

Experiences with pooling national resources such as ERA-Nets and the first steps towards Joint Programming Initiatives have demonstrated the potential impact and efficiencies offered by leveraging other public sources of funding. Their effectiveness in great measure depends on strong commitments, also in financial terms, from national and regional public authorities.

An important role needs to be played by the future Cohesion policy, which serves to build research and innovation capabilities at the regional level through smart specialisation strategies, yet within the context of the EU broader policy objectives. The Commission Communication on the future of Cohesion policy⁸ points to reinforce strategic planning, increased concentration of resources and greater use of conditionality and incentives to enable a stronger impact on Europe 2020 priorities including research and innovation. The Common Strategic Framework for EU research and innovation funding need to be complementary with the future Common Strategic Framework for cohesion policy.

Europe needs to better performance in creating impact from research and innovation funding while obstacles still remain in transferring research outcomes from the laboratory through to the development, commercialisation and application phases. The Innovation Union flagship initiative indicated that industry has an essential role in setting priorities and through public private partnerships.

FP7 introduced novel approaches to strengthen industry participation. The European Technology Platforms (ETPs) helped define industry relevant priorities. The Joint Technology Initiatives (JTIs) put industry in the driving seat through establishing formal public private partnerships.

The mission of the ETPs has been to define Strategic Research Agendas (SRAs), addressing the challenges facing the particular sectors they represent. In the transport sector, ETPs have already made major strides in that direction and have provided fundamental input in the development of the specific FP7 work programmes.

and innovation support services. It addresses clusters, public procurement and non-technological barriers to innovation. It helps developing the information society by stimulating take-up and use of ICT and promotes the increased use of renewable energies and energy efficiency.

⁷ The European Institute of Innovation and Technology (EIT) is an autonomous EU body bringing together the higher education, research and business sectors to stimulate worldleading innovation. Through its highly integrated Knowledge and Innovation Communities (KICs) it strengthens links across the knowledge triangle. The EIT's flexibility aims at making it attractive to the business sector. A contribution of 309 million euro was provided to the EIT from the EU budget.

⁸ Conclusions of the fifth report on economic, social and territorial cohesion: the future of cohesion policy - COM (2010) 642.

The transport research Technology Platforms are the Advisory Council for Aeronautics Research in Europe ACARE, the European Rail Research Advisory Council ERRAC, the European Road Transport Advisory Council ERTRAC, and WATERBORNE.

By setting out clear and coherent research agendas, the ETPs are helping to identify and support the most compelling European projects, focusing efforts on real and present European challenges. There has been no single approach, each ETP developing its own procedures for dealing with specific problems in specific sector, but interaction among the ETPs is now increasing, helping to identify areas of common, cross-platform interest, and with the ETPs playing an increasing role in the development of national, regional and European research strategies.

Towards the Strategic Transport Technology Plan

The Strategic Transport Technology Plan (STTP) will provide a strategic framework for research, development and deployment that respond to policy needs. The technology areas, which will be covered within are articulated as a comprehensive set of technologies, methods and practices with a shared focus on application. It encompasses all elements of the research and innovation chain - from research and demonstration to market take-up and standardisation.

A basis for the STTP is the European Commission's vision for environmentally sustainable, affordable and safe mobility that will be outlined in the new Transport White Paper. The STTP will look at technology from a broad perspective and take into account the impacts of technology on the transport system.

The STTP will identify and define transport research and technological development and innovation (RTDI) priorities both from the perspective of transport policy and RTDI policy. The STTP roadmaps will define key technology areas where action at EU level has added value in leveraging the role of other stakeholders, including the industry. It will address all transport modes as well as cross-modal issues, identify areas for RTDI for the next Framework Programme and predict the needs in a medium time horizon (2025/2030).

The STTP package is foreseen for adoption by mid 2011. It will consist of a Commission Communication, an Impact Assessment Report and Commission Working Papers dealing with:

- the initial roadmaps for key technology areas,
- the state of the art in European transport technology and prospects,
- research and innovation undertaken by Member States and industry (Capacity Map).

European Commission White Paper “Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system”

On 28 March 2011, European Commission adopted new White paper⁹ which follow strategic guidelines of Europe 2020 Strategy and related flagship initiatives.

A Single European Transport Area has to respond policy request to facilitate the movements of citizens and freight, reduce costs and enhance the sustainability of European transport. The Single European Sky needs to be implemented as foreseen, and already in 2011 the Commission intend to address the capacity and quality of airports. The area where bottlenecks are still most evident is the internal market for rail services, which has to be completed as a priority in achieving a Single European Railway Area. This includes the abolishment of technical, administrative and legal obstacles which still impede entry to national railway markets. A further integration of the road freight market will render road transport more efficient and competitive. For maritime transport, a “Blue Belt” in the seas around Europe shall simplify the formalities for ships travelling between EU ports, and a suitable framework must be established to take care of European tasks for inland waterway transport. Market access to ports needs to be further improved.

The ten goals for a competitive and resource efficient transport system - benchmarks for achieving the 60 percent GHG emission reduction target are:

- Developing and deploying new and sustainable fuels and propulsion systems
 - (1) Halve the use of „conventionally-fuelled“ cars in urban transport by 2030; phase them out in cities by 2050; achieve essentially CO₂-free city logistics in major urban centres by 2030.
 - (2) Low-carbon sustainable fuels in aviation to reach 40 percent by 2050; also by 2050 reduce EU CO₂ emissions from maritime bunker fuels by 40 percent (if feasible 50 percent).
- Optimising the performance of multimodal logistic chains, including by making greater use of more energy-efficient modes.
 - (3) 30 percent of road freight over 300 km should shift to other modes such as rail or waterborne transport by 2030, and more than 50 percent by 2050, facilitated by efficient and green freight corridors. To meet this goal will also require appropriate infrastructure to be developed.
 - (4) By 2050, complete a European high-speed rail network. Triple the length of the existing high-speed rail network by 2030 and maintain a dense railway network in all Member States. By 2050 the majority of medium-distance passenger transport should go by rail.

⁹ Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system - COM(2011) 144

(5) A fully functional and EU-wide multimodal TEN-T ‘core network’ by 2030, with a high quality and capacity network by 2050 and a corresponding set of information services.

(6) By 2050, connect all core network airports to the rail network, preferably high-speed; ensure that all core seaports are sufficiently connected to the rail freight and, where possible, inland waterway system. Increasing the efficiency of transport and of infrastructure use with information systems and market-based incentives.

(7) Deployment of the modernised air traffic management infrastructure (SESAR) in Europe by 2020 and completion of the European Common Aviation Area. Deployment of equivalent land and waterborne transport management systems (ERTMS, ITS, SSN and LRIT, RIS). Deployment of the European Global Navigation Satellite System (Galileo).

(8) By 2020, establish the framework for a European multimodal transport information, management and payment system.

(9) By 2050, move close to zero fatalities in road transport. In line with this goal, the EU aims at halving road casualties by 2020. Make sure that the EU is a world leader in safety and security of transport in all modes of transport.

(10) Move towards full application of “user pays” and “polluter pays” principles and private sector engagement to eliminate distortions, including harmful subsidies, generate revenues and ensure financing for future transport investments.

Regards to European Transport research, innovation and deployment strategy „growing out of oil“ will not be possible relying on a single technological solution. It requires a new concept of mobility, supported by a cluster of new technologies as well as more sustainable behaviour. Technological innovation can achieve a faster and cheaper transition to a more efficient and sustainable European transport system by acting on three main factors:

- vehicles’ efficiency through new engines, materials and design;
- cleaner energy use through new fuels and propulsion systems;
- better use of network and safer and more secure operations through information and communication systems.

The synergies with other sustainability objectives such as the reduction of oil dependence, the competitiveness of Europe’s automotive industry as well as health benefits, especially improved air quality in cities, make a compelling case for the EU to step up its efforts to accelerate the development and early deployment of clean vehicles.

Transport research and innovation policy should increasingly support in a coherent way the development and deployment of the key technologies needed to develop the EU transport

system into a modern, efficient and user-friendly system. In order to be effective, technological research needs to articulate holistic approach, taking care of infrastructure and regulatory requirements, coordination of multiple actors and large demonstration projects to encourage market take-up.

The Commission intend to prepare an innovation and deployment strategy for the transport sector, complemented with the Strategic Energy Technology Plan (SET-plan), identifying appropriate governance and financing instruments, which have to ensure a rapid deployment of research results.

This connote analogly the deployment of smart mobility systems developed through EU-funded research, such as the air traffic management system of the future (SESAR), the European rail traffic management system (ERTMS) and rail information systems, maritime surveillance systems (SafeSeaNet), River Information Services (RIS), intelligent transport systems (ITS), and interoperable interconnected solutions for the next generation of multimodal transport management and information systems (including for charging). It will also require an investment plan for new navigation, traffic monitoring and communication services. Of equal importance is research and innovation in the field of vehicle propulsion technologies and alternative fuels (Green car initiative, Clean Sky).

Innovation and deployment need to be supported by regulatory framework conditions. Protection of privacy and personal data will have to develop in parallel with the wider use of information technology tools. Standardisation and interoperability requirements, including at international level, will avoid technological fragmentation and enable European businesses to fully benefit from the entire European transport market, and to create worldwide market opportunities.

South-Eastern Europe and Western Balkan Region

As support to the processes of economic reforms and growth in the countries of Central and South-Eastern Europe, regional initiatives of transport connections have been started. The relevant regional initiatives include:

- Initiative for cooperation in Central-Eastern Europe – SECI
- Stability Pact – program of facilitating trade and transport in South-Eastern Europe
TTFSE
- Central-European Initiative CEI
- Memorandum of Understanding on the development of regional transport network in South-Eastern Europe – SEETO

Transport Observatory for region of South East Europe has established in Belgrade with main task to define a regional core transport network and coordinating development plans, especially within the context of European integration processes.

Analogue to the TINA project, which was completed in 1999, an whole series of projects was initiated for determining the regional transport network for South-Eastern Europe and the evaluation of the required investments – Transport Infrastructure Regional Study (TIRS) and Regional Balkans Infrastructure Study (REBIS) were used as the basis to start the SEETO program of defining the basic regional transport network for South-Eastern Europe.



Figure 2. South East Europe Core Transport Network

Following the signed Memorandum of Understanding, a multi-annual plans of SEETO network development have been adopted, which define the priorities for Albania, Bosnia and Herzegovina, Montenegro, Croatia, Macedonia and Serbia. The specific feature is that this network, apart from the sections of Pan-European corridors in the region, includes also a certain number of routes of regional significance. SEETO network is the basis for prioritization of the infrastructure transport development projects, which are financially covered by the sources from pre-accession funds – ISPA strategy and the new IPA program. The specificum of this region is existing of three Transport Faculties which potential research and education networking would in great measure contribute to appropriate regional transport development.

Conclusion - Clustering of Transport Sciences Resources

The renewed strategic approach to future transport development in Europe will influence a radical policy shift to a long time declared readiness for sustainable development. Such a defined strategic agenda will change also the traditional methodology of research and innovation policy, introverted to national and local strategies of interest. Within the framework of the Strategic Transport Technology Plan, all available research and education resources are invited to participate in a broad network under an umbrella of transport-related technology platforms as well as consortium partners within regional clusters. The benefits, which can be expected within the upcoming Commission transport innovation policy, refer to easy access possibilities to research programmes and stronger commitment obligations of national public and governmental sectors. Transport faculties traditionally have close relations with the transport operational sector and industry, so a new holistic approach of cross-sector strategy planning would assure better networking and funding possibilities also for transport research and educational profiles. On a regional level, that means also a challenge of knowledge clustering and joint acquisition of research and education projects in regional programmes of mutual interest.

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