SMART GOVERNMENT AS A KEY FACTOR IN THE CREATION OF A SMART CITY

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Abstract

The essence of the smart city concept is to increase the quality of life in cities with an emphasis on digital technologies. This mainly concerns the participation in decision-making as a part of the smart government. The participation means opportunity for citizens to participate in the management of the city. This academic paper presents basic concepts of a smart city as well as specific ways how smart cities can increase the participation of their citizenry, especially with regard to social media. Based on a literature search it is obvious that the involvement of citizens strengthens democracy and the quality of the decision-making process.

Keywords: *Smart city, smart government, participation, social media, municipalities, public administration*

1 INTRODUCTION

A smart city is a fuzzy concept. Anthopoulos and Reddick (2016, p. 352) define smart city as a concept that mainly deals with "innovation, not necessarily but mainly based on ICT, that enhances urban living in terms of people, governance, economy, mobility, environment and living."

The most common and complex explanation of smart city is a concept created by researchers from the Centre of Regional Science, which describes a smart city in the following six dimensions: "smart economy; smart mobility; smart environment; smart people; smart living; and, finally, smart governance."

The literature provides another definition with emphasis either on technological aspects or aspects of human capital. Washburn et al. (2010, p. 2) preferred information and communication technologies and define smart city as "the use of smart computing technologies to make the critical infrastructure components and services of a city – which include city administration, education, healthcare, public safety, real estate, transportation, and utilities – more intelligent, interconnected, and efficient." On the other hand, according to Berntzen and Johannessen (2016), smart city presents the concept of brand or statement that itself, in the most general sense, includes the activities of municipalities, which are intended to enhance the quality of life through modern technologies. In practice, it means the improvement of life quality and efficiency of public services with an emphasis on social and environmental sustainability. The implementation of smart city projects goes hand in hand with the long-term strategic plans of an area.

The participation of citizens in the decision-making processes of a local government is an integral part of all dimensions of the smart city concept and can be seen as an all-embracing idea of the concept. A municipality, which is not based on the real interests of their citizens and other stakeholders, cannot be seen as a genuine fulfilling vision of a smart city concept.

A Smart government builds on previously widely disseminated concept of e-Government (electronic government) and it is defined as the next step widely regarded as the evolutionary step forward in public administration innovations. Just note, that the e-Government deals with the computerization of the tasks of public authorities, but with an emphasis on strictly technological dimension of the relationship between governments and citizens. Harsh and Ichalkaranje (2015) describes the shift from earlier extended e-Government to smart government on specific examples of emergence of social media networks, mobile apps, big data analytics and mashup technologies in relations to empowering citizens to connect with government in new smart way. The concept has spread out especially with massive computerization during the '90s, but today with regard to the rapid expansion of new modern technologies it is widely considered to be outclassed.

A Smart government defined by Giffinger et al. (2007) includes the following aspects: participation in decision-making, public and social services, transparent governance and political strategies and perspectives. The concept directly relies on participation of citizens as one of its major pillar. Chourabi et al. (2012, p. 2293) approaching with follows: "Projects of smart cities have an impact on the quality of life of citizens and aim to foster more informed, educated, and participatory citizens. Additionally, smart cities initiatives allow members of the city to participate in the governance and management of the city and become active users." Gil Garcia et al. (2015) describe smart government as a continuous effort of local government innovations and not a specific goal. Innovations are supported by a set of emerging technologies and tools like big data, open government data, social media, blogs, web design, smartphone applications, cloud computing, and sensors.

2 HOW SMART GOVERNMENT CONTRIBUTES TO BETTER CITIES?

The essence of authorities implementing smart government approach should be to identify the needs of the citizens and provide them public services accordingly. Engagement of citizens is one of the most powerful ways of improving and transforming government's services and quality of life in cities. Harsh and Ichalkaranje (2015) characterize it as a situation, where customers drive the solutions, not the government.

Smart government as an integral part of the smart city concept is a comprehensive way of institutional changes in the municipal management. This philosophical dimension differentiates the concept from other parts of the smart city theory. Another dimensions of the smart city have particularly technological aspects, respectively it is about external characteristics that are determined, and from the perspective of municipalities it is very difficult to directly influence them.

Let's mention complete breakdown of a smart city concept by Giffinger et al. (2007) and the keywords that characterize each category of the concept.

Table 6 Smart city concept by Giffinger et al. (2007).

Smart economy (Competitiveness)	Smart people (Social and Human Capital)	Smart governance (Participation)
Innovative spirit	Level of qualification	Participation in decision-making
Entrepreneurship	Affinity to life-long learning	Public and social services
Economic image & trademarks	Social and ethnic plurality	Transparent governance
Productivity	Flexibility	Quality of political strategies
Flexibility of labour market	Creativity	
International embeddedness	Cosmopolitanism/Open-mindedness	
Ability to transform	Participation in public life	
Smart environment (Natural resources)	Smart living (Quality of life)	Smart mobility (Transport and ICT)
Attractivity of natural conditions	Cultural facilities	Local accessibility
Pollution	Health conditions	(Inter-)national accessibility
Environmental protection	Individual safety	Availability of ICT-infrastructure
Sustainable resource management	Housing quality	Sustainable, innovative and safe transport systems
	Education facilities	
	Touristic attractivity	
	Social cohesion	

From the above description it is evident that smart governance with an emphasis on the participation of citizens constitutes an essential precondition for successful implementation of projects contributes to fulfilling any part of the smart city concept. Shift from the relationship between municipalities and citizens to equal participatory level, offers a potential for a really smart solutions.

Berntzen et al. (2016) discuss the citizen participation as an important factor in implementing smart projects. Citizens disposes important competences that the municipality do not have. Participation with citizens means that potential problems can be described at an early stage and reduce the risk of failure. Citizens have a lot of experience to enhance development of better solutions. In this connection it is appropriate to state also assertion of Calderoni et al. (2012), who sees the smart cities in relations to smart governance from a customer-oriented point of view with emphasis on citizens and other stakeholders. Citizens can also help collecting environmental and other data by using smartphones and other technologies with sensors. As an example of good practise Berntzen et al. (2016) describes Green Watch project. The main idea of the project was to distribute 200 smart devices to citizens of Paris. The smart devices sensed ozone and noise levels as the citizens lived their normal lives and the results where shared through a mapping application. The project showed how a sensing network could reduce costs dramatically and there was also aa sense of higher level of citizen's engagement in relations to environmental situation in Paris. Finally, active participation enhances democracy, especially on the local government level. Participation in sense of a smart government is not only about taking part in the decision making processes, but it is also about to build sustainable local communities with citizen's togetherness and social cohesion. (Berntzen et al., 2016) (Chourabi et al., 2012)

3 ENHANCE OF CITIZEN'S ENGAGEMENT WITH SOCIAL MEDIA

Major challenge for the local government, who resonates with the concept of smart city, is to identify and then utilize the appropriate tools to increase participation and engagement of citizens in local government decision-making process.

The greatest communication potential for participation provides social media. Government agencies and municipalities start using new channels of communication like social media for various purposes. In the centre of this new approach is to overcome the barriers to communication often encountered in the local government (Hofmann et al., 2013).

Based on the findings of the Pew Research Internet Project (2016) 80% of adults in United States in age category 30-49 used at least one social network. Revolution in the expansion of smartphones means that a social network or applications are literally close at hand at any time. Active use of social networks as a communication tool represents enormous opportunities for citizen participation and local government policy formulation in relation to individual projects and strategic decision making process. The same study indicates that smart devices are not only used to interact with friends or followers but also to social and political activism. (Haro de Rosario et al., 2016)

Social media like facebook, twitter, instagram and more have enormous potential in the direct involvement of citizens in the implementation of specific smart city projects. Bertot et al. (2012) have observed that the use of social media in communication between local governments and citizens and other stakeholders can improve citizen's engagement, transparency, trust, democracy and the transfer of good practices. Recent research published by Mergel (2013) has shown that local government social media accounts are still mainly used to transmit messages in one-way communication with low levels of interactivity. A smart government should respect, that social media provide an opportunity to achieve a more engaged society, but only by promoting interaction between the government and citizens.

Municipalities that are providing social media profiles with a high level of content are more aware of the need to increase the level of interactive, and thus bilateral participation with citizens (Nah and Saxton, 2013). Likewise Mergel (2013) find out that getting a high level of engagement between the citizens and government means the publishing style must go beyond the mere publication of official content. Citizens must be encouraged to comment on posts in social media and to take an active part in this field. To illustrate the situation that quality surpasses quantity Bonsón et al. (2014) found no relationship between the level of institution activity in social media and citizen's engagement. Authors

suggested that an increase in the mere number of posts in social media like Facebook does not necessarily produce higher levels of citizen engagement.

Presentation of each municipality on social networks should meet the basic criteria. At the first sight it should be obvious that it is the official profile of a particular municipality. The profile should respect the comprehensive branded identity of the city, as their tone of voice, and specific design of posts. And the most important is the effort to enhance engagement with users that should be associated with any activity on social media. The concept of smart government thus enlarges about dimension of design and marketing.

De Rosario et al. (2016) conducted a study on 80 largest municipalities in Spain. Researchers were focused on empirical analysis to find out which social network is most used by citizens in order to participate in the political and social affairs of the local governments. Twitter and Facebook present the highest numbers of accounts and active users (Global Web Index, 2015) in Spain, so research was aimed on those social media. From the 80 local governments analysed, 44 were found to have both an official Facebook page and an official Twitter account. Facebook is present in 65% and Twitter in 62% of the analysed municipalities, both platforms are simultaneously present in 52% of the municipalities.

Authors also observes a positive relation between engagement and transparency of local government, which means the higher level of citizen's participation in social media. The results indicate that higher levels of citizen engagement are achieved with Facebook profiles than with Twitter. Local governments should thoroughly consider the differences in level of citizen engagement with each type of social media.

Harsh and Ichalkaranje (2015) point out that governments across the world are struggling with an approach to measure and understand the social and economic impacts of open data. There is a dilemma between giving access to data inexpensively and widely, or restricting access. Researchers approaching specific options which should motivates government agencies to allow participants to develop innovative solutions in relations to open data. Harsh and Ichalkaranje (2015, p. 12) emphasize as „one of the marketing methods that has been highly successful not only for customers is events such as Unleashed and GovHack, where over a single weekend, an event provides an opportunity for web and application developers, open data and visualisation gurus, user experience folk, accessibility peeps, augmented reality and mobile masters to create new mashups, data visualisations and apps"

4 CONCLUSION

This paper described importance of the smart government framework for fulfilling the vision of the smart city concept. Based on a literature review it has been dealt with relationship between the formerly widespread concept of e-Government and smart government. Concept of e-Government deals with the computerization of the tasks of public authorities but with an emphasis on strictly technological aspects. In contrast, smart government as part of the whole concept of smart city is a continuous effort of local government innovations and not a specific goal, which relies on participation of citizen. (Gil Garcia et al., 2015) In chapter about smart government contributes to better cities, it was observed that citizens dispose important competences and their participation is a key factor in implementing smart projects. (Berntzen et al., 2016).

The greatest communication potential for participation provides social media. Bertot et al. (2012) have observed that the use of social media in communication between local governments and citizens can improve citizen's engagement, transparency, trust, democracy and the transfer of good practices. This was illustrated on De Rosario et al. (2016) study on 80 largest municipalities in Spain. Authors observes a positive relation between engagement and transparency of local government, which means the higher level of citizen's participation in social media. The results indicate that higher levels of citizen engagement are achieved with Facebook profiles than with Twitter.

Smart government is a dynamic concept that is constantly changing, not only with technological development, but also in relations to changing preferences of citizens. The concept should not be rigid and like Harsh and Ichalkaranje (2015) writes should be about mind-set that respects the position, where the customers or citizen drive the solutions, not the government.

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