Telecommunications Policy 39 (2015) 218–240

Contents lists available at ScienceDirect

Telecommunications Policy

URL: www.elsevier.com/locate/telpol

Qualitative indicators for smart city business models: The case of mobile services and applications

Nils Walravens*

[a] SMIT, Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, Belgium
[b] iMinds, Gaston Crommenlaan 8, 9050 Ghent, Belgium

ARTICLE INFO

Available online 31 January 2015

Keywords:
Business models
Public governance
Smart city
Public value
Mobile services

ABSTRACT

This article introduces a theoretical framework for the analysis of business models that involve public actors, and city governments in particular, in the value network. It starts from an established business model framework and expands it to include an additional set of indicators required to successfully perform a qualitative analysis of the business models of new (digital) services offered by cities. It then applies this framework to several divergent cases from the mobile services sector in which city governments are involved as part of their efforts in becoming "smarter cities". By weighing the indicators for each case study, we can create a grid that allows for their direct comparison and gives an indication of diverging strategies. The newly introduced structured framework and its qualitative indicators are the main contribution of this work and can be used to set out or evaluate smart city strategies on a meso-level, as part of a broader policy exercise within cities.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Cities today face increasing challenges when it comes to providing advanced (digital) services to their constituency. The explosive growth in popularity of mobile internet, mobile applications and smartphones, the increased connectivity of devices and the internet of things as well as the drop in costs of sensors and RFID technology are trends that present new questions to city governments. These difficulties mainly pertain to the business models of these new services, combined with the fast moving pace of the internet and ICT industry and slow reaction time of city administrations to changes in these sectors. In this quickly evolving context, city governments need to rethink the ways in which they interact with large companies in offering services to their citizens as well as how they communicate with those citizens. New sets of indicators, based in both qualitative and quantitative research can provide helpful guidelines in achieving this.

These questions link up to the ever-evolving concept of Smart Cities. We will see that although this notion remains vague, it has a great deal of potential in framing some particular challenges cities face today and provides new ways of thinking about potential future issues. As ICTs generally form a large part of the operationalisation of the Smart City concept, we will take a closer look at how mobile technologies can be an important tool in reaching "Smart City goals" policy makers set out, as long as careful and systematic thought, facilitated by structured approaches using a.o. qualitative indicators, goes into the development of the business models for these new "smart" services.

* Tel.: +32 2 629 1621; fax: +32 2 629 1700.
E-mail address: nils.walravens@vub.ac.be

http://dx.doi.org/10.1016/j.telpol.2014.12.011
0308-5961/© 2015 Elsevier Ltd. All rights reserved.

Developing, rethinking or making a strategy explicit can allow cities to adapt more quickly to the changes and challenges in the field referenced above. Designing such a strategy may start with the acknowledgement that in many cases, governments are indeed not able to keep up with the pace of the industry. This however, does not mean there is no role to play for the city. As stated by John Tolva, CTO of the City of Chicago:

> *"For the most part we have pushed app creation to the edges of government. That is both a resource statement, but also an acknowledgment that volunteers and private sector will probably innovate quicker and certainly at scale that government cannot match. So we really don't create many of our own apps. We put our effort into getting the raw materials for the creation of applications […] We lay the infrastructure for the innovation and development to happen on top of."* (Tolva, 2013).

This article takes mobile city services as a case to explore new ways of thinking about business models in a public context and proposes a new set of qualitative indicators and theoretical framework to tackle pressing questions in this area. The main goal and contribution of this work is introducing and elaborating this new structured framework, while validating it though the case studies. We decidedly start from the perspective of the city and begin by framing the Smart City concept while highlighting current trends related to mobile services and applications.

2. Smart Cities

The idea of linking innovation and ICT-development, together with social and societal development, to a geographical area is far from new (Townsend, 2013). Komninos (2009) provides an overview and describes the evolution of systems of innovation, linked to geographical locations, in Europe. Komninos starts from early 1980s literature describing industrial districts, a concept which was popularised by Porter (2000) under the header of "Industry Clusters". This trend could be identified in traditional industries, but also proved effective in technology and technology-related sectors, gathering in so-called "Technology Districts". These districts brought together various players such as the basic research companies, venture capitalists, law firms, consultants and local companies, similarly to the pattern of Silicon Valley. In a somewhat more 'planned' approach, innovation linked to location could be found in science and technology parks, which in some cases could be interlinked in certain regions, forming so-called "Technopoles" or multi-park areas. The innovation dynamics within these all these types of clusters or districts are mainly centred around the diverse skills in various fields, the close cooperation networks in place there and the presence of "catalysts" that can spark cooperation between the skills and units within the cluster (Komninos, 2009, p. 343).

From the mid-nineties a shift from district literature can be identified, moving to the concept of "Learning Regions", referring to how organisations can learn and generate new knowledge, followed by a third generation of systems, from the year 2000 onwards, for organising innovation on a geographical level that can be identified under the "Intelligent Cities and Regions" moniker (Komninos, 2009). This mainly refers to the addition of online or virtual collaboration to the mix; something that became increasingly easy as internet technologies evolved and became more accessible, both to end users and enterprises. Progressively it became clear that ICTs could be an essential part of improving workflows and increasing efficiency and efficacy on a local scale, but also facilitating interactions on a global one. This was not only the case in sectors that are directly related to ICT or telecommunications, but also in various other sectors and industry branches beyond it e.g. health, culture, media, mobility, energy, government, policy etc. It should be clear that the Smart City concept is a direct descendent of the conceptualisation of this link between innovation, ICT and geographical areas (Townsend, 2013; Dameri, 2013, p. 2545).

Even though the term is relatively young, the operationalisation of what a Smart City is, can vary dramatically depending on the approach. Several attempts have been made at formulating a definition of the Smart City, taking different perspectives. In an effort to be holistic, several areas a city should focus on in making itself "smarter" have been identified, such as competitiveness, social and human capital, participation, transport and ICT, natural resources and quality of life (Giffinger et al., 2007; Caragliu, Del Bo, & Nijkamp, 2009). This view is supported by the somewhat technologically deterministic idea of a "control room" for the city, providing an architecture and ICT-based overview of all activity in the city as well as the tools to (automatically) interact with infrastructures or adjust parameters to predefined optima (IBM, 2009, p. 5).

These architectural or infrastructural viewpoints are contrasted by a more experimental, bottom-up view on the Smart City. In this perspective, innovation comes from the people "using" the city or is at least co-created with citizens, a process that can be stimulated by government. Examples of this can be found in the growing trend of open data initiatives and "hackathons", stimulating developers to create applications based on cities' databases, or the use of social media to organise local and ad hoc or more structural events and even protests. In such a perspective, what defines the Smart City is not the infrastructures or architectures it offers, but the ways in which its citizens interact with these systems as well as each other.

What is interesting in both approaches and of particular interest in the context of this article is the concept of the "app economy". This refers to the whole new area of economic activity that has seen the light as a result of the changing dynamics in the mobile services sector. A recent report (VisionMobile, 2013) estimates that the app economy, which is only five years old, has contributed to the creation of 794.000 jobs and revenues of over €10 billion per year in the EU28; and that 22% of the global production of app-related products and services comes from the EU. The creation of mobile applications

Download English Version:

https://daneshyari.com/en/article/556444

Download Persian Version:

https://daneshyari.com/article/556444

Daneshyari.com