POLITECNICO DI TORINO
Repository ISTITUZIONALE

Smart communities inside local governments: a pie in the sky?

Original
Smart communities inside local governments: a pie in the sky? / Michelucci, FANIA VALERIA; DE MARCO, Alberto. - In: THE INTERNATIONAL JOURNAL OF PUBLIC SECTOR MANAGEMENT. - ISSN 0951-3558. - STAMPA. - 30:1(2017), pp. 2-14. [10.1108/IJPSM-03-2016-0059]

Availability:
This version is available at: 11583/2662523 since: 2017-01-12T22:33:19Z

Publisher:
Emerald Group Publishing Ltd.

Published
DOI:10.1108/IJPSM-03-2016-0059

Terms of use:

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright
Emerald postprint/Author's Accepted Manuscript (articoli e capitoli libri)

© 2017 Emerald Publishing Limited. This AAM is provided for your own personal use only. It may not be used for resale, reprinting, systematic distribution, emailing, or for any other commercial purpose without the permission of the publisher'

(Article begins on next page)

12 October 2024

Fania Valeria Michelucci, Alberto De Marco

"Smart communities inside local governments: a pie in the sky?", International Journal of Public Sector Management, 2017, Vol. 30 Iss: 1, pp.2 - 14

DOI: http://dx.doi.org/10.1108/IJPSM-03-2016-0059

Smart Communities inside Local Governments: a Pie in the Sky?

Purpose - Via embracing the idea that who directly experiences a problem is keener to develop more innovative solutions, local governments have started to engage smart communities in the innovation of public services' delivery. Even if the meaning of "smart community" generally refers to the community participation in the innovation of public services for urban living, local governments have predominantly stimulated the participation of their citizens. But innovative ideas can potentially spring out also from the insiders. This paper aims to find the managerial and technological issues that public managers have to consider when planning an internal smart community initiative.

Methodology - For this purpose, the authors analyse the case study of the Municipality of Turin that developed a participatory smart community project, named Innova.TO, through the theoretical lens of sensemaking (Weick et al., 2005; Weick, 1979).

Findings - Results show that there are three main aspects to be considered when implementing smart community initiatives in local governments.

Originality - Even if there is the potential, the engagement of public employees in a smart community of innovators is not straightforward and several complexities may challenge its success. Otherwise, real-life examples and empirical studies are still episodic. As a consequence, if it is concretely possible to build a smart community of innovators inside a local government still remains a question to which this paper aims to response.

Keywords: smart communities, public sector, innovation, smart city

Research paper

1. Introduction

Researchers and professionals have increasingly addressed their interest on information and communication technologies (ICT) for smart cities (Neirotti et al., 2014; Ricciardi and Za, 2014; Hernandez-Muñoz et al., 2011). A smart city can be defined as a platform, which fosters collective (local) intelligence of all affected stakeholders, businesses, government, universities, citizens, enabled by the use of technology (Breuer et al., 2014; Walravens, 2013). The smart city debate is gradually evolving from hardware infrastructures and technology towards softer aspects like city management and innovation of administrative processes (Nam and Pardo, 2011). Indeed, managing city innovation is challenging because of the radical changes to which cities are exposed, such as immigration, urbanization, and environment that require the extensive involvement of local communities of users and citizens (Brorstrom, 2015; Gontar et al., 2015; Huston et al., 2015; Wiseman et al., 2014; Caragliu et al., 2011; Nam and Pardo, 2011; Toppeta, 2010). This is usually labelled as the "Smart Communities" (SCC) innovation process. SCC has the purpose of focusing on the development of a smart city that would include investments beyond pure ICT and that would especially put emphasis on the role of the human capital and people's participation in the processes of administration and service delivery's innovation (Caragliu et al., 2011; Toppeta, 2010).

However, while great attention has been paid to SCC of citizens that co-create and co-participate to the smartening of their cities, little work has explored how innovation could spring out from the ideas of the insiders and the contributions of the city workers. What is a great potential in theory, is mined by the complexity of the contest in practice. Indeed, local governments are usually resistant to innovation processes and public employees are discouraged by bureaucratic procedures. Thus, the phenomenon of bottom-up innovation in public administrations remains understudied and the innovation process itself is usually considered as a black-box, which needs to be opened and studied in order to understand the main enablers and inhibiters of its implementation (Brorstrom, 2015; Piening, 2011; Fagerberg, 2005). Therefore, the question of whether it is possible to build in

practice a SCC of innovators inside a local government is still without an answer (Stewart, 2014; Fagerberg, 2005).

As an attempt to answering this question, a single rich case study of bottom-up innovation in a local public government is presented in this paper via application of the lens of sensemaking (Weick, 1979). The case is about an initiative, a.k.a. Innova.TO, launched by the municipal government of Turin, a city in the North-West of Italy, to improve the administrative processes via engaging the innovative and smart contributions of the city employees. In particular, the paper presents the approach used in Innova.TO, and identifies the key milestones of the process in order to highlight the managerial and technological issues that public managers have to take into account when planning to create a smart community of innovators inside their organizations.

The remaining part of this paper is organized into seven sections. After introducing the notion of SCC (Section II), the authors present the theoretical framework used to analyse the case study (Section III). Then, the methodology is given (Section IV). In the following sections, authors present the main results (Section V), discussions (Section VI) and the final conclusions (Section VII).

2. Smart Communities in urban contexts

Cities are in a permanent flux of continuous change: they reinvent themselves overtime to advance their economic, social and technological performance and improve their competiveness to manage the ongoing urban changes (Wiseman et al., 2014; Komninos et al., 2011). Besides the negative externalities of the "urban century" (Huston et al., 2015; Caragliu et al., 2011; Toppeta 2010), the urban agglomeration phenomenon has also opened opportunities to increase the efficiency of our cities. Indeed, cities are increasingly competing for their economic and social success, becoming the place of social and technological innovation (De Marco et al., 2016; Caragliu et al., 2015): they must create the enabling factors, innovate their administration's processes and their service delivery

if they want to be sustainable (Brorstrom, 2015). The operating environment of the public sector is fundamentally changing also thanks to technological assets and infrastructures that empower more informed, connected, and participatory people in the innovation journey (Katsigiannis et al., 2015; Chourabi et al., 2012). Under this perspective, people are not simply individuals, but are considered in their potential as SCC that participate and contribute to improve the quality of living within a city (Chourabi et al., 2012). The term SCC indicates a group of people, such as citizens, employees, or students that collaborate to co-create economic and social value, support the decision-making of the government or local authorities, and leverage ICTs to accomplish common goals (Zurita et al., 2015). In other words, SCC can also be defined as the one that learns fast and well, in the sense that it makes the highest and best use of intellectual, social, financial, and instrumental resources (Paquet, 2001). In the SCC concept, the human dimension is pinpointed as a crucial driver for the city's development and management, making it fair, inclusive, efficient and sustainable (Bencardino and Greco, 2014; Cocchia, 2014).

Even if civil servants can be unprepared for this bottom-up approach (Hollands, 2015; Bergvall-Kareborn et al., 2009) co-operation between public sectors, enterprises, universities and citizens should be preferred instead of individualism (Cocchia, 2014) because improvements and changes come especially from people who use and live the city (Breuer et al., 2014). Through the users' involvement, the process of innovation becomes collaborative; the technical, the social and the subjective issues are nomore considered as disconnected, but as interdependent (Breuer et al., 2014). Thus, the SCC concept can be assumed as people-centred: cities are not merely the source of data that are gathered and analysed to monitor and control, but the place where communities can co-create opportunities and leverage bottom-up innovation (Michelucci et al., 2016; Breuer et al., 2014; Komninos, 2013; Leydesdorff and Deakin, 2011).

ICTs are, of course, important, but more as an enabling technologies able to answer to social needs (Neirotti et al., 2014; Caragliu et al., 2011; Toppeta, 2010), while the human capital should be again

at the centre (Caragliu et al., 2015). According to this point of view that is contrary to the first and well established ideas that ICTs make cities automatically smarter, the smartness relies especially on the involvement and participation of the people (Brorstrom, 2015; Hollands, 2015; Huston et al., 2015; Wiseman et al., 2014; Walravens, 2013; Caragliu et al., 2011; Nam and Pardo, 2011; Toppeta, 2010). With the diffusion of the SCC debate, by leveraging on enabling technologies local governments have opened their processes of innovation and decision-making to citizens' participation. However, it seems that they have forgotten the potential of public employees' ideas when it comes to innovating their everyday routines. If, on the one hand, studies about citizenship participation into the government life feed the scientific debates (Garnier and Kudo, 2016; Viitanen et al., 2015; Nanni and Mazzini, 2014), on the other hand the accreditation of a smart community inside the local government has not received the deserved attention.

3. Theoretical framework: sensemaking of innovation in local governments

When organizations experience a change in their operative environment and have to face new challenges, the sensemaking process can help in generating the right intuitions and transforming its culture and strategies (Madsbjerg and Rasmussen, 2014). With this nonlinear process, the problem is re-thought in the form of a phenomenon, with the objective to catch the complex, and usually unaware, interactions between people and their surrounding environment (Madsbjerg and Rasmussen, 2014). Sensemaking is a diagnostic process to construct plausible interpretations of a complex, organizational context. The sensemaking process is characterized by three main phases, namely: enactment, selection, and retention (Weick et al., 2005; Weick, 1979). In the enactment phase, individuals realize that something is changing in the surrounding environment and in their flow of experience and identify the problem (Madsbjerg and Rasmussen, 2014; Rasmussan et al., 2001). In relation to local governments, even if the cities' competition may favour the birth of innovative ideas to make the public sector more efficient (Kornberger, 2010), innovations remain circumscribed and do not propagate (Jappinen, 2015). Indeed, public administrations are change

resistant, tricked with bureaucracy and risk averse, while innovation is risky and requires flexibility (Brorstrom, 2015; Morgan, 2006; Du Gay, 2000).

In the selection phase, people rationalize the number of plausible interpretations (Weick et al., 2005; Rasmussan et al., 2001). Mendes et al. (2012) identifies structural and agency factors that make local governments innovation resilient. Structural barriers are due to the context: the elevated level of bureaucracy makes the public context highly formalized, while innovation requires dynamism to spread (Mendes et al., 2012); the lack of finance and cultural resistance hinder the adoption of new procedures and discourages the promotion of innovation from the inside (Mendes et al., 2012; Koch and Hauknes, 2005; Mulgan and Albury, 2003); finally, innovation is considered a no-one's job in the public administration and rarely departments have a person in charge of innovation (Mulgan, 2007a). Even when it occurs, radical innovations cut across departments' boundaries, while high invisible walls still isolate them and prevent the coalescence of a smart community of innovators (Mulgan, 2007b). Agency barriers are linked to the characteristics of individuals involved in the innovation process: people attracted to work in a bureaucratic environment tend to be less creative and risk-adverse (Mendes et al., 2012; Clark et al., 2008; Mulgan, 2007a; Koch and Hauknes, 2005) and are discouraged by an environment that dissuades risk-taking and overweighs and amplifies even small failures (Mendes et al., 2012; Clark et al., 2008; Mulgan, 2007a; Mulgan and Albury, 2003); moreover, public employees have a conservative attitude and nurture a certain resistance to change the way in which they have worked for years (Mendes et al., 2012; Koch and Hauknes, 2005).

Finally, at the retention phase, the outcomes of the process are evaluated, elaborated and organized to interpreter what happened (Weick et al., 2005). In local governments, innovation is usually initiated as a top-down process, with changes in governance and regulations enacted by managers and policy-makers (Windrum, 2008), and even if co-participation with citizens seems an affirming paradigm (Lappas et al., 2015; Pankowska, 2015; Burton and Hilton, 2014), rarely bottom-up

process are originated by employees. On the contrary, the literature has acknowledged the value of involving employees in the innovation process, because they better know everyday difficulties, communicate with the final users and understand their wants (Hasu et al., 2015; Fuglsang and Sundbo, 2005). Thus, employees can be more than single workers, but a smart community of people that join their creativity, experience and problem-solving skills and drive innovation in the public administration (Hasu et al., 2015). However, even if employees have a better understanding of the problems of their work, seldom they are asked to become a smart community and think about how to improve their work (Saari et al., 2015; Hasu et al., 2011). When they are asked so, the innovation path is not straightforward.

4. Methodology

The research is based on a single case-study analysis (Yin, 1984). This approach was chosen to collect rich and longitudinal data following the process of development of a smart community in the Municipality of Turin. Rich data was necessary to identify the fundamental steps of the process and the main managerial and technological issues to be considered when planning such an initiative. The case Innova.TO was selected because it can be considered as a pioneering example of SCC building process internationally.

4.1 Case setting: Turin as a Smart City and the Innova.TO project

For decades fed by the automobile industry (Crivello, 2015), Turin's economy entered a period of decline at the end of the last century due to the delocalisation of the car manufacturing facilities. In order to limit the social and economic consequences, such as the increase of the public debt and the unemployment rate, over the last decades the city's administration implemented a strategic plan to convert Turin into a technological and cultural city (Crivello, 2015; Vanolo, 2015). However, the financial crisis of 2008 hit again the Turin's economy (Vanolo, 2015). Frightened by the risk to remain tricked in the stagnation, in 2011 the public administration launched the Torino Smart City

Foundation, in order to reinforce the brand of Turin as a technological and intelligent city. One year later, the city launched the Torino Social Innovation strategy, with the objective of stimulating the creation and aggregation of SCCs. Since then, the city government has been undertaking several initiatives to support local technological and social innovation, promoting networks, workshops, partnerships with local organizations and also opening the Centre for Open Innovation to involve the Turin's citizenship into the process.

Within this context, in 2013 two public employees, called "the promoters" in the following, had the idea to develop a competition "in order to encourage all public employees of the Turin's municipality to propose innovative projects and improve the administration's performances through the reduction of waste and resources' valorisation" (Municipal Act number 2013-04814/068). As a result of this idea, the Innova.TO (a name that merges the words "Innovation" and "TOrino") initiative was launched as a pioneering case of a virtuous competition that, with exclusion of executives and directors, incentivizes the public employees to co-innovate and collaboratively share their ideas and projects.

All employees could propose innovative projects in several fields of public service delivery: costs rationalization, procedures' simplification, data sharing, improvement of the service level, efficiency of territorial management and control systems, improvement of the working environment. The basic idea was to stimulate bottom-up innovation through the aggregation of people that co-participate to enhance the level of service of their work. Indeed, projects could be submitted by a team of proponents, belonging to different public departments and could suggest improvements in both the primary or secondary functions of the city administration, could be functional or inter-functional, and had to satisfy some basic requirements: no additional costs, technical feasibility in the short-medium period, tangible results, developable by usage of internal personnel, and environmentally-friendly. An ICT collaborative platform was developed and entirely dedicated to Innova.TO: employees could search for allies, interact, ask questions, share their

proposals, gather documents and information about the competition, and submit their proposals. 4.000 employees interacted with the platform, and 71 projects were submitted by 111 employees. A panel of experts evaluated them and the first 20 winning projects were awarded during a public ceremony led by the Major of the city.

4.2 Data collection and analysis

The research was designed in two phases. Observations and data collection took three years: from 2013 to 2014 (Phase 1) and in 2015 (Phase 2). During the first phase, the authors were observers to the process of transforming the idea of the promoters into Innova.TO and of the award ceremony. They did not get the access to the selection of the winning projects. During this phase, the authors were invited to project meetings and public presentations of Innova.TO. They also took advantage of informal occasions to talk with the promoters and obtain information about the Innova.TO's evolution, as well as with public employees to investigate their interest in participating to Innova.TO and their ideas. Fifteen employees accepted to be informally interviewed. The answers given by the limited, tough sufficiently informative sample (Bertaux, 1981) were then triangulated with participant observations and document analysis for the sake of a rigorous and robust qualitative analysis (Guest et al., 2006). Indeed, during this first phase, employees were quite sceptical to show their intention, in order to benefit of the anonymity. During the award ceremony of Innova.TO the authors also discussed with two of the panel's members. They got access to public and confidential documents, press releases and employees' applications. During the observations, they took field notes that where then expanded to formalize the gathered information.

During the second phase, the authors assessed the outcome of the project one year after the award ceremony, through semi-structured interviews to 20 employees and the two promoters. Based on the concept of saturation by Glaser and Strauss (1967), 20 interviews allowed to capture the different participant's perceptions, while avoiding any repetitiveness. The interviewees were selected among both awarded and non-awarded participants of Innova.TO and from different departments. The

authors used semi-structured interviews to ensure for consistency in the structure, while maintaining flexibility. The civil servants were asked to illustrate their ideas, to explain their motivations to apply for Innova.TO, their points of view about how Innova.TO was organized, to describe their project team and expose their expectations about the project.

In addition, with separate interviews, given their role as proponents of the initiative, the two promoters were asked about the origin of their idea and its approval, motivations that encouraged or discouraged their colleagues to apply, strengths, limitations, organizational issues, expectations, and their feedback with Innova.TO's results. All interviews were recorded.

Data gathered during the two phases were progressively analysed. The analysis consisted of a close reading through documents, the chronological narrative of the events was written and patterns of managerial and technological schemas were searched under the theoretical concepts presented in the previous sections (Brorstrom, 2015).

5. Results

The results are presented in the following according to the specified phases of sensemaking: enactment, selection and retention (Weick et al., 2005; Weick, 1979).

5.1 Enactment

The promoters had the idea of Innova.TO in 2013 when, during their attendance to an executive master about innovation and technology, they asked themselves how to bring people back at the centre of the innovation journey. The answer was "working on smart communities", as one of them illustrates, "stimulating the sense of belonging and participation and transforming the employees in the protagonists of innovation in their administrations". According to them, the local government was doing a lot to support the city's innovation, through policy making, partnerships and smart procurement processes, while doing nothing to innovate the city in its internal administrative routines. As public employees, they felt they were usually evaluated for their performances,

conformation to their directors' expectations and for their doing exactly what they were asked to do. On the contrary, they could be more than simple instruments of the public management, they could be a vector of change, a community of innovators. "Turin Municipality: 10.500 public employees – 10.500 potential innovators" became the slogan to promote Innova.TO, with the aim to enhance all competences and intelligences of the Turin public administration. Even if the promoters' directors seemed to appreciate the project, one year later Innova.TO was still an unexplored idea. The promoters realized they had to find the endorsement of both the executives and political boards in order to strengthen the idea and put it forward. Specifically, a visionary council member remained particularly impressed and decided to commit with Innova.TO: "To be a smart city means also reforming the management and organizational processes of the public administration, embracing the intuitions of our employees, their know-how and competences". Also the Major seemed enthusiastic: "This is a new integrated vision of our administration, which promotes the knowledge sharing and collaborative organization". Contemporary, the promoters started to illustrate their idea during public sector meetings and exhibitions, in order to raise their proof of concept. The idea was transformed into a project in the Municipal Act number 2013-04814/068, approved by the municipal council the 15 of October 2014, but no budget was allocated for the implementation.

5.2 Selection

As soon as after the act was billed, a technical committee, which included the two promoters, started to organize the competition. Transparency and credibility were the two main concerns because a common thinking during that period was that "Innova.TO is simply a marketing calculation of the politicians that have embodied the idea". The technical committee found some expedients to signal the reliability of the competition: first, the evaluation panel was composed of experts internal and external to the Municipality; secondly, it was given the possibility to send the applications anonymously, separated from the name of the applicants; third, executives were excluded from the competition, to stimulate bottom-up innovation and do not make employees and

middle managers feel discouraged; fourth, it dedicated an online platform to the project, to let employees interact, share ideas, submit their applications and let the smart community coalesce; finally, it established public-private partnerships with private sponsors. The private sponsorships were of help for several reasons. Indeed, Innova.TO was a zero-budget project and private sponsors offered amazing prizes to award the winners, such as electric bicycles, smartphones, online newspaper subscriptions, carsharing and bikesharing season tickets, for a total value of 12.000 euros. The prizes served also as an incentive to encourage employees' participation. Moreover, the involvement of private partners increased the external and internal recognition of the project and its consensus. The call for ideas was launched early in April 2014 and remained opened for 45 days, during which employees interacted on the online platform and submitted their applications. The vast majority of employees decided not to apply because still sceptical, as shown by some common comments: "Bureaucracy will never let our ideas exist in practice", "What do they want by me? I have worked here for years and nobody asked me anything". The jury classified the received applications into seven categories, namely: improvement of transparency and accessibility to services (19), organizational development (16), operative efficiency (14), the delivery of new services (7), environment and energy efficiency (7), employees wellbeing (5), paperless and ICT solutions (3). The best 20 applications were awarded during a public ceremony chaired by the Major who declared that only the first 10 of them would have been implemented.

5.3 Retemption

One year after the award ceremony, no applications had entered the development phase. However, during the months following the ceremony, Innova.TO was presented as a success initiative to newspapers and even The Guardian titled "Devolution, the Italian-style – the cities forging their own futures" (The Guardian, 30 July 2014). Innova.TO was introduced as a triumph during pubic presentations, European meetings, public administration forums and the winners were invited to tell their experience. While the promoters, politics and executives were saying "Yes, we did!",

employees common though was “A year is passed and nothing has changed”. Some interviewed individuals said that the completely exclusion of executives from competition made them hostile instead of favouring a collective change. Moreover, no feedbacks were given about the progress of the winner ideas, nor employees, one year later, knew if their ideas would have never been realized. The vast majority of the few participants did not shared their ideas on the platform and applied alone to the competition, as well emerged from one interviewee: “My project was a secret, I couldn’t share it with anybody else, neither with the end-users of my idea. I gave it for granted that they would have accepted my innovation, because it really improves the flow of their work”. While externally strong, internal communication was weak as well as interactions among employees and departments. After the ceremony, the winners were not kept in touch, as an interviewee said: “I candidate myself to give a help during the implementation of our ideas, but they didn’t give me the opportunity”. Another employee said: “When we stopped boosting the realization of our ideas, the technical committee stopped to move forward”. Conversely the two proponents affirmed: “The winners should prompt the development of their projects, but are too shy and prefer to give up and don’t ask us to move forward”. However, everybody agreed that Innova.TO was a signal that something was changing in the mind-set of the public administration. For the first time, the idea that also who is at the bottom of the organization can improve or change things was felt as an opportunity by many.

6. Discussion

Through application of the framework of sensemaking (Weick et al., 2005; Weick, 1979) to a case study of bottom-up innovation in a public organization, this paper presents the managerial and technological issues to consider when it comes to build a smart community of innovators inside local governments. The study is based on a single case study, using interviews, documental analysis and participant observations, in order to gather rich and longitudinal data. The results point out that during the enactment of the surrounding environment, the phase in which individuals become aware

of the problem, it is hard to find the person in charge of pushing the project forward through the bureaucratic steps of the public administration process (Jappinen, 2015; Mulgan, 2007a). Even if directors seemed to share the vision, they felt the task was out of their perimeter and the proposal remained stuck for as long as one year. The executives' and political consensus was shaken by the endorsement of an innovation champion, member of the city council, that enabled the transition from idea to practice, unlocking the bureaucratic interruption and political opposition. Moreover, the involvement of the external community of experts enabled the internal community's credibility and transparency and made it more difficult to abandon the idea.

In the selection phase, when people advance their possible interpretations and solutions to the problem, the bureaucratic environment largely discouraged employees from responding to the call for proposals, who preferred to stay in their anonymity and everyday duties (Jappinen, 2015; Mendes et al., 2012; Koch and Hauknes, 2005; Mulgan and Albury, 2003). The ICT collaborative platform revealed to be not sufficient per se to coalesce a community of insider innovators, without activities of community building and awareness rising. Indeed, the participation was below expectations and also the interactions between departments quietly rare. The promoters seemed to have forgotten that Innova.TO was born during a conversation about the relationship between human capital and innovation, ending up with an online platform to which they delegated the management of the entire initiative. Interestingly, the exclusion of some categories of employees from the community had a double effect: while, on the one hand, it enabled bottom-up participation, on the other it increased the antagonism of the excluded people, with significant delay during the innovation's development.

In the redemption phase, when the outcomes are evaluated to interpreter what happened, the case study revealed that Innova.TO was evaluated as a good tool to collect ideas, but nobody was put in charge of managing the implementation of the winning projects and to stimulate the interactions among the innovators (Saari et al., 2015; Mendes et al., 2012; Mulgan, 2007a). As somebody said,

"Innova.TO lets ideas come up. But now we need Realizza.TO[1] to make smart communities happen".

Briefly, three main managerial and technological aspects revealed to be important for the coalescence of a SCC inside the local government under the lens. First, the case study showed the importance of interacting and collaborating with external recognised communities to increase the internal awareness and legitimation. Second, Innova.TO illustrates the importance of including the stakeholders all along the process, since the beginning phases, in order to avoid antagonisms inside the community. Finally, ICT is an enabling technology to facilitate the bottom-up merging of the community, but the process runs aground if nobody governs it and stimulates interactions and reactions.

7. Conclusion

Some considerations can be drawn inherent with the results of the case study. The single case study methodology is usually questioned as it does not allow a statistical generalization of results or a formulation of a general understanding (Yin, 2003). Accordingly, this paper is explorative in nature and its objective is to provide interesting insights to examine a phenomenon that is still little studied (Jappinen, 2015; Stewart, 2014). In particular, it aims to inform both scholars and public managers on the issues that have to be managed to avoid that smart communities in the public sector remain a pie in the sky. However, the focus on one single case study over a three-years period permitted the collection of rich and longitudinal data for a deep analysis of the phenomenon (Yin, 2003). The case Innova.TO showed several difficulties of implementation, and through the analysis of these failures the study showed three main factors that are important when building a smart community of innovators inside a local government, namely: the relationship between internal and external communities, the resistance to change, and the role of technology as an enabler of change. They imply some relevant conclusions.

[1] The name merges the words "Realization" and "TOrino" in the Italian language

From a practical point of view, three main issues can be brought. First, it becomes hard for SCC managers to abandon an ongoing innovation process whenever internal and external consensus is reached, the endorsement of innovation champions is obtained and a formal processes is enacted. The case showed that the interaction with external communities increases the internal legitimacy. Under this perspective, both internal and external communities become interdependent (Breuer et al., 20014) and co-participation is not only the end, but also the mean through which public managers enforce the SCC coalesce. The endorsement by the external community of experts brought additional resources, enlarged the focus of the project, and avoided it fell in the anecdotal situation of being self-referential overlooking external ideas.

Second, change resistance and hostility inside the community arise when the stakeholders are not fully engaged in the innovation path, because they feel excluded and a common vision of the way forward is not shared. The Innova.TO case showed that in a routine environment, the SCC managers have to balance the trade-off between stimulating employees' participation and preserve the commitment of who has the decisional power, or, in other word, between creativity and rigidity, or innovation remains circumscribed and its potential does not propagate (Jappinen, 2015).

Third, in a resistant and highly-formalized context such as local governments (Brorstrom, 2015; Morgan, 2006) the help of technology can lean the process if this has a clear governance that prompts commitment to the initiative, support and sustain the community, and stimulate a participatory approach. Indeed, according to results, face-to-face contacts and interactions are still important to encourage people to co-participate and co-create value and it creates dynamism in the culture resistance that discourages innovation (Mendes et al., 2012; Koch and Huaknes, 2005; Mulgan and Albury, 2003).

From a theoretical point of view, two main considerations emerge. First, scholars generally refer to SCC as to people that support the decision-making process of the government and contribute to improve urban living (Zurita et al., 2015; Chourabi et al., 2012). However, Innova.TO is an

example that different SCC can coexist in an urban context. They may co-operate to leverage the collective intelligence of the city. They interact and empower each other to accomplish the community's objectives while improving the quality of living in the city. In Innova.TO, this collaboration allowed to legitimate the project and aspired to advance the level of service offered to citizens. Second, usually scholars agree around the idea that ICTs enable the union of SCC (Katsigiannis et al., 2015; Chourabi et al., 2012), but the case study highlights that the rigidity of the context can affect this potential and transform ICT in an inhibiter. Thus, it opens the road to research on how to stimulate interactions and reactions to build the community when the rigidity of the context constrains the process and invisible walls isolate departments (Mendes et al., 2012; Clarck et al. 2008; Mulgan, 2007a; Koch and Hauknes, 2005), otherwise the ICT potential remain unexploited.

This paper is an attempt to report an interesting experience of bottom-up innovation in public organizations. Future research is directed towards extending observations and case study analyses in other local governments and various field of applications beyond the SCC domain. Also, the authors are committed to transform the results of these studies and associated lessons learnt as best practice guidelines for those local governments that might be willing to undertake similar processes in the future.

8. References

Bencardino, M. and Greco, I. (2014), "Smart communities. Social innovation at the service of the smart cities", Tema Journal of Land Use, Mobility and Environment, Special Issue 2014, pp. 39-51.

Bergvall-Kåreborn, B., Bergquist, B. and Klefsjö, B. (2009), "Creating social change in a municipality using a Total Quality Management approach", Total Quality Management, Vol. 20 No. 12, pp. 1375-1393.

Bertaux, D. (1981), “From the life-history approach to the transformation of sociological practice”, in Bertaux, D. (Ed.), Biography and society: The life history approach in the social sciences, Sage, London, UK, pp. 29-45.

Breuer, J., Walravens, N. and Ballon, P. (2014), “Beyond defining the smart city. Meeting top-down and bottom-up approaches in the middle”, Tema Journal of Land Use, Mobility and Environment, Special Issue 2014, pp. 153-164.

Brorström, S. (2015), “Implementing innovative ideas in a city: good solutions on paper but not in practice?”, International Journal of Public Sector Management, Vol. 28 No. 3, pp.166 – 180.

Burton P. and Hilton S. (2014), “To participation and beyond?: Developing e-democracy in Bristol, UK”, in Baum, S. and Mahizhnan, A. (Eds.), E-governance and social inclusion: Concepts and cases, IGI Global, Hershey PA, USA, pp. 215-228.

Caragliu, A., Del Bo, C., Kourtit, K. and Nijkamp, P. (2015), “The winner takes it all: forward-looking cities and urban innovation”, The Annals of Regional Science, pp. 1-20.

Caragliu, A., Del Bo, C. and Nijkamp, P, (2011), “Smart Cities in Europe”, Journal of Urban Technology, Vol. 18 No. 2, pp. 65-82.

Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J.R., Mellouli, S., Nahon, K. and Scholl, H.J. (2012), “Understanding smart cities: An integrative framework” in System Science (HICSS) 45th Hawaii International Conference, IEEE, pp. 2289 - 2297.

Clark, J., Good, B., and Simmonds, P. (2008), “Innovation in the Public and Third Sectors”, Innovation Index Working Paper, NESTA.

Cocchia, A. (2014), “Smart and digital city: a systematic literature review”, in Dameri, R.P., Rosenthal-Sabroux, C. (Eds.), Smart city, Springer International Publishing, Switzerland, pp. 13-43.

Crivello, S. (2015), “Political ecologies of a waste incinerator in Turin, Italy: Capital circulation and the production of urban natures”, Cities, Vol. 48, pp. 109-115.

De Marco, A., Mangano, G., Michelucci, F.V., Zenezini, G. (2016) "Using the private finance initiative for energy efficiency projects at the urban scale", International Journal of Energy Sector Management, Vol. 10 No 1, pp.99 – 117.

Du Gay, P. (2000), In Praise of Bureaucracy, Sage Publications, London, UK.

Fagerberg, J. (2005), "Innovation: a guide to the literature", in Fagerberg, J., Mowery, D.C., Nelson, R.R. (Eds.), The Oxford Handbook of Innovation, University Press, Oxford, UK.

Fuglsang, L. and Sundbo, J. (2005), "The organizational innovation system: three modes", Journal of Change Management, Vol. 5, pp. 329-344.

Glaser, B. and Strauss, A. (1967), "The discovery of grounded theory: Strategies for qualitative research", Aldine Publishing Company, New York, USA.

Granier, B. and Kudo, H. (2016), "How are citizens involved in smart cities? Analysing citizen participation in Japanese Smart Communities", Information Polity, Vol. 21 No. 1, pp. 61-76.

Gontar, B., Gontar, Z. and Pamuła, A. (2015), "Deployment of smart city concept in Poland. Selected aspects", Management of Organizations: Systematic Research, Vol. 67, pp. 39-51.

Guest, G, Bunce, A. and Johnson, L. (2006), "How many interviews are enough? An experiment with data saturation and variability", Field Methods, Vol. 18 No. 1, pp. 59-82.

Hasu, M., Toivonen, M., Tuominen, T. and Saari, E. (2015), "Employees and Users as Resource Integrators in Service Innovation: a Learning Framework" in Agarwal, R., Selen, W. and Roos, G. (Eds.), The Handbook of Service Innovation, Springer, London, UK.

Hasu, M., Saari, E. and Mattelmaki, T. (2011), "Bringing the employee back", in Sundbo J. and Toivonen, M. (Eds.), User-based innovation in services, Edward Elgar, Cheltenham, UK.

Hernández-Muñoz, J.M., Vercher, J.B., Muñoz, L., Galache, J.A., Presser, M., Gómez, L.A. and Pettersson, J. (2011), "Smart Cities at the Forefront of the Future Internet", in Domingue, J., Galis, A., Gavras, A., Zahariadis, T., Lambert, D., Cleary, F., Daras, P., Krco, S., Müller, H., Li, M., Schaffers, H., Lotz, V., Alvarez, F., Stiller, B., Karnouskos, S., Avessta, S. and Nilsson, M. (Eds.), The Future Internet,Springer, Berlin, DE.

Hollands, R. G. (2015), "Critical interventions into the corporate smart city", Cambridge Journal of Regions, Economy and Society, Vol. 8 No. 1, pp. 61-77.

Huston, S., Rahimzad, R., Parsa, A. (2015) " "Smart" Sustainable Urban Regeneration: Institutions, Quality and Financial Innovation", Cities, Vo. 48, pp. 66-75.

Jappinen, T. (2015), "How to Manage a Service Innovation Process in the Public Sector: From Co-Design to Co-Production", in Agarwal, R., Selen, W. and Roos, G. (Eds.), The Handbook of Service Innovation, Springer, London, UK.

Katsigiannis, T., Agarwal, R. and Jin, K. (2015), "Business Model Approach to Public Service Innovation", in Agarwal, R., Selen, W. and Roos, G. (Eds.), The Handbook of Service Innovation, Springer, London, UK.

Koch, P. and Hauknes, J. (2005), "On innovation in the public sector – today and beyond", Publin Report n. D20, available online at: https://brage.bibsys.no/xmlui/bitstream/handle/11250/226573/d20-innovation.pdf?sequence=1 (accessed May, 2016).

Komninos, N., Pallot, M. and Schaffers, H. (2013), "Special Issue on Smart Cities and the Future Internet in Europe", Journal of the Knowledge Economy, Vol. 4 No. 2, pp. 119-134.

Komninos, N., Schaffers, H. and Pallot, M. (2011), "Developing a Policy Roadmap for Smart Cities and the Future Internet", paper presented at the eChallenges Conference: IIMC International Information Management Corporation (Florence, October 2011).

Kornberger, M. (2010), Brand Society: How Brands Transform Management as a Lifestyle, Cambridge University Press, Cambridge, UK.

Lappas, G., Triantafillidou, A., Yannas, P. and Kleftodimos, A. (2015), "Local E-Government and E-Democracy: An Evaluation of Greek Municipalities", in E-Democracy – Citizen Rights in the World of the New Computing Paradigms, proceedings of the 6th International Conference, in Athens, Greece, December 2015, Springer International Publishing, pp. 134-150.

Leydesdorff, L. and Deakin, M. (2011), "The Triple-Helix Model of Smart Cities: A Neo-Evolutionary Perspective", Journal of Urban Technology, Vol. 18 No. 2, pp. 53-63.

Madsbjerg, C. and Rasmussen, M.B. (2014), "Un antropologo entra in un bar… per capire cosa fa scattare la molla nel cliente, bisogna osservarlo nel suo habitat naturale", Harvard Business Review Italia, March 2014, pp. 49-58.

Mendes, A., Batista, A., Fernandes, L., Macedo, P., Pinto, F., Rebelo, L., Ribeiro, M., Ribeiro, R., Sottomayor, M., Tavares, M. and Verdelho, V. (2012), "Barriers to social innovation", deliverable 3.1 of the project "The theoretical, empirical and policy foundations for building social innovation in Europe (TEPSIE)", 7th Framework Programme, available online at: http://www.tepsie.eu/images/documents/tepsie.d3.1barrierstosocialinnovation.pdf (accessed December 2015).

Michelucci, F.V., De Marco, A. and Tanda, A. (2016), "Toward the Definition of the Smart City Manager Role: An Analysis of Responsibilities and Skills", Journal of Urban Technology (forthcoming).

Morgan, G. (2006), Images of Organization, Sage Publications, Thousand Oaks, CA, USA.

Mulgan, G. (2007a), "Ready or not? Taking innovation in the public sector seriously", NESTA working paper, available online at: http://www.nesta.org.uk/publications/ready-or-not-taking-innovation-public-sector-seriously (accessed May 2016).

Mulgan, G. (2007b), "Social Innovation: what it is, why it matters, how it can be accelerated", Report for The Young Foundation, Said Business School, University of Oxford, available online at: http://youngfoundation.org/wp-content/uploads/2012/10/Social-Innovation-what-it-is-why-it-matters-how-it-can-be-accelerated-March-2007.pdf (accessed May 2016).

Mulgan, G. and Albury, D. (2003), "Innovation in the Public Sector. Paper for the Strategy Unit of the Cabinet Office UK", working paper complementary to the Strategy Unit's Strategy Survival Guide of the UK Cabinet Office.

Nam, T. and Pardo, T.A. (2011), "Conceptualizing Smart City with Dimensions of Technology, People, and Institutions", paper presented at the 12th Annual International Digital Government Research Conference (University of Maryland, USA, June 12nd-15th, 2011).

Nanni, S. and Mazzini, G. (2014), "From the Smart City to the Smart Community, Model and Architecture of a Real Project: SensorNet", Journal of Communications Software & Systems, Vol. 10 No. 3, pp. 188-194.

Neirotti, P., De Marco, A., Cagliano, A.C., Mangano, G. and Scorrano, F. (2014), "Current Trends in Smart City Initiatives: Some Stylised Facts", Cities, Vol. 38, pp. 25-36.

Pankowska, M. (2015), "Government 2.0: Innovation for e-democracy", in Economics: Concepts, methodologies, tools, and applications, Vol. 3, pp.1577-1595.

Paquet, G (2001), The New Geo-governance: A Baroque Approach, University of Ottawa Press, Ottawa, Canada.

Piening, E. (2011), "Insights into the process dynamics of innovation implementation: the case of public hospitals in Germany", Public Management Review, Vol. 13 No. 1, pp. 127-157.

Rasmussan, E.S., Koed Madsen, T. and Evangelista, F. (2001), "The founding of the born global company in Denmark and Australia: sensemaking and networking", Asia Pacific Journal of Marketing and Logistics, Vol. 13 No. 3, pp. 75-107.

Ricciardi, F. and Za, S. (2014), "Smart City Research as an Interdisciplinary Crossroads: a Challenge for Management and Organization Studies", in Mola, L., Pennarola, F. and Za, S. (Eds.), From Information to Smart Society, Springer, Switzerland.

Saari, E., Lehtonen, M. and Toivonen, M. (2015), "Making bottom-up and top-down processes meet in public innovation", The Service Industries Journal, Vol. 35 No. 6, pp. 325-344.

Stewart, J. (2014), "Implementing an innovative public sector program", International Journal of Public Sector Management, Vol. 27 No. 3, pp. 241-250.

The Guardian (2014), "Devolution, Italian-style – the cities forging their own futures", 30 July 2014, available online at: http://www.theguardian.com/public-leaders-network/2014/jul/30/devolution-italy-city-reform-renzi-innovation (accessed January, 2016).

Toppeta, D. (2010), "The smart city vision: how innovation and ICT can build smart, "livable", sustainable cities", Report of The Innovation Knowledge Foundation.

Vanolo, A. (2012), "The image of the creative city, eight years later: Turin, urban branding and the economic crisis taboo", Cities, Vol. 46, pp. 1-7.

Viitanen, J., Connell, P. and Tommis, M. (2015), "Creating Smart Neighborhoods: Insights from Two Low-Carbon Communities in Sheffield and Leeds, United Kingdom", Journal of Urban Technology, Vol. 22 No. 2, pp. 19-41.

Walravens, N. (2013), "The city as a service platform: A typology of city platform roles in mobile service provision", proceedings of the Nineteenth Americas Conference on Information Systems, Chicago, Illinois, August 15-17, 2013, Association for Information Systems (AIS), pp. 3271-3278.

Weick, K. E., Sutcliffe, K. M. and D. Obstfeld (2005), "Organizing and the process of sensemaking", Organization science, Vol. 16 No. 4, pp. 409-421.

Weick, K. E. (1979), The Social Psychology of Organizing, 2nd ed., Addison-Wesley, Reading MA, USA.

Windrum, P. (2008), “Innovation and entrepreneurship in public services”, in Windrum, P. and Koch, P. (Eds.), Innovation in Public Sector Services. Entrepreneurship, Creativity and Management, Edward Elgar, Cheltenham.

Wiseman, J., Edwards T. and Luckins, J. (2014), “Pathway to a sustainable and resilient urban future: economic paradigm shifts and policy priorities”, in Pearson, L., Newton P. and Roberts, P. (Eds.), Resilient Sustainable Cities a Future, Routledge, 2014.

Yin, R. K. (1984), Case study research: Design and methods, Sage, Beverly Hills, CA, USA.

Yin, R.K. (2003), Case study research, design and methods, Sage Publications, California (USA).

Zurita, G., Pino, J.A. and Baloian, N. (2015), “Supporting Smart Community Decision Making for Self-governance with Multiple Views”, in García-Chamizo, J.M., Fortino, G., Ochoa, S.F. (Eds.), Ubiquitous Computing and Ambient Intelligence. Sensing, Processing, and Using Environmental Information, proceedings of the 9th International Conference, UCAmI 2015, Puerto Varas, Chile, December 1-4, 2015, Springer International Publishing Switzerland, pp. 134.143.