



EYE 2022 THE EUROPEAN YOUNG ENGINEERS CONFERENCE

5 - 8 May, 2022 | Lisbon

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PANEL 1

IP VISION ON INNOVATION AND TRANSPORTATION IN THE COMING FUTURE

João Figueiredo

Gestor da Unidade de Inovação na Infraestruturas de Portugal





Agenda

1. ABOUT IP

Mission, The IP Group, Big Numbers

2. TRANSPORT INFRASTRUCTURE IMPACTS

Economy, Land, Urban Planning, Environment

3. PORTUGUESE ROAD AND RAIL NETWORKS

Our position on the international scene

4. THE FUTURE OF INFRASTRUCTURES

Main challenges for the infrastructure managers



1. ABOUT IP

Mission, The IP Group, Big numbers

INFRAESTRUTURAS DE PORTUGAL is the state-owned company that resulted from the merger between “Rede Ferroviária Nacional – REFER” and “EP - Estradas de Portugal”.



1. ABOUT IP

Mission

The **purpose of IP** is to plan, design, construct, finance, maintain, operate, rehabilitate, extend and modernise the Portuguese road and railway networks, including in the latter traffic command and control.





1. ABOUT IP

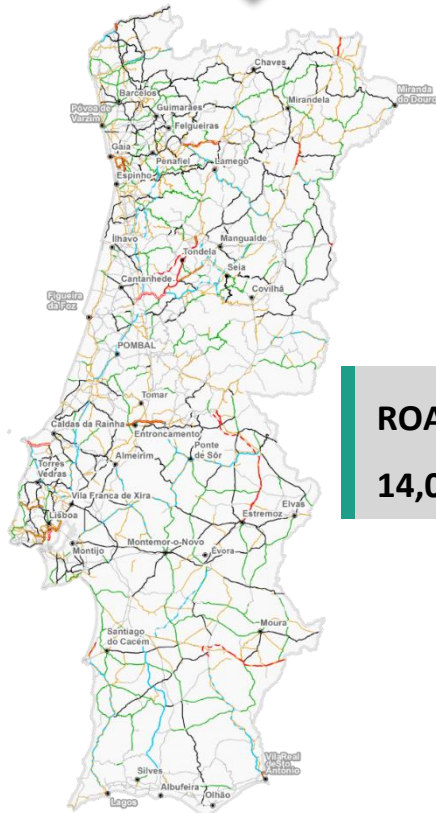
The IP Group



1. ABOUT IP

The IP Group

ROAD NETWORK



ROAD NETWORK:
14,092 km (directly managed)

RAIL NETWORK



RAIL NETWORK:
2,558 km (with traffic)

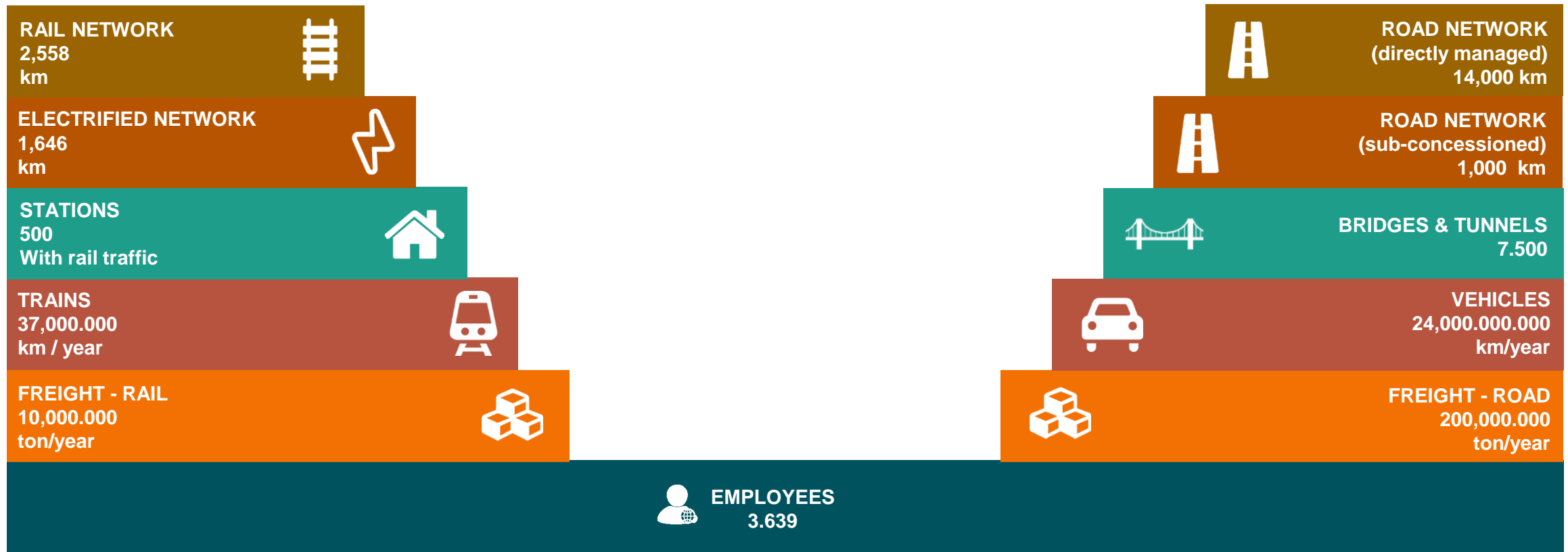
Legenda

- Rede em Exploração
- Rede Sem Exploração



1. ABOUT IP

Big Numbers



Agenda

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Our position on the international scene

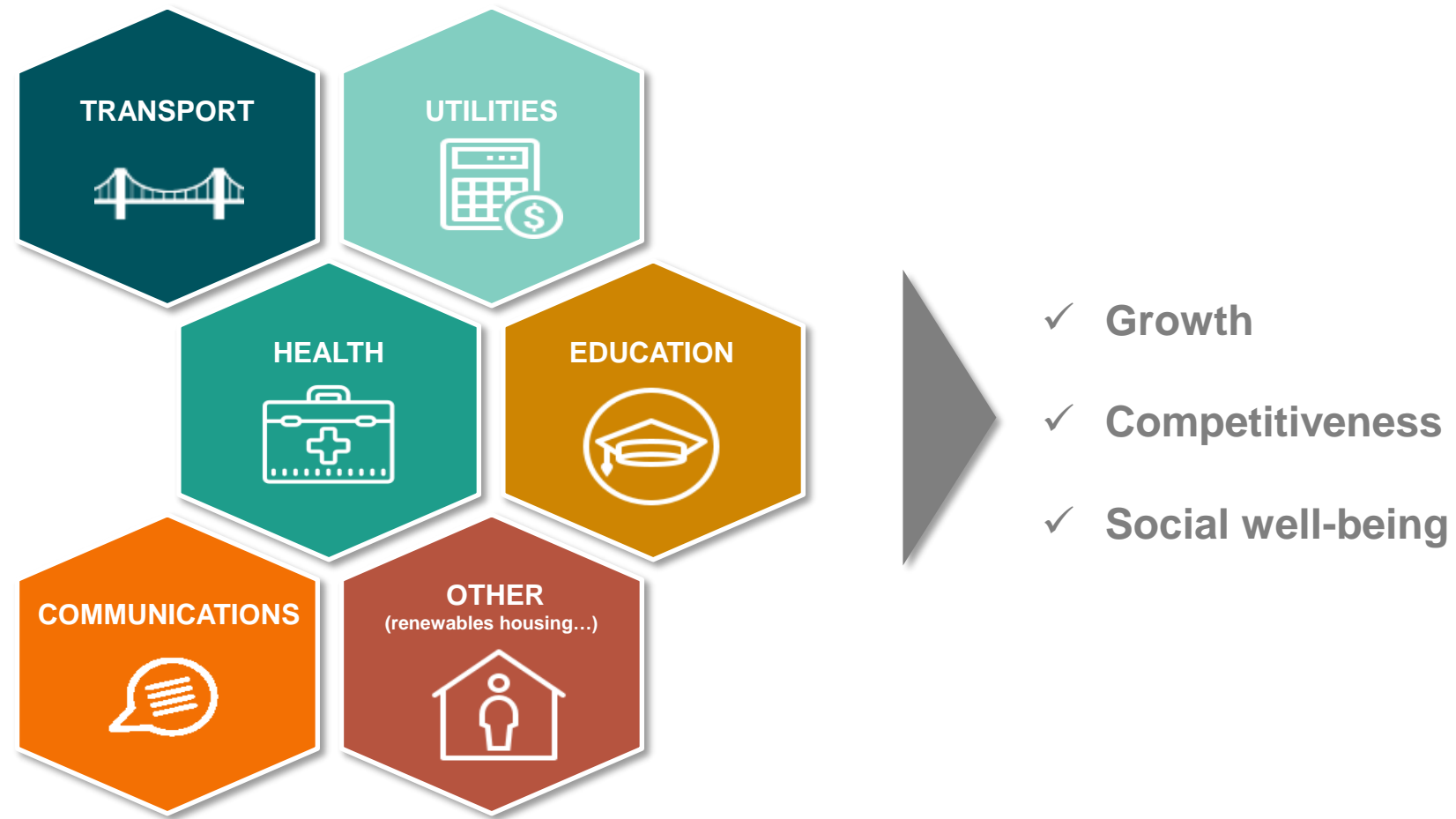
4. THE FUTURE OF INFRASTRUCTURES

Main challenges for the infrastructure managers



2. TRANSPORT INFRASTRUCTURE IMPACTS

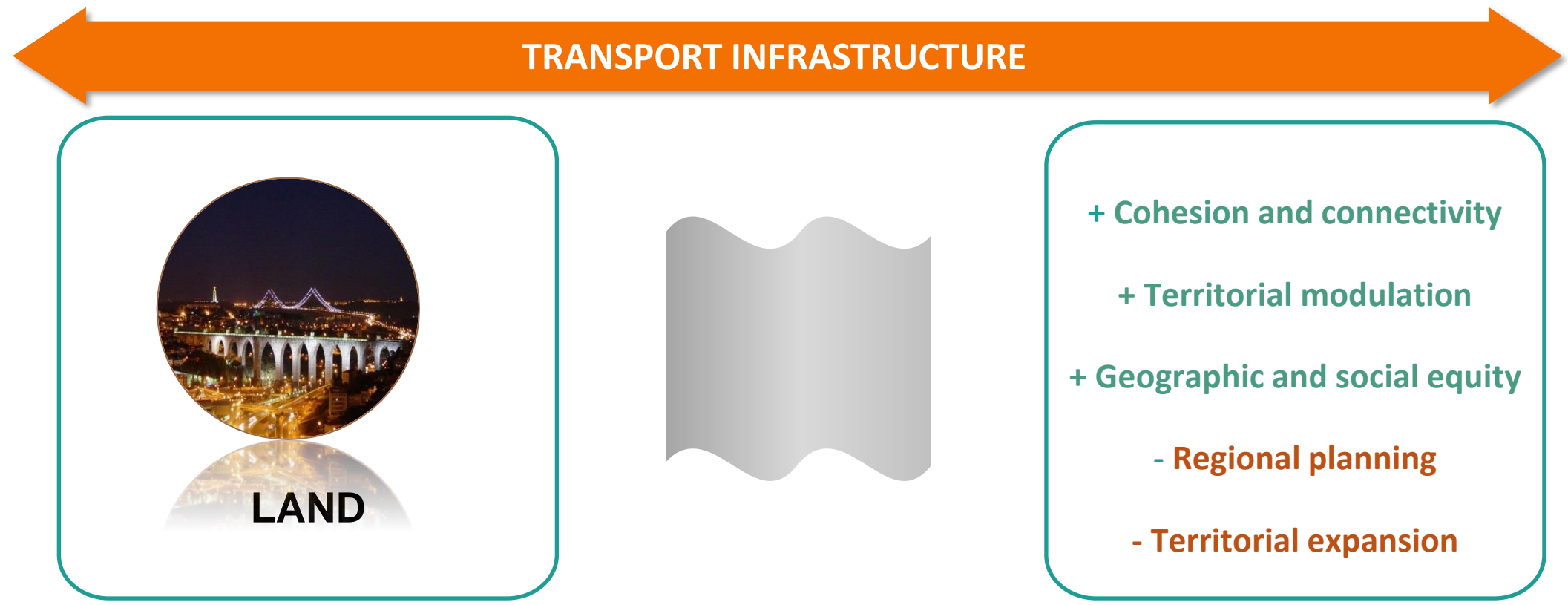
The importance of infrastructure for economic growth





2. TRANSPORT INFRASTRUCTURE IMPACTS

Duality of Impacts





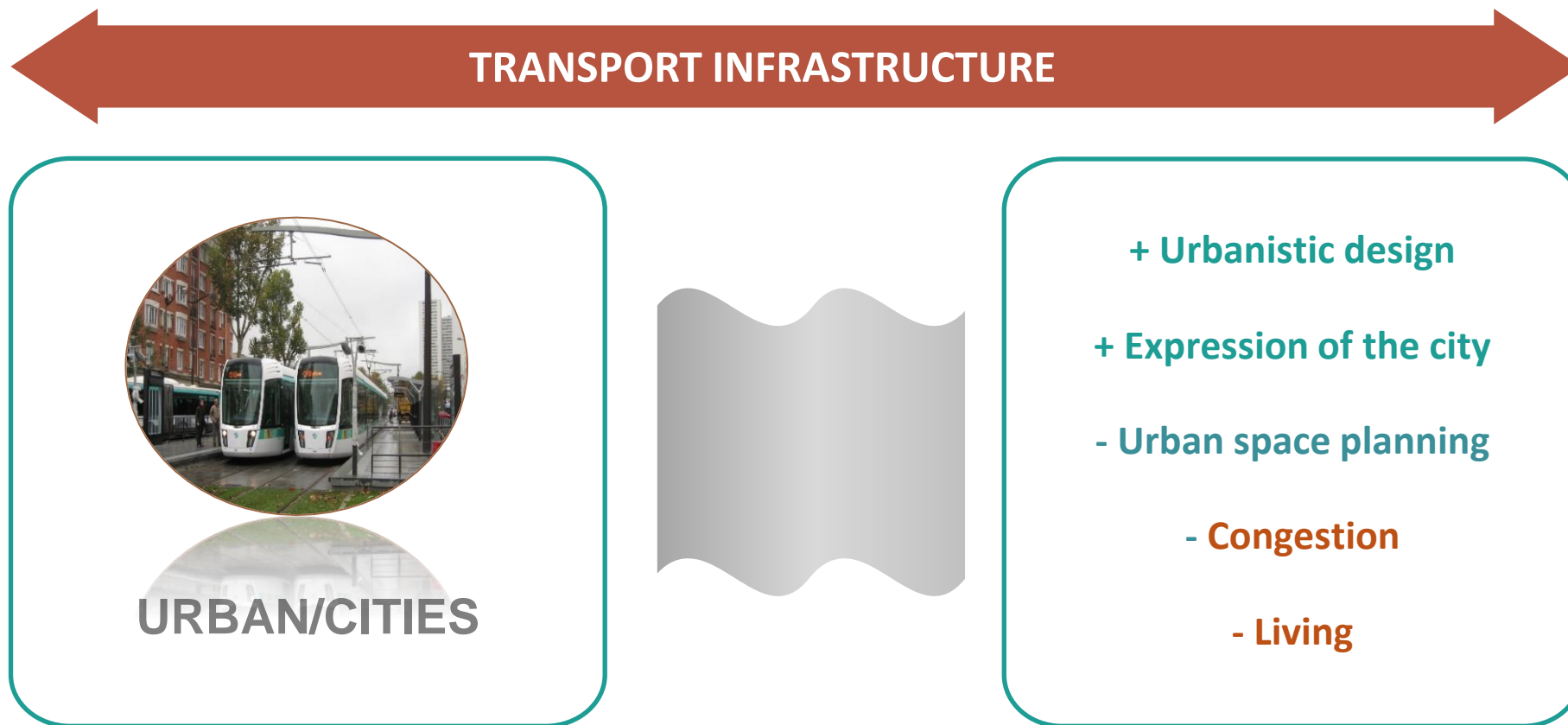
2. TRANSPORT INFRASTRUCTURE IMPACTS

← COHESION, CONNECTIVITY AND TERRITORIAL MODULATION →



2. TRANSPORT INFRASTRUCTURE IMPACTS

Duality of Impacts



2. TRANSPORT INFRASTRUCTURE IMPACTS

Liberdade Avenue, Lisbon

BACK TO THE ORIGINS: RETURN OF SPACES TO MORE URBAN AND CITIZEN-CENTRED USES



1900



1934



1955



2011

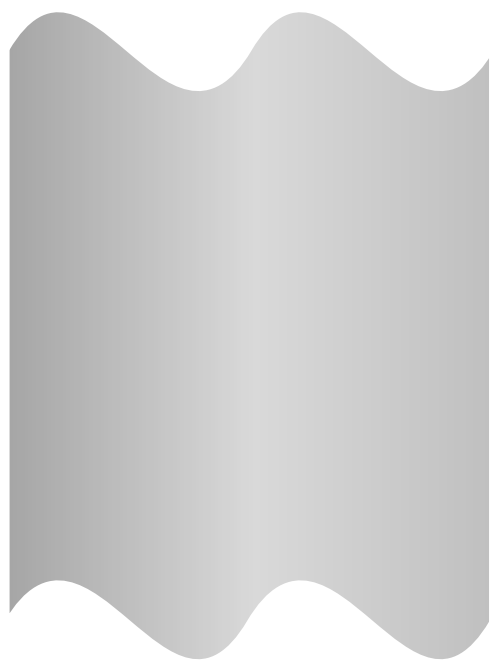


2018



2. TRANSPORT INFRASTRUCTURE IMPACTS

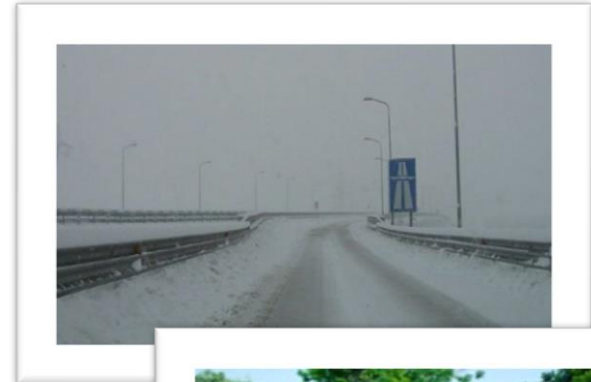
Duality of Impacts



- + Social development**
- + Economic growth**
- Environmental impacts**
- Air pollution/GHG**
- Life quality**

2. TRANSPORT INFRASTRUCTURE IMPACTS

Climate Change Resilience



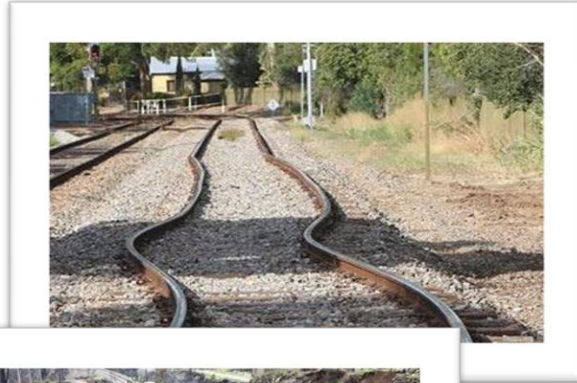
SNOW / ICE



LANDSLIDES - PRECIPITATION



FIRES



LANDSLIDES - FIRES



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Our position on the international scene

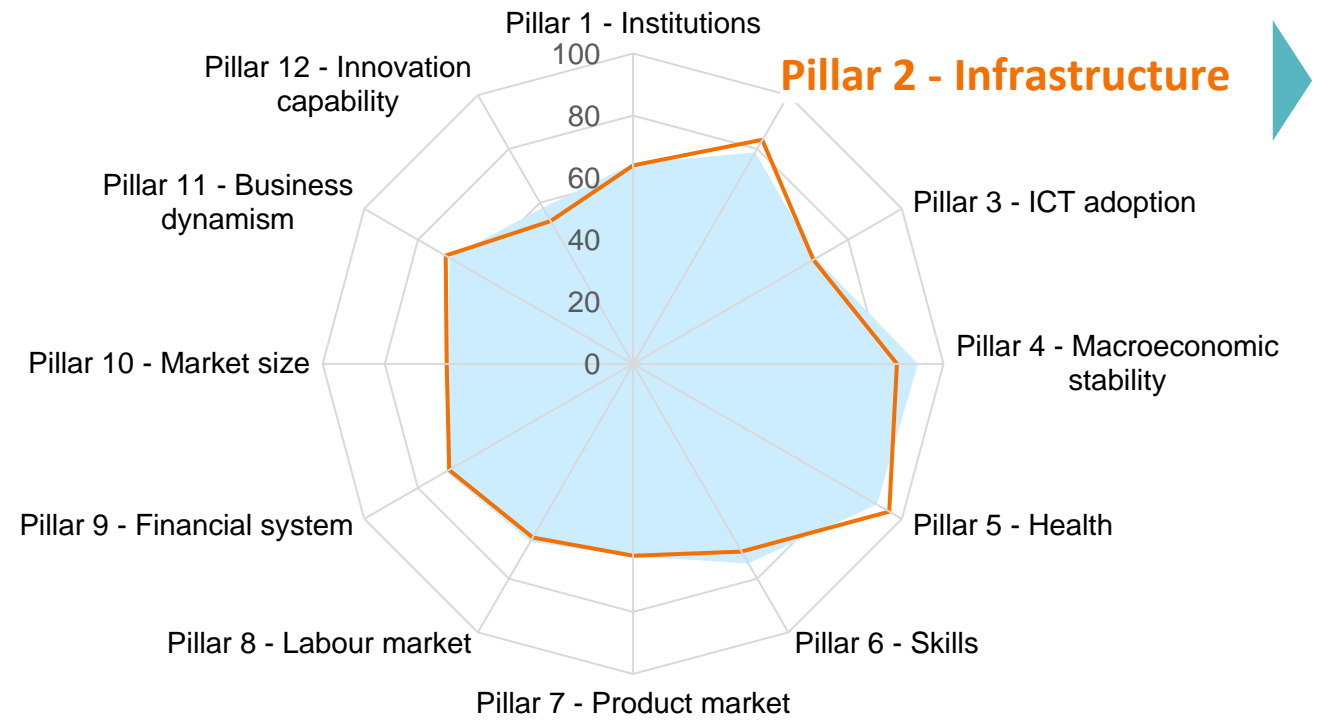
4. THE FUTURE OF INFRASTRUCTURES

Main challenges for the infrastructure managers



3. PORTUGUESE RAIL AND ROAD NETWORKS

Infrastructure contribution to Portugal's competitiveness



Portugal Ranking : 19º/140
Quality and extension of transport infrastructure (road, rail, water and air) and utility infrastructure

Global Competitiveness Index
0 (-), 100 (+)

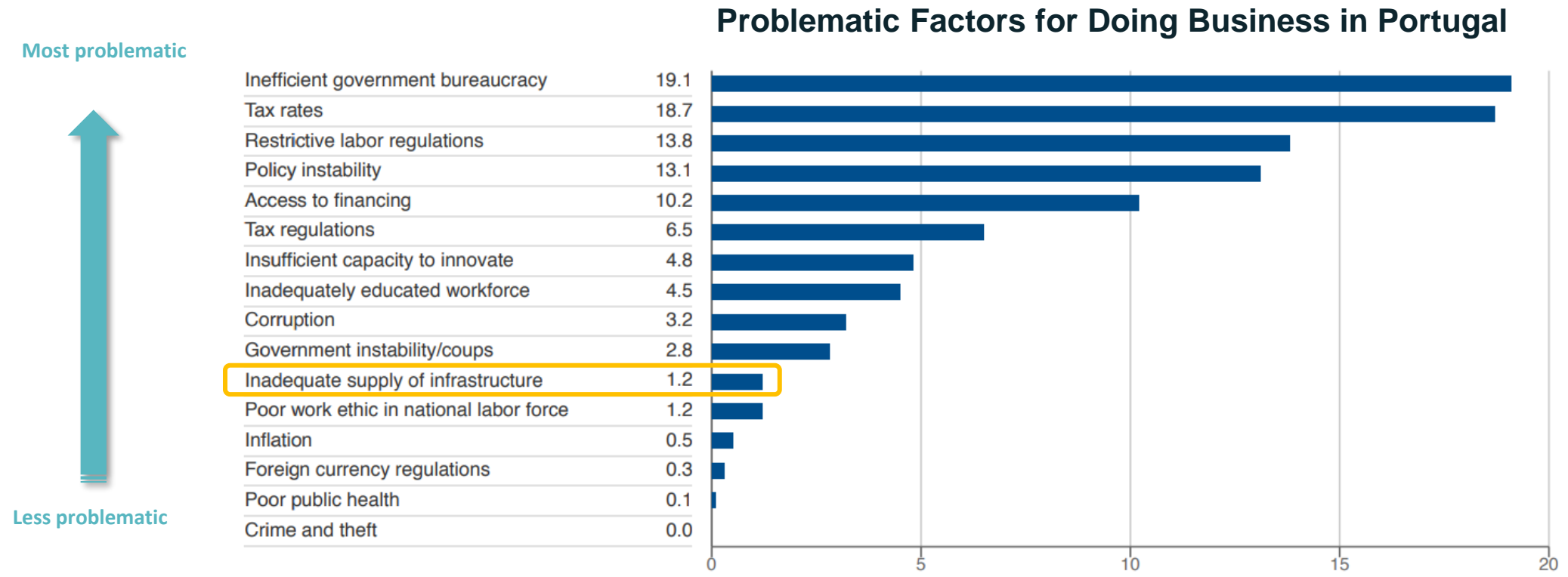
- Europe and North America
- Portugal

Source: World Economic Forum, The Global Competitiveness Report, 2018



3. PORTUGUESE RAIL AND ROAD NETWORKS

Infrastructure contribution to Portugal's competitiveness



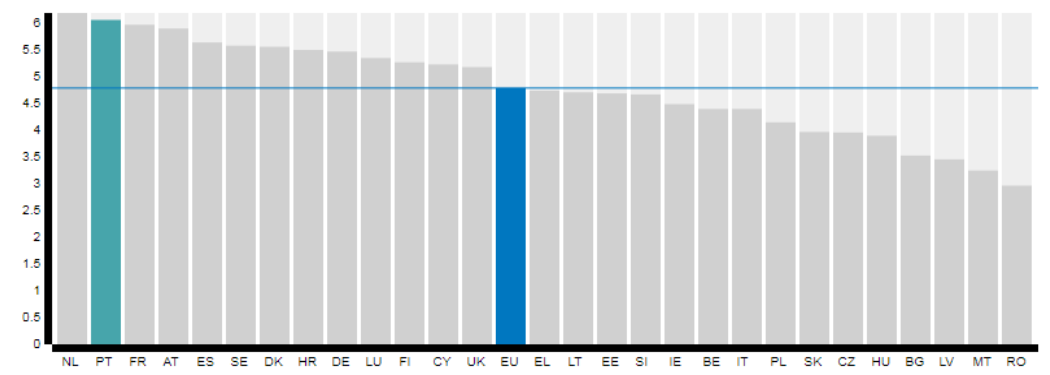
Source: World Economic Forum, The Executive Opinion Survey, 2017



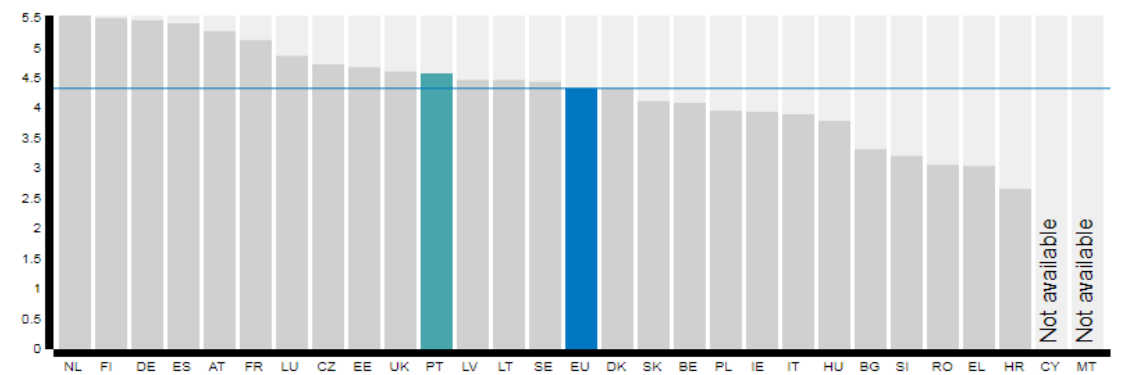
3. PORTUGUESE RAIL AND ROAD NETWORKS

Infrastructure contribution to Portugal's competitiveness

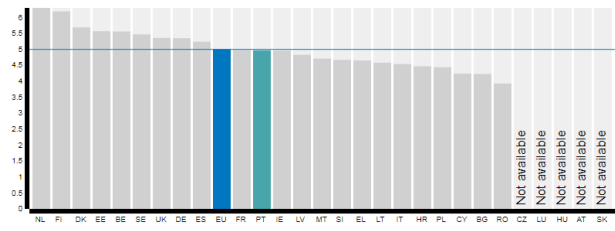
Quality of roads
 Ranking EU: 2º / 28
 Ranking FEM: 5º / 140



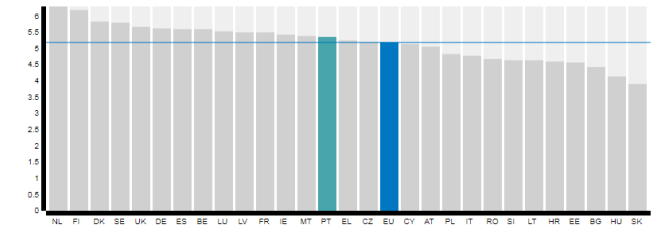
Efficiency of train services
 Ranking EU: 11º / 28
 Ranking FEM: 23º / 140



Efficiency of seaport services



Efficiency of air transport services

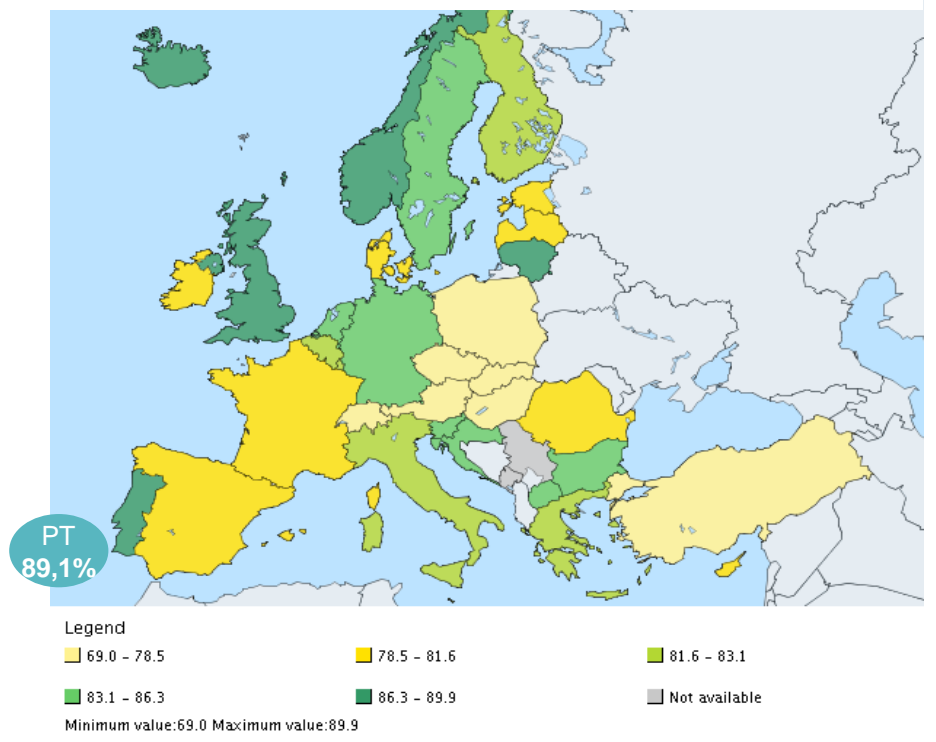


Source: World Economic Forum, The Global Competitiveness Report, 2018

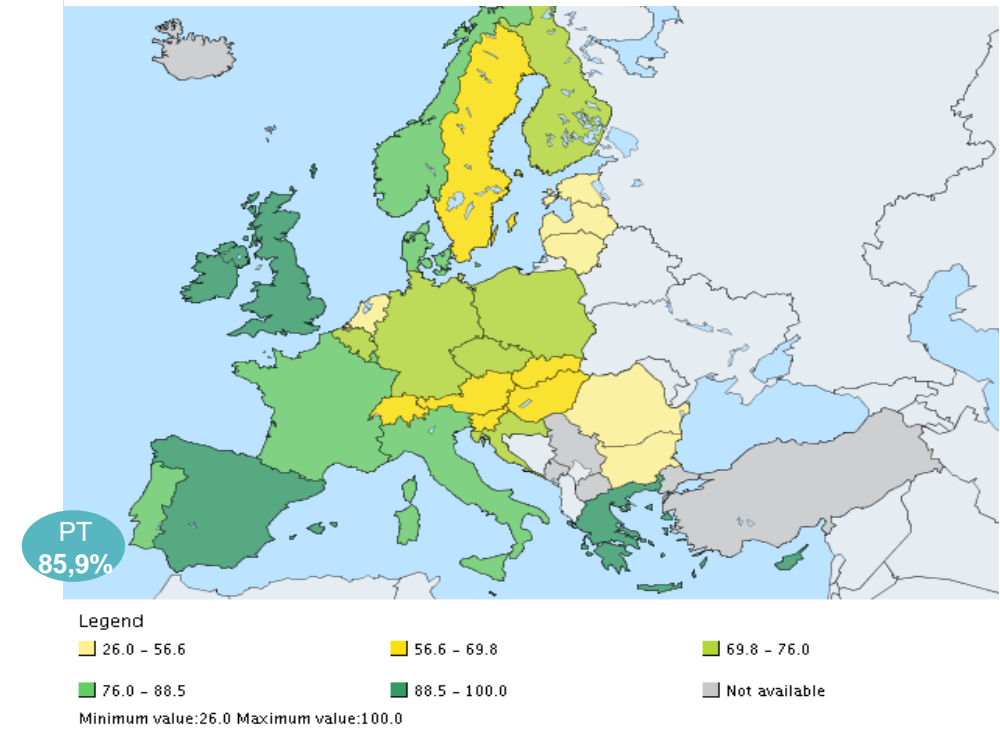
3. PORTUGUESE RAIL AND ROAD NETWORKS

Modal Share of Road Transport

MODAL SHARE OF PASSENGER CAR (2016)
% in total inland passenger.km



MODAL SHARE OF FREIGHT TRANSPORT (2017)
% in total inland freight tonne.km



Source: Eurostat



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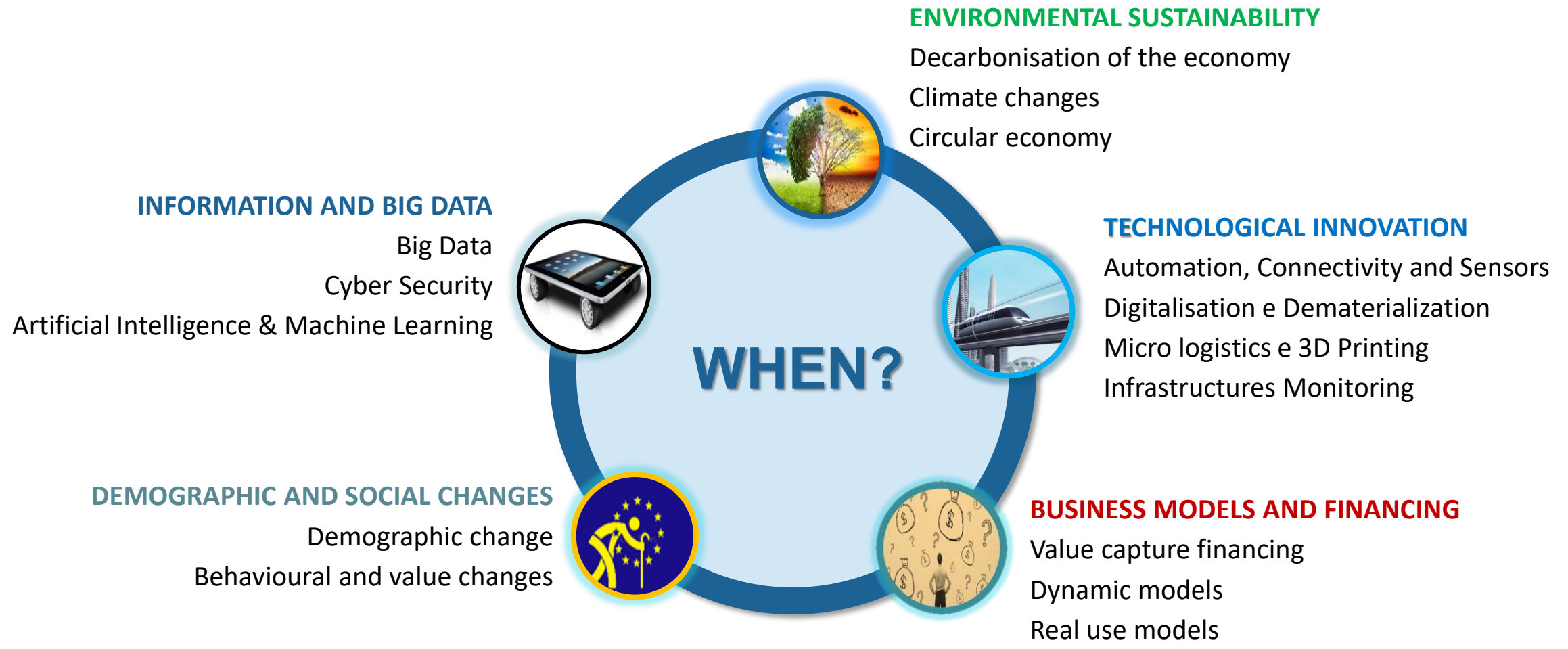
4. THE FUTURE OF INFRASTRUCTURES

Main challenges for the infrastructure managers



4. THE FUTURE OF INFRASTRUCTURES

Global Trends



4. THE FUTURE OF INFRASTRUCTURES

Program of 50 Challenges for Research, Development and Innovation



GROUPED INTO SIX THEMED CHAPTERS

- A Global Challenges
- B Social and Demographic Changes
- C Management and Financing Models
- D Environmental Sustainability
- E Structures and Materials
- F I.T. Innovation

HOW TO PARTICIPATE

The **50 Challenges Program** aims RDI solutions for IP in collaboration with the scientific, academic, technological and business communities.

IP handle Innovation Partnerships, Cooperation Protocols, and support Research and Development Theses, providing information, guidance, monitoring and/or infrastructure for testing or development.

IP invites all interested parties – students, professors and researchers – to submit their proposals for cooperation.

JOIN US!



4. THE FUTURE OF INFRASTRUCTURES

Innovation projects with participation of IP



A grid of 40 logos for various infrastructure projects, including 5GRail, 5GMOBIX, In2Stempo, C-ROADS Cooperative Streets, infra future, ROBOSHOT, C4R Capacity for Rail, Projct SCOOP, FCH₂RAIL, IN2SMART, LIFE LINES, FERROVIA 4.0, bridgesm, EUEIP European ITS Platform, Arc Atlantique, IN2TRACK2, IN2SMART 2, Baseline, PLEBIA DEMO, DATEX II, MedITS, SIRMA, SAFEWAY, Evo4Rail Demo, INFRA ALERT, In2Track3, BarRod, TN-ITS GO Map Update Exchange, IN2TRACK, ROAD SAFETY, radius, Ecossian, REV@CONSTRUCTION, FORE SEE PROJECT, and optimum.

40 PROJECTS

































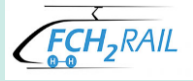
110 WORKERS

350 PARTNERS



4. THE FUTURE OF INFRASTRUCTURES

Innovation projects with participation of IP

Connectivity, Communications and Information         	Shift2Rail      	Cyber Security 	Road Safety   
Strategy & Business  	Sensorisation, Management and Monitoring of Infrastructures       	Environment & Climate Change     	

PROJECTS FUNDING BY PORTUGAL 2020 | H2020 | LIFE | FP7 / CEF | Interreg