



IRF WORLD ROAD MEETING 2017

/ 14-17 NOVEMBER / DELHI / INDIA /

Skills and Competences Development of Future Transport Professionals at all Levels

Thierry Goger
Secretary General
FEHRL
thierry.goger@fehrl.org



General information about project

- SKILLFUL – Skills and Competences Development of Future Transportation Professionals at all Levels
- European Union H2020 project
- Start date: 1 October 2016
- Duration - 3 years
- 25 partners; 13 countries represented
- Budget: 3 MEur

THE RELEVANT NEED

- In 2011, the transport sector in the EU-28 employed around 11.2 million persons.
- The European transportation system, which is a rapidly developing and changing sector, struggles to develop, attract and retain appropriate staff.
- As the overall trend is to increase automation, the sector will depend more and more on specialized equipment and products.
- Future jobs will therefore require new and advanced skills in engineering.
- The growing interdisciplinary elements of transport activities will also require transport professionals with developed skills in safety, security, logistics, IT, marketing and economics.

OBJECTIVES

SKILLFUL aims to address the needs described above by

- critically reviewing the existing, emerging and future knowledge and skills requirements of workers at all levels in the transportation sector;
- structuring the key specifications and components of the curricula and training courses that will be needed to meet these competence requirements optimally;
- identifying and proposing new business roles in the education and training chain.

Dealing with the main challenge for the transportation sector ➡
to be able to attract new employees, as well as equip the existing ones with the competences required for addressing the needs of the constantly changing and developing transportation sector.

Vision of SKILLFUL

The vision of the project is to identify the skills and competences needed by the Transport workforce of the future (2020, 2030 and 2050 respectively) and define the training methods and tools to meet them.





METHODOLOGY

Step 1: Identification of Future Trends/ Needs & Best Practices

Step 2: Development of Training Schemes & Definition of Profiles and Competences

Step 3: Verification and Optimization of training schemes

Future trends, needs and scenarios for jobs across Europe

The first step of the project is also what powers the rest of it - identifying the real needs existing in the whole chain system of Transport and Education i.e.

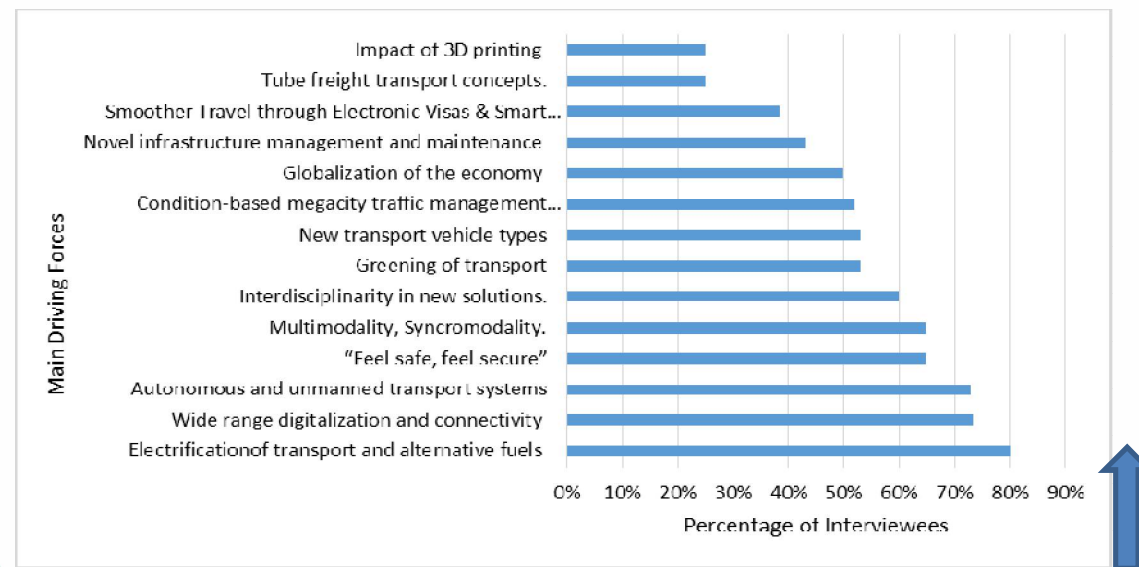
- The factors that will affect the transport system over the next 5-15 years
- The jobs that will be mostly affected
- Prioritised skills & competences that will be necessary for the future professionals of the European transportation system
- The gaps and best practices in relation to European educational systems and programs for training of the Transport professionals.

Future trends, needs and scenarios for jobs across Europe

For the realization of these objectives:

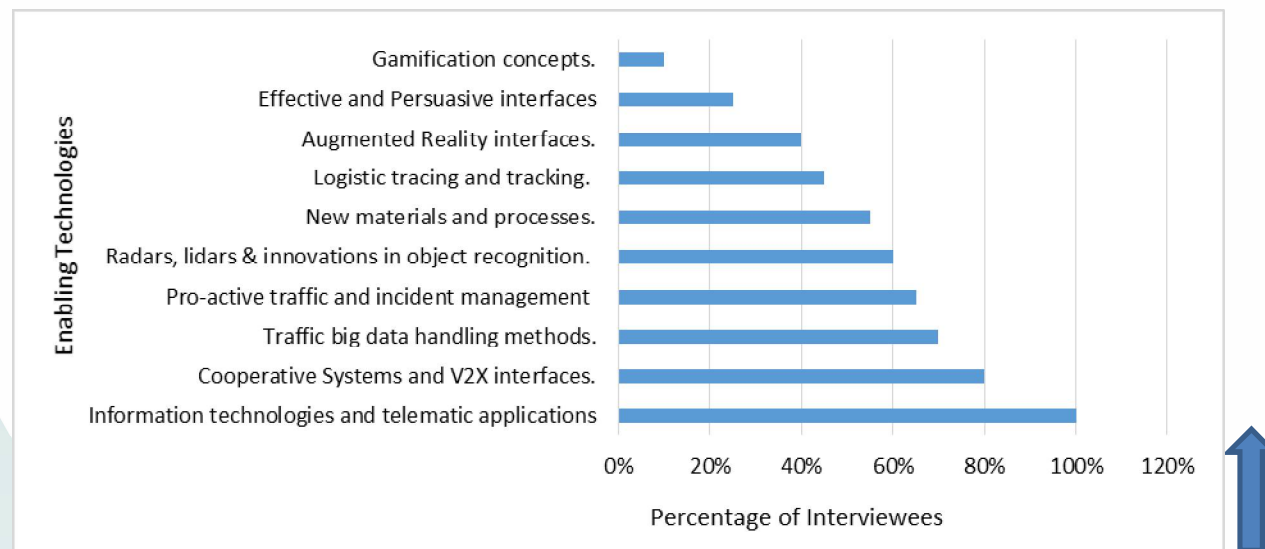
- 126 experts were interviewed from more than 20 different European countries covering all Europe also covering a wide area of positions and professional areas.
- 124 relevant reports and documents (from all ETPs and other relevant bodies and actors), as well as scientific articles were analysed.
- A relevant Workshop was held, during the FIRM (FEHRL Infrastructure Research Meeting) Conference 2017 in April 2017, Brussels

Prioritization of future trends and driving forces



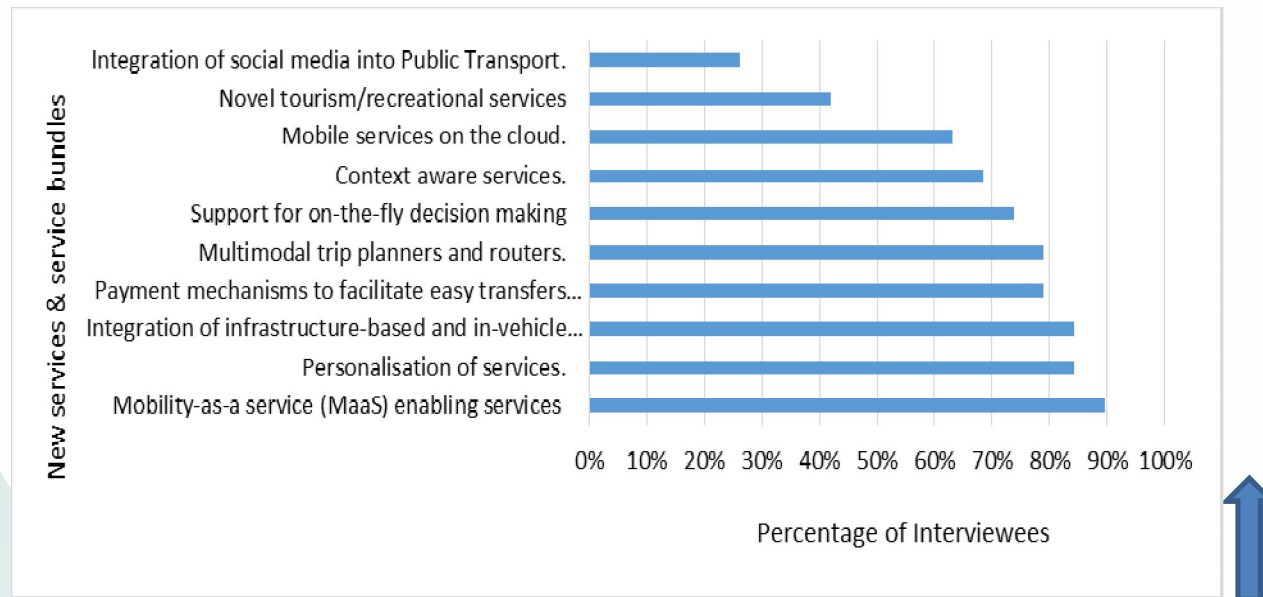
Prioritization of the **paradigm shifters** and **game changers** expected impact to the future Transportation system of Europe

Prioritization of future trends and driving forces



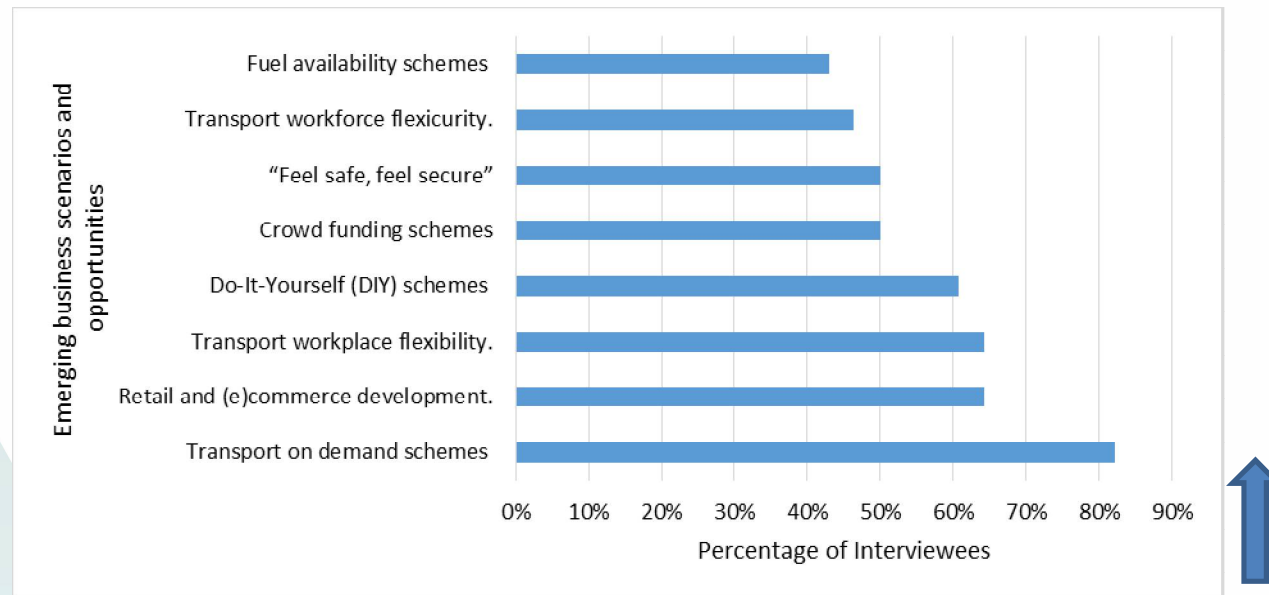
Prioritization of the **enabling key technologies** expected impact to the future Transportation system of Europe

Prioritization of future trends and driving forces

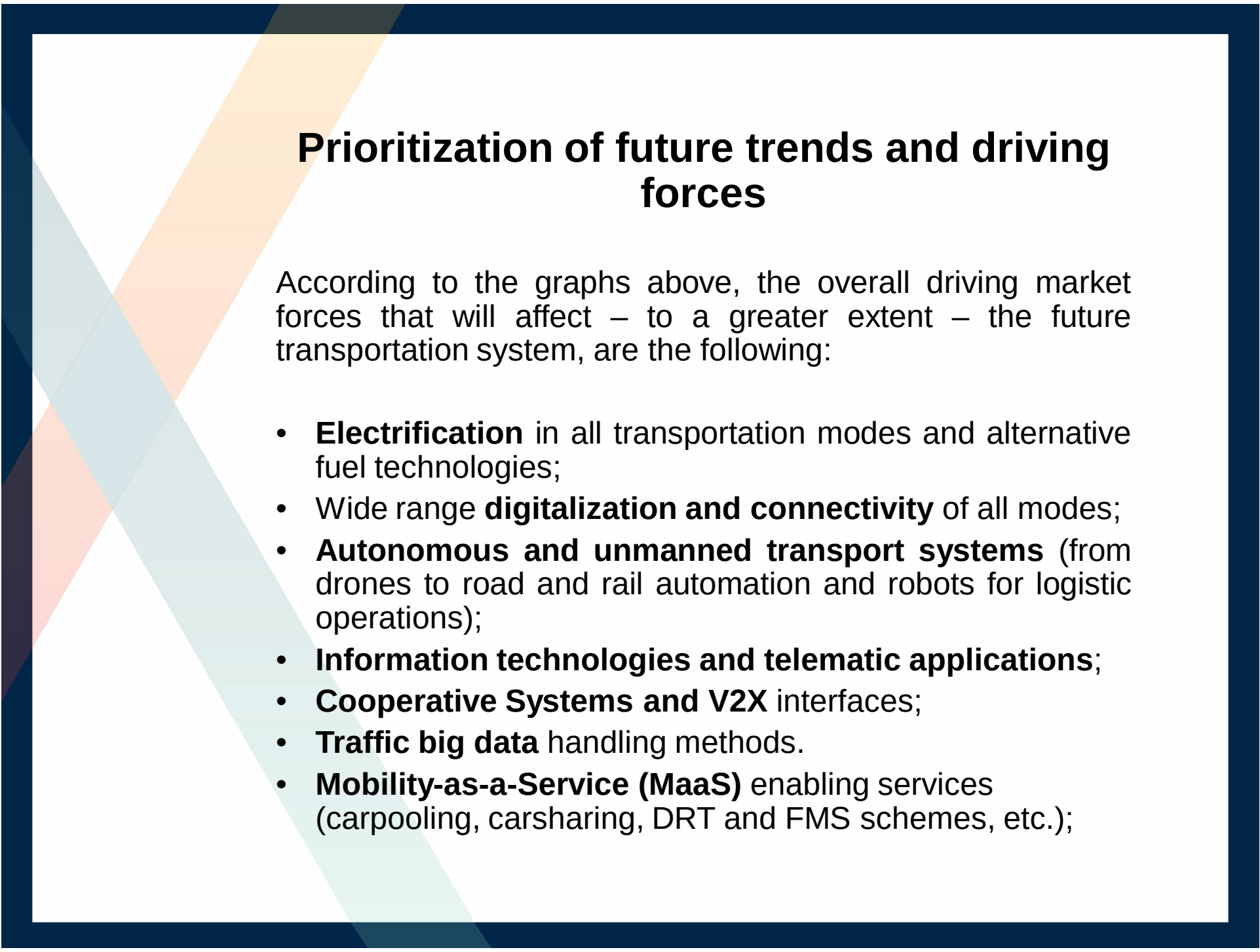


Prioritization of the **new services** expected impact to the future Transportation system of Europe

Prioritization of future trends and driving forces



Prioritization of the **new business schemes** expected impact to the future Transportation system of Europe



Prioritization of future trends and driving forces

According to the graphs above, the overall driving market forces that will affect – to a greater extent – the future transportation system, are the following:

- **Electrification** in all transportation modes and alternative fuel technologies;
- Wide range **digitalization and connectivity** of all modes;
- **Autonomous and unmanned transport systems** (from drones to road and rail automation and robots for logistic operations);
- **Information technologies and telematic applications**;
- **Cooperative Systems and V2X** interfaces;
- **Traffic big data** handling methods.
- **Mobility-as-a-Service (MaaS)** enabling services (carpooling, carsharing, DRT and FMS schemes, etc.);

Main changes to employability. How will the future be shaped?

Jobs/Positions to be changed or eliminated (some examples)

	Title/ Description of professional position	Main affective parameters	Timeframe
1	Freight forwarders, Logistic centre staff	ITS based booking systems; web based e-platforms etc	Short term
2	Transportation scheduler/ planner, Mobility planner	Digitalization of services; IT and integrated planning; big data; IoT;	Short term
3	Ticket issuers & controllers	Autonomous driving; smart payments; digitalization and connectivity of all modes;	Short to Medium term
4	Customer service personnel, Customers' suppliers & Suppliers planning, Custom officials.	Logistic tracing and tracking; retail and (e)commerce development;	Short to Medium term

Main changes to employability. How will the future be shaped?

Jobs/Positions to emerge (some examples)

	Title/ Description of professional position	Main affective parameters	Timeframe
1	Logistics manager, Global freight forwarder/manager	New requirements for intermodal and multimodal operation	Short to Medium term
2	Logistic operators at terminals & delivery dispatchers/ City logistics service provider	Cooperative systems and V2X interfaces; affective and persuasive interfaces	Short to Medium term
3	Experts on AI, Digital transformation, Big Data	Automation of customer order and production process; digitalisation	Short to Medium term
4	IoT developers, IoE Engineers, 3D Printing Engineers	AI; IoE & IoT; 3D printing on production location and logistic	Short to Medium term

Conclusions

- The changes that will occur in the transportation sector are inevitable given the way and the speed at which things are evolving, not only in the transportation field, but in general.
- All these developments, related to and affecting transportation, whether they relate to technological discoveries and developments, or to social and economic factors, directly affect also the employability, as well as the education and training needs of professionals in the transportation sector.

Conclusions

- Novel transport market driving forces (such as electrification, etc.), new technological advancement or further evolution of already existing technologies (such as the evolution of information technologies and telematic applications, etc.), new business schemes that accompany them (such as Transport on demand schemes, etc.), as well as the emergence and promotion of new transportation services (such as MaaS etc.) are expected to change the working ecosystem of transport and with it the sphere of professional jobs and occupations within it.



**Never Stop
Learning...**

Thank you very much



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 723989