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This project is funded by the Seventh Framework Programme (FP7)
of the European Commission.

The SOLUTIONS City Session at the Challenge Bibendum

Four speakers

- **Carlos López,** Mobility Planning Department, City of Barcelona, Spain
- **László Sándor Kérényi,** Head of Transport Strategy, BKK - Center of Budapest Transport, Hungary
- **Song Xinyu**, Hangzhou City Transportation Bureau, Hangzhou, China
- **Gladimir Nascimento,** City of Curitiba, Brazil

Moderator: **Ivo Cré**, Senior Manager, Polis

Four questions in rounds of short presentations

- How to make urban mobility smarter?
- What are barriers for smart urban mobility solutions, and how to overcome them?
- Lessons learned: what can you recommend to other cities around the world?
- What is the role of international cooperation?

About Polis

Ivo Cré, Senior Manager

What is Polis ?

Network

Exchange of experiences

65 European cities & regions

European Initiatives

Innovation

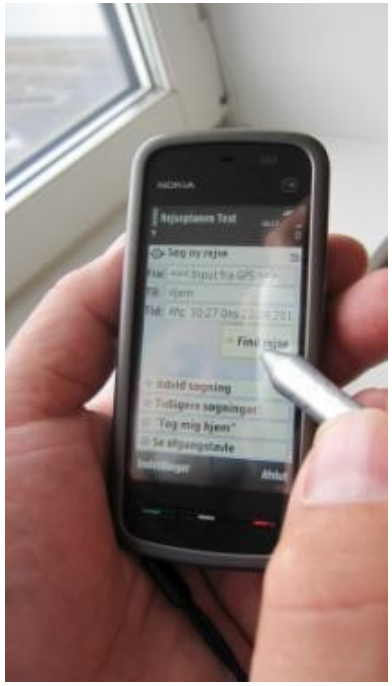
European Institutions

Sustainable urban mobility

- environment & health
- mobility & traffic efficiency
- safety & security
- economic & social aspects

Approach

Exchange between members



Dialogue with other actors

Tailored approach

- **Networking**
- **Policy**
- **European Projects**

Member driven

Structure

Founded in 1989

Around 70 member cities and regions

President: Madrid

Management Committee: 10 members

Office in Brussels

13 employees

Core activities

Net-working

Policy

European Projects

Core themes

mobility
& traffic efficiency

Mobility & Traffic Efficiency

- Intelligent transport systems, network management, cooperative systems...
- shoadley@polisnetwork.eu

safety
& security

Safety & Security

- Road safety, security of transport systems…
- kvancluysen@polisnetwork.eu

environment
& health

Environment & Health

- Air quality, soft modes, noise reduction, clean vehicle procurement…
- fboschetti@polisnetwork.eu

economic
& social aspects

Social & economic aspects

- Accessibility of public transport, financing of transport…
- icre@polisnetwork.eu

Understanding innovation

Understanding Innovation

- ‘Idea, practice or object that is perceived as new by an individual or other unit of adoption’ (Rogers) and that provides a better solution to existing challenges than traditional measures in urban transport and mobility
- higher potential to effectively respond to current challenges than already well-established measures
- Pragmatic perspective: mainstream in some countries versus new in other parts of Europe
- Comparably new to large parts of Europe

Understanding innovation: the TIDE approach

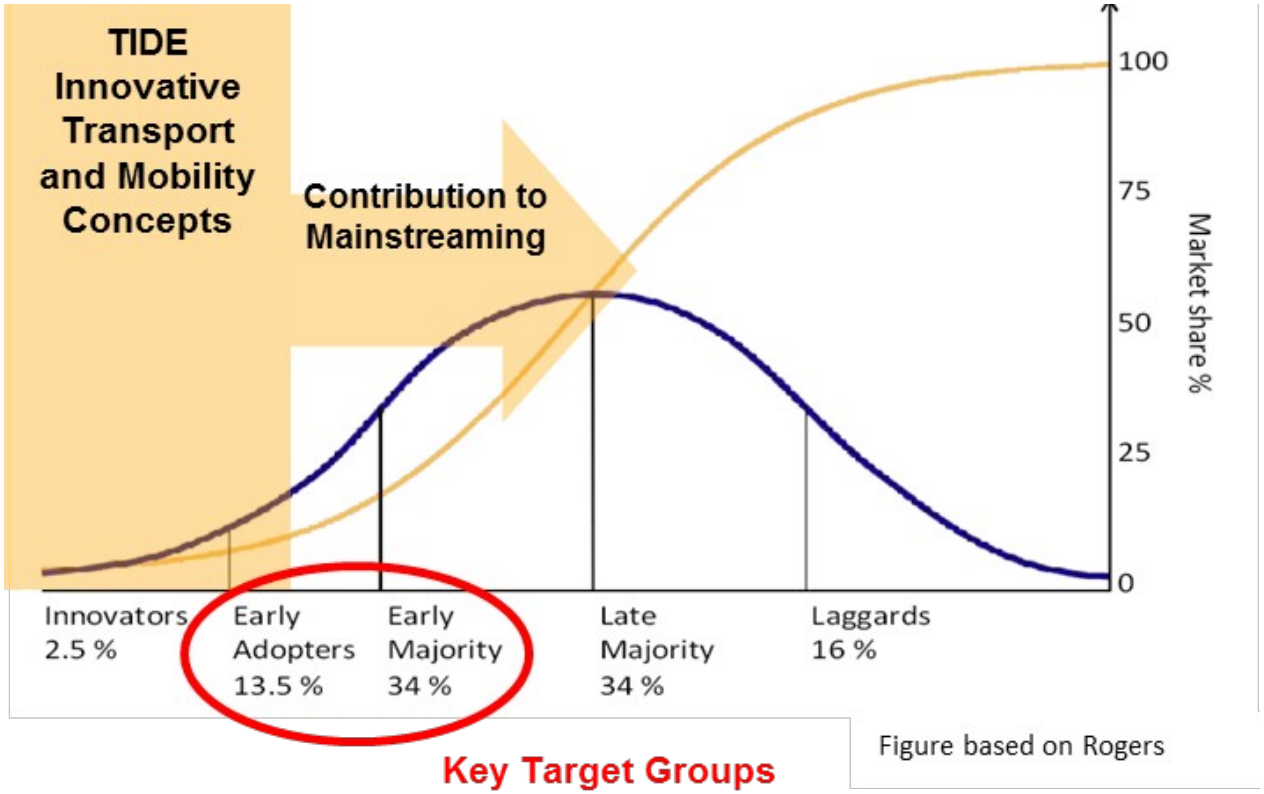


Figure based on Rogers

Reducing the risk of starting something new

- **Most European cities want to be innovative, but not all want to be the first to implement a new measure.**
- **Various risks**
  - Financial: will we be able to afford the measure?
  - Political: will the measure be accepted, and will citizens vote in favour of it?
  - Effectiveness: will the measure solve the problems it is meant to solve?
  - Implementation: will we be able to introduce the measure smoothly, without delays or extra costs?

How can we shorten the innovation cycle?

What about Impact Assessment and Transferability Assessment?

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION
HORIZON 2020

About SOLUTIONS

Karsten Marhold, Project Officer, Polis

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This project is funded by the Seventh Framework Programme (FP7)
of the European Commission.

SOLUTIONS: The project and team

- SOLUTIONS stands for: **S**haring **O**pportunities for **L**ow Carbon **U**rban **T**ransportat**IONS**
- Project funded by the 7th Framework Programme for Research and Technological Development of the European Commission
- 27 Consortium partners from 18 countries in Asia, Latin America, Europe and the Mediterranean
- Duration: May 2013 – April 2016 (36 months)

A few slides about SOLUTIONS

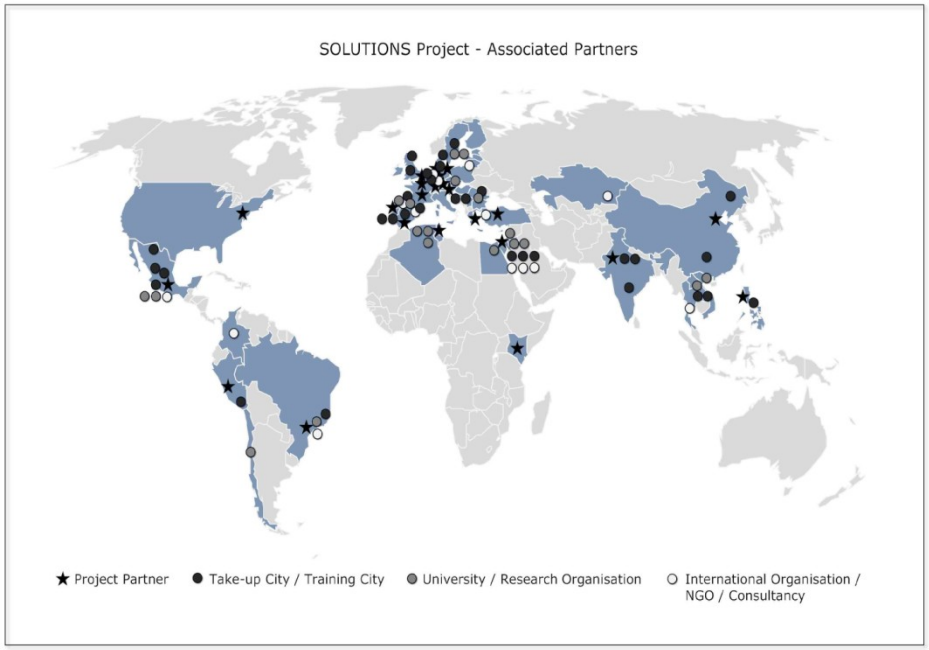
Objectives
Thematic Clusters
Participating Cities
How? Which outcomes?

SOLUTIONS Objectives

- Step 1: Assess the **transferability** of sustainable urban mobility solutions from around the world

- Step 2: Assess their **uptake potential** in:
  - Europe
  - Asia
  - Latin America
  - The Mediterranean region

- Step 3: Go beyond potential & foster the **implementation** of sustainable urban mobility solutions in four take-up cities in:
  - China (Guiyang)
  - India (Kochi)
  - Brasil (Belo Horizonte)
  - Mexico (Léon)



SOLUTIONS: six thematic clusters

- Public transport
- Transport infrastructures
- City logistics
- Sustainable Urban Mobility Planning (SUMP)
- Network and mobility management
- Clean vehicles

Each cluster is lead by an organization with **proven expertise** in the field

The thematic depth and focus will take into account the different levels of maturity of sustainable mobility policy in the partner regions and the **ability to adapt solutions**.

SOLUTIONS Cities

- **19 Cities** participate in SOLUTIONS as **Leading Cities, Take-up Cities or Training Cities**
  - **Leading Cities** will share their expertise in the development and implementation of sustainable urban mobility solutions; selected as they are relatively advanced and have practical experience
  - **Take-up Cities** will prepare the actual implementation of innovative and green urban mobility solutions
  - **Training Cities** are invited to participate in training events and capacity building workshops on innovative and green mobility solutions

Each Leading City has teamed up with one Take-up City
Each take-up team is assisted by a regional take-up coach

Leading Cities

Leading city	Clusters
Barcelona	Public Transport, City Logistics, SUMP
Bremen	Public Transport, SUMP, Mobility Management, Clean vehicles
Budapest	Public Transport, SUMP
Curitiba	Public Transport, SUMP, Infrastructure, Clean vehicles
Hangzhou	Public Transport, SUMP, Clean vehicles

Take-up cities

Take-up city	Clusters	Take-up coach
León, México	**Public Transport**	EMBARQ México
Belo Horizonte, Brasil	**Public Transport, SUMP, City Logistics, Clean vehicles**	EMBARQ Brasil
Guiyang, China	**SUMP, Clean Vehicles**	CATS
Kochi, India	**Public Transport, SUMP**	ICLEI - SA
Kocaeli, Turkey	**Public Transport, SUMP, City Logistics**	EMBARQ Turkey

Training cities

Latin America	Asia	Mediterranean
Durango, Mexico	Xi‘an, China	Casablanca, Morocco
La Serena, Chile	Hanoi, Vietnam	Sfax, Tunisia
São José dos Campos, Brazil	Matale, Sri Lanka	Amman, Jordan

How?
What will the project deliver?

- **Stocktake report** on sustainable urban mobility solutions from Europe, Asia, Latin America:
  - Focusing primarily on policy and the regional policy environment

- **Feasibility studies** for four cities in Guiyang, Kochi, León and Belo Horizonte

- **Guidelines** on the uptake of innovative sustainable urban mobility solutions and technologies in Europe, Asia, Latin America and the Mediterranean

...but also...

Knowledge Sharing, Training, and e-learning for cities in the target regions

...to foster dialogue and share first-hand experience.

MICHELIN CHALLENGE BIBENDUM

Let's go!

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How to make urban mobility smarter?

3 best solutions

from Barcelona, Budapest, Curitiba, and Hangzhou

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What does ‘smarter’ mean?

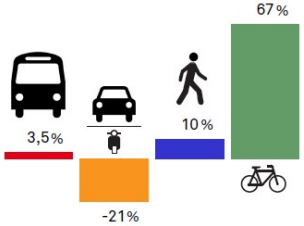
Barcelona defines its best mobility scenario, *the smartest scenario*, according to the city's own circumstances:

-**<u>Safer</u>:** Reduce accidents, severely-injured and killed

-**<u>More Sustainable</u>:** Promote active mobility

-**<u>More Equitable</u>:** Provide universal mobility rights

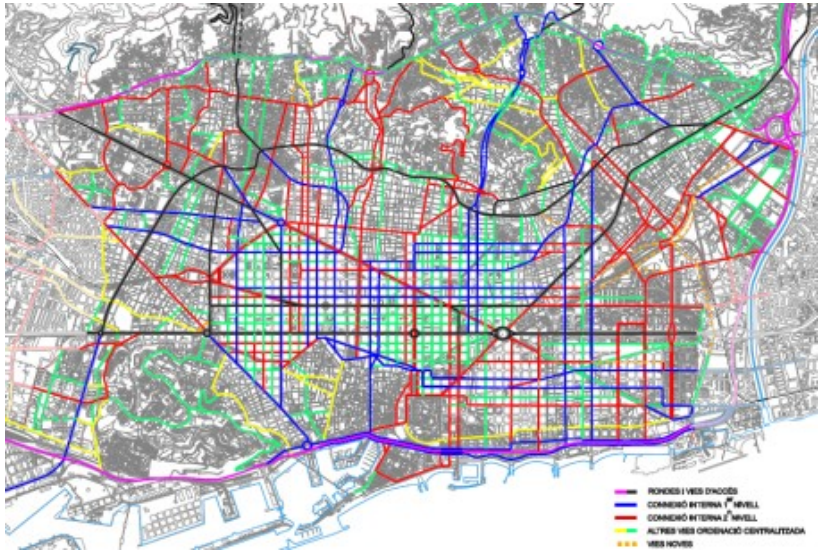
-**<u>More Efficient</u>:** Minimize delays



To achieve this target scenario, the city has approved its ***SUMP 2014-18*** containing **67 actions** covering all mobility areas

#1: ACTIVE MOBILITY (PEDESTRIAN ACTIONS)

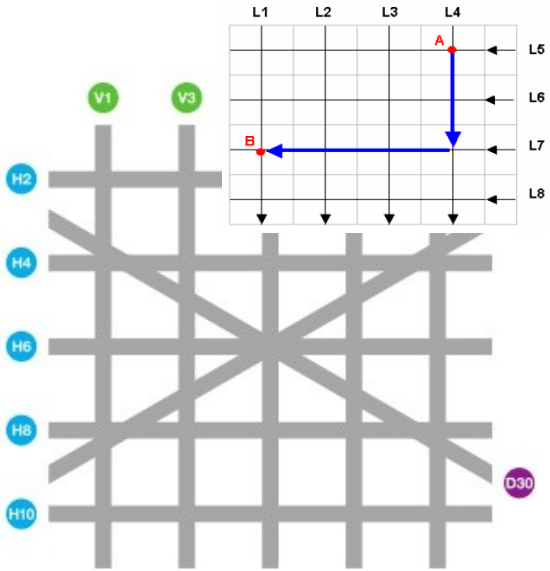
BASIC NETWORK



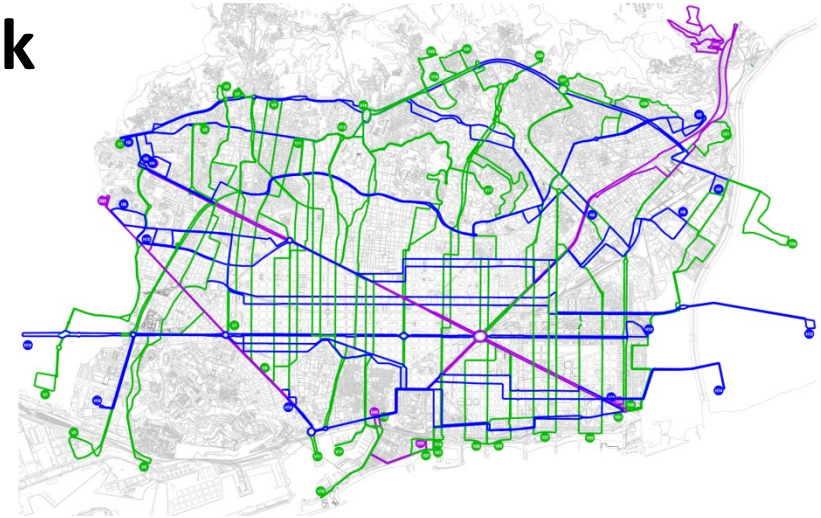
SUPERBLOCKS

- Maximize traffic capacity along the **basic network**
- **Concentrating flows** in basic corridors
- Bounding restricted traffic areas: ***Superblocks***

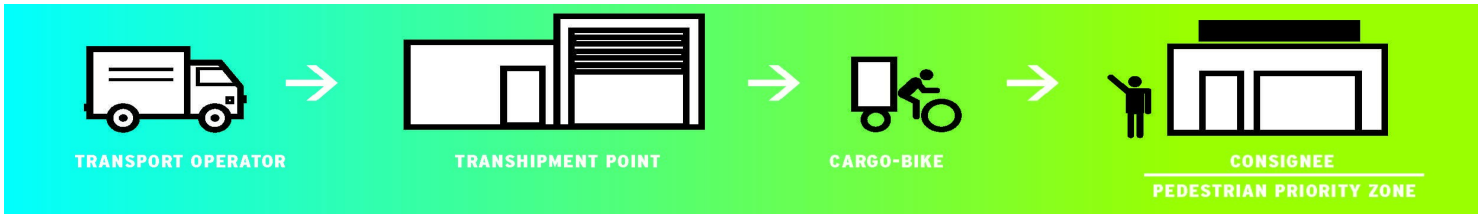
#2 NEW BUS NETWORK



New Bus Network



#3 URBAN FREIGHT DISTRIBUTION



URBAN CONSOLIDATION CENTRES

-The **trans-shipment** point **reduces the traffic of vans and trucks** in the historic centers.

-The "**last mile**" distribution is made by **electric or assisted cargo-bikes**, with **less urban impact: Small size and zero emissions**.

-This solution is **not limited** by **"time-window" access restrictions.**

Video: Superblocks in Vitoria-Gasteiz

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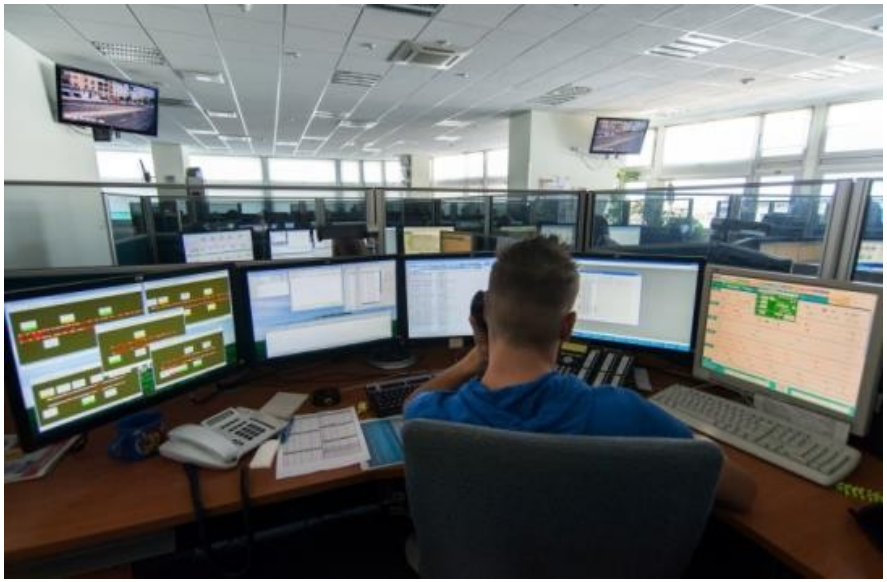
Dynamic passenger information and traffic control (FUTÁR)

- Vehicle tracking system through satellite (real-time information involving 2268 vehicles)
- Passenger information on all channels (displays at 263 locations)
- Control Center: overall traffic control (500 events/day, 8000 phone calls)
- Operation since October 2013
- Project costs: 22.3M Euro, 13.3M Euro subsidy (1.6M Euro liquidated damages due to the delays in construction)



Automated fare collection scheme (E-ticket)

Development step-by-step:

- 300 ticket vending machines (TVM): 7/24 operation, cash and bankcard acceptance, tickets and passes
- Ticket validating machines for 2,100 vehicles and 120 stations (ticket format: secure, comfortable, can be uploaded offsite)
- 9,000 card readers, 3 million cards
- 700 portable hand-held control devices
- Back office system
- Project cost: EUR 54,5 million, co-financed by EBRD (yearly revenue increase expected: EUR 16.7 million)
- Contract signed on 08.10.2014 (Scheidt&Bachmann)

Development of customer services and communication

- New customer centers
- BKK INFO app: real time information
- FUTÁR app: real time journey planner
- BKK Facebook: direct communication to passengers (90.000 followers, 60 news, traffic changes per month, 5 days answer policy on questions)
- New static information system
- Occasional information: flyers, info graphics, maps

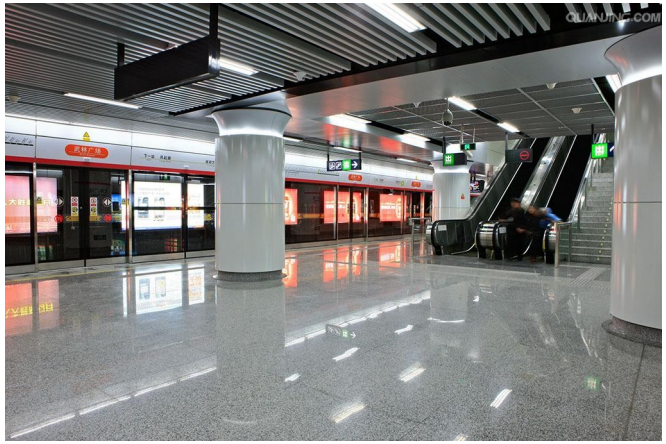
杭州市 Hangzhou

#1 Establishing and perfecting the Hangzhou City Public Traffic Model

Through the establishment of the model and improving the access to dynamic urban traffic data, the Hangzhou City Public Traffic Model **enhances the management of transportation** and the efficiency of services.

#2 Setting up a public service platform for Public Transport information

- Collecting **real-time data** from traffic departments
- Expanding the contents of **dynamic public transport information services**
- Realizing a **complete coverage** of dynamic public transport information services
- Smart predicting, **discovering the hidden problems** in the operation of the city, as to facilitate the travel arrangement and transfer for citizens



#3 Encouraging enterprises to develop traffic applications

- Encouraging enterprises to develop **traffic applications** based on cloud computing
- Improving the **level of intelligence** of public transport fleet control and operation management
- At the same time improving the efficiency of cross-industry, cross-regional **information sharing**, as to enhance the capacity of public transport coordination

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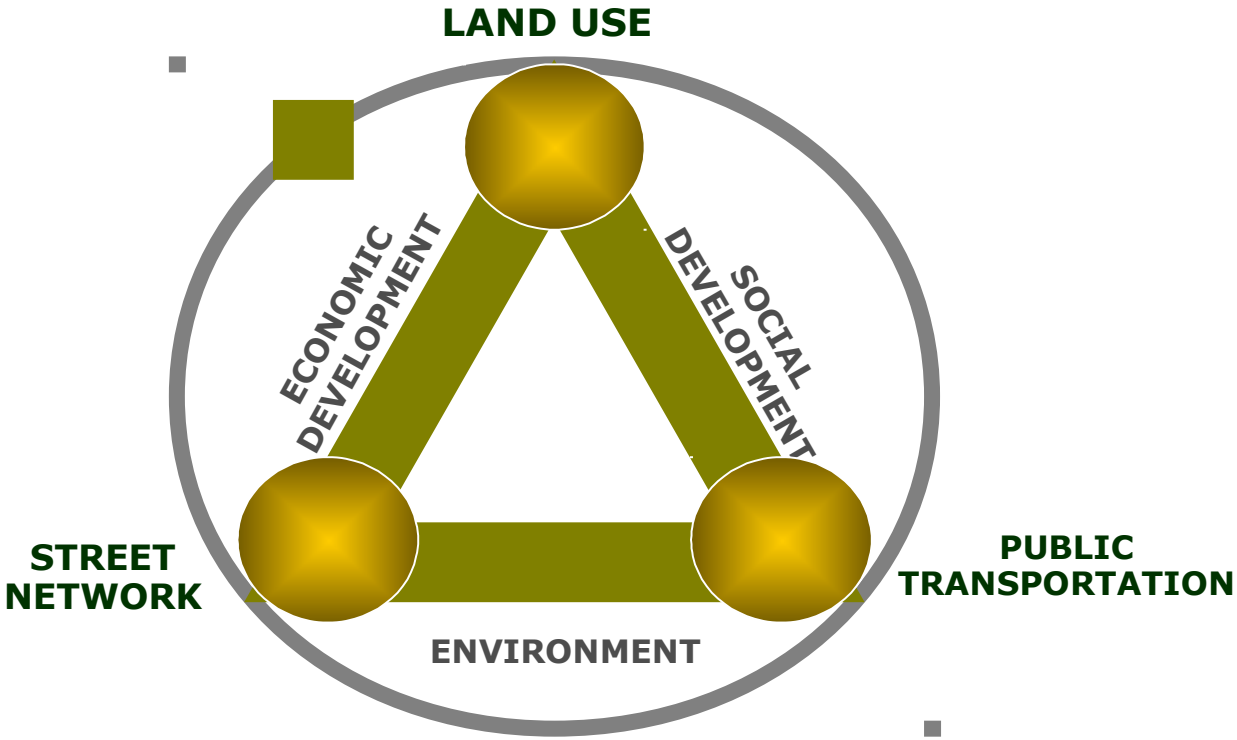
URBS

CURITIBA

PREFEITURA DA CIDADE

Video: Sustainable Transport and Sustainable Development in Curitiba

CURITIBA – Urban Planning



CURITIBA

Public information

Electromobility

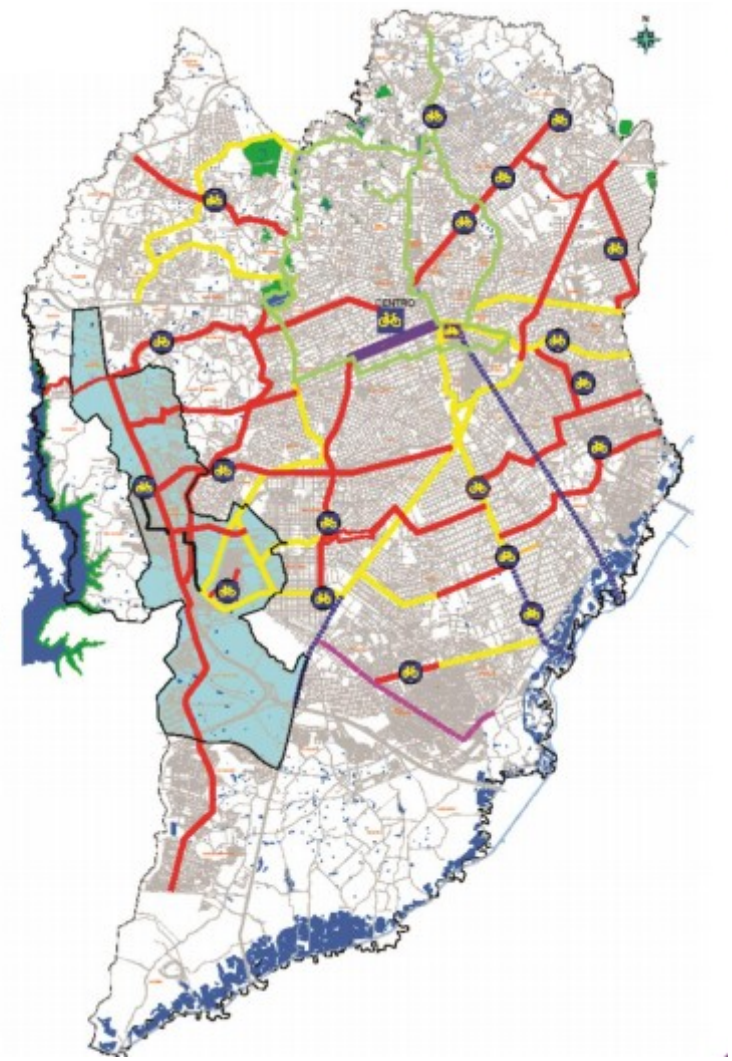
Bicycles

Pedestrian

Apps

Flow

Financing



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What are **barriers** for smart urban mobility solutions, and how to overcome them?

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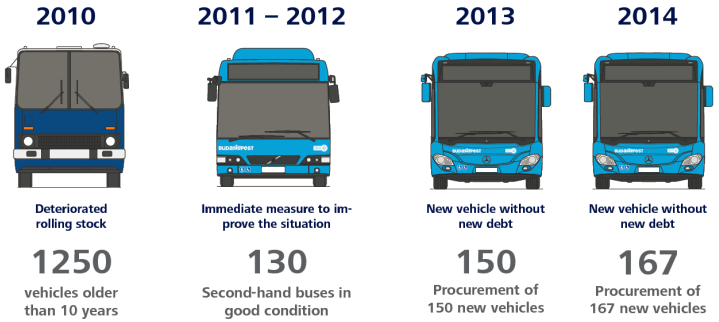
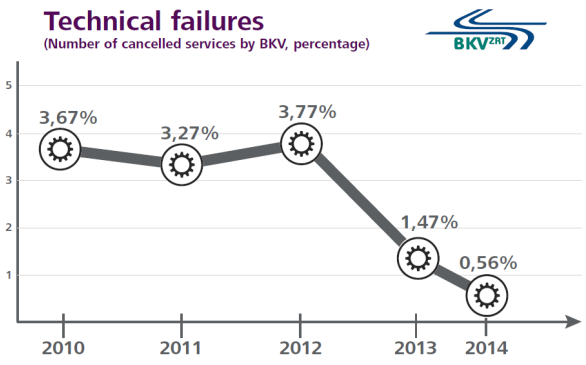
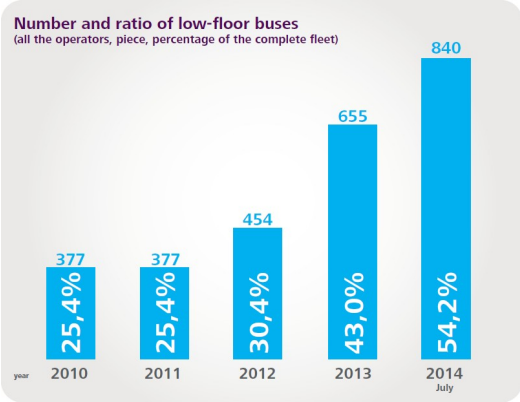
Example 1: Lack of financing – renewal of the bus fleet

- In the past: no development, worsening services, old fleet (average 18 years, oldest 27 years), increasing operation risks
- „Quick win”: second-hand buses in good condition
- From 2012: new buses from contracted operators (opening the market up to 66,6%) – no additional debt







Example 2: Lack of control – freight transport and taxi regulations

- Freight: zone system in operation, online service for overweight and oversize permits – special mobile camera control to increase revenues and keeping transit out of the city (using permitted routes only)
- Taxi: operation of taxi stations, licensing vehicles (2518), unified tariffs, continuous supervision – monthly 800 test journeys to control services (no invoicing 21,7% - decreasing, high pricing 1,7% - decreasing)

Example 3: Lack of public engagement – bicycle friendly inner city

- From the past: centralized road network, „parking rights”
- Civil movement and trends: Critical Mass, increasing usage
- Changes: in infrastructure (bike friendly roads), in services (MOL bubi bike sharing scheme, bike racks), in information

Video: Budapest Inner City Renewal

杭州市 Hangzhou

Data collection: The existing data collection methods are imperfect

- At present, traffic **data collection is being repeated** by different departments
- The **integrity, reliability and timeliness** of the data needs to be improved

Integration of traffic departments

The development of smart urban mobility involves multiple transport departments and enterprises.

However, data integration and sharing mechanisms from different transport departments and enterprises are **not comprehensive and standardized**.

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Customized transportation

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Barriers

- **Multiple Government levels**
- **Different stakeholders**

Not always with the same interests

- **Breaking the *status quo***

Doing things differently affects the existing equilibrium about costs (externalities...) and rights

- **Perception of threatened positions**
- **Multiple information sources**
- **Resistance to information sharing**

Information is power. Perception of being assessed

How to overcome the barriers?

- Building a <u>common vision</u> of the desired situation
- Benchmarking of similar experiences
- Involve politicians
- Identify relevant stakeholders and <u>engage</u> them
- Create a dialogue board, a "<u>Mobility Pact</u>" as an advisory council to reach <u>consensus</u>

How to overcome the barriers?

- Engage citizens in real participation about the project, its definition and execution
- Keep stakeholders informed about the process, the progress of actions and about the decisions taken and forthcoming
- Rigorous assessment and accountability & explain
- Take advantage of collaborative information
- Turn big data into *smart* data
- Engage with mass media and public opinion

Video: Green Zone in Barcelona

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Lessons learned: what can you **recommend** to other cities around the world?

杭州市 Hangzhou

Perfecting the system of smart transport planning

- Establish a complete and effective smart transportation system based on a **structured approach towards transport information**
- **Integrate resources** from both inside and beyond the transport operators

Develop an urban traffic database

- Develop a **public transportation database** and sharing platform
- Improve the **integrity, reliability and timeliness** of traffic

data

- **Reduce the overlap** of collection
- Establish and improve **comprehensive sharing mechanisms**, involving each department

Funding

Related departments should develop **supporting policies**, providing relevant funding and beneficial measures to encourage the construction of a smart traffic system.

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PREFEITURA DA CIDADE

New Fleet

USE OF HYBRID BUSES - Set/12

30 Buses

Hybrid Bus Results

- Diesel Economy: **35,35%**
- Emission Reductions:

CO_2 = 35,55%

NO_x = 80,33%

PM = 89,06%

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Lessons learned

- **Have a plan**

But plan **beyond** the formal time **horizon**

- **Learn from others' experience**
- **There are no general solutions**

The most efficient measures depend on **local conditions** (culture, specific demands...) and **temporal circumstances** (economic crisis...)

- **Take advantage of these circumstances and look for synergies**
- **Mobility solutions are not good or bad in themselves -** Each of them has its own conditions for optimal performance

General recommendations

-Promote dense and mixed land use

In order to induce **less** and **shorter trips**, satisfy demand by the means of **active mobility**

-‘Smart cities’ see ‘Smart mobility’ as ‘informed mobility’

Technology now generates **multi-source** (**reliable** and consistent) data that can be centralized and transformed into useful **information** to assist citizens with their mobility decisions

General recommendations

-Use collaborative information

-Co-responsability

Ask citizens for **rational** decisions, but at the same time be **rigorous** in selecting investment processes. Present society can't afford 'political' investments anymore

-Prioritize long-term vision vs. short-term benefits

Providing free *on-street* parking space provides short term political benefits, but it makes it more difficult to implement bike or bus lanes

General recommendations

-Assign urban space and investments with equity in mind

-Achieve consensus about certain projects

Convince opposing **public opinion**

-Show transparency

During the decision process and the assesment of results in order to generate **confidence** in the decisions. **Check and explain progress**

-Calculate real costs: Internalize externalities

Study in-depth **real costs** incurred by the different possibilities

...and finally:

-Demand is not captive anymore

Convince users

-Promote active mobility

Making **walking and cycling a pleasant experience** and strengthen **livability** in cities

-Providing more traffic capacity can’t solve congestion

In the mid/long term, congestion will return

-Take advantage of cooperative/sharing economy

(sharing, pooling…)

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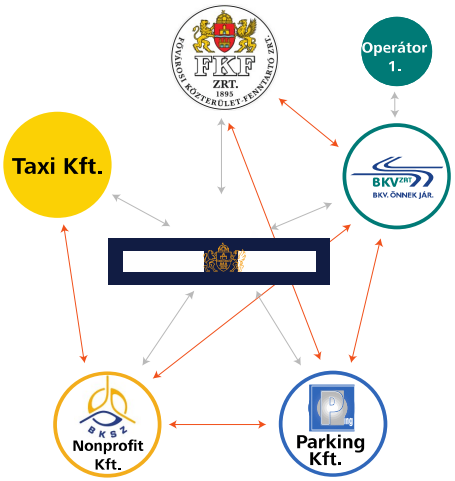
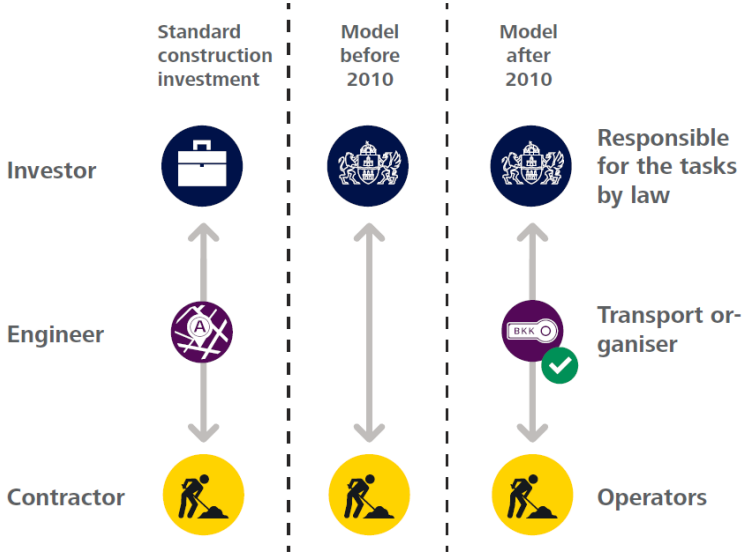
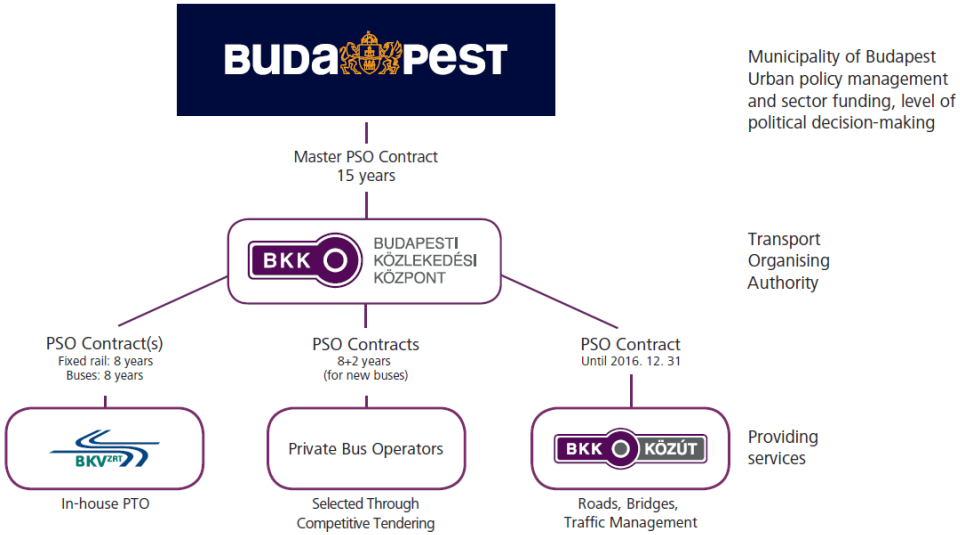
Lesson 1: the city needs an „engineer” – the BKK Concept

- Before 2010: unclear responsibilities, no control over public transport services, worsening quality
- After 2010: PSO contract structure, clear tasks and responsibilities – more effective operation

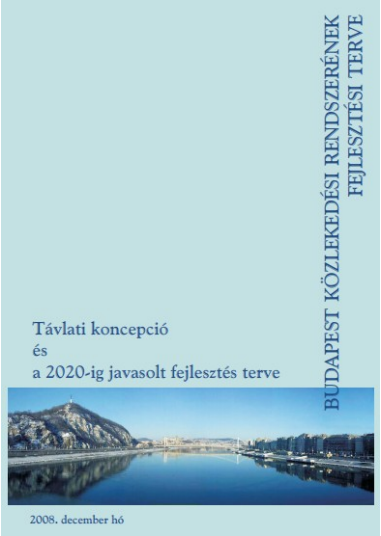


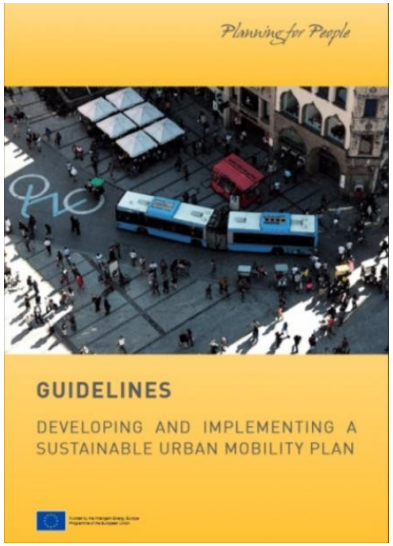


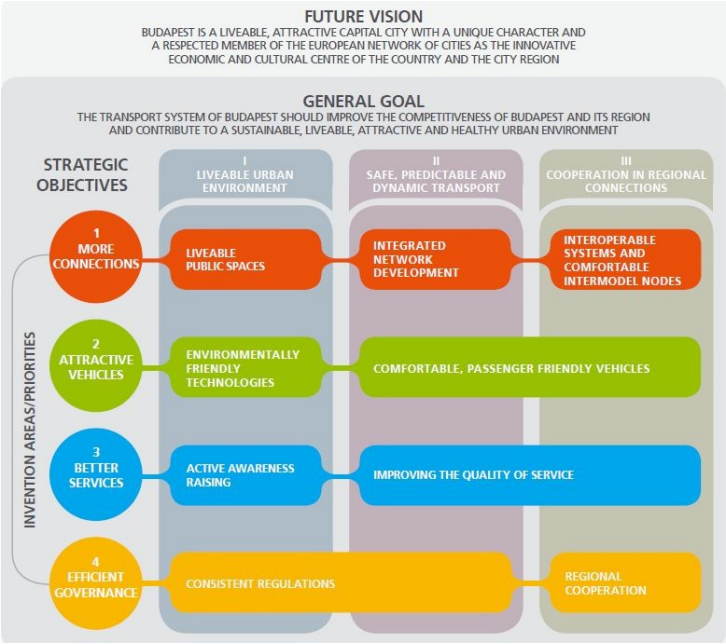


Lesson 2: the city needs good projects – strategic planning and smart goals

- Before 2010: M4 metro took all major resources, poor preparation for EU financing period 2007-13
- After 2010: proper preparation for 2014-20, SUMP and strategic planning (Balázs Mór-plan)

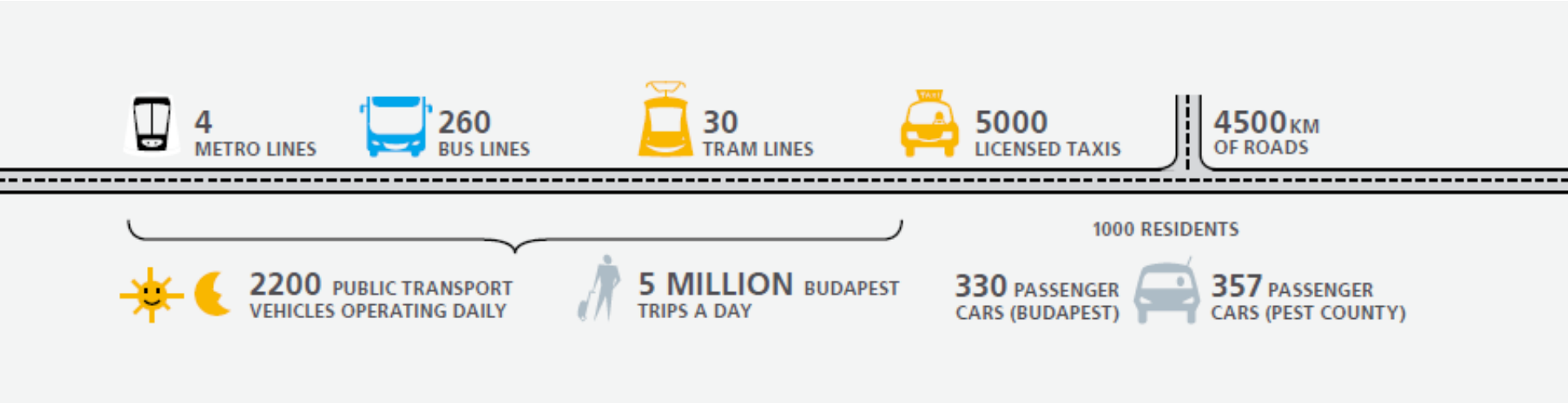






Lesson 3: the city needs cooperation – on national, regional and local level

- National level: budget for development and annual operation, legislative issues
- Regional level: harmonized public transportation services in the agglomeration and the city
- Local level: customers – professionals – NGO's



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What is the role of international cooperation?

How to transfer measures effectively between cities and regions around the world?

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Role of international cooperation

-Learn from others' experience

To be more **effective** in achieving good results taking profit of **knowledge already acquired** in other completed projects

-Helping and orienting others to develop their own *know-how*

-Strenghten citizens' commitment towards sustainable development

Improve quality of life, local economies, education, public health…

Role of international cooperation

-Work together to provide new insights to similar problems

Reaching better solutions (**for all parties**) as a consequence of tackling situations with different approaches

-Test the effectiveness of alternatives to check that they work under different conditions

-Accelerate the growth of future markets

Act as a catalyst triggering actions and synergies

How to transfer measures effectively

-Be realistic when defining objectives taking stock of the context and the available resources

Make use of favourable circumstances

-Coordinate different policies to maximize *outcomes*

-Experience can't be transferred exactly in the same way from one place to another. It must be adapted to the local reality

What is usually possible to transfer are **criteria**, the **factors** to be considered before taking a decision, and the **decision process** itself

How to transfer measures effectively

-Developing partnerships with local agents

For better understanding/respect of local **priorities**

-Creating local *ownership* of projects

-Understanding successes and failures

Monitoring and assessing the effectiveness of the solutions implemented, checking **progress towards the objectives**, and reviewing them when necessary

杭州市 Hangzhou

International cooperation offers a chance for cities and regions around the world to **share information** and transport management techniques. It also provides a platform to **learn from the advanced experience** of leading cities.

Suggestions: **Develop an international traffic guidance platform**, putting forward relative standards, making it easy for traffic departments from different cities and regions to share and transfer information.

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General activity and membership – getting information, “being part of it“

- Membership: information (newsletters, online access), direct help (questionnaires, benchmark data), consultation, professional contacts, publication, workshops and conferences
- Roles: personal and institutional representation (EMTA – board member, POLIS – vice-presidency)
- Projects: „pole position” for Research & Investment opportunities (Horizon 2020, Climate-KIC)
- Policy: support to European level decision makers (e.g. SUMP Guidelines)

Project activity – sharing know-how, best practices, lessons learnt, piloting

- CATCH-MR (Cooperative Approaches to Transport CHallenges in Metropolitan Regions) – Final guide with good practices and recommendations
- TIDE (Transport Innovation Deployment for Europe) – Trainings, handbooks, e-learning courses
- NODES (New tOols for Design and opEration of urban transport interchangeS) – toolbox for design and operation of new or upgraded interchanges
- STARS (Sustainable Travel Accreditation and Recognition for Schools) – accreditation system for primary and secondary schools, campaigns
- CH4LLENGE (four Key Challenges of Sustainable Urban Mobility Planning) – learning and applying SUMP methodology

Your city acknowledged – Budapest as inspiration for others

- European Mobility Week Award finalist (2013, 2006, 2005)
- European Mobility Week Award winner (2008)

Janez Potocnik (Commissioner for the Environment) celebrated all the finalists, Ljubljana (SLO), Budapest (HUN) and Östersund (SWE), saying they were some of the best examples of change and should be inspiration for other cities.

SOLUTIONS: Next steps

SOLUTIONS Training Programme

- **Training & Knowledge Sharing workshops** during major events & conferences in the target regions **open to all training cities**
- **Free e-learning courses** for transport professionals led by SOLUTIONS partners, courses **start in November/December 2014**
- **Contact**: Karsten Marhold, Polis, kmarhold@polisnetwork.eu

Date	Place	Event	Clusters/Themes
2-5 February 2015	Istanbul	CODATU XVI	Network Management, City Logistics, Clean Vehicles
25-26 February 2015	Brussels	TIDE/SOLUTIONS Training	SUMP

Today, 11 November
13h30-18h30
Room E, Level 1

Training on Public Transport, Clean Vehicles, Network Management

Thank you!

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