Door to Door solutions: a strategic move for sustainable mobility

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SUSDEF and UIC co-operated several times on the environmental railway issue.

SUSDEF, in partnership with the Italian Ministry of Environment and the Ministry of Transport and Infrastructure created and actually manages the National Shared Mobility Platform.
The National Platform for Shared Mobility is composed by over 90 members, including all shared mobility providers, institutions, local authorities and universities. The Platform collects and disseminates data, enables matchmakings among shared mobility stakeholders, disseminates information and best practices and organizes every year the National Conference with Italian and international shared mobility experts.
Italian Shared Mobility Platform: the Network
UIC D2D Project: Key Activities and Timeline

**Preparatory study**
- Concept of Door-to-Door services
- Limitations and barriers for the door-to-door services

**Workshops**
- #1 Warsaw
- #2 TBD - Asia Pacific Region
- #3 Environment Agencies
- #4 UE
- #5 TBD - Internal

**Selection of D2D Best Practices**
- Case study literature review
- Structured interview by request for information

**Dissemination Event**

**D2D Award**

**UIC Door-to-Door Guidelines**

2018
- Concept

2019
- Engagement

2020
- Dissemination
D2D Solutions Project: Outputs and Outcomes

- Workshops
- Final Report
- Network Mobility as a Service Providers
- UIC Guidelines on Door-to-Door solutions
- Event Dissemination
- Best practices Award
« Le pas de l’homme ou le pas du cheval conduisaient d’une porte à une autre porte ; tout était relié finement, de l’intention au but. Le chemin de fer brisa cette perfection dans le continu, instaura l’alternatif de la porte à la gare, de la gare à l’autre gare, de l’autre gare à l’autre porte. Aussi bien pour les gens que pour les objets. Rupture très sensible, pénible dans le cycle des vingt-quatre heures solaires, qui poussa aux agglomérations artificielles autour des gares. Le fossé s’ouvrit entre la campagne et la ville. L’automobile conduit d’une porte à une autre porte.
Le cycle des vingt-quatre heures, par l’effet des vitesses vingtuples ou trentuples, étend subitement son rayon d’action ; le soleil est vingt fois plus lent ! C’est une révolution.»

(Le Corbusier, Sur Les Quatre Routes - Paris, 1941 – Figure : Le Minimum Voiture - 1936)
Man's and horse's steps led from door to door; everything was connected with accuracy, from intention to purpose. **Railways broke this continuity**, establishing the alternation from the door to the station, from the station to the other station, from the other station to the other door. For both people and objects. A significant rupture, tiring over the twenty-four hours, leading to the development of cities around railway stations. The gap between the city and the countryside was opened. **Cars go from door to door**. Thanks to speed, the range of action becomes twenty or thirty times bigger, the twenty-four hour cycle suddenly stretches out; the sun is twenty times slower! **It is a revolution.**
Ubiquity
On-Demand
Spatial Flexibility
Always Available
Self-production
Door-to-Door journey
Scheduled
Mobility as a service
Station-to-Station journey
Fixed Route
Discontinuity
Seamless
On-Demand
Sprawled spatial accessibility

Concentrated spatial accessibility

UIC D2D Preparatory Study: Concept
Even if a railway connection exists from A to B, to go to A1 or to B1 there will be a change in the mode or means of transport.
A car journey is spatially and temporally seamless, because flexible on routes, without schedule, always available.
With a car we produce a mobility service for our selves. The car is (mostly) a personal vehicle for a personal journey.

...VICE VERSA...

...Fixed routes modes offers mobility service consumed by many. The means of transport are always shared to offer a shared journey.
PRIVATE CAR: a success story

Passenger kilometers by mode, Great Britain: 1952 to 2016
It is not just the success of a product, a mode of transport and a model of production and consumption that is also the success of an ecosystem in which many actors collaborate and coordinate their action (fuel industry, automotive, insurance, financial institutions, government agencies that build infrastructures, rules and technical standards, local authorities and land development...).
Average external costs for road transport are more than six times higher than rail for passenger services (excluding congestion).

Source: External Costs of Transport in Europe - Update Study for 2008 (2011)
NB Last update (2015) doesn’t show comparison tables – The graph will be updated
UIC D2D Preparatory Study: Concept

CAR UTILISATION:
- 1% sitting in congestion
- 5% driving
- 1.6% looking for parking

TANK-TO-WHEEL ENERGY FLOW - PETROL
- Energy used to move people
- Inertia of vehicle
- Rolling resistance
- Auxilliary power
- Transmission losses
- 12:1 dead-weight ratio
- Aerodynamics
- Engine losses
- 86% of fuel never reaches wheels
- Idling

DEATHS AND INJURIES/ YEAR ON ROAD
- 30,000 deaths in accidents and 4X as many disabling injuries
- >95% of accidents from human error

LAND UTILISATION:
- 5%
  - Road reaches peak throughput only 5% of time and only 10% covered with cars
- 50%
  - 50% of most city land dedicated to streets and roads, parking, service stations, driveways, signals, and traffic signs
MACRO TRENDS that show us that there is a new change taking place that could have a REVOLUTIONARY effect, like that anticipated by Le Corbusier at the beginning of the 20th century.

TIMES THEY ARE A-CHANGING
Digital Revolution is bringing new and winning solutions for Shared Mode -> the Door-to-Door preparatory study is focused on Digital Solutions to enhance rail and other shared modes accessibility by mutual integration.
UIC D2D Preparatory Study: Times they are a-changing

Source: Pierre Trami – Fabrique des Mobilités
DIGITALIZATION enables the SHARE of vehicles designed for PERSONAL USE. The "family" of traditional shared mobility services gains NEW OPPORTUNITIES and NEW OPTIONS.
Motorized SELF-PRODUCTION

Active Modes: Cycling and Walking

PARADIGM SHIFT

GOAL and TRENDS at the same time

Focus of D2D Study: TIMES THEY ARE A-CHANGING
All the actions currently available for a railway company to offer its customers an **INTEGRATED MOBILITY SERVICE** that may start form the initial origin of the customer’s movement and end at its final destination and **INCLUDES THE RAILWAY TRANSPORT service** among the travel solutions used during the entire journey.
Rise *intermodality* between rail and other shared and non motorized modes means rise *rail accessibility*, that leads to *modal shift* to rail
29% of the Italian population is located within a 1 km radius of a railway station.

73% of the Italian population is located within a 5 km radius of a railway station.

Source: RFI (2018)
UIC D2D Preparatory Study: Shift to Rail

Elementary Multiple Journey Impacts

Railway Services

Urban and Sub-Urban
Regional
Intercity
High-Speed

Shared On-Demand
Shared Semi-Continuous
Shared Scheduled
Personal Motorized
Personal Active

Less

Less/Equal

A

B

A

B

UIC D2D
Preparatory Study: Shift to Rail

Less/Equal

Less

Less/Equal

Shared On-Demand
Shared Semi-Continuous
Shared Scheduled
Personal Motorized
Personal Active

Personal Motorized - Journey from A to B
UIC D2D Preparatory Study: Supply Side

How to improve railway accessibility?

Better integration between different railway services (Urban, Regional, Intercity, High-Speed)

Improving all the stages of the travel chain that involves a railway journey -> INTEGRATED TRAVEL SOLUTIONS

Focus of D2D Study

Personal mobility

Shared mobility

Active modes

Personal motorized transport
SUSDEF will collect and analyse Door-to-Door Solutions within the main areas of intervention.
SUSDEF will collect and analyse mobility service providers strategies (including railway companies) towards integration and seamless connectivity.

**WAIT&SEE**
Focus on Railway core business, maximizing the accessibility of rail transport in itself.

**NEW DEAL**
Horizontal Integration through agreements between different mobility service providers.

**SWOT Analysis**

**VERTRICAL INTEGRATION**
Buy other Mobility Service Providers and integrate within company boundaries.

**PUBLIC BENEFITS VIA OPEN DATA**
Promote open digital infrastructure to enhance a competitive and vibrant mobility market. Work together instead of against each other mobility provider.

Where to go?
THANK YOU!

“Door to Door solutions: a strategic move for sustainable mobility”

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