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ITS European Congress, 6-9 June 2016, Glasgow

SISo4: Cities go for Smart Mobility now

Statement Paper & Highlights from Discussion

July 2016

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1 Introduction

Urban authorities have to deal with, by everybody well-known, major challenges within the next decades. Without any actions, urbanisation will continue to compromise traffic safety and efficiency, and result in increased exposure to emissions and noise, endangering the quality of life, public health and the climate. All hope is centred on "Smart Mobility" that should reduce congestion and foster faster, greener, safer and cheaper transportation options.

Smart Mobility includes many innovative solutions, such as Car, bike and ride sharing, Multimodal and on-demand services, New distribution solutions for city logistics, and Connected, electric and autonomous vehicles. Although many stakeholders are trying to implement Smart Mobility solutions, they also seem to be hampered by missing regulations, unclear allocation of responsibilities, unknown markets, lacking public investments and missing visions on future cities.

In Rapp's vision on Smart Mobility, each city should focus on mobility services and business models that "fit" the city best, since not all cities are the same. However, the common key aspect in each city is Urban Mobility Policy: Decisions made today will determine how mobility and car usage evolve in the next 10 to 20 years. We believe that a change in mobility behaviour is needed to face the challenges of urbanisation. And policy should induce this change: Travellers should be tempted to go off the beaten track, e.g. through targeted and personalised information on new services and monetary incentives to use these services.

In our Special Interest Session, we discussed together with our speakers and with the audience, how mobility in a future city will look like and what exactly will need to be done to enable this vision. We are proud, that the following speakers¹ contributed to our session:

- Sami Sahala – City of Helsinki, Finland
- Damien Declercq – Local Motors, Germany
- Marcel Meeuwissen – City of Enschede, Netherlands

In preparation of this session, we asked our speakers to provide us with their view regarding the following questions:

- What is your vision towards future cities regarding mobility? (e.g. related to technologies, public acceptance, financing, business models, etc.)
- How to reach this vision? (What steps are needed, which steps did you already take?)
- Why are we not there already? (What are the main barriers (e.g. technical, financial, political, legislative, etc.) and how to overcome them?)

The answers to these questions are provided in this document as well as some highlights from the discussion during our session on 7 June 2016 in Glasgow.

Have a good read!

Robert Yen & Cornelia van Driel
Rapp Trans (DE) AG

¹ Unfortunately, our fourth speaker, Johannes Springer (T-Systems, Germany), had to cancel his visit to Glasgow.

2 What is your vision towards future cities regarding mobility?

Sami Sahala (City of Helsinki, Finland):

Since we are arguably on the brink of the next generation urban transport system, there is a flow of crystal ball predictions around. With autonomous dreams and almighty connectivity aside, there is one thing that's certain: The future of mobility will be more complex. Driven by urbanization, digitalization, technological advancements such as the rise of electric drive, as well as behavioural changes - less desire to own a car, millennials want to purchase service rather than ownership - we are pushed to reinvent our transportation as we know it, with some new building blocks.

First of all this means that the number of transportation alternatives one has available will increase. Sharing economy and rise of peer2peer will produce new types of services and combinations we haven't seen yet, and will likely cause more change in transport behaviour. Public sector will become more an enabler than an entity who produces everything by themselves, thus leaving room for innovation. It will also have to accept new 'hybrid' -transport modes to enter the market between current public transit and completely private offering. For users the plethora of available choices may seem confusing and difficult to manage, which is the key trigger for Mobility as a Service (MaaS) that promises to take care of all the hassle. All in all, this will benefit users by bringing more alternatives to choose from, new types of service, ease of use and quite likely decreasing average cost level for mobility.

Damien Declerq (Local Motors, Germany):

Local Motors is building the future of mobility to contribute to Smart Cities. We think that innovation has to come from the people itself, that's why we settled the "Urban Mobility Challenge" in Berlin last year ago to work with our co-creation community. Local Motors is designing its vehicles collaboratively with a community of 50000 co-creators online on a platform and offline in decentralised labs and micro-factories.

Our vision is to adapt locally to solve the transportation problems with relevant systems. In Berlin, with our community and the mobility stakeholders, we found out that the future of transportation is going to be shared, sustainable and driverless. We're creating an autonomous vehicle system working with an application and a software package, with an upgradable and adaptable vehicle with different capacity depending on the use case we want to address. We're talking about a system that we want to integrate in cities as a Mobility Solution, more than a single vehicle leveraging MaaS model.

Marcel Meeuwissen (City of Enschede, Netherlands):

Mobility in Cities will become more and more sustainable and flexible. Mobility will become more sustainable because of the negative consequences of transportation on health, safety and liveability. Mobility will also become more flexible because the standard daily patterns will become less standard, because the knowledge and matching possibilities for supply and demand of mobility will grow and because new individual based business approaches become more profitable.

3 How to reach this vision?

Sami Sahala (City of Helsinki, Finland):

To make this vision happen we need to look at the bottlenecks and obstacles, and remove them where possible. For example Finland's Ministry of Transportation is working on renewing all legislation concerning transport services. Also private sector needs to be active in pinpointing the areas in need of repairing. All parties need to look at themselves too, quite often bottlenecks are e.g. old traditions and processes that haven't been updated. Some out-of-the-box thinking should be applied. Public sector should define its role, publish it and stick to it to create confidence in the market. To enable innovation, multitude of new services and in the end new business, public sector should be extremely careful when pondering what portion of the new mobility to declare as public service. And especially make sure they don't disturb the market by creating their own competing services. Instead public sector should focus on creating the market, by being the pilot user and shift from funding development to be the first to purchase these services.

Damien Declerq (Local Motors, Germany):

We have set-up several labs and micro-factories for our community engagement and for the production of our vehicles in the US. In Berlin, we're opening our first lab and showcasing our first prototype of the autonomous shuttle.

Beside, we're currently meeting with the mobility ecosystem of several European regions to see how we can implement our new system. Next step is to find a way to integrate an autonomous system in the current transportation network.

We started a more open dialogue with the municipalities and the political authorities to make regulations more flexible.

Marcel Meeuwissen (City of Enschede, Netherlands):

To reach this vision, availability of data is an important issue: both public data as well as private data. This means open data, but also open API's. Combining and open are key drivers, far more important than standardization. Furthermore, barriers for developing new mobility services, like legal boundaries, should be resolved. The role of the government is mainly accelerating and facilitating innovations and services. Especially in the situation where we would like to change people's behaviour, the role of the local government stays important in providing services.

4 Why are we not there already?

Sami Sahala (City of Helsinki, Finland):

So why now, why hasn't this already become reality? For one, public sector has never accused of being too agile what comes to reacting to new, fast-paced development. Likewise lack of money and resources is a never ending challenge. As hardly anyone is predicting any light at end of tunnel on these, the industry and public sector together should look into doing something in a different way and go round some of those obstacles. For decision makers new phenomena pose another challenge, as having to make decisions without knowing the exact impact of those decisions is often a showstopper in itself. We need desperately research and studies that predict those impacts, of both the decisions and also lack of them. And there's also the infamous resistance to anything new and disruptive. While some do embrace them, there's always those who don't and manage to halt or at least decelerate the progress.

Damien Declerq (Local Motors, Germany):

The technology has arrived and now it's up to us to see how we can integrate it in the public transportation network. We'll first operate on the last-miles, for the end to end journey and for the private sites, depending on the regulations. Even if the potentialities depend heavily on the legal authorisations, we consider ourselves as a market push to put autonomous vehicles on the road.

We believe that this process of education to convert the passengers to the autonomous technology can only be realised by involving the community in the whole building process. That's how we can convert people to autonomous and shared transportation.

Regulations remain our biggest challenge at the moment. Authorities are yet more and more open to new transportation solution to solve issues related to a growing urbanisation. There is a consensus that things have to change, which is a first great step in bringing to life new transportation solutions.

Marcel Meeuwissen (City of Enschede, Netherlands):

There are several barriers. One is that not all data is open and/or shared. This has to do with costs but also with protectionism. Furthermore an important issue is that not all necessary partners are always used to cooperate and bringing different aspects together. And finally quite often the costs are not made at the same place as that the earnings are being made. And getting to some kind of arrangement where this is being resolved isn't always easy.

5 Highlights from the discussion during our session

The objective of our session was to discuss with our panel and the audience, how mobility in a future city will look like and what exactly needs to be done to enable this vision. After the introduction (see slides from Rapp in Annex 1) each speaker shortly presented their view towards our central questions (see slides in Annex 2):

- What is your vision towards future cities regarding mobility? (e.g. related to technologies, public acceptance, financing, business models, etc.)
- How to reach this vision? (What steps are needed, which steps did you already take?)
- Why are we not there already? (What are the main barriers (e.g. technical, financial, political, legislative, etc.) and how to overcome them?)

After these presentations a vivid and interactive discussion within and between the panel as well as the audience took place. Below you can find an excerpt of this discussion according to the following topics:

- How people will get from home to work in 2025?
- What are the expectations towards the public administration?
- What are the current limitations that prevent the developments from going in the directions discussed?
- What would be a good business case?

All statements are presented anonymously.

How will people get from home to work in 2025?

- There will be areas in cities where cars with a driver may not drive, but only fully automated vehicles.
- People will not drive to work with their own car anymore, rather they will share vehicles.
- There will be different ways of how to get to work every day.
- For this a "mind shift" is needed. People must be made aware of it, that alternatives to their usual trip to work exist and that the use of these alternatives has a personal benefit (e.g. faster, financial incentive).
- However, only information will not induce any change. People are trapped in their daily routines and do not "just" change this behaviour. Especially certain mechanisms to inform the user on personally relevant alternatives and benefits are needed, so that he really changes his behaviour (e.g. EMPOWER project).
- Here the employers have a task as well. There should be more confidence that employees could also work from home and consequently save travel time.

What are the expectations towards the public administration?

- Overall, the municipality should steer the developments by formulating clear goals and requirements, consistently in the same direction.
- However, cities need to pursue conflicting goals all the time. For example, on the one hand they need to provide parking possibilities for locals and visitors (e.g. car parks that generate money). On the other hand, they need to incentivize biking (which does not generate any money for the city).
- To reduce the number of vehicles on the city network, the amount of parking places in urban areas should be reduced.

- New functionalities for closed parking buildings should be found to still being able to generate money for the city.
- From reactive planning we should go to proactive planning. The type of actions must be based on the goals that a city wants to reach and not just on a continuation of current practice on future forecasts of traffic volumes etc.

What are the current limitations that prevent the developments from going in the directions discussed?

- Regarding automated driving regulation (or the lack thereof) is a showstopper.
- There are many different cities with different situations. There is no "one solution fits all".
- The problem is that the user would have to pay for the services. There are currently many services without a satisfying business case.
- The parameters for urban planning are still the same as in the last 50 years.
- You have to get away from Capacity Planning towards "Service Delivery Planning".

What would be a good business case?

- From a city point of view it would be a positive business case, if the municipality can save money.
- For cities the business case is, when more people would use public transport.

Annex 1: Introduction slides from Rapp



Major Challenges of a City

- Without any actions, urbanisation will continue to compromise traffic safety and efficiency and result in increased exposure to emissions and noise, endangering the quality of life, public health and the climate
- Our hopes are centred on “Smart Mobility” that should reduce congestion and foster faster, greener, safer and cheaper transportation options

Solutions ...

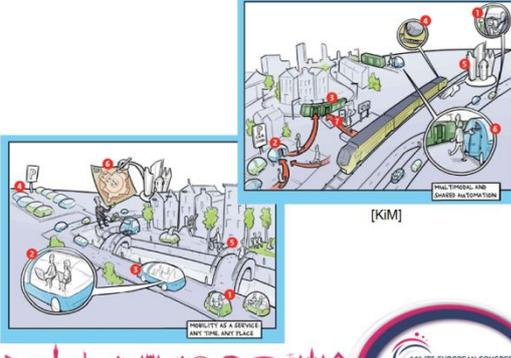
- Car, bike and ride sharing
- Multimodal and on-demand services
- Urban distribution centres for city logistics
- Connected, electric and autonomous vehicles
- ...

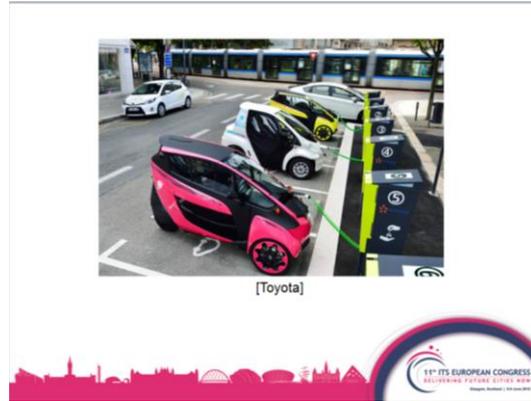


... versus Barriers



- Missing regulations
- Unclear allocation of responsibilities
- Unknown markets
- Lacking public investments
- ...
- Missing visions on future cities?





Rapp's Vision on Smart Mobility

- City A ≠ City B: Each city should focus on mobility services and business models that “fit” the city best
- The key is Urban Mobility Policy: Decisions made today will determine how mobility and car usage evolve in the next 10 to 20 years
- Policy should induce a **change in mobility behaviour**: Travellers should be tempted to go off the beaten track through
 - targeted and personalized info & services
 - monetary incentives

Towards Mobility Pricing

- People should be **more aware** of (also other than their usual) mobility options to go from A to B
- Moreover, people should be **challenged** to make a trade-off between possible mobility options
- Charging a vehicle for using a certain road => **charging a person** using certain mobility means
- “Good” behaviour is rewarded (e.g. cheaper)
- Also means for **revenue generation** to enable further investments in Smart Mobility

The Time is Now!

- **Major trends supporting this right momentum:**
 - A **shift towards alternative mobility choices** is taking off in urban centres – esp. by younger generations
 - **Increased environmental awareness**: More and more people understand that we need to sustainably manage our planet’s resources and ecosystems
 - Consumers around the world are rushing into the **embrace of the smartphone market**
 - More and more the **advantageous possibilities of open data** are being used to enable innovations based on information

Objective of this Session

- Discuss with our panel and you, the audience, how mobility in a future city will look like and what exactly needs to be done to enable this vision
- **Central questions:**
 - What is your vision towards future cities regarding mobility? (e.g. technologies, public acceptance, financing, business models, etc.)
 - How to reach this vision? (What steps are needed, which steps did you already take?)
 - Why are we not there already? (What are the main barriers (e.g. technical, financial, political, legislative, etc.) and how to overcome them?)

Annex 2: Panel presentations

➤ Sami Sahala – City of Helsinki, Finland



Mobility in future cities: Vision

- More variety in available mobility options to choose from
- Sharing economy, incl Peer2Peer
- Public sector is an enabler
- From black&white-world to hybrid transport modes
- MaaS to make it all more manageable



Mobility in future cities: Obstacles to focus at

- Public sector not very agile
 - Make public sector's role smaller
- Money (lack of)
 - Don't procure !
- Lack of studies on effects
 - « Hard to make decisions when you don't know the impact »
- Resistance to change
 - If all else fails:
May the force be with you



Mobility in future cities: Action points

- Remove obstacles, deregulate
- Reinvent processes, look for out-of-the-box ideas
- Public sector: Do NOT develop competing service to disturb market
- Public sector: Be a pilot user, be 1st to buy services
- Public sector: It's Ok to fail



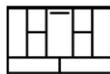
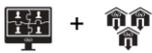
➤ **Damien Declerq – Local Motors, Germany**



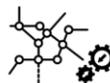
Vision toward future cities regarding mobility.



How to reach this vision?



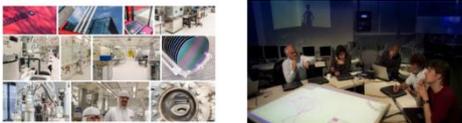
Challenges to come.



➤ **Marcel Meeuwissen – City of Enschede, Netherlands**



Enschede = innovation, technology and cooperation also within Mobility



Marcel Meeuwissen

3



EMPOWERing people

Marcel Meeuwissen

4



Rapp Trans (DE) AG
A Rapp Group Company
Reinhardtstr. 37
D-10117 Berlin-Germany

T +49 30 2844 5015
F +49 30 2844 5016
www.rapp-trans.de

Board of Directors:
Daniel Ohst, Robert Yen
Chairman of the Supervisory Board:
Bernhard Oehry

Registered: Berlin
Local Court Charlottenburg
HRB 133505
VAT: DE276600229

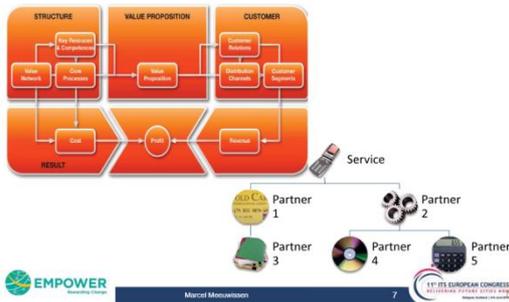
Connected and flexible PEOPLE



How open are we?

- Openness is a key driver:
 - On data
 - On cooperation
 - On letting others benefit
- Combining and connecting instead of standardisation
- One of the main remaining issues is ticketing. From an open data, open community, smart city point of view, finding a way to deal with pricing and ticketing will be a major driver for the real integrated development of new, flexible services that serves the consumer best.

How to build the business case?



Thank you for your attention



- Email: m.meeuwissen@enschede.nl
- Telephone: +31 6 128 99 583 (Enschede, dissemination)
- EMPOWER Project website: <http://empowerproject.eu/>