

CHALLENGES AND OPPORTUNITIES ON THE PATH FOR ITS DEPLOYMENT



First in Traffic Solutions.



International Road Federation
Fédération Routière Internationale
Federación Internacional de Carreteras

Geneva, 04 December 2018

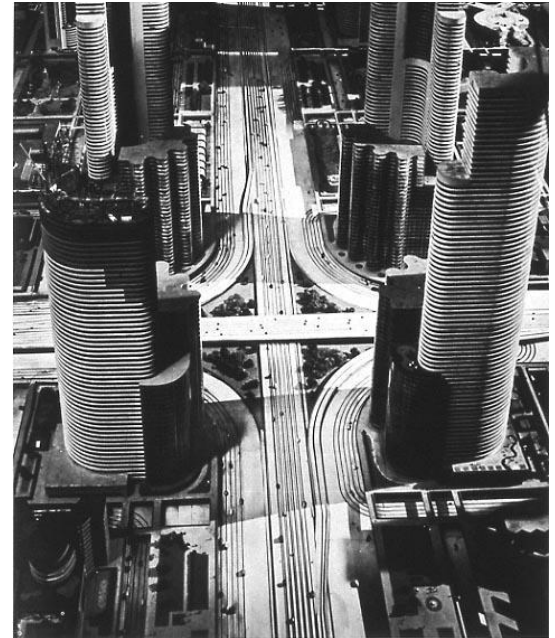
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“REAL PROGRESS HAPPENS ONLY WHEN ADVANTAGES OF A
NEW TECHNOLOGY BECOME AVAILABLE TO EVERYBODY”

HENRY FORD

- ▶ 1914: first three-colored traffic signal
- ▶ 1920s: the number of passenger cars registered in the United States nearly tripled
- ▶ 1935: the first parking meter
- ▶ 1939: General Motors launches Futurama

Can we already mark this milestone for ITS?



BARRIERS TO ITS DEPLOYMENT

NON TECHNICAL

Economical

- Lack of funding
- Old business models

Institutional

- Political prioritisation
- Policy

Legal

- Legal framework (Data Ownership, Ethical issues)

Organizational

- Lack of cooperation among stakeholders

Social

- User awareness
- User acceptance

BARRIERS TO ITS DEPLOYMENT

TECHNICAL

«SILOS» APPROACH

- Separate applications for different market segments
- Fragmentation of solutions up to "isolated" urban areas even within the same City (duplication and weaknesses of technological solutions)
- Legacy solutions, limited application of standard interfaces

UPCOMING TRENDS ASK FOR ADAPTION OF EXISTING SYSTEMS

- Autonomous driving
- Big data
- Cloud computing
- Social networking



INTEGRATION IS THE KEY WORD



SWARCO'S ANSWER



Total Traffic Control



Public Transport Management



Infomobility



Integrated Systems



Traffic Management & Traffic Safety Systems



Access & Parking



Speed and Redlight Enforcement



Licence-plate recognition



Passenger Information



Traffic Light Management



Highway & Tunnel Control Systems



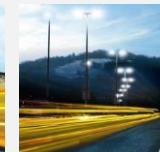
Emergency Control



Border Control



Traffic Controller Systems



Light Management

INTEGRATED TRAVEL MANAGEMENT

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OMNIA TRAFFIC MANAGEMENT AT YOUR FINGERTIPS

HIGH LEVEL INTEGRATION PLATFORM

SUPPORTING THE INTEGRATED ROAD
TRANSPORT ENVIRONMENT

excellent safety and
“green” credentials

solutions with high
operational efficiency

easy to use, easy to extend,
adaptability to evolving technologies

an open architecture for simple
integration with other systems



omnia

- Urban Traffic Management
- Strategic Traffic Management
- CCTV and Video Analytics
- Public Transport
- E-Mobility
- Highways & Tunnels
- Parking Guidance & Access Control
- Street Lighting Management
- Infomobility
- V2X Communication
- Service & Maintenance
- Third party system integration



MOSCOW, RUSSIA

Traffic Control

463 centralised intersections

Exploitation of private-public framework agreements



KUWAIT CITY, KUWAIT

Urban and Interurban Traffic Management
VIP Route

300 centralised intersections
800 CCTV (VBID)
40 VMS
100 Radar sensors

From Pilot showcase to full scale implementation



ASTANA, KAZAKHSTAN

Public Transport Fleet Management
Traffic Control

900 PT Vehicles
155 centralised intersections

Interagency cooperation across market sectors



MONTEVIDEO URUGUAY

Traffic Control
Strategic Traffic Management

- 135 centralised intersections
- 4 variable message signs
- 48 video surveillance cameras
- 21 LPR cameras
- 50 AID cameras

Modern equipment as a door opener for Innovative
Traffic Management solutions



TIMISOARA, ROMANIA

Integrated Mobility Management Solution

230 CCTVs

10 Enforcement Cameras

150 Intersections

43 VMS


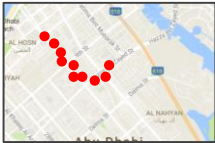
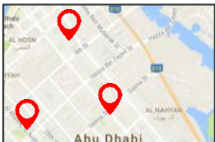
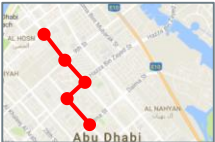

160 PT Vehicles

Contagious willingness to transform

A COMPLETELY CONNECTED ENVIRONMENT: NEW OPPORTUNITIES



NEO – THE FUTURE PERCEPTION TOOL

Detectors	
Radars	
AVM	
TAXI	
V2I	
Bluetooth	
ANPR	
Here	
Inrix	
TomTom	
Video	

Data Sources

How can you control what you cannot fully measure?

Added Value, Hi-Resolution Information exploiting all available Data Sources

- Geospatial analytics
 - Data collection and normalization
 - Data geo-referencing
- Descriptive analytics
 - Data validation and fusion
- Predictive analytics
 - Data short and mid-term forecasts
- Prescriptive analytics
 - Real-time response plans

NEW APPLICATIONS

Greenlight Optimal Speed Advisory (**GLOSA**)

- Show the driver at which speed the next intersection can be passed
- Drive without need to rush for green

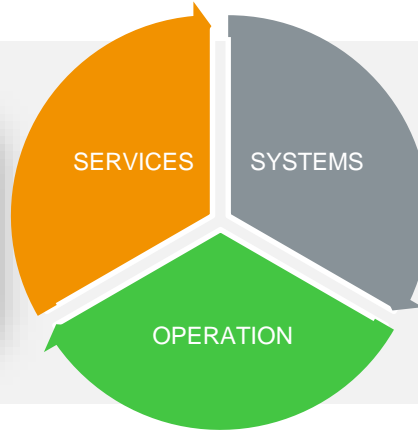
Time to green (**TTG**)

- Show the driver when green is back
- Take a relax at red / be prepared for green in time
- Start-stop engine ignites just before green
- drive-train / energy management and vehicle comfort functions
- ACC/ Gear-shift et al. energy functions adapt to traffic flow



NEW BUSINESS MODELS

TMAAS



SYSTEMS

- Flexible deployment options
- Browser-based user interfaces with easy workflows
- Suited for the modern work environment
- Pay-per-use (only the features needed)

OPERATION

- System maintenance
- Server hosting
- Communication

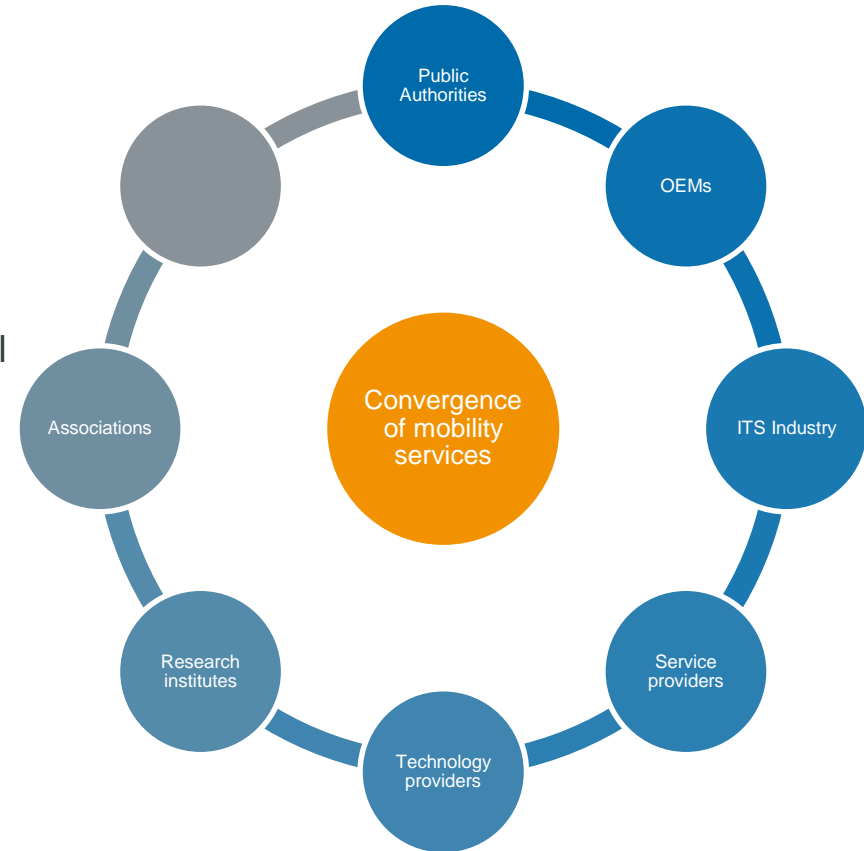
SERVICES

- Service and support center
- Traffic engineering
- Advisory services

CONNECTED AND COLLABORATIVE TRAFFIC MANAGEMENT

Sharing data and traffic management plans exploiting the connected vehicle environment:

- ▶ Vehicles share data and travel needs
- ▶ Traffic control shares accurate traffic forecast and control strategies with vehicles
- ▶ Navigation systems consider and support the control strategy
- ▶ Community and individual objectives converge in a win-win scenario



CONVERGENCE OF MAAS AND TRAFFIC MANAGEMENT

Traffic Management as an enabler of MaaS

TM evolves through MaaS: from traditional to cross-modal interactive mobility management

TM enables MaaS: involves car as part of MaaS but promotes modal shift & facilitates seamless usage of urban and interurban road network while preserving quality of service

HOW WILL ALL THIS IMPACT OUR LIVES?

- Real choice between travel alternatives
- Personalised response to needs:
 - Professional drivers
 - Commuters and frequent trips
 - Business travellers
 - Tourists
- Planning and payment for travel in the easiest way
- Match between the right mode of transport for the needs of the journey
- Cost effective travel



SWARCO responds to the needs of society with its technological know-how and innovative mobility solutions to make your travel experience quicker, safer, more convenient, and environmentally sound, improving the **quality of life**.

THANK YOU FOR YOUR ATTENTION!



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