

Kingdom of Morocco

Ministry of  
Equipment and Water



المملكة المغربية  
+٠٧٣١٨٤٦ | ١١٤٢٠٤٥  
وزارة التجهيز والماء  
+٠٤٠٤٤٥٠٦ | ١٤٤٤٥٠٨ ٤٤٤٥٠٤



الجمعية المغربية الدائمة لمؤتمرات الطرق  
L'Association Marocaine Permanente des Congrès de la Route  
The Permanent Moroccan Association of Road Congresses



UNIVERSITÉ PRIVÉE DE FÈS  
الجامعة الخاصة لفاس  
PRIVATE UNIVERSITY OF FÈS

# Welcome words and TC 2.1 présentation

**Andrea Simone**

Chair of the TC 2.1 – Professor at the University of Bologna

International seminar on Accessibility and Mobility for Urban and Peri-urban  
Areas: challenges and opportunities for the cities of tomorrow

15 - 17 October 2025 Fez – Morocco

# What is PIARC?



- **PIARC - World Road Association**
- PIARC was **founded in 1909** as a non-profit, non-political association
- **Our goal is to organise exchange of knowledge, policy and practice on all matters related to roads and road transport**
  - Expert Committees, Reports, International Seminars...
- We have **128 member governments**, as well as regions, groups/companies and individuals.
- The Association mobilizes the experience and knowledge of **1,200 experts** from more than **80 countries** in **20+ Technical Committees** and Task Forces

# Strategic Plan 2024-2027

Strategic Theme 1 Road Administration	Strategic Theme 2 Road Mobility	Strategic Theme 3 Safety and Sustainability	Strategic Theme 4 Resilient Infrastructure
TC 1.1 Performance of Transport Administrations	TC 2.1 Roads for Accessibility and Mobility in Urban and Periurban Areas	TC 3.1 Road Safety	TC 4.1 Pavements
TC 1.2 Contribution of Roads to Economic and Social Development	TC 2.2 Roads for Equity, Accessibility and Mobility in Rural and Interurban Areas	TC 3.2 Winter Service	TC 4.2 Bridges
TC 1.3 Finance and Procurement	TC 2.3 Sustainable Freight	TC 3.3 Asset Management	TC 4.3 Earthworks
TC 1.4 Planning the Resilience of Road Networks - Climate Change and other Hazards	TC 2.4 Road Network Operations and ITS for Sustainability	TC 3.4 Environmental Impacts of Road Infrastructure and Transport	TC 4.4 Tunnels
TC 1.5 Disaster management	TC 2.5 Road infrastructure for Connected and Automated Mobility (new)	TC 3.5 Road infrastructure for road transport decarbonization (new)	TC 4.5 Decarbonization of road Construction and Road Maintenance (new)
<b>Task Forces</b>			
TF 1.1 HDM-4			TF 4.1 Road Design Standards
<b>Strategic Coordinator on Decarbonization</b>			
<b>CROSS-CUTTING COMMITTEES</b>			
Terminology Committee			
Road Statistics Committee			

## 4 Strategic Theme

### 20 Committees and Task Forces

#### ➤ Strategic Theme 2: **Mobility**

- The goal of this Strategic Theme is to provide **good knowledge** and some **sustainable answers** to all communities in the fields of **people mobility** and **goods transportation**, taking into account what follows: challenges for mobility policies mentioned above, the opportunity of new technologies, and the increasing need to have a good alignment between mobility policies and the broader goals of communities, in a context where those goals are changing.

#### ➤ Technical Committee 2.1: **Roads for accessibility and mobility in Urban and Peri- Urban Areas**

- The new title of the TC 2.1 underlines the 3 pillars of the T.C.'s work: **Roads, accessibility and mobility.**

## 2.1 Technical Committee

### 3 Working groups

- **WG 2.1.1: Cooperation between transport modes in urban and peri - urban areas**
  - The first topic **cooperation** between transport modes in urban and peri -urban areas has the goal to reduce car traffic, congestion and greenhouse gas emission and to ensure equity between urban and peri -urban areas, through a better cooperation between transport modes and a ***new paradigm for road space and multimodal transit center design***. This topic will develop In cooperation and coordination with TC2.2
- **WG 2.1.2: Urban vehicle access regulations (UVARs)**
  - The second topic has the purpose to study different solution of **urban vehicle access restrictions and regulations**: Low emission zones, pedestrian zones, congestion charging zones and road pricing. The goal is to evaluate the **effectiveness** in terms of congestion mitigation also from the point of view of an integrated urban transportation plan, to analyze the **benefits** and **potential neglected cost**. It is noted that UVARs will be more effective if introduced along with alternative multimodal solutions. This work will be made in coordination with zero/low emission zones treated in TC3.4

## 2.1 Technical Committee

### 3 Working groups

#### ➤ **WG 2.1.3: Securing mobility of vulnerable road users in crowded street and for highly frequented infrastructures**

will focus on some arguments dealing with the specific aspects of safety in urban areas:

- vulnerable users facing public transport (Bus, tram, etc.)
- new forms of mobility in crowded street and in district development
- traffic and crowd management for highly frequented infrastructures

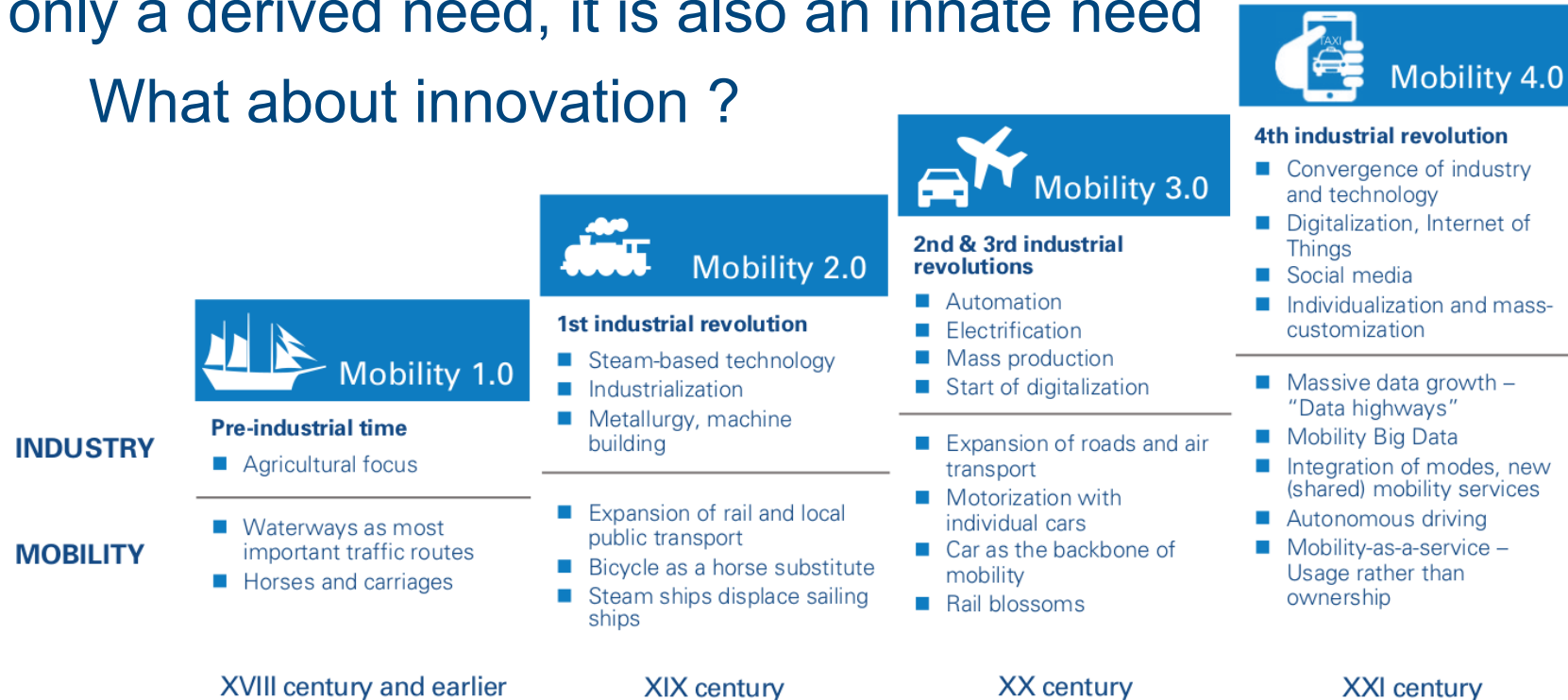
This Topic it' s strictly connected with the TC 3.1 Road Safety and it should be done in relation with it.

# Summary

Mobility : what are the priorities ?

Mobility is not only a derived need, it is also an innate need

What about innovation ?



Source: Arthur D. Little

Figure 1: **Mobility is being redefined again, driven by the 4th industrial revolution**

# First approach: Focus on people, their needs, their habits, not on vehicles

## Mobility as a derivative human need

- When you are « far from everything »
  - Far from jobs, from education, from social welfare
- Mobility is the answer
  
- What are my questions ?
  - Do I have a modal choice ?
  - Do I have a cheap offer ?
  - Do I have a sustainable mode of transport?
  - ...

# Second approach: Mobility as a Native Human Need

Schafer, A., and D. Victor (2000).  
The future mobility of the world  
population. *Transportation  
Research A*, 34(3): 171-205  
([http://dx.doi.org/10.1016/S0965-8564\(98\)00071-](http://dx.doi.org/10.1016/S0965-8564(98)00071-)



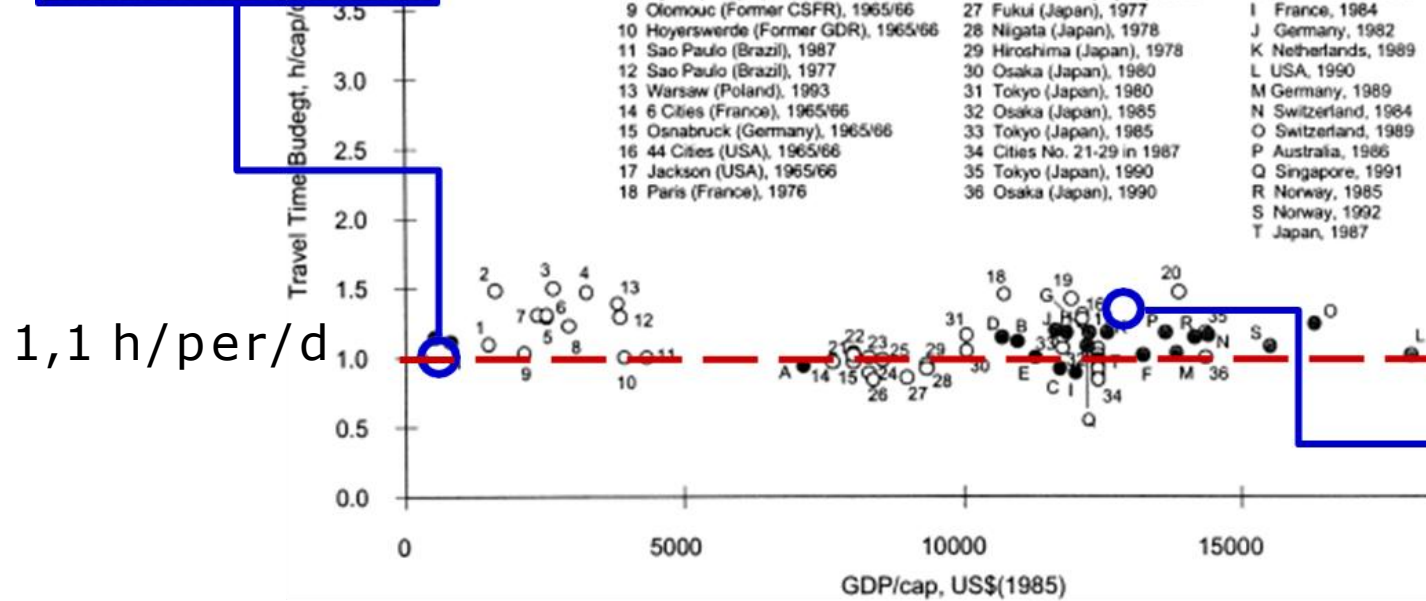
African Villages in:  
Tanzania, 1986  
Ghana, 1988

City Surveys:

- 1 Tianjin (China), 1993
- 2 Kazanlik (Bulgaria), 1965/66
- 3 Lima-Callao (Peru), 1965/66
- 4 Pskov (Former USSR), 1965/66
- 5 Maribor (Former Yugoslavia), 1965/66
- 6 Kragujevac (F. Yugoslavia), 1965/66
- 7 Torun (Poland), 1965/66
- 8 Győr (Hungary), 1965/66
- 9 Olomouc (Former CSFR), 1965/66
- 10 Hoyerswerde (Former GDR), 1965/66
- 11 Sao Paulo (Brazil), 1987
- 12 Sao Paulo (Brazil), 1977
- 13 Warsaw (Poland), 1993
- 14 6 Cities (France), 1965/66
- 15 Osnabruck (Germany), 1965/66
- 16 44 Cities (USA), 1965/66
- 17 Jackson (USA), 1965/66
- 18 Paris (France), 1976

National Travel Surveys:

- A Belgium, 1965/66
- B Austria, 1983
- C Great Britain, 1985/86
- D Germany, 1976
- E Netherlands, 1979
- F Great Britain, 1989/91
- G Finland, 1986
- H Netherlands, 1987
- I France, 1984
- J Germany, 1982
- K Netherlands, 1989
- L USA, 1990
- M Germany, 1989
- N Switzerland, 1984
- O Switzerland, 1989
- P Australia, 1986
- Q Singapore, 1991
- R Norway, 1985
- S Norway, 1992
- T Japan, 1987



each person spends 1.1 hours / day traveling (Schafer and Victor)

# To bring an answer to those questions I need to know :

where do people live ?	City	Periphérie	Rural area
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## To bring an answer to those questions I need to know :

where do people live ?		City	Periphérie	Rural area
Length of the trip ?	0 to 10 km			
	10 to 100 km			
	100 to 1000 km			

- For very short trips we generally have an old and strong governance
- For very long trips we also have an old and strong governance

## To bring an answer to those questions I need to know :

where do people live ?		City	Periphérie	Rural area
Length of the trip ?	0 to 10 km			
	10 to 100 km			
	100 to 1000 km			

- In many countries the main mobility problems are for people living in peripheries and medium range length

## Needs in the medium range of length (about 5/10 km to 100 km) for people living in suburbs and periurban areas are the most important problem

### ➤ Why ?

- Access to jobs, education, health services
- Most of them are constraints
- They cost a lot of money to households
- Most of them occur during peak hours (congestion)
- CO2 emissions
- ...

### ➤ It is

- a question of social inclusion
- and a question of efficiency for urban areas and metropolitan areas

# To bring an answer to those questions I need to know :

**On average a person spends 1.1 h per day traveling and devotes a predictable fraction of income to travel.**

**these time and money budgets are stable over space and time and can be used for projecting future levels of mobility and transport mode.**

**The fixed travel money budget requires that mobility rises nearly in proportion with income.**

In addition, demand for low-speed public transport is partially determined by urban population densities and land-use characteristics.

Schafer and Victor present a model that incorporates these constraints, which we use for projecting traffic volume and the share of the major motorized modes of transport—automobiles, buses, trains and high speed transport (mainly aircraft)—for 11 regions and the world through 2050.

Schafer and Victor project that by 2050 the average world citizen will travel as many kilometers as the average West European in 1990. The average American's mobility will rise by a factor of 2.6 by 2050, to 58,000 km/year. The average Indian travels 6000 km/year by 2050, comparable with West European levels in the early 1970s. Today, world citizens move 23 billion km in total; by 2050 that figure grows to 105 billion.

## What about innovation ?



# How will new technologies shape our projects ?

They are already challenging our transportation services in many fields :

## ➤ Efficiency

- Our transportation services are far from being efficient; most of the time, the vehicles (cars, bus, BRT, metro, ...) are 80% empty
- With a good algorithm new technologies can provide a better and cheaper public service (ride hailing apps., automatic routing systems new services)

# How will new technologies shape our projects ?

The effects of autonomous driving are unknown but :

- The frontier between “public transport” and “private transport” is disappearing
- Self-driving cars will make vehicle travel more affordable and will increase urban congestion
- The scales of time between digital projects and infrastructure projects are very different
- Etc.....
  
- We should look for integrated projects, smart projects, resilient systems (i.e. optimizing existing transportation networks)
- We should think about the “transition”

# Thank you for your attention!

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