Transport and Communications Architecture 2030 and 2050

Funding: National (Finland)
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Status: Complete with results

Background & policy context:
Transport and communications networks are the backbone of modern society. They have developed to meet the changing needs of commerce and citizens. Thanks to technological breakthroughs, transport and communications have brought about a radical improvement in productivity throughout society. In autumn 2016, the Ministry of Transport and Communications appointed a group of rapporteurs to draw up a vision of the state of the transport and communications system in the years 2030 and 2050, and to investigate ways of reaching the desired state.

Objectives:
The objective of this work was to create a vision of how bold development of the transport and communication system can create a favourable environment for Finnish well-being, competitiveness and the economy.

The assumption of the work is that, in the coming decades, a technological revolution will take place in transport and communications. Forecasting its content and impact is, however, an impossible task. For this reason, the working group has rather tried to create a vision of what kind of operating environment Finland should have in order to gain maximum benefit from it.

Transport and communication systems have principally developed separately from each other. As a result of digitalisation, they are integrating and in future will form a harmonised entity or architecture.

In this work, the main focus of attention has been the construction of the vision, as a result of which, instead of examining individual transport projects and different forms of transport, requirements and indicators of transport and communications architecture as a whole have been evaluated.

International and national emissions reduction targets concerning climate and environmental issues have been set such as they are as boundary conditions for this work. The development of transport and communications is not an absolute value, but its significance arises from the fact that it efficiently serves economic development and national wellbeing.

Transport and communications architecture has three basic aims:
1) to support economic growth and competitiveness,
2) to enable effective national transport and communications services, and
3) to create new business.

Other funding sources: Ministry of Transport and Communications

Partners:
Public–Private–People partnerships bringing cooperation to a new level. The transport and communications market of the future will have many new, as yet unknown, operators. The field of operators will become increasingly varied. At the same time as operators are competing with each other, they will also be engaging in increasing cooperation with their competitors. In order for traditional operators to maintain their productivity, they must find new strategic operating models and new products and services for the market. Though Public–Private–People partnerships, it will be possible to introduce new innovative services, technologies and bold test platforms for both domestic and
international experimentation. Finland has users, innovative companies and a favourable public sector ready for such experimentation. Innovative public procurements will promote the entry to the market of new operating models as well as better-targeted procurements from the start-up sector. Finland must make use of its exceptionally good prerequisites to develop quickly as a flexible platform for experimentation. Diverse cooperation models must also be applied in transport and communications infrastructure investments and service development. Society has a responsibility for overall architecture but, in its implementation, the private sector is playing an increasingly important role. The private sector could participate more extensively in the development and funding of infrastructure as a partner to the public sector. On the other hand, users can participate in providing the services they use, for example by offering their data for the use of service providers. Each party then benefits from cooperative models.

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### Key Results:

1. New revolutionary technological breakthroughs that will transform the current transport and communication systems are about to happen globally.
2. Traditional traffic and digital solutions will merge.
3. Data will become the primary factor of production and competition.
4. Finland's greatest opportunities lie in quickly and comprehensively utilising the technological solutions being created globally.
5. These opportunities must be seized, as this would allow Finland's particular challenges in internal and external accessibility to be overcome in a sustainable manner.
6. Finland must make radical changes to its existing structures, operating models and decision making.
7. The objective must be to make Finland the global leader of intelligent transport ecosystems.
8. This requires investment, readiness for change, risk-taking, new skills and a culture of experimentation.
9. Succeeding in this would bring sustainable economic growth, create new business and enable high-quality transport and communications services for citizens.
10. This change must be brought about in a way that benefits every Finnish citizen.

The report describes the dynamics and components of a functional transport and communications architecture: technology and knowledge, skills, infrastructure, pricing and taxation, regulation, safety, accessibility, open interfaces, risk-taking and market pioneering, public-private-people partnerships, and decision-making.

**Documents:**  
[Reports 8-2017 Transport and Communications Architecture 2030 and 2050.pdf](#)  

**STRIA Roadmaps:** Network and traffic management systems  
**Transport mode:** Multimodal transport  
**Transport sectors:** Passenger transport, Freight transport  
Societal/Economic issues, Environmental/Emissions  
**Transport policies:** aspects