The smart revolution

How does the smart city change the urban resident's future?

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Through the growing concentration of populations in urban areas and the multiplication of so-called mega-cities[1], we are moving to a world where cities become primordial actors. This evolution generates challenges in terms of resource management, transport infrastructure and public governance. Smart cities have emerged as a possible solution for big and small cities to render urban management more effective and efficient. This article will clarify the meaning of 'smart city', refer to the implementation of smart city strategies in Luxembourg City and explore is the the citizen's role in the urban future.

The concept of smart city has become a fashionable buzzword used in the political discourse and is a train economic actors do not want to miss. What in the past was 'e' (i.e. electronic) is today smart and there are 'smart solutions' for almost anything: smart metring, smart mobility, smart infrastructure … Yet, the concept in itself is surrounded by 'many unspoken assumptions and has a rather self-congratulatory tendency'.[2] Caragliu et al. seek to define the term and propose that a city is considered smart, 'when investment in human and social capital and traditional (transport) and modern communication infrastructure fuel sustainable economic growth and a high quality of life[3], with wise management of natural resources through participatory governance'.[4]

He refers to the main elements, which comprise the typical smart revolution discourse: transport, communication, IT, economic sustainability and governance. However, the smart city is not a monolithic concept: Francis Pisani, a former journalist at *Le Monde*, travelling around the world visiting and exploring urban spaces concludes that there is not one single model of a smart city.[5] He presents multiple ways in which 'smart' can be understood and draws the picture of an idea that can be adapted to the objectives that are pursued.

Ubiquitous

Smart cities are popping up all over the world (but mostly in so-called 'developed economies'): some aim at adapting and upgrading existing city infrastructures, others are planning – and already building – not only new neighbourhoods but entire cities. Masdar (United Arab Emirates) may be cited as a prime example in this context: a carbon-neutral, zero-waste city is being built – in the desert – from scratch. The city houses a technology research university (in parternship with MIT) and is conceived as a laboratory of new ideas. Interestingly however, the fact that this city working 100 % with renewable energy is funded by 'petroleum dollars' makes the whole ordeal seem contradictory at best. Shifting further east to South Korea is Songdo, which seeks to create synergies between work and living space as well as shopping facilities. This project reflects the vision of eco-utopians such as the Belgian architect Vincent Callebaut who is involved in smart city planning. He designs floating eco-city islands and continental self-sufficient urban eco-systems: highly energy-efficient buildings with innovative water and electricity systems plus vertical gardens where organic fruits and vegetables grow, thus integrating food systems into the buildings. He envisions a place where citizens work, socialise and live in the same place, this way reducing their carbon footprint.[6]

Smart Luxembourg: No. 1?

There are also those aiming at transforming the existing infrastructure. They turn 'smart' not only in order to improve the service provision and reduce en-

> **The concept of smart city has become a fashionable buzzword used in the political discourse and is a train economic actors do not want to miss.**

ergy consumption, but also to increase the economic potential of the city. Luxembourg City is only one example among many others. Yet, scrolling down the website of the Luxembourg City Council, you hardly find any hints to 'smart projects' or a 'smart strategy'. This is surprising considering that it is the capital of a country that launched the 'Digital Lëtzebuerg' strategy in order to create a hub for Information and Communication Technology (ICT), biotechnology, logistics and financial services companies. Some available information refers to the e-city (which relates mainly to the Hot City wifi network).[7] Yet, a discussion with Guy Breden, the IT project manager of Luxembourg City, and Corinne Pommerell, the head of the IT department, shows that there is much more to it: the city has become 'smart'. There is a large list of smart projects: city app (pooling information on public transport, parking, traffic, public administration and social activities), ability to track online the progress of requests for permits to build, real-time public transport information, the report it! app, which allows citizens to report problems they encounter such as defective street lightening or potholes, etc… According to Breden and Pommerell, Luxembourg City is actually 'not doing badly' compared to other smart cities in Europe. Its strength lies in the high quality of its Internet infrastructure and the projects that have been implemented keep up with their counterparts around Europe. And indeed, according to the 2014 smart city ranking of the Technische Universität Wien, Luxembourg is ranking first among a sample of 77 medium-sized cities, followed by Aarhus (Denmark) and Umeaa (Sweden).[8] The only problem is that most citizens do not know about these developments: a coherent marketing effort that unites on-going projects under the 'smart' umbrella is missing.

In order to create a smart city, a long-term vision and strategy are necessary. According to Breden, smart city is most of all about 'access to information' and it is true that reliable and cutting-edge infrastructure constitutes the basis. Yet, access to information means a lot more. Which type of information is referred to? Who provides it and more importantly who manages and gets access? Much of the information consists in data collected by companies or public authorities that, after a 'mining' process, is transformed into custom-tailored information that is then provided to the user, be it a private person, a company or a public institution. In the case of Luxembourg much of the data not falling under data protection legislation and collected either by public authorities or industries is not accessible to the public. According to the EU digital agenda scoreboard, Luxembourg (country) ranks 26 out of 28 regarding its efforts in terms of open data. Yet, the statistical information (e.g. data related to traffic and mobility) in question could be a key element to boost the economy, make services more efficient and improve public services. Up to this point, scepticism of local officials and administrators towards open data persists. It may be true that if available the private sector will use the data collected with public money for commercial profit. At the same time, it may encourage innovation while respecting data protection, which will then generate improved services for citizens.

Smart cit(y)zen

So, does a smart city also need smart citizens and if so, what characteristics does this citizen need? According to Guy Breden, 'smart' people are those that use 'smart' information, i.e. information compiled in a way that allows saving time and being more efficient. Hence, being smart is not anymore about what you know, it is about how you use and manage information. Concerning the question of the role of the citizen in the smart city, Adam Greenfield argues in *The Guardian* that 'vendors like Microsoft, IBM, Siemens, Cisco and Hitachi construct the resident of the smart city as someone without agency; merely a passive consumer of municipal services – at best, perhaps, a generator of data that can later be aggregated, mined for relevant inference, and acted upon'. [9] While these IT companies may indeed see citizens as consumers of data that help increase commercial profit, the citizen's role can be much bigger: they can become entrepreneurs by joining together in a start-up and for instance coding an application without waiting for a company or a public administration to do it. They start with an idea that may be sold later on, which is what happened with waze,[10] the world's largest community based traffic and navigation app, where it is the citizens who provide map data and real-time traffic information. This is only one example of 'citizen entrepreneurship', many others related to mobility, waste management (e.g. food share) and political participation (Better Reykjavik) have been set up using ICT infrastructure.

Second, the downward trend in voter turnout over the last decades has made clear that municipal and national elections are not sufficient anymore to legitimise political decisions. It appears that today more than ever, citizens have become alienated from political processes. In this context, the smart city discourse advocates 'smart governance', i.e. rethinking relations between political representatives and citizens while stressing citizens' political rights. The above-mentioned smart city model shows that although it is ranking high in terms of digital economy, Luxembourg City is lacking far behind in terms of public governance. A closer look at the criteria

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La Confluence : a smart neighbourhood built on a former industrial ground of Lyon (CC BY Kim Nommesch and Mónica Lafón)

reveals that the negative evaluation is mostly due to poor management of public and social services as well as low participation in public life. Unfortunately, no further explanatory comments are available for the data but it provides some food for thought that merits further exploration.

Governance relates to the way decisions are made and how political representatives and citizens interact. Current literature on e-democracy and participatory theory confirms that digital tools carry the potential to render political processes and decision-making more participatory and transparent while cyber realists doubt however that digital politics fundamentally change how politics work. Yet, what is true is that the impact depends on the implementation of online political tools. The participatory budget in Luxembourg City shows for example that it may not be sufficient to upload numbers of a budget – with the option to comment or ask a question while closing the forum one day before the budget is voted – in order to increase participation. Instead, information should be presented in a way that is easy to understand and to use. If this condition is not given, efforts to increase transparency, participation and thus legitimacy seem half-hearted indeed. Patrick Goldschmidt, alderman at the Luxembourg City Council, agrees in the context of the participatory budget with this reflection as he argues that if the City Council truly wishes to increase participation, it is important to reflect on how information is presented to the citizen.

What type of smart city do we want?

In the end, the discourse about smart city sounds inspiring and enthralling, it seems to encompass al-

most all aspects of urban life (even though not all have been mentioned in this text) and be the solution for an improved, energy-efficient and participatory urban management. While some are highly enthusiastic about new opportunities offered by technological progress, others see it as a threat that is breaking social relations, contributing to the 'Big Brother' state or benefits companies more than citizens. Without referring to such gloomy perspectives, Adam Greenfield argues that 'the smartest cities rely on citizen cunning and unglamorous technology'. He refers to various grassroots projects to show that citizens actually do not need cutting-edge technology to organise and use urban space. Basic ICT such as social media, or 'unglamorous technology' as he calls it, may be sufficient to set up and manage projects through 'network-mediated coordination'. It is true that cutting-edge and expensive ICT is not the panacea for sustainable urban management. Therefore beside smart projects, we should not forget the offline world, where people meet and may create a dynamic and vibrant urban atmosphere. The effects of modern ICT infrastructure facilitate communication, participatory governance and public accountability. It also improves public transport networks while reducing energy consumption. However, it is only a part of the urban future. Consequently, it should not be a question of smart technologies or not but rather being aware of potential negative effects this new city entails as well as constantly being aware of the citizen's space and contribution to the 'new' city. ◆

1   Megacities are metropolitan areas counting more than 10 million inhabitants.

2   Hollands, R. (2008). 'Will the real smart city please stand up?', in: *City: Analysis of urban trends, culture, theory, policy, action,* 12(3), p. 304.

3   However, whether the new urban utopia will actually improve the quality of life is contentious and requires further clarification and analysis.

4   Caragliu, A., Del Bo, C., Nijkamp, P. (2011). 'Smart Cities in Europe' in *Journal of Urban Technology*, 18(2), p.70.

5   Pisani, F. (2015). *Voyage dans les villes intelligentes : entre datapolis et participolis*, Netexplo.

6   Vincent Callebaut (2014). Smart Cities, la nouvelle révolution urbaine? Up Conferences. https://www.youtube.com/watch?v=saVjOmMk7JU

7   A call for tender concerning the redesign of the website was launched in January 2016. The plan is to present the new website at the end of this year or the beginning of 2017.

8   TU Wien (2014). European smart citiy model. http://www.smart-cities.eu/?cid=6&city=47 (accessed on 21st February 2016).

9   On citizen cunning and unglamorous technology' in *The Guardian*, 22nd December 2014,http://www.theguardian.com/cities/2014/dec/22/the-smartest-cities-rely-on-citizen-cunning-and-unglamorous-technology (accessed 20th February 2016)

10 It was developed by a group of programmers in Israel but was acquired by Google in 2013.

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