



# Transport revolution

International perspectives

## Ministry of Transport and Communications

### vision

Well-being and competitiveness through high-quality transport and communications networks

### mission

The Finnish Ministry of Transport and Communications seeks to promote the well-being of our people and the competitiveness of our businesses. Our mission is to ensure that people have access to well-functioning, safe and reasonably priced transport and communications networks.

### values

Courage

Equity

Cooperation

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Abstract

Transport Revolution is a development programme launched jointly by The Finnish Innovation Fund's Public Leadership and Management Programme and the Ministry of Transport and Communications, the Ministry of Employment and the Economy, the Ministry of Finance, the Ministry of the Environment, two national Transport Agencies, and two strategic centres for science, technology and innovation. The programme aims at developing a new mind-set for urban and transport planning and policies and policy implementation.

This study plotted the existence of initiatives and plans similar to those of Transport Revolution in other parts of Europe and beyond. The study material consisted of transport policy documents, an Internet survey and discussions with Finnish civil servants. Both researchers and civil servants responded to the survey.

The report presents the new perspectives, structures or practices identified from the material, under the four main headings: New governance and organisation structures of the transport sector; Increased efficiency of the transport sector; End-user based design of transport technologies and services; and New operational procedures to boost transport innovations.

In summary, the study revealed that individual themes or actions of the Transport Revolution programme have been planned and even implemented elsewhere, including many European countries, Canada and Australia. However similar renewal of the entire transport and urban planning culture has not been implemented anywhere else.

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## 1. Introduction

Transport Revolution is a development programme launched jointly by The Finnish Innovation Fund's Public Leadership and Management Programme and the Ministry of Transport and Communications, the Ministry of Employment and the Economy, the Ministry of Finance, the Ministry of the Environment, two National Transport Agencies and two strategic centres for science, technology and innovation (SHOKs of the built environment and ICT). The programme aims at developing a new mind-set for urban and transport planning and policies and policy implementation.

The purpose of the present background report was to explore whether models similar to Transport Revolution exist elsewhere in Europe and other continents. The material included a literature review, an online survey and expert consultations (Finnish experts at the Ministry of Transport and Communications). The literature review covered national transport policy documents from the Nordic countries, the UK, Ireland, Canada, the USA and Australia, and also the European Commission's recent White Paper on transport (2011). The online survey was sent to some 70 European and American transport experts through the ERA-NET TRANSPORT<sup>1</sup>, EPTR<sup>2</sup> and ECTRI<sup>3</sup> networks, including both civil servants and scientists. The number of responses received was 21, with reasonable geographical coverage: Austria, France, Germany, Greece, Hungary, Lithuania, the Netherlands, Norway, Spain, Sweden, Switzerland and the UK. Slightly over half of the respondents were scientists and the rest civil servants.

The body of the report consists firstly of a general discussion of the emerging themes of transport system development based on the literature review, online survey and consultations (chapter 2), followed by a more detailed discussion of specific themes. Chapter 3 consists of a summary of emerging approaches and policies, together with examples, grouped under the four key themes of Transport Revolution. While this chapter does not seek to present a comprehensive review of global changes in transport and urban planning, it provides an exhaustive discussion of the themes and details discovered in the course of the present study. Chapter 4 contains the key findings and conclusions relevant for the continuation of Transport Revolution.

A summary of the responses to the survey is given in Appendix 1, and a list of the key transport policy documents referred to by respondents is given in Appendix 2.

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<sup>1</sup> ERA-NET TRANSPORT is a project financed under the Seventh Framework Programme of the EU, networking national transport research programmes; its second stage is currently under way. Finland is a member of ERA-NET TRANSPORT, as are Sweden, Germany, Austria, France, Denmark, Norway, the UK, Poland, Belgium, the Netherlands, Switzerland and Greece. The project has been developing tools and procedures for international cooperation among transport research funding providers and has coordinated shared research needs and organised several international study searches. The Finnish parties involved in the project are the Ministry of Transport and Communications and the Finnish Transport Agency.

<sup>2</sup> The European Platform for Cooperation and Coordination in the Field of Transport Research (EPTR) comprises the national representatives on the programme committee for the transport theme in the Seventh Framework Programme and expert members who mainly represent national ministries and national transport research funding organisations. The EPTR seeks to influence European transport research and to lobby for the allocation of EU research funding so as to reconcile national views in order to improve the European transport system and its competitiveness. More than 30 EU Member States and associate member states are represented in the EPTR. The Finnish participants are the Ministry of Transport and Communications, the Finnish Transport Safety Agency (Trafi) and the Finnish Funding Agency for Technology and Innovation (TEKES).

<sup>3</sup> The European Conference of Transport Research Institutes (ECTRI) is an international non-profit association founded in 2003. Its members are 28 transport research institutes in 20 European countries. They employ a total of more than 4,000 transport research scientists. The purpose of ECTRI is to promote the improvement of European transport research by engaging in cooperation in ECTRI working groups, in EU Framework Programmes, and at international seminars and conferences.

## 2. New approaches in transport system development

### 2.1 Transport revolution

The first phase of Transport Revolution, planned and implemented in Finland in 2010 and 2011, generated a mind-map of new-generation transport and urban policy. This mind-map summarises the key message of Transport Revolution as follows:

*Transport Revolution refashions established conceptual and action models in transport and urban planning. Ensuring sustainable growth, competitiveness and wellbeing requires us to move away from the production-oriented social operating logic of the industrial age to the approaches and policies of a sustainable, human-oriented society. In this, infrastructure, travel and logistics are considered as services and as sources of added value and wellbeing. The challenge is to do better with less.*

The new approach focuses on users – people, enterprises and other organisations – and its key concepts are services and service levels. From the end user's point of view, 'service level' refers to the quality of a trip or a transport service. This, in turn, is a service construct made up of the offerings of several actors, and as such its content can be defined. The principal service types we are concerned with here are public transport services and market-based added value services.

The mind-map shows that reforms must be effected in four areas:

- transport and urban planning;
- transport system funding and user prices;
- service level acquisition; and
- service production.

In the new approach, political decision-making will involve not individual projects but the determining of a service level to be produced with public funding, a guarantee of functionality. The implementation of this service level will draw on a wide range of means and technologies, involving users in the planning, deployment and development of services.

### 2.2 Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system (European Commission White Paper 2011)

The recent White Paper on transport policy issued by the European Commission sets the central goal of reducing emissions of greenhouse gases from transport by 60% from the 1990 level by 2050. For attaining this goal, the White Paper sets out ten aims for the European transport system, focusing on:

- the development and introduction of new, sustainable fuels and means of propulsion;
- optimisation of the performance of multi-modal logistics chains;
- increasing the efficiency of transport infrastructure and services through information systems and market-driven incentives.

These aims are broad and consistent with the approach of the Transport Revolution model. More specifically, the following may be identified as similar aims or aspirations:

- clarifying the transport policies of the EU and its Member States (particularly in order to increase investments in transport systems by commercial stakeholders);
- a modern infrastructure, intelligent pricing and funding:
  - clear and transparent funding frameworks (both public and private funding, and PPPs);
  - appropriate pricing without bias (including the introduction of the 'user pays' principle);
  - more efficient leveraging of the transport system, for instance by improving information management and traffic flow management through 'smart traffic' means;
  - high level of quality and reliability for passenger and goods transports;
- integrated urban transport;
- faster piloting and introduction and shorter time to market of new technologies and services;
- Urban Mobility Plans (cf. the MALPE approach, p. 5).

### 2.3 Transport planning reforms

Smaller-scale reforms have been planned and are already underway in several European countries, but there are no reforms in progress to revolutionise the entire current operating model and culture, as far as could be determined through interviews and the literature review. The Netherlands, the Nordic countries and the UK have clearly taken the lead in transport reform. Currently ongoing changes in European countries are discussed in more detail in the theme-specific summary in chapter 3.

Beyond Europe, however, Canada and Australia are planning sweeping reforms of an orientation very similar to that of Transport Revolution, as the literature review indicates. A brief description of these schemes follows.

*Framework for National Transportation Policy 2008, Canada*  
<http://www.westac.com/pdfs/FrameworkNTP.pdf>

The private sector plays a significant role in the administration of the transport system in Canada, as it owns a major percentage of the infrastructure — including the railways, ports, airports and some of the motorways — besides managing the transport services using them. Because of the extensive private ownership, the provision of transport system services in Canada is market-driven. The national transport policy focuses on public-private cooperation in the development of the national transport system. Two key principles are given for this development. The first is "Maximise the capability of the transportation network", its objectives being:

- Improve the operations and efficiency of the existing system (including new privatisation, pricing and service provider cooperation policies);
- Strategically expand the capacity of the system by exploring new models (including PPP and new funding strategies);
- Ensure the availability of a skilled labour pool to meet the industry's needs;
- Ensure statutory, regulatory, and institutional regimes support a strong system;
- Proactively identify and address emerging transportation needs.

The second principle is "Earn public support through socially responsible behaviour", whose objectives include minimising adverse environmental and safety impacts and engaging and educating the public about the need for a strong transportation system.

*National Transport Plan 2008, Australia*

<http://www.ntc.gov.au/viewpage.aspx?documentid=1750>

The National Transport Plan formulated in Australia outlines a transition from the old planning culture to a new one. Key items in this are shifting the focus from mode-specific, transport-based infrastructure planning to a more efficient use of the existing transport network and long-term planning highlighting not only economic values but also environmental values and safety. The importance of public-private cooperation is also emphasised, especially in infrastructure construction but also in the development and deployment of transport pricing models. There are five key points in the plan:

- Infrastructure Pricing – Sending the appropriate signals to influence supply and demand for infrastructure;
- Competitive Markets – Establishing competitive markets wherever possible to minimise the need for regulation;
- Private Sector – Involve the private sector, where it is efficient to do so, in delivering outcomes;
- National Regulation – A national perspective should be adopted where regulation is required;
- Customer – Customer focused. Equitable access for all users.



### 3. Notes on international trends with reference to the key themes of Transport Revolution

#### 3.1 New models for administration, management, partnership and organisation in the transport sector

*The core idea of Transport Revolution is to bring together the interests of various administrative sectors and levels of administration into a shared agenda, not to change the organisational structures themselves. The mind-map proposes a new strategic planning model that empowers various actors, integrating the potential and requirements of land use, housing, transport, the service structure and the business sector (known as the MALPE approach). This cross-functional development strategy will be further developed at two levels. The national strategy will be drawn up as a cross-sectorial report at the beginning of the electoral period, together with urban area strategies. It will be recommended that reports on future outlook prepared by ministries should be drafted in horizontal cooperation between various ministries, employing the MALPE approach.*

The literature review and survey conducted for the present report indicate that administrative structures in the transport sector in Europe are undergoing a transition period. More than 70% of the survey respondents considered that changes have already happened or are happening currently, particularly within the transport sector (merging the administrations of various modes of transport) but also between administrative sectors. Furthermore, more than half of the respondents saw indications of the emerging of administrative models based on actor networks.

The following were singled out as examples of change in the material collected:

- Merging administrations of transport modes (Sweden, Greece, Finland);
- Cooperation between administrative sectors:
  - merging the ministries of transport and the environment in the Netherlands;
  - Germany's 'High-tech strategy of the Federal Government',
  - 'Electromobility' programmes in Austria and France,
  - public debate on the 'Grenelle Environnement' legislation in France;
- Structural changes in the transport sector:
  - a smaller, more reactive and more transparent Ministry of Transport (UK),
  - devolution of functions and decision-making powers from a centralised national administrative model to the local level (UK, Sweden, Norway),
  - reorganisation of the transport sector (interaction between public-sector research and enterprises, and cooperation between enterprises and local authorities in transport system planning and solutions) in Denmark,
  - reducing the role of the public sector and transferring functions at least in part to the private sector (Canada and Austria),
  - institutional changes (Australia),
  - formation of regional Centres for Economic Development, Transport and the Environment (ELY) (Finland);
- Increased role of international and EU-level regulation (Sweden, Finland).

#### 3.2 Improving the productivity of the transport sector

*The core idea of Transport Revolution is to improve the productivity and effectiveness of transport policy measures, "better with less". The MALPE concept enables a comprehensive approach and a shared agenda for various actors in strategic outlining. Significant means for improving the productivity and effectiveness of transport policy measures identified in the mind-map include the efficient exploitation of a wide range of measures, the increasing of strategic agility, the development of new user-oriented*

*service concepts, the deployment of the innovation potential of all actors in the field, and the overall service offering of public and market-driven services.*

The productivity of the transport sector is a current theme, in one way or another, in transport policy debate all around Europe. No fewer than 70% of respondents to the survey noted that the focus in transport system development is shifting significantly or at least in part from constructing transport infrastructure to managing transport demand and the service level offered to customers. Nearly 80% of the respondents felt that a wide range of measures is being used in transport system development, and 75% considered that positive changes had happened (or are happening) in the integration of transport and land use planning, influencing the demand for transport and reducing greenhouse gas emissions.

The following were singled out as examples of change in the material collected:

- New transport policy goals in the Netherlands:
  - more efficient use of resources in the transport sector,
  - fulfilling the travel and transport needs of end users,
  - integrating transport and land use planning to reduce emissions of greenhouse gases (e.g. PPPs and the 'user/polluter pays' principle) (also in Sweden, Norway, Australia);
- Extended range of measures:
  - use of the four-step model in preparing the implementation of a national transport plan (Sweden),
  - extensive range of measures deployed to prevent congestion in urban areas (Australia),
  - shifting focus from construction to operation and maintenance (Norway),
  - launching the Mobility Management network LIVE and Mobility Management research programme (Finland);
- Increased emphasis on environmental matters:
  - development of a sustainable transport system (UK, Norway, Sweden, Denmark),
  - minimising adverse environmental and safety impacts (Canada),
  - emphasising environmentally friendly transports, e.g. reform of kilometre-based motorway tolls for heavy goods traffic, environmental zones (Germany),
  - emphasising the modal shift between modes of transport (Norway);
- Orienting research towards improving the functioning of the transport system and the quality of the infrastructure in order to improve productivity (Sweden);
- Developing cooperation between modes of transport, for instance by developing park-and-ride services and terminals (UK, Sweden);
- Creating a competitive transport sector market as one of the key principles of transport policy (Australia).

In addition to more efficient use of existing transport infrastructure, building new infrastructure was seen as an option if such projects can be shown to be socio-economically necessary and environmentally acceptable. For example, respondents in the UK and Sweden pointed to project evaluation methods under development that will take such factors better into account.

In the UK and France, general cost-cutting in the transport sector is seen as a key national challenge. The debate on increasing productivity and improving the level of service is therefore seen largely as rhetoric, and very little practical action has been taken so far. However, in the UK improving the level of service is seen as a potential approach through regional operator partnerships and cooperation.

A wholly new matter emerging in the responses was the convergence of diverse infrastructure networks (transport, energy, ICT) and the challenges and opportunities that this entails.

### 3.3 User-driven development of transport products and services.

*The key beneficiaries of Transport Revolution are people and enterprises. In the new approach, users will be involved in the planning, development and to some extent even the implementation of services. They will be provided with exactly the services they need. As the market-driven service offering develops and real-time information is increasingly being leveraged, it will become easier to create customised service packages. The digitalisation of society will be exploited in the construction of a market place for all transport information, an info-market that will also be a tool for participation. Users' travel profiles and travel accounts will be linked to this info-market.*

Involving users in the design of transport products and services is an emerging theme in Europe and elsewhere in the world. In Australia and Canada, the customer-oriented approach has been made one of the core principles of transport policy. There are as yet few concrete experiences of user-driven planning, but great expectations are vested in it. The majority of survey respondents (more than 60%) felt that users were now being involved in one way or another in the development of new transport products and services. International cooperation is considered important in this context.

The following were singled out as examples of user-driven schemes in the material collected:

- In Germany, the national 'Electro-Mobility' programme is aiming for the greening of urban centres. Planning is based on the needs of families and ageing people and the level of service in public transport to be offered to them (shift from public transport subsidies towards public service obligations);
- Real-time traffic information is already used extensively in traffic control, particularly in the Netherlands:
  - 'Multi-modal traveller information system',
  - 'De Verkeersonderneming' – a traffic control programme for the A15 motorway;
- In Austria, users have been invited to participate in the planning of the ways2go programme;
- Location Based Services (LBS) are being developed throughout the EU. Key issues include privacy and availability of information;
- In Denmark, there is an initiative to create test sites for new services, enabling users, enterprises, local authorities and the rest of the public sector to work with research institutions to develop transport sector technologies and services;
- In Norway, passenger rights have been and are being augmented;
- Customer group needs research programme of the Road Administration, ASTAR 2004–2007 (Finland).

### 3.4 New operating models to promote transport innovations

*In the Transport Revolution approach, the core task of the client is the detailed specification of the level of service to be procured. On the basis of this, service providers plan the concept and the means for attaining that level of service and maintaining it in the long term. The client may also enter into a long-term agreement with a service provider to obtain the required level of service as a genuine lifecycle project. Producing a given level of service brings together the various and diverse means available to the actors involved, as well as the innovations of service providers. In all procurement, the focus is on the added value generated, not the outcomes or measures in themselves. Demanding domestic public and private customers and long-term agreements create*

*incentives for service providers to develop their services and to improve their productivity. The level of requirements must be consistent with an internationally high level of quality so that enterprises successful in Finland can easily expand their business abroad.*

Various new innovative procurement and/or operating models are already in use or undergoing testing in a number of countries. Existing PPPs in France, Sweden, Greece and Canada were pointed to, as were innovative public transport procurement models in cities in France and congestion charges in Sweden.

Examples of new operating models or other important points singled out from the research material include:

- Financing local productivity-improving projects (e.g. the purchase of environmentally friendly buses) through a newly set-up fund (UK);
- New reward systems for railway service agreements: rewards paid for good services, terminals and rolling stock (UK);
- New forms of funding for transport networks (Canada);
- Support for legislation and institutional decisions in developing a robust transport system (Canada, Australia);
- Smoothly functioning procurement models:
  - clarifying the responsibilities of service providers (Canada),
  - transparency of procurement models (Australia),
  - coordination of public transport service procurement and local cooperation (Norway);
- Preparation of legislation concerning innovative transport system procurement (Greece);
- Participation of the private sector in transport system development (Australia);
- Availability of competent transport sector professionals (Canada, Australia);
- Emphasis on carbon dioxide goals in project evaluation (UK, Sweden).

Other operating models being actively taken forward that were mentioned included Asset Management (including Life Cycle Costing) and Level of Service Agreements (Netherlands).

New operating and procurement models aim to find new advantages for operations (value for money). This may be a substantial challenge, however, as in new cooperation models it may be unclear who ultimately bears the overall risk: is the responsibility held by a public authority or some other party? Market-driven concepts for shared use of bicycles and cars in Germany were mentioned as an example of a failed initiative. On the other hand, in certain cities such as Paris shared-use concepts have been introduced with great success, but this probably involves a different division of responsibilities.

Ex-post evaluations of completed projects were considered important for learning and operations development, and such evaluations should be performed as often as possible.

## 4. Summary and conclusions

Ideas and reforms similar to individual themes in Transport Revolution have been planned and put into practice in several European countries, in Australia and in Canada. However, apparently no comprehensive approach to reforming thinking and operating models such as the present one has ever been attempted.

The key findings of the report can be summarised as follows: Models for administration, management, partnership and organisation in the transport sector are in a state of transition all around Europe. The roles of the private and public sectors are changing; the role of the private sector is increasing. There are attempts to dismantle the entrenched positions of administrative sectors, to create networks of actors and to devolve functions increasingly to the local level. In practice, however, this is progressing very slowly and is still on the drawing board.

The focus in transport system development is shifting significantly or at least in part, depending on the area in question, from constructing transport infrastructure to managing transport demand and the service level offered to customers. An extensive range of measures is typically employed for developing transport systems. Environmental issues are also important.

Involving users in the design of transport products and services is an emerging theme in Europe and elsewhere in the world. There are as yet few concrete experiences of user-centric design, however.

Various new and older models for promoting transport innovations are being tested or are already in use in several European countries. Experiences vary. Major challenges have been found particularly in the assignment of responsibilities between private and public bodies.

Even in Finland, Transport Revolution is only just beginning, and it remains to be seen how well the mind-map can be translated into practical projects, reforms and measures. The task is not an easy one, calling for systematic and interactive investments in anticipating changes in society and organisations, in assessing the impact of the transport revolution and in strategic management to redirect and further specify the progress of that revolution as necessary. In practice, putting the mind-map into practice will begin with small-scale pilot projects to test the viability and feasibility of new approaches and procedures, with a view to scaling up later if possible.

International cooperation and getting to know what other countries are experiencing and planning could be a very fruitful way of learning from the experiences of other parties and thereby carry the Transport Revolution forward in Finland and in other countries. This could mean in practice e.g. launching of a cooperation network or a series of round table discussions by the European Commission, the ITF<sup>4</sup>, the JRC<sup>5</sup> or some other international body.

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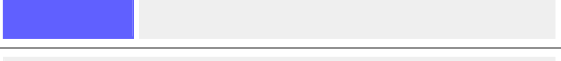

<sup>4</sup> The International Transport Forum (ITF) is an OECD intergovernmental organisation with 52 member states. The Forum is a strategic think-tank for transport policy and organises a ministerial meeting between member governments each year.

<sup>5</sup> The Joint Research Centre (JRC) is an OECD unit bringing together transport policy and economy researchers from ministries and research institutions in 51 countries.

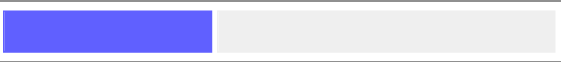

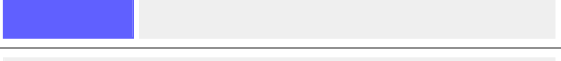

## Appendix 1 The survey results

### New governance and organisation structures of the public sector



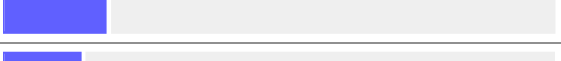

1. Enhanced cooperation and decision-making that crosses the boundaries of public administration sectors

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	11	52,38%					
2.	yes, minor changes	5	23,81%					
3.	no changes	5	23,81%					
4.	don't know	0	0,00%					
	Total	21	100%					

2. A shift from modal administrations and management to multi-modal administration and management



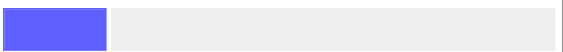

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	8	38,10%					
2.	yes, minor changes	8	38,10%					
3.	no changes	5	23,81%					
4.	don't know	0	0,00%					
	Total	21	100%					

3. A shift from performance management to multi-actor performance governance


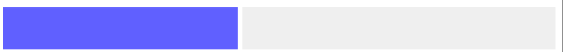
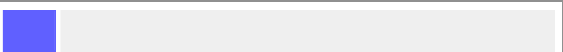
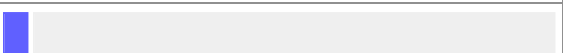
	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	4	19,05%					
2.	yes, minor changes	10	47,62%					
3.	no changes	4	19,05%					
4.	don't know	3	14,29%					
	Total	21	100%					

### Increased efficiency of the transport sector (more output with the same input)


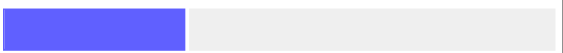
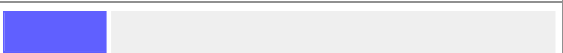

1. The main focus on the quality of seamless door-to-door services, not on infrastructure investments (both passenger and freight transport). In other words, better services and performance and cheaper travel and transport to people and businesses

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	7	33,33%					
2.	yes, minor changes	8	38,10%					
3.	no changes	4	19,05%					
4.	don't know	2	9,52%					
	Total	21	100%					

2. Introduction of new, innovative combinations of transport policy instruments starting from bottom-up instruments such as demand management. The second group of instruments focuses on more efficient use of the current transport network. The third group includes small development projects. Large infrastructure investments are presented only as the last option.



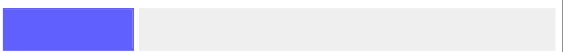

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	9	42,86%					
2.	yes, minor changes	9	42,86%					
3.	no changes	2	9,52%					
4.	don't know	1	4,76%					
	Total	21	100%					

3. Integrated transport and urban planning targeted to decreased travel and transport demand and consequent CO2 emission reductions

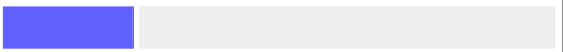


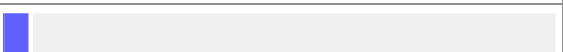
	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	9	42,86%					
2.	yes, minor changes	7	33,33%					
3.	no changes	4	19,05%					
4.	don't know	1	4,76%					
	Total	21	100%					

### End-user based design of transport technologies and services


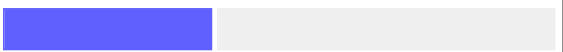
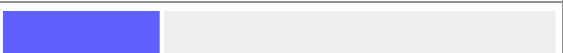
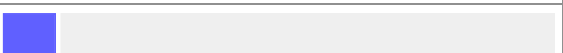
1. A shift from top-down design of transport infrastructures to bottom-up design of the transport system technologies and services (e.g. co-creation of service concepts, end-users together with other stakeholders)

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	5	23,81%					
2.	yes, minor changes	9	42,86%					
3.	no changes	5	23,81%					
4.	don't know	2	9,52%					
	Total	21	100%					

2. Exploitation of scientific knowledge base, market knowledge and end-user preferences in co-operation in building new service concepts and innovations

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	5	23,81%					
2.	yes, minor changes	11	52,38%					
3.	no changes	4	19,05%					
4.	don't know	1	4,76%					
	Total	21	100%					

3. A tendency towards opening up new markets and business opportunities for transport businesses

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	5	23,81%					
2.	yes, minor changes	8	38,10%					
3.	no changes	6	28,57%					
4.	don't know	2	9,52%					
	Total	21	100%					



## 4. Real-time traffic information in use within traffic management

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	11	52,38%					
2.	yes, minor changes	8	38,10%					
3.	no changes	1	4,76%					
4.	don't know	1	4,76%					
Total		21	100%					

## 5. A tendency towards international co-operation in new service concepts

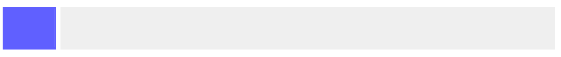



	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, major changes	4	19,05%					
2.	yes, minor changes	12	57,14%					
3.	no changes	3	14,29%					
4.	don't know	2	9,52%					
Total		21	100%					

New operational procedures to boost transport innovations



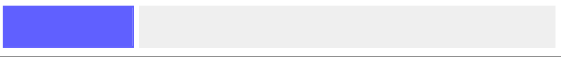

## 1. Innovative procurements for transport system performance

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, widely in use	4	19,05%					
2.	yes, emerging	13	61,90%					
3.	not in use	3	14,29%					
4.	don't know	1	4,76%					
Total		21	100%					

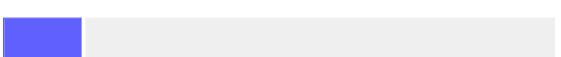


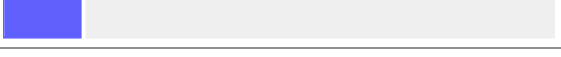
2. Pre-commercial procurement (a new process for sharing the risks and benefits of designing and testing new products and services with the suppliers, and creating the optimum conditions for wide commercialisation and take-up)

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, widely in use	2	9,52%					
2.	yes, emerging	9	42,86%					
3.	not in use	6	28,57%					
4.	don't know	4	19,05%					
	Total	21	100%					

3. New multi-producer models that create new business activities

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, widely in use	1	4,76%					
2.	yes, emerging	7	33,33%					
3.	not in use	5	23,81%					
4.	don't know	8	38,10%					
	Total	21	100%					

4. Development of (market based, commercial) value added services to complement publicly financed basic services

	Answer	Frequency	Percentage	20%	40%	60%	80%	100%
1.	yes, widely under development	3	14,29%					
2.	yes, some development	14	66,67%					
3.	no development	3	14,29%					
4.	don't know	1	4,76%					
	Total	21	100%					

## Appendix 2 Source reports

The Netherlands:

The 2004 policy document NoMo (Nota Mobiliteit) is currently being revised and updated. A new integrated transport, spatial planning and mobility policy document is expected to be available in the second half of 2011.

OEI (Overview of Effects of Infrastructure) Guidelines and the MER (Environmental Impact Statement)

[http://www.verkeersonderneming.nl/english/de\\_verkeersonderneming](http://www.verkeersonderneming.nl/english/de_verkeersonderneming)

[www.riversoftheworld.nl/expertise/policy](http://www.riversoftheworld.nl/expertise/policy)

<http://www.retrack.eu/>

Great Britain:

The new Local Transport White Paper - Creating Growth, Cutting Carbon - January 2011. Need to read between the rhetoric! But also take a look at the documents produced by local authorities and the main transport operators - demonstrates both what they are trying to do and the limitations on what can be done.

Coalition Agreement - see <http://www.cabinetoffice.gov.uk/news/coalition-documents>

The new Localism Bill - the announcements on Enterprise Zones (23/3/11) - and on the Green Investment Bank. But also the reductions in planning controls (localism) and the reorganisation of the Health Service

Department for Transport business plan and Structural Reform Plan, obtainable at <http://www.dft.gov.uk/>

Austria:

The Austrian introduction Plan for Electromobility. Please refer to (in German language only) <http://www.bmvit.gv.at/verkehr/elektromobilitaet/index.html>

Norway:

National Transport Plan 2010-2019 Research Strategy 2011-2014

See also: <http://www.regjeringen.no/en/dep/sd.html?id=791>

France:

National Strategy for Transport Infrastructure under public consultation with an Environmental Assessment Study. - Digital city and Intelligent Transport Systems and Services (Investment for the Future). - Grenelle Environment Laws. - Electromobility.

Sweden:

Trafikverket, strategisk plan; Nytt trafikverk, ny omvärld - trafikverkets omvärldsanalys 2010

ASEK - Samhällsekonomiska kalkyl och analysmetoder för infrastrukturåtgärder, for English summary see [www.trafikverket.se](http://www.trafikverket.se).

Nationell plan för transportsystemet 2010-2021, see [www.trafikverket.se](http://www.trafikverket.se)

Konkurrens på spåret, prop. 2008/09: 176

Den goda staden - cooperation project between national administrations, SKL (Sveriges kommuner och landsting) and local communities (Uppsala, Norrköping, Jönköping)

ITS rådet

Fördubblingsprojektet.se

Trafiken.nu

Kapacitetsutredningsuppdraget, mars 2011

Medfinansieringsutredningen hösten 2010

FIA - förnyelse i anläggningsbranchen

IVA Transport 2030

Logistikforum, national government's dialogue forum

Resenärsforum, national government's dialogue forum

Gröna korridorer

Finland:

Kostiainen, Juha & Linkama, Eeva (toim.) 2011. Liikennerevoluutio 2011. Ajatuskartta. Työ- ja elinkeinoministeriö, Valtiovarainministeriö, Ympäristöministeriö, Liikennevirasto, Trafi, Tivit Oy ja RYM OY. 39 pages.

Pursiainen, Harri & Jalasto, Petri (2010) Digitaalinen Suomi, uusi liikennepolitiikka. Liikenne- ja viestintäministeriön tulevaisuuskatsaus puolueille 10.9.2010. Liikenne- ja viestintäministeriön julkaisuja 33/2010. 36 pages.

Liikennevirasto 2011. Liikenneolosuhteet 2035: Taustaraportti. Liikennevirasto, liikennejärjestelmätoimiala. Helsinki 2011. Liikenneviraston tutkimuksia ja selvityksiä 19/2011. 148 pages.