



UIC NETWORKING WORKSHOP

Door-to-door solutions: New business opportunities for urban mobility

Warsaw, 14 November 2018



Door to Door solutions: a strategic move for sustainable mobility

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UIC D2D Project: SUSDEF Background

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.**



UIC D2D
Project

UIC D2D Project: SUSDEF Background



MINISTERO DELL'AMBIENTE
E DELLA TUTELA DEL TERRITORIO E DEL MARE



FONDAZIONE
PER LO SVILUPPO
SOSTENIBILE

Sustainable Development Foundation



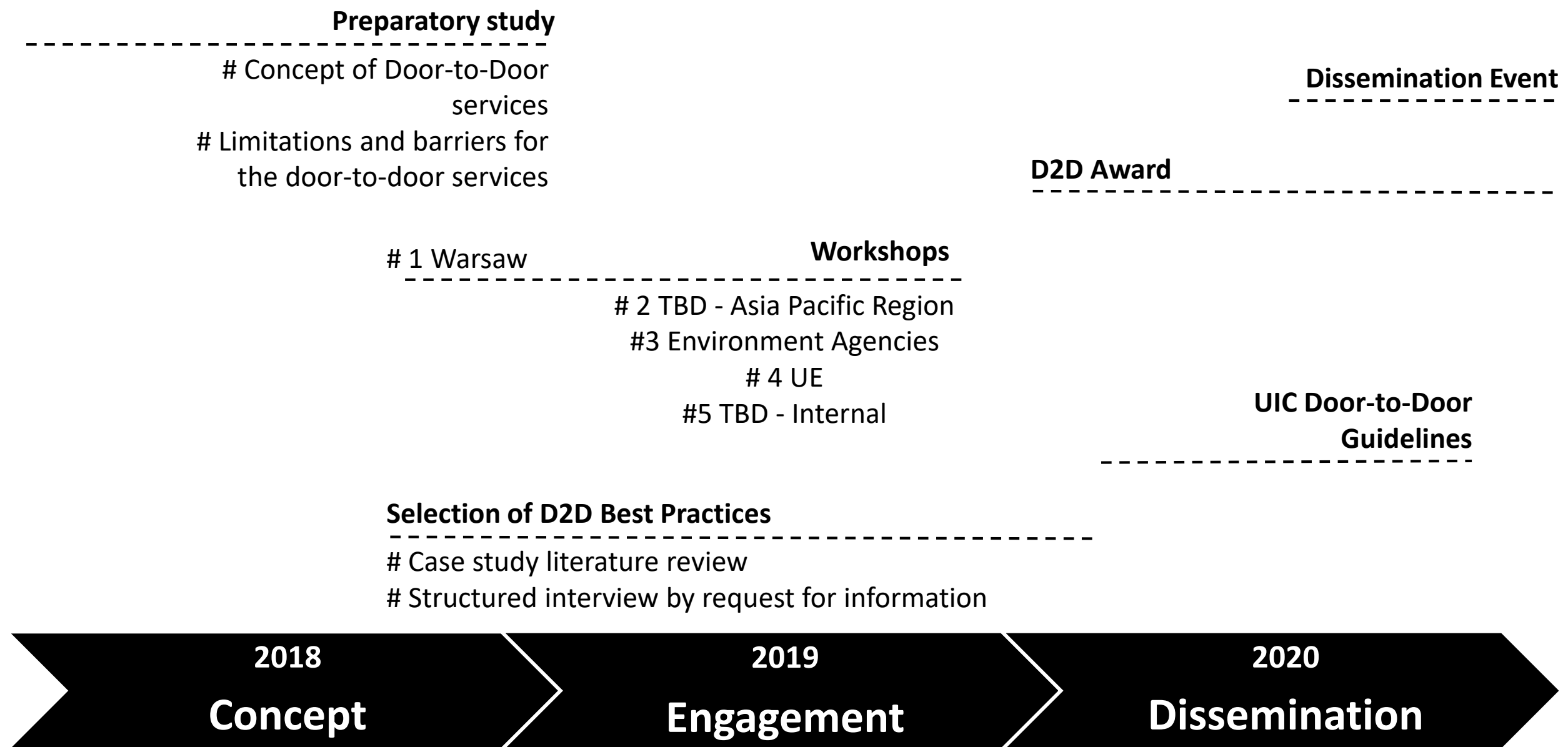
The **National Platform for Shared Mobility** is composed by over **90 members**, including all shared mobility providers, institutions, local authorities and universities. The Platform collects and disseminates data, enables matchmakings among shared mobility stakeholders, disseminates information and best practices and organizes every year the National Conference with Italian and international shared mobility experts.

UIC D2D Project: SUSDEF Background



Italian Shared Mobility Platform: the Network

UIC D2D Project: Key Activities and Timeline



D2D Solutions Project: Outputs and Outcomes

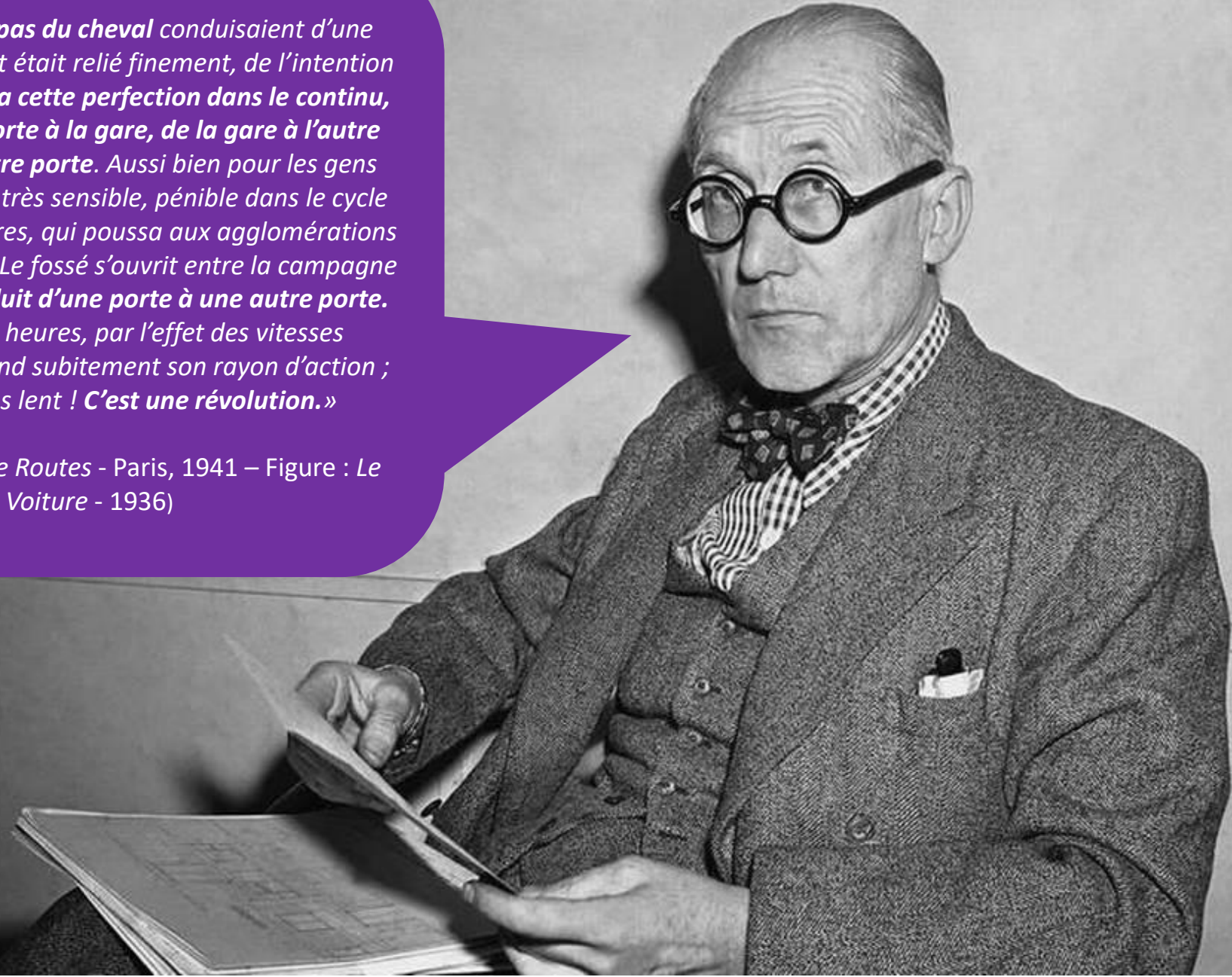


UIC D2D Preparatory Study: Concept

« **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)





UIC D2D Preparatory Study: Concept

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.**

UIC D2D Preparatory Study: Concept



Always Available

Ubiquity

Self-production

Door-to-Door journey

Spatial Flexibility

Seamless On-Demand



Scheduled

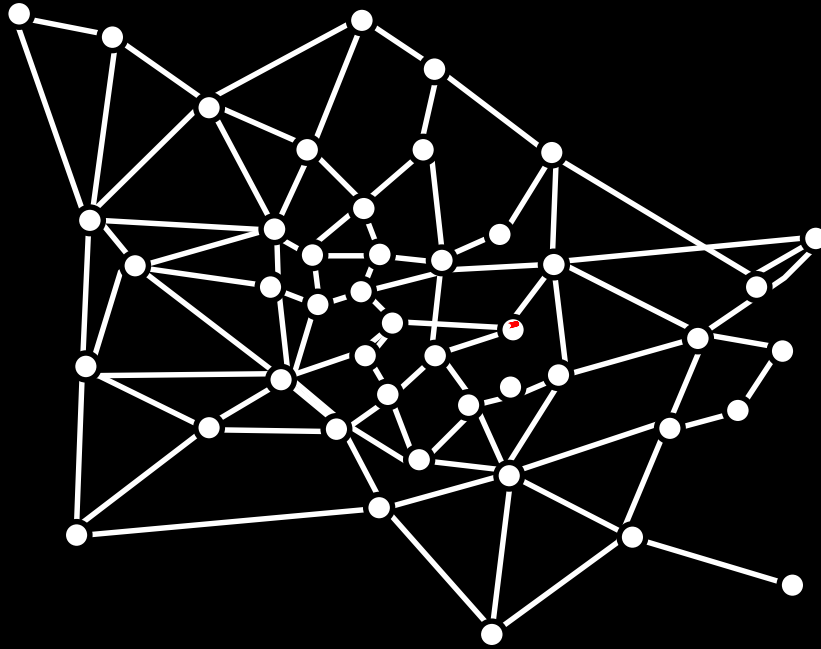
Mobility as a service

Station-to-Station journey

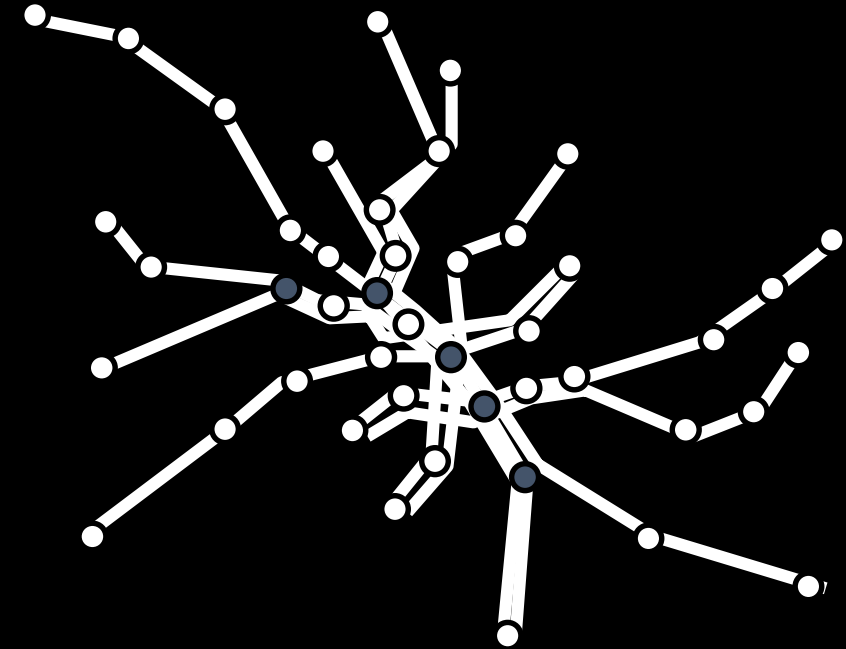
Fixed Route

Discontinuity

UIC D2D Preparatory Study: Concept

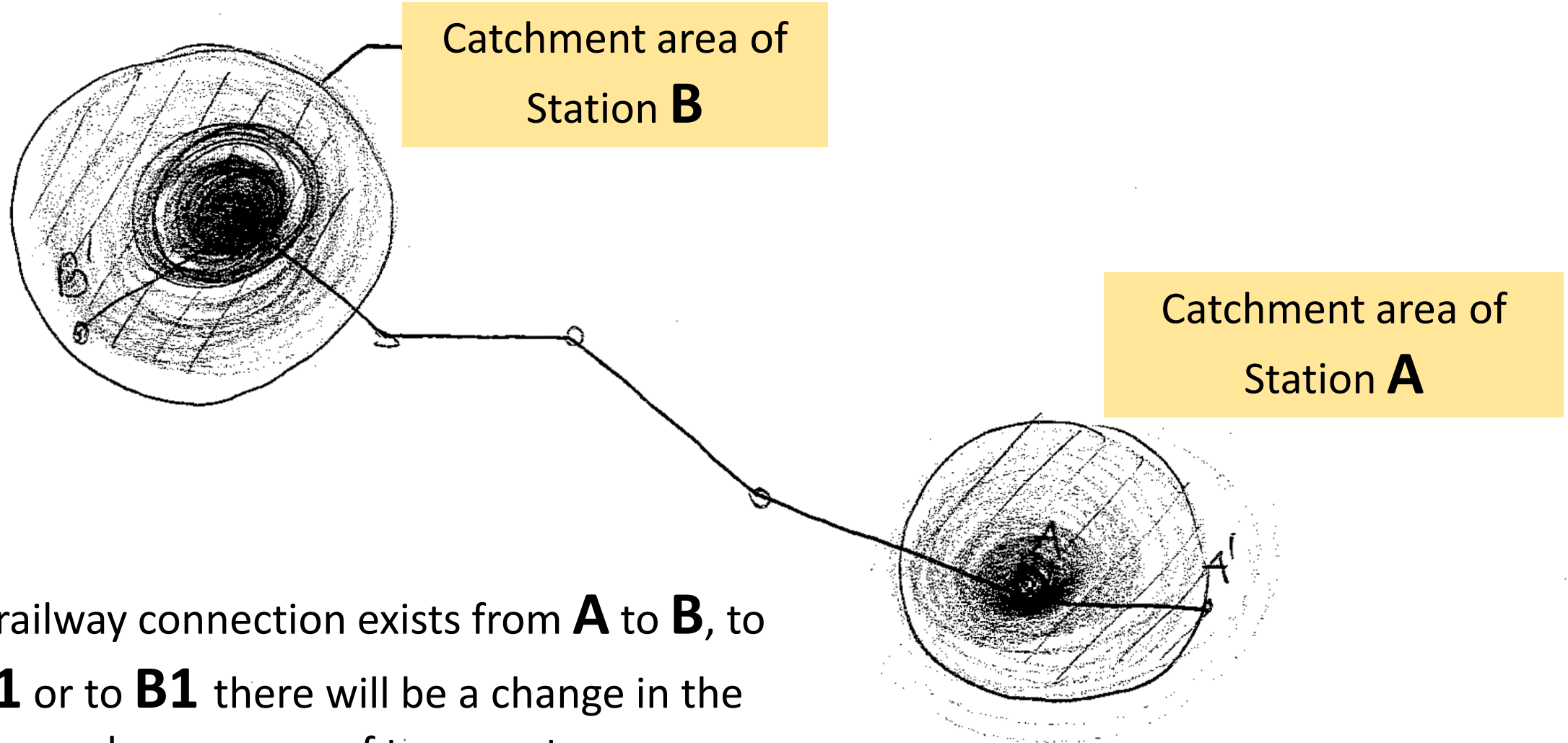


Sprawled spatial
accessibility



Concentrated spatial
accessibility

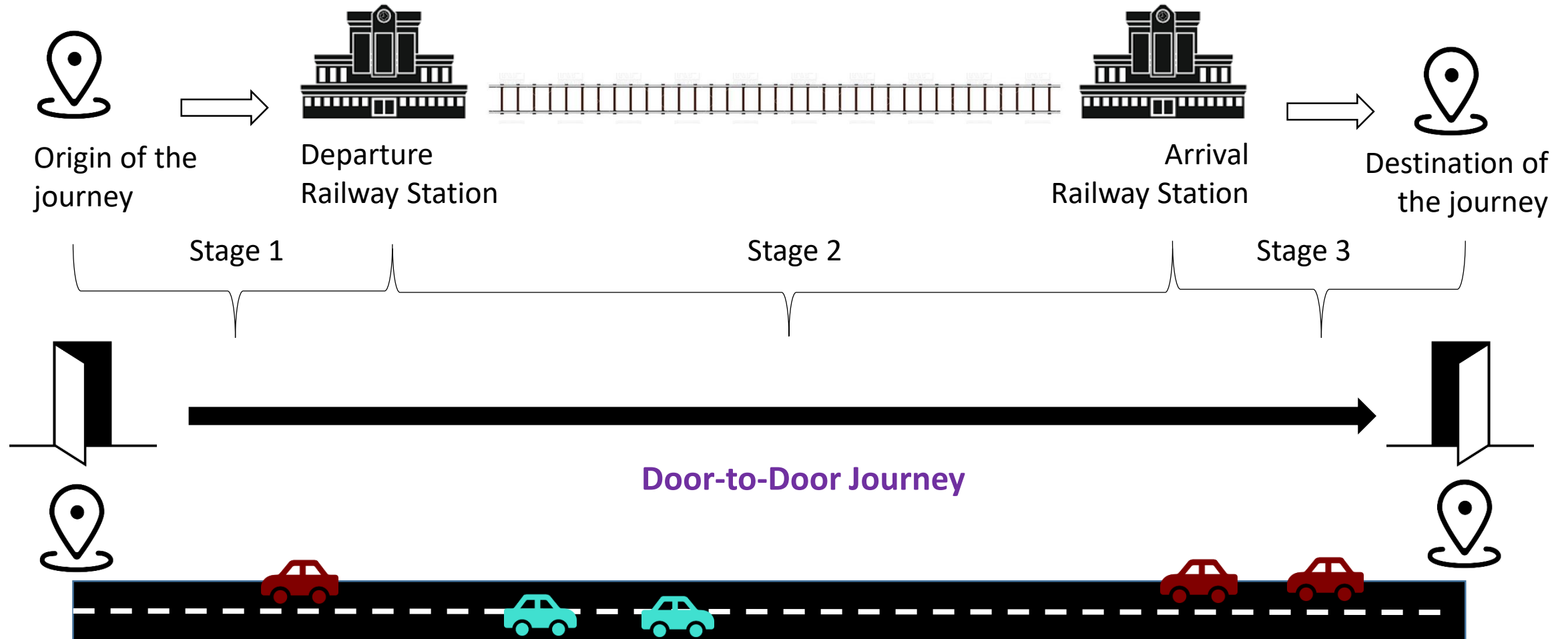
UIC D2D Preparatory Study: Concept



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

UIC D2D Preparatory Study: Concept

Door-to-Door Railway Elementary Journey



Origin of the
journey

A **car journey** is spatially and temporally **seamless**, because
flexible on routes, without schedule, always **available**

Destination of
the journey

UIC D2D Preparatory Study: Concept

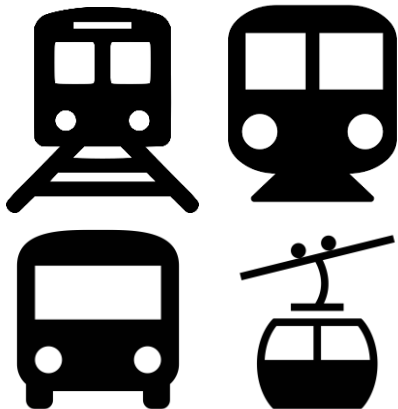


With a car we produce a mobility service for our selves. The car is (mostly) a personal vehicle for a personal journey.

PERSONAL

...VICE VERSA...

VS

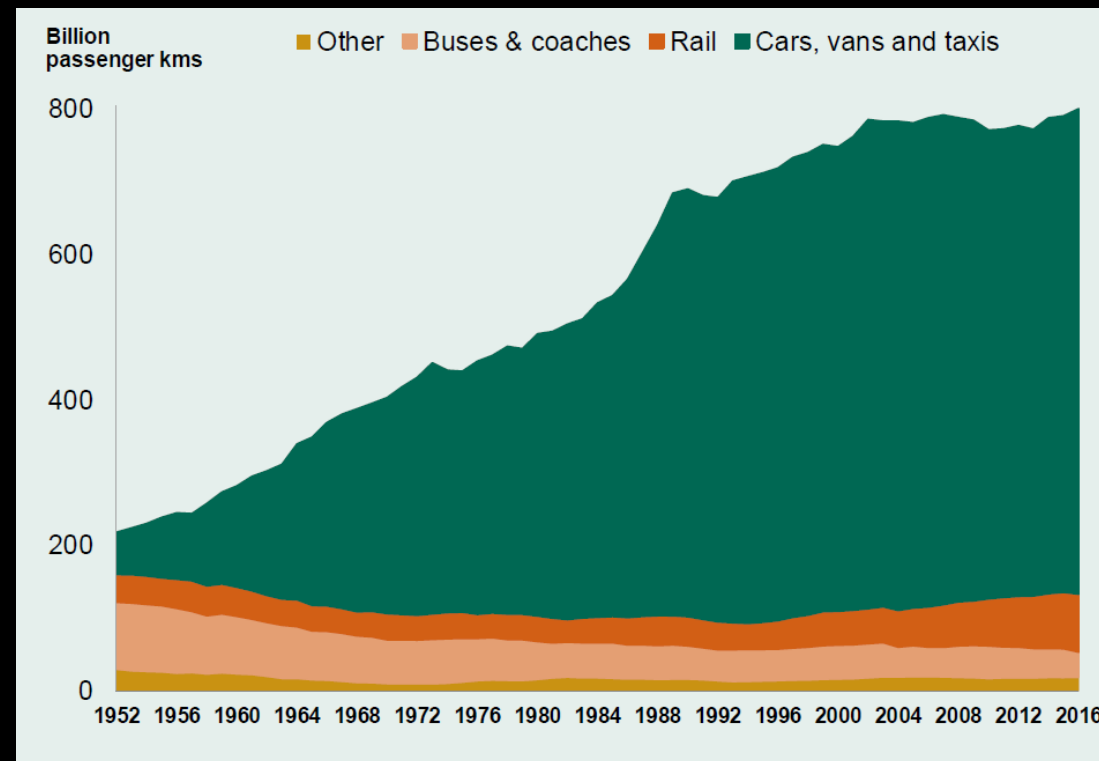


...Fixed routes modes offers mobility service consumed by many. The means of transport are always shared to offer a shared journey

SHARED

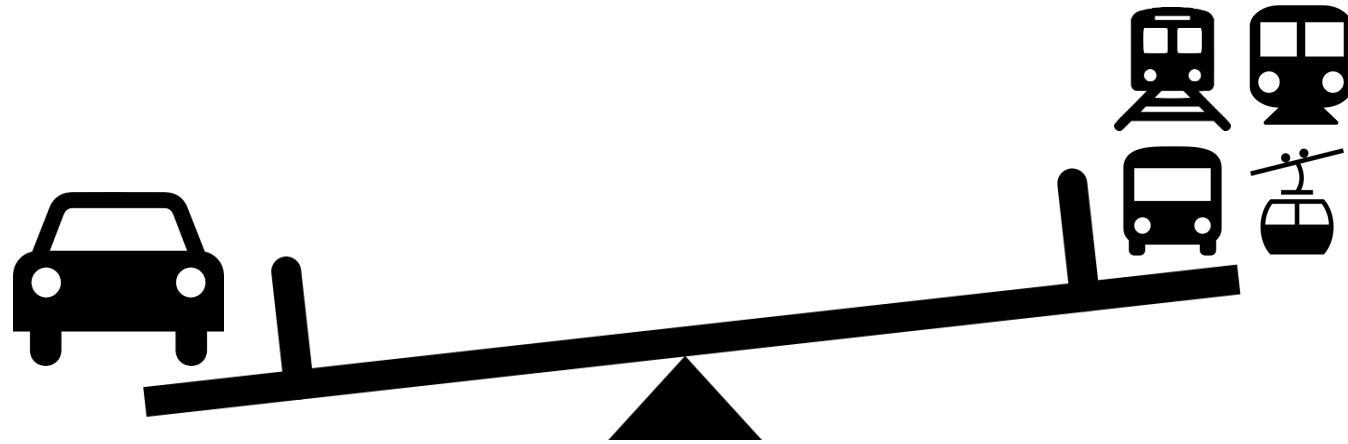
UIC D2D Preparatory Study: Concept

PRIVATE CAR: a success story



Passenger kilometers by mode, Great Britain: 1952 to 2016

UIC D2D Preparatory Study: Concept



MODES of transport

MODELS of transport
production and consumption

PERSONAL

SHARED

UIC D2D Preparatory Study: Concept

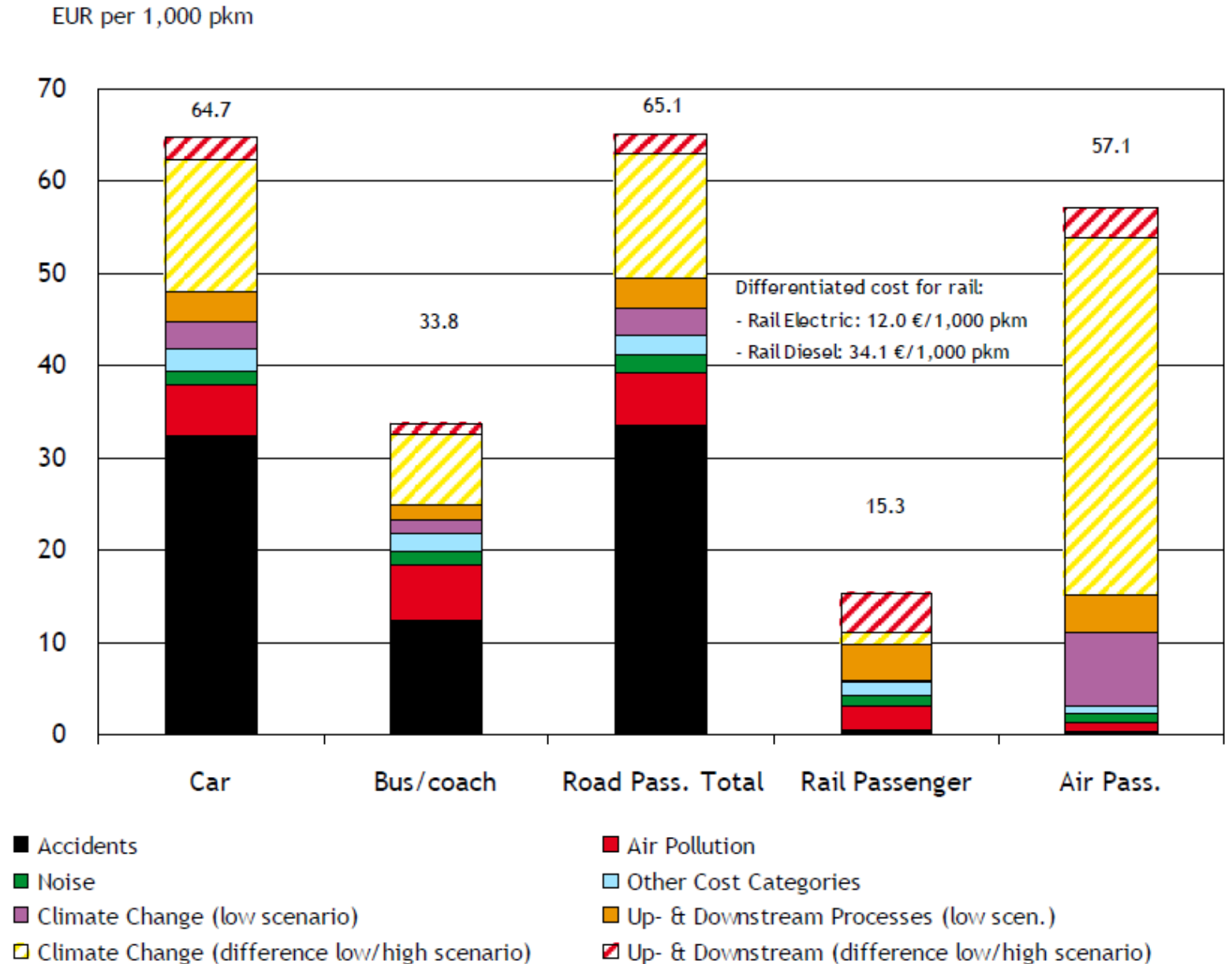
An aerial night photograph of a complex multi-level highway interchange. The image shows several levels of elevated roads with multiple lanes in each direction. Numerous cars are visible, their headlights and taillights creating a dense pattern of light trails. The roads are illuminated by overhead streetlights, and the overall scene is a vibrant display of urban infrastructure at night.

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...)

UIC D2D Preparatory Study: Concept

Average external costs for road transport are more than six times higher than rail for passenger services (excluding congestion)

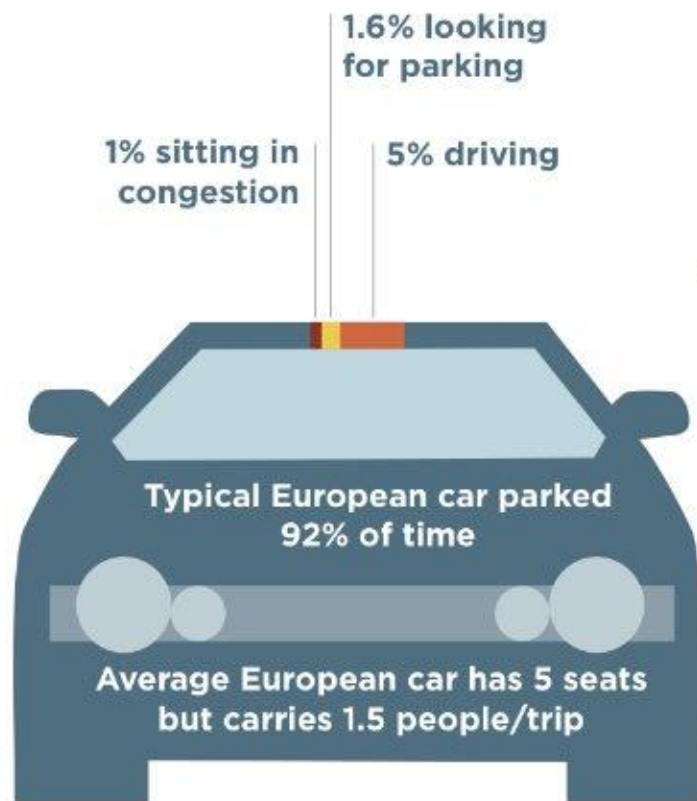
Source: External Costs of Transport in Europe - Update Study for 2008 (2011)
NB Last update (2015) doesn't show comparison tables – The graph will be updated



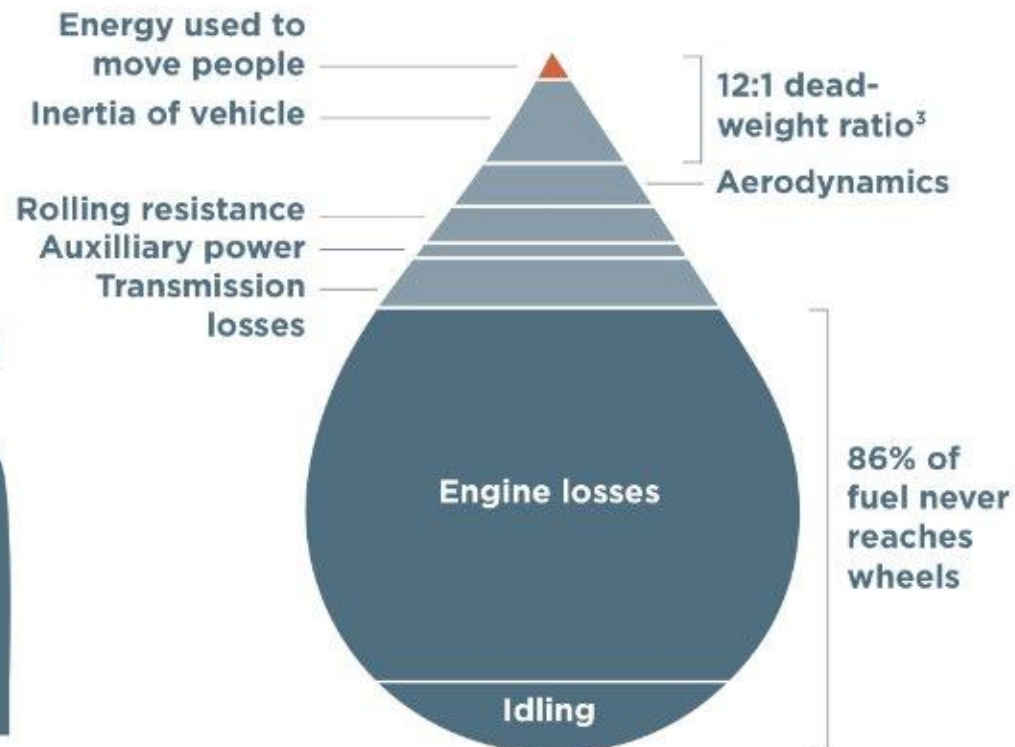
UIC D2D Preparatory Study: Concept

● Productive use

CAR UTILISATION¹

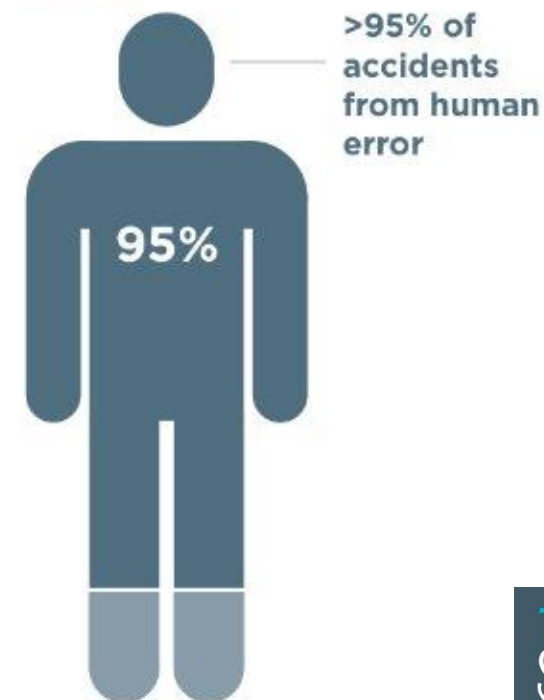


TANK-TO-WHEEL ENERGY FLOW - PETROL



DEATHS AND INJURIES/ YEAR ON ROAD

30,000 deaths in accidents and 4X as many disabling injuries²



LAND UTILISATION:

5%

Road reaches peak throughput only 5% of time and only 10% covered with cars then

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®



UIC D2D Preparatory Study: Times they are a-changing

C:\Megatrend\URBAN GROWTH\Trend

Sprawl – Congestion – Demand for new infrastructure – Changing market and habits – Air quality

C:\Megatrend\CLIMATE CHANGE AND SUSTAINABILITY\Trend

Air quality – Resource depletion – Regulatory action – Greater focus on resilience

C:\Megatrend\DEMOGRAPHIC\Trend

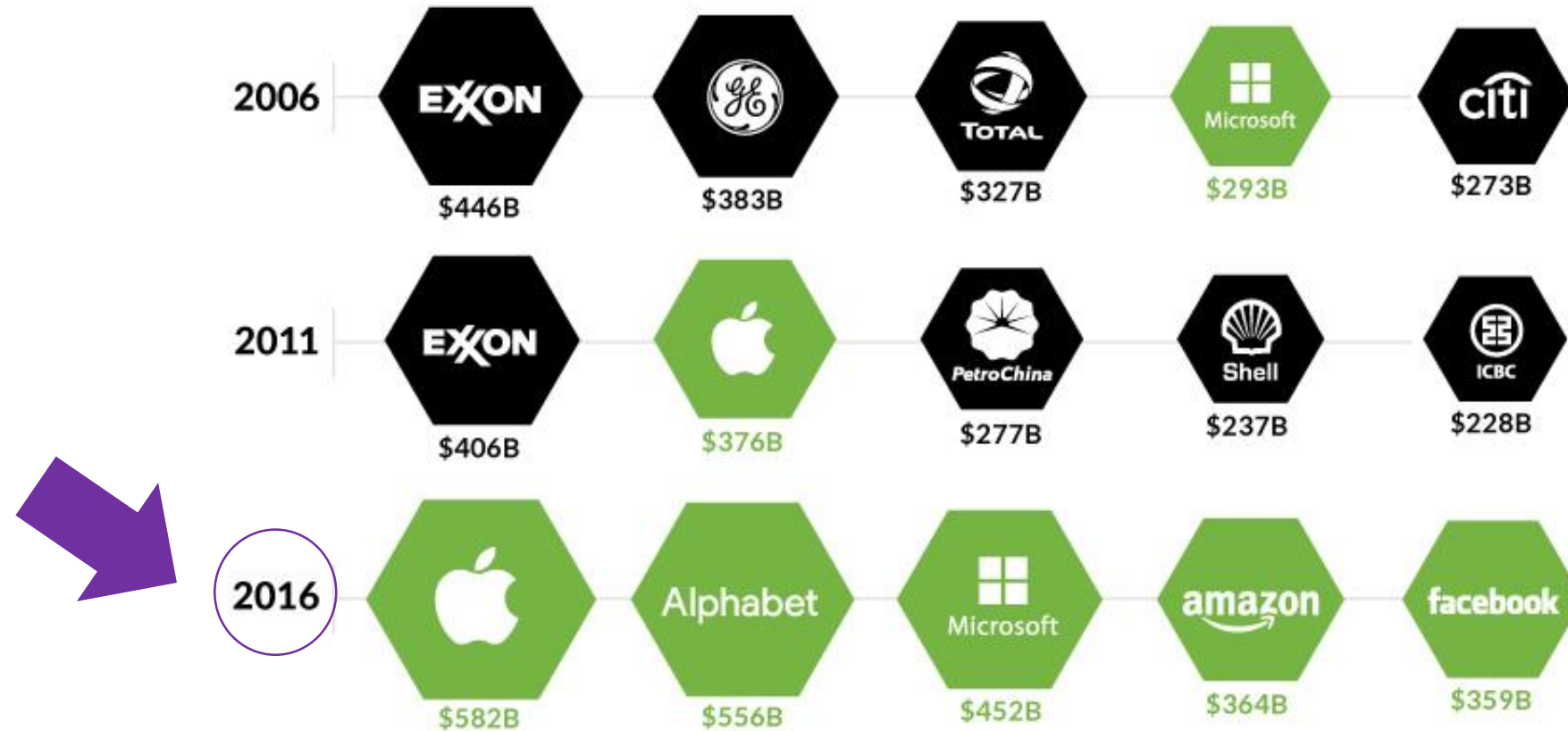
Ageing population – Millennials and Generation Z

C:\Megatrend\TECHNOLOGICAL DEVELOPMENTS\Trend

Increasing penetration of smartphones – **DIGITALIZATION**

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



UIC D2D Preparatory Study: Concept

DIGITALIZATION enables the **SHARE** of vehicles designed for **PERSONAL USE**. The "family" of traditional shared mobility services gains **NEW OPPORTUNITIES** and **NEW OPTIONS**.



BIKESHARING



SCOOTERSHARING



MOPEDSHARING



CARSHARING



VANSHARING

VEHICLESHARING



RIDEHAILING



RIDESPLITTING



E-HAIL



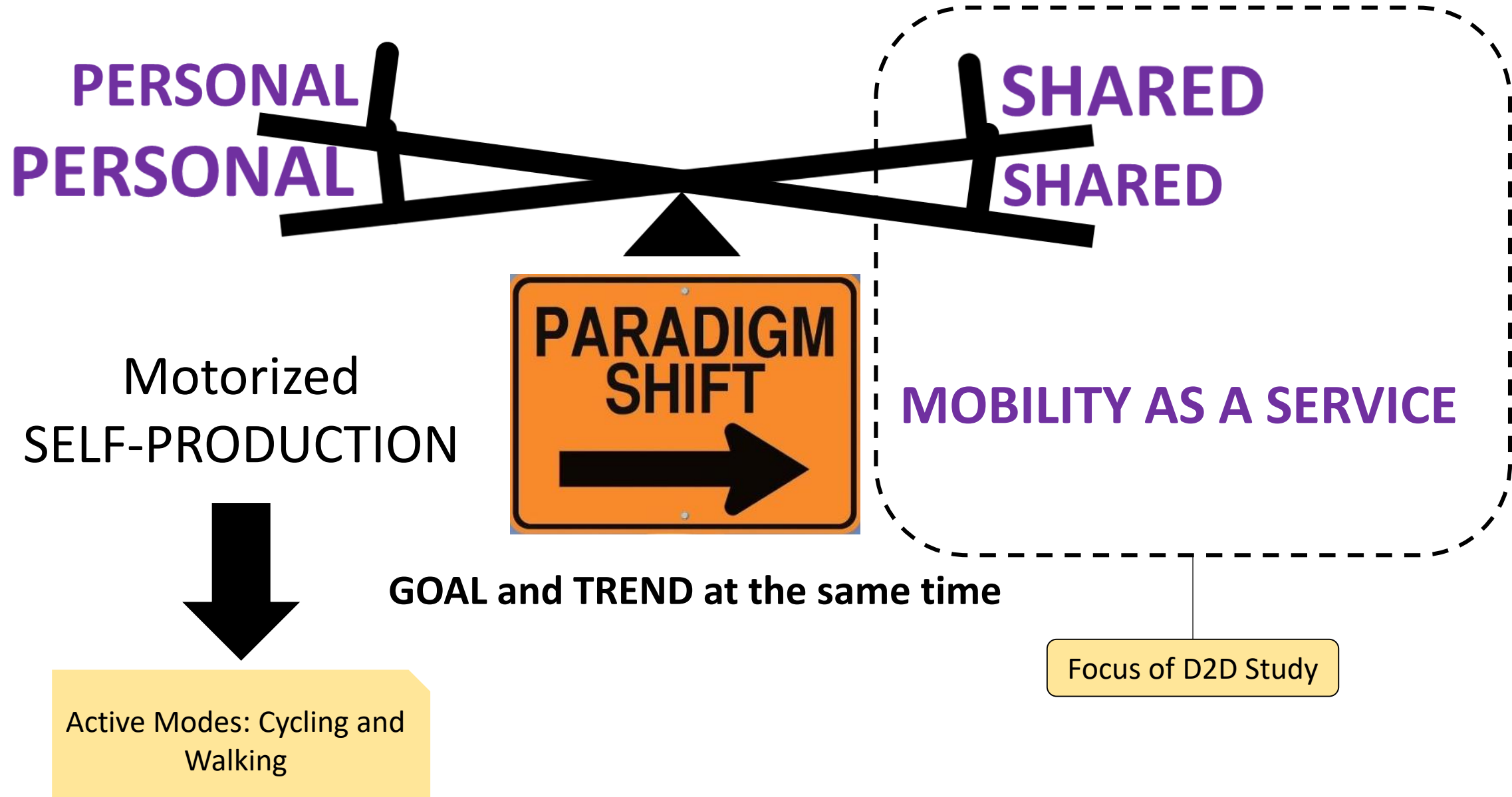
CARPOOLING



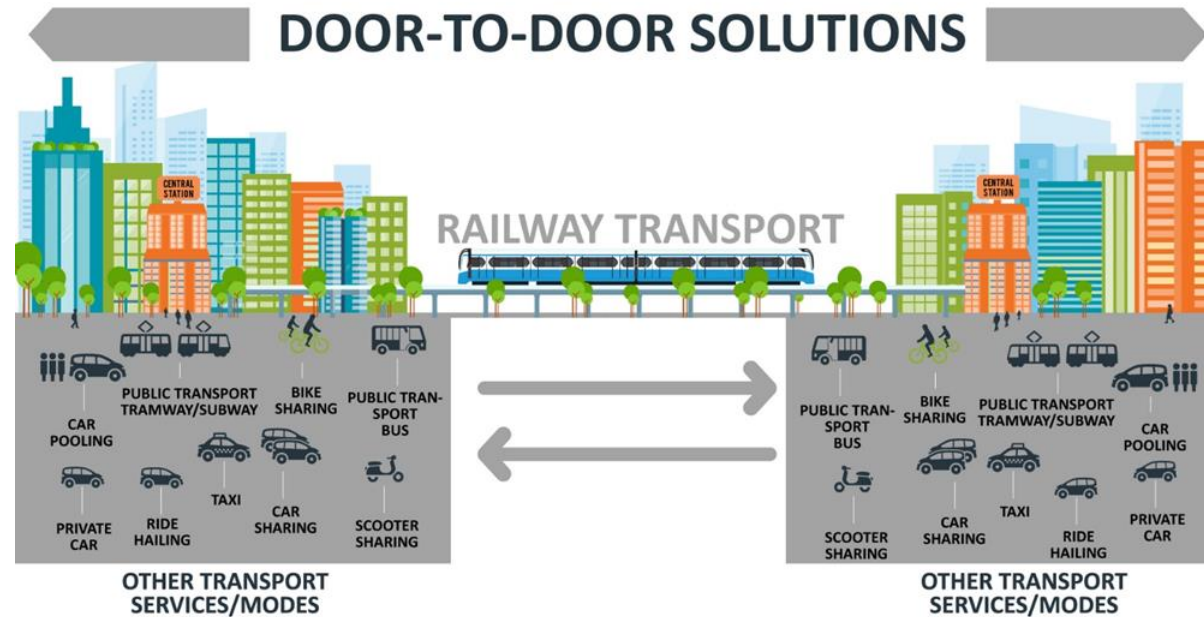
MICROTRANSIT

RIDESHARING

UIC D2D Preparatory Study: Times they are a-changing



UIC D2D Preparatory Study: Definition



Focus of D2D Study

DIGITAL SOLUTIONS
enabling new practical
solutions for D2D

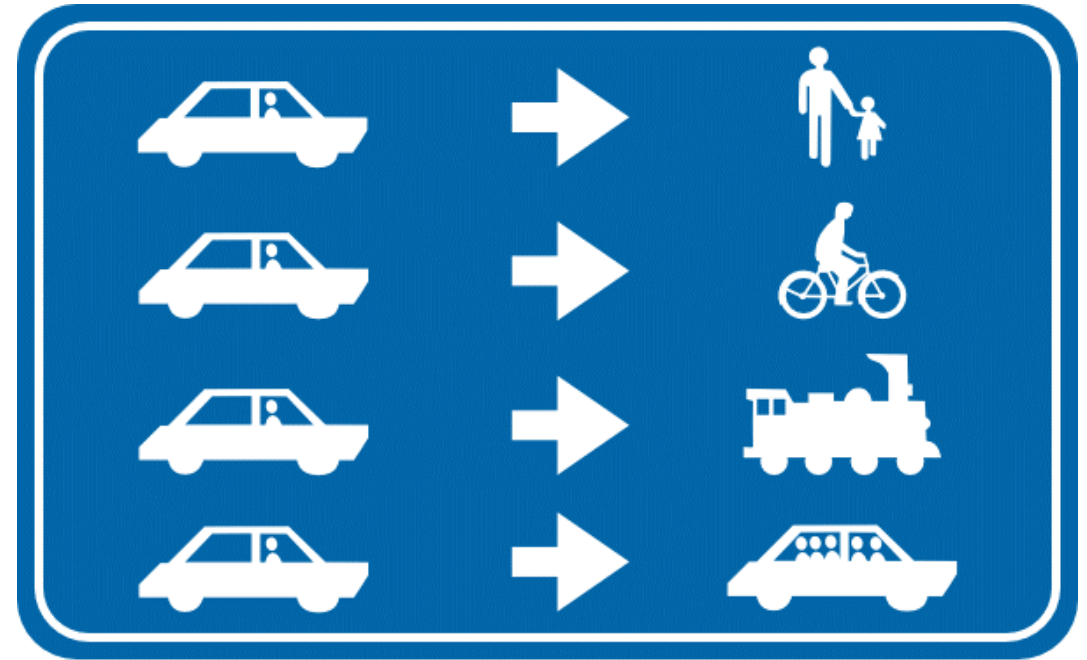
All the actions currently available for a railway company to offer its customers an **INTEGRATED MOBILITY SERVICE** that may start from the initial origin of the customer's movement and end at its final destination and **INCLUDES THE RAILWAY TRANSPORT service** among the travel solutions used during the entire journey.

UIC D2D Preparatory Study: Shift to Rail

Rise **intermodality** between rail and other shared and non motorized modes means rise **rail accessibility**, that leads to **modal shift** to rail

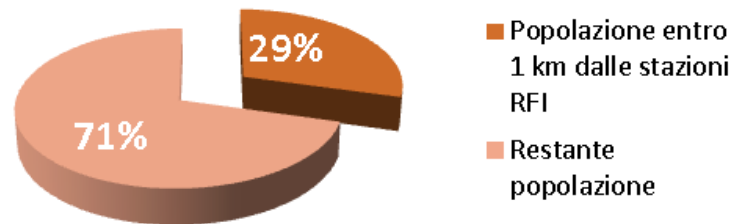
MODAL SHIFT

FROM private car TO
SHARED and/or NON-
MOTORIZED Modes

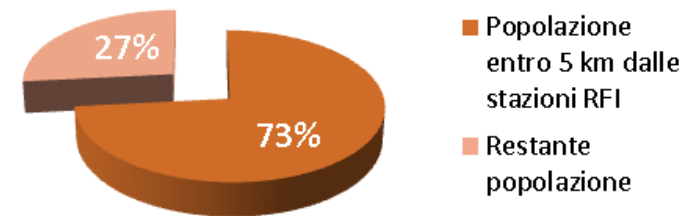


UIC D2D Preparatory Study: Shift to Rail

29% of the Italian population is located within a 1 km radius of a railway station

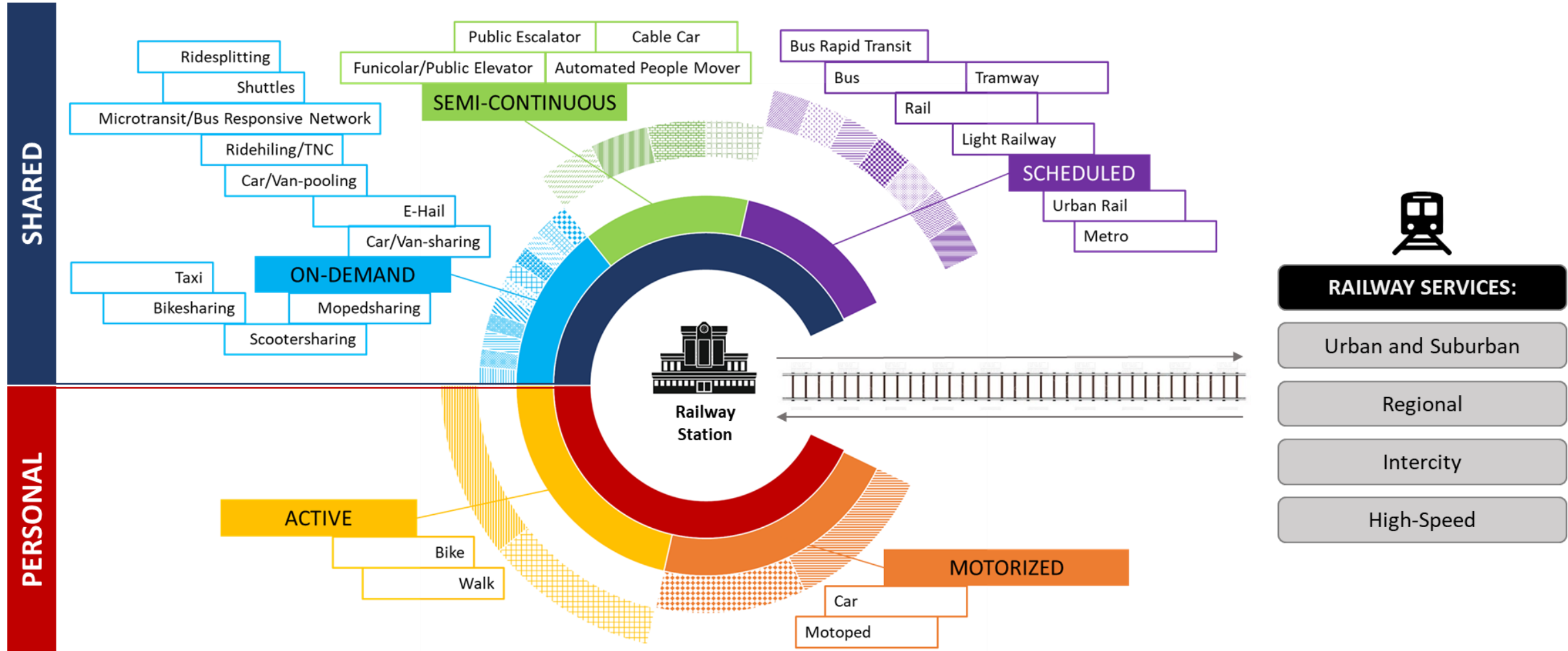


73% of the Italian population is located within a 5 km radius of a railway station



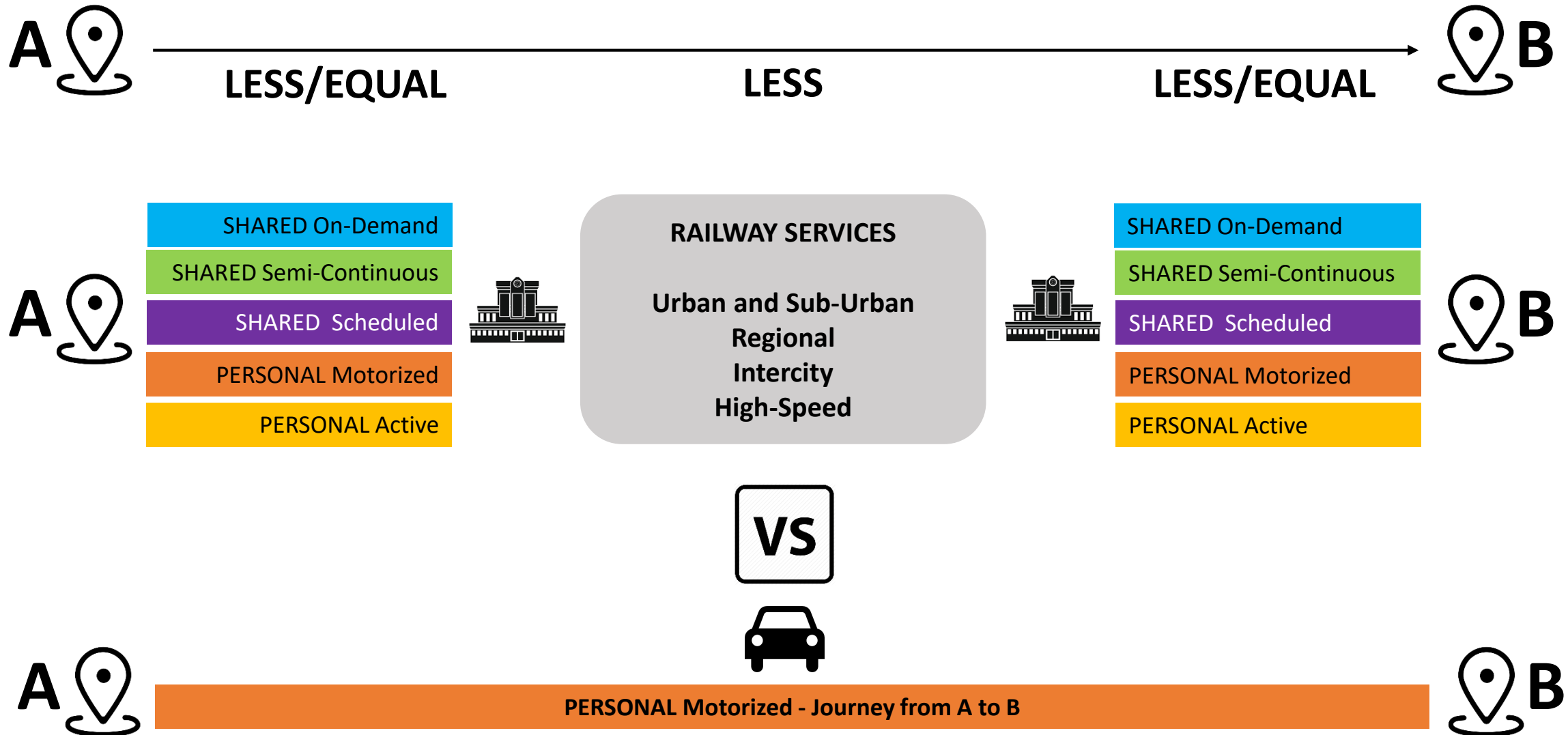
Source: RFI (2018)

UIC D2D Preparatory Study: Supply Side



UIC D2D Preparatory Study: Shift to Rail

ELEMENTARY MULTIPLE JOURNEY IMPACTS



UIC D2D Preparatory Study: Supply Side



How to improve **railway accessibility**?

Focus of D2D Study

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

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

Personal mobility

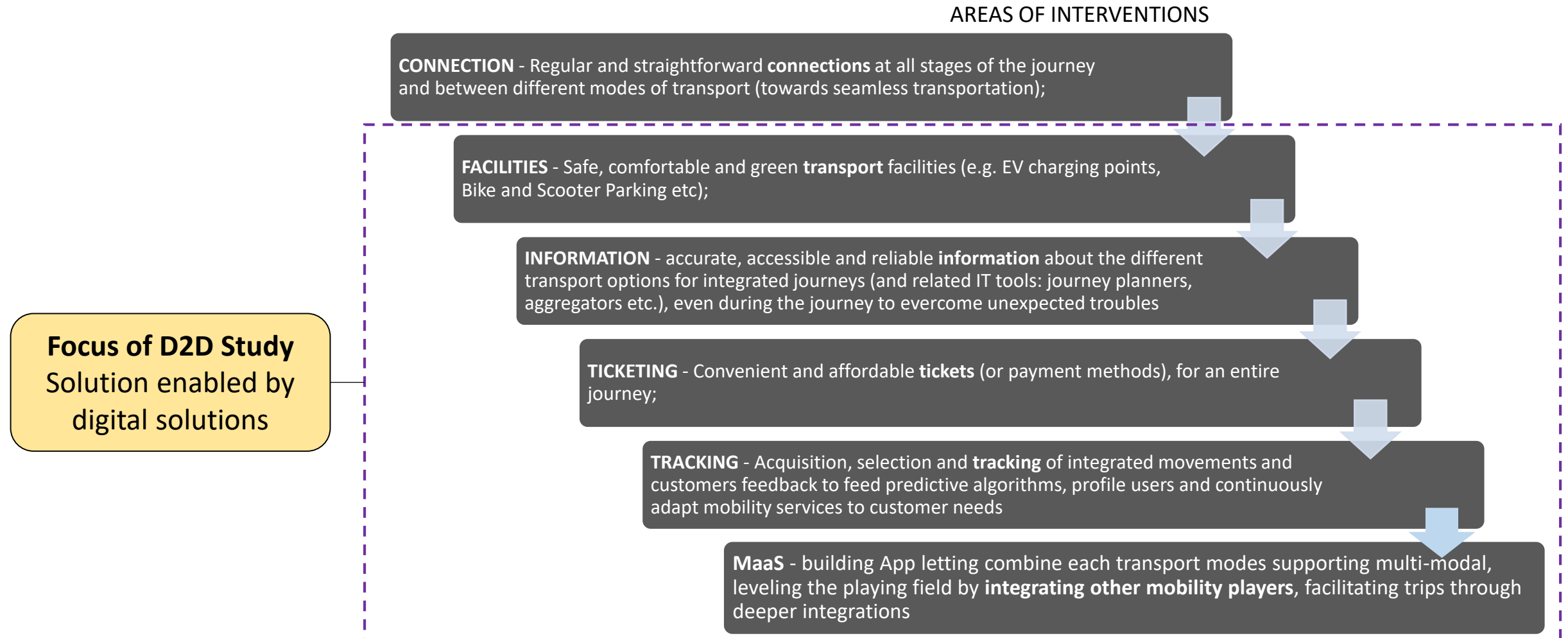
Shared mobility

Active modes

Personal
motorized
transport

UIC D2D Next Steps: Selection of best practices

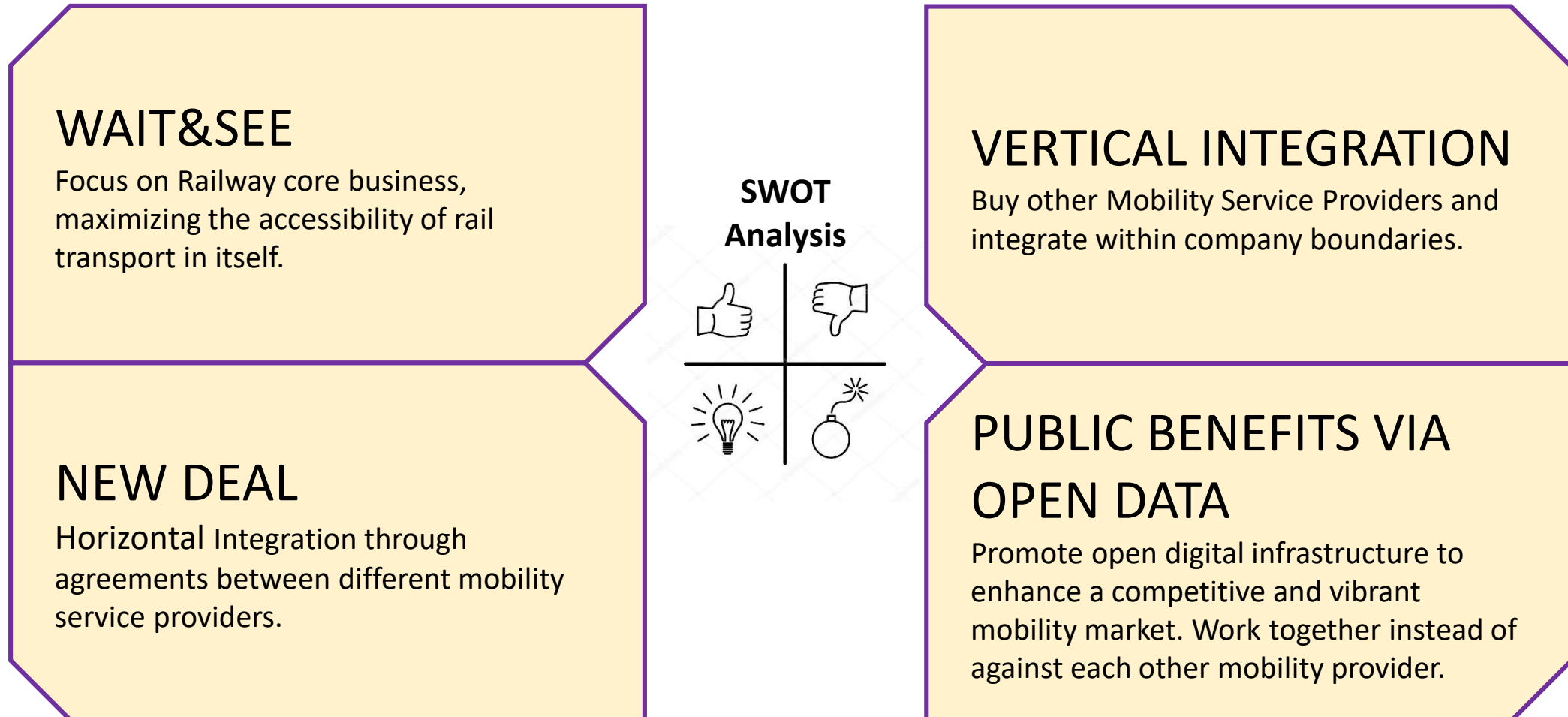
SUSDEF will collect and analyse Door-to-Door Solutions within the main **areas of intervention**.



UIC D2D Next Steps: Selection of case studies

SUSDEF will collect and analyse mobility service providers strategies (including railway companies) towards integration and seamless connectivity.

Where to go?







UIC NETWORKING WORKSHOP

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Warsaw, 14 November 2018



THANK YOU!

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

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