Connected Smart Cities 2017

Panel on Market Creation and Policy Issues

12th January 2017

Panel Participants

Chair. Hugo Goncalves, Forum Virium Helsinki. Hugo Goncalves is the coordinator of Select4Cities EU-project, which is executing a pre-commercial procurement of IoE platform between 3 cities.

Speaker 1. Martin Brynskov, Aarhus University, with a presentation on Synchronicity project – Internet of Things Large Scale Pilot on EU Reference Zones in Smart Cities. Martin Brynskov is the coordinator of Synchronicity project.

Speaker 2. Ann Founier, Digipolis, with a presentation on Innovation and Public Procurement, case focusing on Lean & Mean procurement piloting approach taken at Digipolis. Ann Fournier is Head of Purchasing at Digipolis. Digipolis is the IT service provider for cities of Antwerp and Ghent.

Speaker 3. Jakob Nielsen, City of Copenhagen, with a presentation on Market Creation and Policy issue in Copenhagen. Jakob Nielsen is Director for Urban development at City of Copenhagen.

Speaker 4. Hanna Niemi-Hugaerts, Forum Virium Helsinki, with a presentation on the Finnish Six City Strategy and Open Helsinki & IoT. Hanna Niemi-Hugaerts is the project director of IoT projects at Forum Virium Helsinki. Forum Virium Helsinki is smart city unit of City of Helsinki.

Speaker 5. Carl Piva, TM Forum, with a presentation on Smart City App built for smart city leaders. Carl Piva is VP of Strategic Programs at TM Forum. TM Forum is the global member association for digital business.

Speaker 6. Koen Snoeckx, Baltan laboratories, with a presentation on Creative Ring. Creative Ring is a membership organization facilitates these engagements, by enabling a European-wide, technology-supported experimental ecosystem for creative talents, professionals and stakeholders working in and with the Creative Industries.

Speaker 7. Katalin Gallyas, Civic Tech Amsterdam, with a presentation on incubating urban disruptor startups. Katalin Gallyas is CEO of Civic Tech Amsterdam, an incubator focusing on civic tech startups.

Rapporteur: Roope Ritvos, Forum Virium Helsinki

Panel thematic, and key questions presented by Chair:

"A market is a medium that allows buyers and sellers of a specific good or service to interact in order to facilitate an exchange. This type of market may either be a physical marketplace where people come together to exchange goods and services in person, as in a bazaar or shopping center, or a virtual market wherein buyers and sellers do not interact, as in an online market" ***(Investopedia)***

The Panel Chair posed following questions for the panelists to reflect and discuss on: *The original Markets were those at the city centers, and the word market comes from these. Also roads were constructed to cities in order to let the products and sellers enter the markets. It was the city administrations that built the market squares and the roads. Reflecting this and the definition on the market by economists, how the smart cities should approach the smart city market?*

Figure 1 What is Market, Hugo Goncalves/Forum Virium Helsinki

- *What are the common enablers that cities need to provide for the digital market? (Old markets: electricity for huts, ensuring the quality with inspections, etc)*
- *What are the cities' demand-side methods, where a city can participate in the local market to make it more lively?*
- *How cities should foster the local or the global market, to ensure competitive market functionality and composition?*
- *And especially for this event - what should be done together by cities? What is the role of networks and facilitators like OASC, EIP SCC, and others in the smart city market creation?*

Internet of Things comes together at Smart Cities

First, **Smart Cities is where all the IoT complexities meet.** Smart City IoT projects are the piece linking a large amount of vertical IoT domains together. As an example, the now launched 20M€ "Internet of Things Large Scale Pilot for EU Reference Zones in Smart Cities" project – *Synchronicity* – will deliver harmonized ecosystem and reference architecture for IoT in Smart Cities. But also the other EU IoT Large Scale pilots in verticals like mobility and aging will take place in cities! IoT decisions in Smart Cities need to take into account, and effect these verticals. *(Martin Brynskov)*

It goes also beyond a narrow notion of "smart city" - everything on ICT and Digital will come together in future in the "City Context" – this means integration both within the public and private silos in the city, and between the different cities – everything is emerging now in great speed - **there will be horrible successes and failures!** *(Carl Piva)*

Figure 2 Smart Cities is where IoT complexities meet, Martin Brynskov tweet from Net Futures 2016)

Cities need to work on Local and Global level to create a working market for smart city solutions

Locally, curating the local ecosystem is extremely important for functioning local markets. Often the open data has been made with "if you build it, they will come" mentality – and **curation of the ecosystem has often been forgotten.** *(Carl Piva).* This has been one reason why there has not always been so much business activities exploiting the cities open data, for example.

Local level is very important, to have the local city developers and companies on board. In addition to just opening the data, one lesson learned from Finnish smart city network activities is that **do not talk just about apps** [using city-provided data]**, but think through the whole data value chain**. And maybe we should in future look more towards medium-size and large companies, or the not yet tech-savvy companies wishing to digitalize their industries. *(Hanna Niemi-Hugaerts*).

Everyone is talking about creating a digital single market – enabling the "locals" in each city connect and trade with the other cities in Europe easily – and the morning plenary presentations threw out a lot of ambitions and expectations for the seminar participants to make this happen. There are some concrete examples like the CitySDK EU-project and locally the Helsinki Region Infoshare and 6Aika programme in Finland for example. How should cities approach, and what kind of role networks like OASC could play in these? *(Chair)*

One crucial challenge is that **standards and platforms is a jungle for Smart Cities** – standards, best practices and emerging platform ecosystems are very fragmented. The field looks like the telecom industry 15 years ago – everything is happening at once, and there is new initiative or company starting every day. **There is no way of knowing what will survive 2 years from now**. Smart City leaders are struggling on thinking strategies towards. *(Carl Piva).* To battle this, there are emerging tools for cities to help them think about this, like the TM Forum app on Smart City Maturity and Benchmark Model.

Cities need to also realize that **Interoperability is a constant process** *(Hanna Niemi-Hugaerts*). This means investment to people and resources, to enable collaboration with other cities. Forums like OASC are important but they are not enough – city-side need to think differently. It is not enough just to go to a meeting, but you need to take into account for example pragmatic different API versions and act on these. Also, **Cities need to put more effort in finding the common ground, and not just go where we originally wanted to go.** It's not always easy and intuitive at start, and it is slower and maybe not always as innovative, but it is the only way to create scalability. For example the 6 Cities in Finland selected common domains to work on opening the data (linked events, issue reporting, open decision API, resource reservation), and everyone had to make compromises on their main interests. Some suggestions for future: Re-use of Services (sharing and collaborating on code), Collaborate also on boring stuff like documentation, Lower the standards and go for quick wins, Rethink the data production in cities so that not just open statistics data but try to create data the companies actually need.

One pragmatic way forward is doing together – for example the now starting **Synchronicity project will deliver a harmonized ecosystem and a reference architecture** that will have 0,35 million users in the project, taking place directly in 8 European cities and 3 global cities, and via OASC connects to 89 cities more. The aim is to create a global market for IoT-enabled urban services. *(Martin Brynskov)*

Cities need to define the "Real, Real Challenges" for the market, and the demand-side instruments (procurement) need to be developed

One key question regarding innovating on smart cities domain is aligning the ambitions and visions of those who are building the smart city together. Industry innovation collaboration is easy when activities are with the companies' existing plans, but how to create and maintain interest on

something that is not in the companies' pipeline yet? **As cities, we need to define the real, real challenges** that the companies can start to solve, and in a such way that the companies can easily then understand there is a future market behind them. *(Jakob Nielsen)*

It should be noted that the main reason why cities have engaged in the smart city innovation activities is not that the cities are technological fetishists, and not even because of the economic growth perspective (which is important, but not the driver). The main reason is to create a livable city – finding answers on "**how to create welfare for the future generations"** *(Jakob Nielsen).* In long-term perspective it does not matter that a city is already scoring high on livability scores – **if we want to maintain that livability, we need to invest in many smart city activities.**

Also, some of the **European instruments for demand-side activities need to be developed** further. For example, Horizon2020 Pre-Commercial Procurement (PCP) is ambitious instrument, but it has ended up with too much rules - for example compared to national procurement legislation*. (Ann Fournier*). Also H2020 Pre-Commercial Procurement is about buying R&D and large-scale and long-term commitment, which is difficult for start-ups. Then in real life, the **national procurement legislation already allows for very innovative and agile ways of buying**. As a case example Digipolis in Antwerp has developed "Lean and Mean procurement approach", inspired by the European Commission Pre-Commercial Procurement model, but taken in smaller scale, faster pace and using the procurement process also to create a local community of suppliers. The model starts with announcing a challenge to the market. Then the market has two weeks to show the interest, and all who have shown interest are invited to 2 hour pitching. Then after this, 3-5 suppliers are invited to give a simplified offer, and another pitching for this offer then takes place two weeks afterwards. Directly after this, the contract is negotiated and the project starts. Compared to traditional procurement, this gives more contact between the buyer and the suppliers; the procedure is also oral and not just on paper; and this also communicates the need and interest better to start-ups. The procurer is no longer seen as government but as a customer with many interesting challenges to solve.

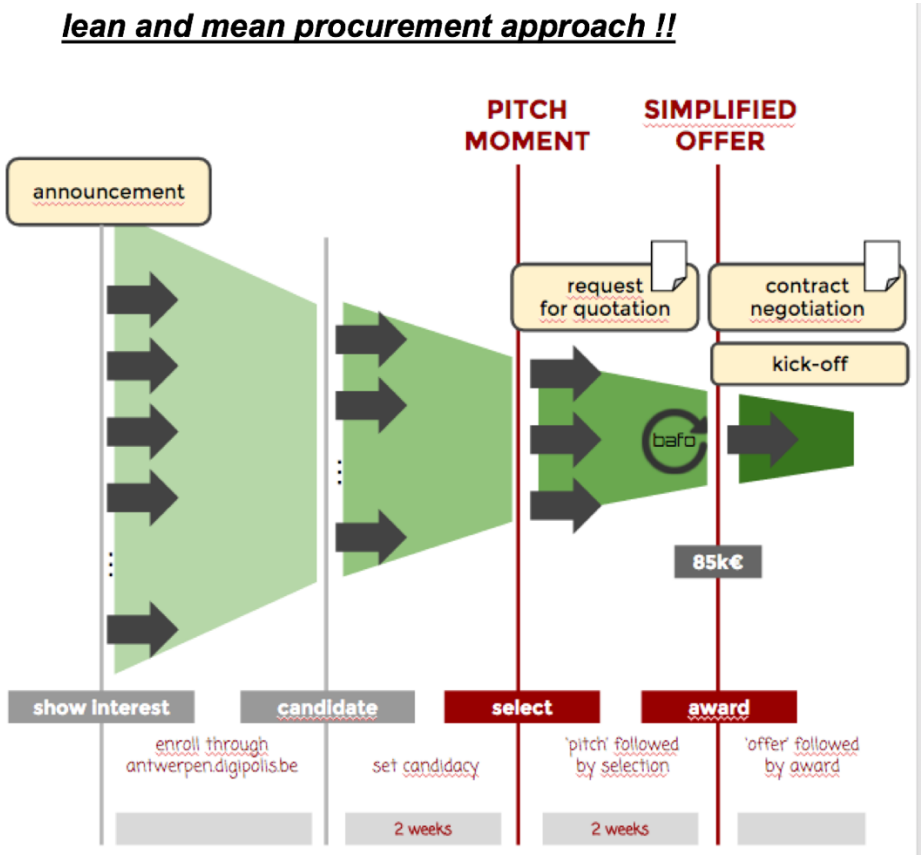

Figure 3 Lean & Mean procurement approach at Digipolis, innovating within procurement legislation (Ann Fournier)

Engage in effective Public-Private Collaboration on Data

One key aspect is that cities need to have an effective approach to the smart city domain. On city administration this means going beyond the silos, and thinking about smart city governance. For example, in Copenhagen, one lesson learned is that the **Copenhagen Solution Lab – responsible for many of the smart city activities – is organizationally part of city's Policy Development**, and it needs to be part of Policy Development in order to have direct link to policy planning and execution, and in order to let it connect the various silos of the city. *(Jakob Nielsen).* A concrete recent example from Copenhagen for the need for integrator between the silos: there were huge challenges in handling the flood from rain water. This was first tried to be handled on the surface level. But the flood means implications to many domains of the city, for example mobility. So there was a need to have the ITS system work with the water handling system. It is important to manage these silos to talk to each other, and get the data work together. One very important approach to find technical solutions for this is the Select4Cities EU-project, where a horizontal (crossing the silos) internet-of-everything platform will be jointly procured by Copenhagen, Helsinki and Antwerp.

On the supply side, the role of start-ups is important, both as innovation and solution generators for the cities challenges, but also as means to develop the smart cities from bottom up. **Not everything can come from the city governance, and not everything need to come from the governance.** *(Katalin Gallyas).* Civic Tech startups are these bottom-up, citizen-driven innovators that create solutions and services, both for the citizens and the cities. **Civic Tech startups sometimes scared by the city, and need love, care and funding.**

Smart Cities and IoT is about data, but more so is about **how to get people use the data** *(Martin Brynskov).* Traditionally a lot of data has been opened from the cities´ statistics department with the mentality of "we will build it and they will come". However, cities should **look at the whole data value chain instead of just old data production mechanisms** (*Hanna Niemi-Hugaerts).* We need new companies on all levels of the technology stack and around the data value chain. Also, cities need to generate such data that the companies have need for. Also, **there are business opportunities for packaging, storing and transferring the data**, not just the data itself *(Jakob Nielsen)*. An example of this is the City Data Exchange in Copenhagen, where the new business models and business ecosystems are explored with a private company as well. However, the hype cycle about "data is the new raw material" was years ago, and is already gone *(Martin Brynskov)* – cities should not think that they can just sell the raw data to the marketplace.

Also there seems to be differences in the approach towards openness between the cities. In Helsinki, we want to keep "Open" in the core of what Helsinki does in smart city –this comes from the city's formal strategy. This means open APIs, open data, and open source solutions. *(Hanna Niemi-Hugaerts).* Internet of Things domain has been quite closed world so far, so projects like Synchronicity and OASC can play key role in open IoT for smart Cities.

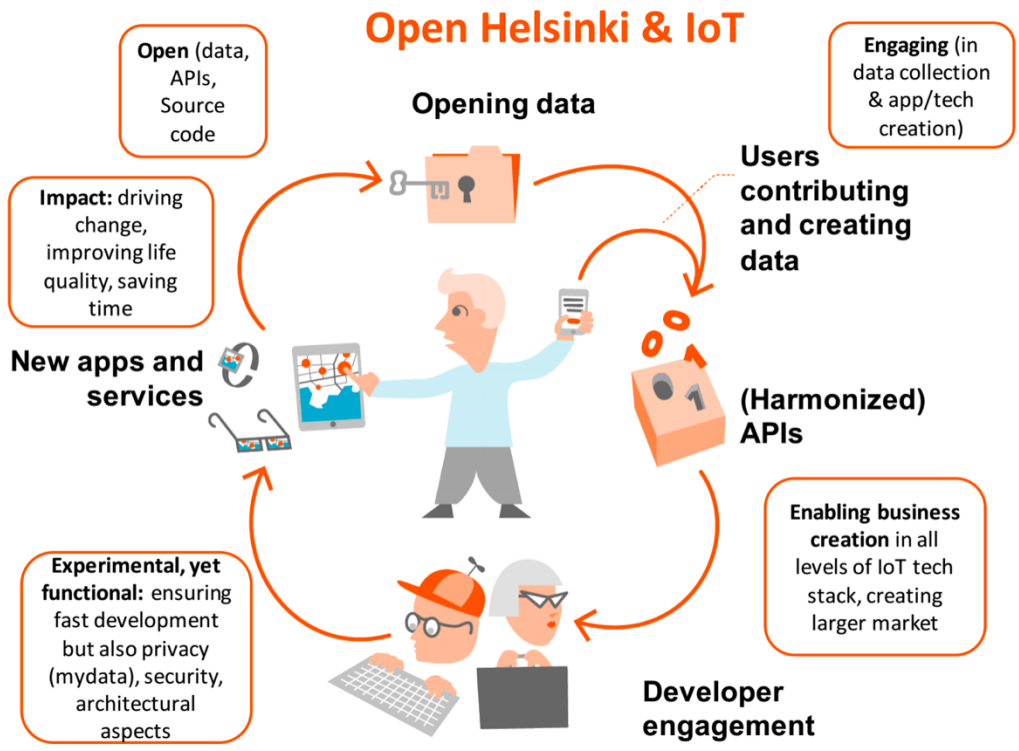

Figure 4 Open Helsinki & IoT / Hanna Niemi-Hugaerts

Key Insights by the panel: True Method of Knowledge is Experiment

There are various ways to approach development of smart cities. Often **technology is not a problem** - it **i**s already there and often quite mature enough**.** One crucial challenge is that smart city planning seems straightforward, and cities are used to large-scale planning. **But can we plan it all in innovation activities?** *(Martin Brynskov).* As an example, in Copenhagen, the electric vehicle charging system was planned towards e-vehicles that were in the market, and substantially smaller than the Tesla vehicle. As a consequence, the Tesla does not fit in the physical parking lot of the charging system.

Cities need much more "just do it" –mentality *(Ann Fournier).* The mindset in smart city development should not be "if something goes wrong", which is typical for civil servants everywhere in Europe, but going more experimental and agile. For example, the national procurement legislation already allows for much more innovation in procurement than is often used.

The **"true method of knowledge is experiment"** said already William Blake *(Koen Snoeckx).* The culture of experimentation and exploiting the talents of the creative industries in this should be fostered. European networks are useful for this peer learning purpose.

Figure 5 Tesla does not fit original EV charging lot. Image: Martin Brynskov

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