

**CROWD
SOURCING[®]
WEEK**

CSW²

Brussels
Metropolitan



orange[™]

POSITIONING PAPER: DAY 3 – NOV. 23, 2016

SMART CITIES AND MOBILITY



INTRODUCTION: FRAMING THE DISCUSSION, CLARIFYING THE CHALLENGE

As part of the Crowdsourcing Week Europe 2016, a discussion group on **Smart Cities and Mobility** has been set up to tackle the current issues on that matter, to identify the limitations of our society and to suggest potential solutions.

Starting from the Smart Cities definition of DG Economy & Society at the European Commission, *“digital technologies translate into better public services for citizens, better use of resources and less impact on the environment”*¹, this workgroup wanted to focus on the quality of life of citizens by means of technology, where technology is not an end, but a mean. In other words, technology can help us solve sociological and economical issues, but needs a mentality shift.

With this in mind, the group came across a **three-folded discussion**, based upon the expertise and professional background of the contributors: (1) Open data, connectivity and innovation, (2) Collective involvement and (3) Smart employment.

IDENTIFIED ISSUES AND LEVERS FOR IMPROVEMENT

1. Open data, connectivity and innovation

Open data has its rightful place in debates about ICT (Information and Communication Technology) and IoT (Internet of Things) to make the cities of the future prosperous. The ideal model, according to the discussion group, would be a central system that gathers, combines and distributes **real-time data information, made available during every moment of our daily life**. It has the advantage to optimize the fluidity of transport, to push information towards the user according to his/her agenda, geographical situation or transport mode, and to get the best out of the existing intermodal services.

Some ideas of how society could be organized in a Smart City based on open data:

Smart wake-up. A citizen starts his/her day by collecting all the relevant information according to his/her agenda, the activities of his/her family and their respective destinations. Data will be pushed such as the most appropriate transport modes and their environmental impact, the mobility sharing possibilities and their time schedule, the alternatives in case of road works or traffic jams, and weather conditions.

¹ <https://ec.europa.eu/digital-single-market/en/smart-cities>



Smart infrastructure. The offer of new infrastructure should take into account the possibility of rapid change in the mobility needs, including a decrease in these needs. The infrastructure of a city could be modulated based upon the density of mobility within a city. Thanks to the collected users' data (public transport, cars, pedestrians, cyclists,...), a virtual movement map would generate the information of all connected users in a specific area, city, community or region and adapt the infrastructure accordingly. That way, speed limitations would be adapted automatically according to the density of the traffic (smart highway), road signs would take into account the activity of the neighbourhood (school hours) or traffic lights give priority to specific modes of transport, such as busses or cyclists or could create 'green waves' when there is no crossing traffic detected.

Smart destination. According to the destination of users, incentives could be given to avoid dense traffic hours. In times of high attendance in amusement parks or shopping malls for example, prices of goods could be adapted based upon the arrival time in order to encourage visitors to avoid peak hours and spread the visiting hours.

Smart health and environment. It is essential to raise awareness about the environmental impact related to the selected mode of transport. The information should be given any time and any place in order to **embed the environmental aspect in our society.** Likewise, health is

slightly percolating at all levels of our society. Encouraging people to choose **modes of transport with a high health factor** could exploit this awareness to the full.

The exchange of open data to optimize a journey as mentioned above, can only be efficient if the performance of the communication networks is ensured. Undoubtedly, future **mobility is about connectivity.** The big challenge and potential of future development is to obtain maximum coverage at maximum capacity of fixed (fibre to the home), as well as mobile networks (4G-5G, Wi-Fi, etc.), which will enable suitable exchange of information through applications or other platforms.

In terms of connectivity, the next step to a better fluidity of mobility is **connected mobility**, such as autonomous driving of cars, buses or even flying with drones. Today, some pilot projects exist, but how far can we push the possibilities of mobile connectivity? Some routine itineraries that generate regular traffic could be optimized by autonomous vehicles, such as dropping off and picking up the kids to/from school, shopping or commuting.

It is impossible to sum up the numerous possibilities of how open data, technology and innovation can optimize mobility in a Smart City. However, it is important to acknowledge the **sociological dimension** related to the technological evolutions. It is worthless to change the offer in mobility, if the demand-side is not



able to adapt to this fast-growing interconnected world.

Therefore, a mentality shift needs to be encouraged: “*I am the city and the city is me*”. Conscious citizenry and the **awareness of how individuals are interconnected** with each other will make a difference for future decisions and developments towards a Smarter City and Mobility. One of these aspects is the fact that people should realise the importance of sharing their data in exchange for personalised services offered by a Smart City, based on their demands. In other words, comfort could take precedence over privacy to some extent.

In that respect, users should know at all times why and for whom they make their data available. The exchange of information should be bidirectional. Therefore, it is essential to have **a watchdog, a Big Data Supervisor**. This is conditional on the willingness of citizens to consider giving up a part of their privacy and think collectively.

That brings us to the second part, which develops a sociological aspect of collective involvement, or more specifically, the well-being of citizens at the heart of the common interest in a Smart City.

2. Collective involvement

As mentioned above, technology is not an end, but a mean. The citizens’ well-being should be the core value of a Smart City. In that respect, **education** is an important vector to create awareness and a sense of

responsibility in society. It is essential to **foster citizens’ consciousness about the global impact of their acts** on both their **quality of life** and their **environment**. In this paper, we shall define this as **collective involvement**.

In terms of mobility, a Smart City should be characterized by new conceptions of transport, such as ‘**soft mobility**’, in which urban development is conceived for the **quality of life of pedestrians and cyclists**. Neighbourhoods could be made livelier by small shop areas for instance. However, soft mobility will need to be completed by **intermodal services** for longer distances. In order to encourage the use of these, the idea could be to encompass all intermodal services with only one subscription or mobility pass. To motivate users for intermodal options, the implementation of **proper alternatives** should be the **priority in infrastructure investment plans**.

If **sharing behaviour** gets embedded into society, citizens could apprehend the use of a car quite differently than today. In a Smart society, a (company) car will no longer be a status symbol nor an individual property, but only a shared **mode of transport paid for usage**. Some **top-down initiatives** could stimulate **collective involvement** and encourage citizens to choose soft mobility, such as a compensation for the users of low emission mobility (walk, bike or public transport), a pollution tax, a low emission zone, a city toll or a congestion charge zone.



The collective involvement of citizens can only be triggered if **governance organises itself similarly**. Hence, it is inefficient that policies are established by interregional fragmented governmental structures.

Collaboration between municipalities, regions and countries is essential for **efficient governance** of smart mobility measures. The establishment of a formal or informal centralised body is highly recommended to put the development of a digital city and its mobility on the agenda. So, the evolution towards a social model characterized by collective involvement depends on the **mutually inclusive ability of mentality change** of both, top- and bottom level.

Considering the discussions above, one specific sector of society needs special attention, namely **employment**. Businesses and Industries are continuously challenged to adapt to digital innovations, which have a considerable impact on how future employment is apprehended. We like to call it Smart employment.

3. Smart employment

The discussion group listed some ideas of how the well-being of employees can be ensured with regard to mobility in a continuously evolving digital world.

Smart employee benefits. Due to the digital evolution and the emerging change in mentalities of employees and employers, car ownership (and so car leasing

policies) will no longer exist in a future Smart City. Transport could be more diversified and flexible according to the needs of the user by becoming an **on demand-customized mode of transport** based on the requirements and the availability of employees.

An employer could also offer a more **diversified Mobility Pack**, similar to a virtual portfolio, wherein employees would pick the mode of transport (and even beyond) corresponding to his/her needs, such as public transport, e-bike, urban wheels, fitness accommodations, crèche services, bike maintenance, car sharing subscriptions, or home rent vouchers. Technologically, these services would be accessible through **one application with one user account**, enabling real-time money transfer or monthly settlements according to the allocated user's budget.

Smart office. Having **flexible working arrangements**, the employee could organize its agenda autonomously by deciding where, when and how to work. His/her work is evaluated based upon result, instead of presence at the office during working hours. In future employment, employees take greater responsibilities for how they work, whether it is at home, at a satellite office or at a co-working space. The benefit for mobility due to this policy is that commuter traffic can be reduced drastically. Technologically, the working conditions of a Smart office will require a **highly performing virtual**



application and network, enabling co-workers to communicate fluently with facial contact, whether it is peer-to-peer or in group discussions.

Smart job. Lastly, employees could fill in different roles according to the needs of both employee and employer, based upon a mutual arrangement. Depending on the content of the job and the related geographical requirements, the **internal mobility** of an employee could have an **external impact** on mobility within a Smart City and its surroundings.

CONCLUSION

Solving or at least **relieving the mobility issues** we are facing nowadays is not only necessary, but also possible. It is no longer only a matter of using the available **technology**, a true **mentality shift** is needed. It is not merely about shifting from the company car to the bicycle or public transport, but more importantly, it is about new ways of living and working.

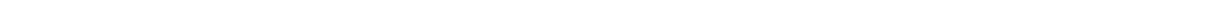
Smart employees: re-think your benefits in ways of quality in your work/private life balance. Increase your productivity by reducing inefficient transport time. Be conscious of your impact on the environment when choosing your mode of transport.

Smart employers: re-think costs and benefits of mobility and other ways of working. Encourage home working and virtual meetings. Save on floor space and company cars.

Raise the ecological consciousness and collective involvement.

Smart governments: encourage open data, home working, active transportation (walking & cycling), car sharing, flexible hours and lower environmental impact. Focus on intermodal services when conceiving coordinated urban development and infrastructure investment plans.

Find on **Wooclap** the work-group's **concrete proposals** to address the challenges explained in this positioning paper. Everyone is invited to contribute with his/her own opinions and ideas.





CONTRIBUTORS:

Patricia Demeulder

B2B Channel Marketeer, Orange

Tom Sorgeloos

Business Development Manager M2M,
IoT & Big Data, Orange

Emanuel Marreel

Business Development & City Account
Manager, Siemens Belgium

Peter Rakers

Data Strategist, Cropland

Aurélie Willems

General Secretary, GRACQ

Céline Vanderborght

Smart City Manager Région Bruxelloise
- CIRB

Andrea Lorenzetti

Product Manager, Arval

Julie Randaxhe

Project Manager, Smart City Institute
(Université de Liège)

Anne-Marie André

COO, Smart City Institute (Université de
Liège)

Jean-François Vanderschrick

Head of Marketing Analytics & Research
CPBB, BNPPF

Cécile Huylebroeck

Facilitator, Brussels Metropolitan (for
CSW Europe)

Disclaimer: The views and opinions expressed in this positioning paper are those of the individuals working as a group and do not necessarily reflect the official policy or position of any company or institution they represent or work for. This paper is lead by CSW/CSW2 and its partners and is scheduled to be delivered and presented at CSW Europe 2016.
