

From Government Innovation to Public Innovation. The ICT as Key Tools

Freddy Mariñez Navarro

Abstract—This article discusses the difference between public innovation (PI) and government innovation (GI). In this sense, the first is defined by the use of Information and Communication Technology, mainly interactive tools 2.0, and the co-creation of public value. Thus, the areas of PI are public administration, public policy, government and civil organizations whose potential is derived from their own interrelation. Meanwhile, government innovation only takes into account internal organizational aspects.

Index Terms— Public Innovation, Innovation in Government, ICT, Public Value.

I. INTRODUCTION

Today, in many countries, more in some than others, governments and public administrations are shaping a network of collaborative governance and flexibility to address the challenge of building and acknowledging the relationship between innovativeness and society. This provided with the ability to support the formulation and analytical rigor of public policy decision and proceed according to a strict criterion of economic efficiency and quality within the provision of public services. In many latitudes, we see that governments aim at creating government action: an open exercise to access information and transparency in co-production with their citizens. We conceive them as changes that are aimed at improving the efficiency and quality of processes, organizational dynamics and flows of information, communication in public administration, public policy, government and civil organizations as well as the production and delivery of public services. They are aimed at achieving the public value expressed by people's satisfaction. Undoubtedly, these changes would not be possible without a digital collaborative platform based on Information and Communication Technologies (ICT), particularly Web 2.0 communities (Social networks -Facebook, Myspace-, webmail, wikis, weblogs, Wikipedia, web sites hosting videos), which allows people to organize into networks, share their concerns, create interest groups and thus, try to influence public decisions. The article aims at establishing the concept of public innovation and differentiate it from the concept of innovation in the public sector.

II. GOVERNMENT INNOVATION

In order to discuss public innovation, we should first refer

Freddy Mariñez Navarro, Research Professor at Universidad Autónoma de Guadalajara (Mexico). Ph.D. in Political Sociology, Université Laval, Québec Canada. Master Cooperation Studies, University of Sherbrooke, Québec, Canada. Master of Economics (University of Zulia, Venezuela).

to the concept of innovation in the public sector. "Public sector innovation usually involves new methods of delivering those services. Occasionally, the public sector develops new programs, and we could think of them as being analogous to private sector's new product" (Borins, 2012: 5). That is why innovation in this sector, either in terms of how public services should be delivered, or the creation of social infrastructure that can be used in a novel, takes time because there are changes in processes, impacts and results (Borins: 2012).

Borins (2002) also introduced three types of innovations in the public sector. The first type is the "bottom-up", which occurs when someone has a good idea and places it in the suggestion box, following up by implementing an organization scheme through normal channels. The second type of innovation is related to crisis response, which are the result of external and at times unpredictable factors. Finally, innovation linked to organizational restructurings conducted by heads of agencies where restructuring is a response to the public sector organization that simply does not meet normal expectations. On the other hand, Potts and Kastell (2010, cited by Casebourne, 2014) introduced three key reasons on why innovation is required in the public sector:

- 1.- Size of the public sector: The public sector has an impact on many countries in the percentage of GDP. Innovation in the public sector can affect the overall productivity growth by reducing the cost of inputs, and increasing the value of products through better organization.
- 2.- A need for the policy to match the evolution of the economies in a globalized context.
- 3.- The public sector establishes the rules for private sector innovation.

Innovation in the public sector presents various approaches that are important to identify since they aim at determining differences and similarities in their approach. Everett Rogers is considered the dean of innovation in the public sector. His book *Diffusion of Innovations 2001* contributes to the diffusion of innovation in communication cases. On the other hand, Sanford Borins presents a rich work on government innovations in the United States from the holistic perspective. His main book, published in 1988, is titled *Innovations with Integrity. How Local Heroes Are Transforming American Government*. Another perspective was developed by Eleanor Glor who is the founder and publisher of *The Innovation Journal: The Public Sector Innovation Journal*. Since 2001, she has seen in systematizing studies how innovation can be seen as part of an organizational theory, management science, social learning and system analysis. It involves an inductive approach to theory, built on the basis of experience and

literature.

III. PUBLIC INNOVATION

Nonetheless, it is important to clarify that innovation in the public sector (public innovation), means going beyond government. It involves civic engagement expressed in collaborative terms among public officials, the private sector, citizens and civil society organizations in order to develop methods, techniques and skills, by using information technology and communication (Web 2.0). It is worth noting that this innovation should aim at producing changes in values, attitudes, processes and leaderships that contribute to generating public value.

It is important to clearly state that the public sector is a stable provider of public services. Public innovation, however, bets a collaborative relationship between government and NGOs for promoting decisions and public policies that would improve the supply of public services with new solutions actors (See table 1). In this table we can see the differences between these two kinds of innovations. From this standpoint, the areas of public innovation mainly cover aspects of public policy, public management and governance in the relational perspective in the new form of collaborative governance (See table 2). We know that today the bureaucratic organization, classical and closed, tends to change given the social, political and economic conditions in the information age reconfigurations. Public administration has now acquired characteristics that have transformed the closed bureaucratic organization concept. "Clearly, the bureaucracy that formed the foundation of the modern state is now obsolete in many ways. But though it has been modified by information technology, each one of its elements remains central. The growth of networks, partnerships, collaborative negotiations, and different types of arrangements omens changes in jurisdiction, hierarchy, boundaries, and agency autonomy. These changes that could affect the inner structures of the bureaucratic state will require considerable political negotiation as well as a cultural change" (Fountain: 2001: 62).

Mark Moore (1995) says that public officials achieve widespread improvements in governance and impacts of public services, including efficiency, to increase public value. But public services and organizational processes need to consider innovation in governance. In recent years, such innovations have included new political arrangements in local governments, as well as changes in the forms of organization for the purpose of planning and delivering services. Innovation is also public participation, and a user of the design and delivery of services. Thus, "In Government 2.0, public value no longer needs to be provided through government alone, but it can be provided through collaborative production of different public agencies, the private sector, community groups and citizens. In this context, policies at an institutional and public level will be able to fully use the power of mass collaborations within the legal frame" (Edelman, Höchtl, Sachs; 2012: 22).

The four key concepts that have powered the Web 2.0 phenomenon, public innovation and consequently, the work of co-creation, are (Mergel, Schweik, Fountain, 2009): first

Peer Production, which describes a special kind of production system where individuals act in response to their own needs and interests in a decentralized way. Another attribute besides resorting users to do things that interest you is that efforts are developed within a crowd (crowd) and in public. The second concept is the Open Source and Open Content Copyright to Copyleft that gives the user the right to copy, modify and distribute new Software derivatives. But the mandates obtained from these derivatives have similar conditions to the original Software. It refers to the Open Source Software (free), which simply collaborates as the "production instance" quintessence of Peer Production (Commons-based Peer). The Open Source depends on many individual contributions to a common project. Share your contributions and with a variety of motivations without rights to be excluded from the digital community (Benkler, 2006 cited by Mergel, Schweik, Fountain, 2009). The third concept is the User-Centered Innovation that first showed that users more than developers are private companies, governments and citizens' organizations, convinced that Open Source is a game that leads to a significant change in the composition of the ecosystem open code. And second, most Software production is developed by programmers who are Software users. The idea of users as innovators significantly adds incentives that drive people to contribute to quality. The existence of open source collaboration as "innovation networks user-centric" is perhaps a surprise to many at the time that innovators are free to reveal their innovations.

The fourth concept is Crowdsourcing. If we take the definition of Howe (2006, cited by Mergel, Schweik, Fountain, 2009), crowdsourcing is the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing more often than not, to a large, undefined group of people in the form of an open and connected call. It is a connection of masses which leads to exploitation via Internet in order to acquire resources, knowledge, experience or time (Open Collaboration). A few advantages of crowdsourcing are: 1) collection of a variety of high quality proposals by the community; 2) lower costs; 3) internal and permanent feedback and; 4) continuous generation of innovative ideas.

These tools, Web 2.0, also called collaborative Web 1, have allowed network users to interact directly with each other and work together to produce collective content, becoming a meeting point that has lagged behind a Download culture to give step to the Upload culture. Communication and information technologies have made a breakthrough not only in technological terms but also in new modes of interaction that have made citizens co-producers and co-creators of actions and content. Web 2.0 is further defined as a collaborative platform that allows citizens to organize into networks, share their concerns, and create interest groups thus, trying to influence public decisions. It can also be understood as new structures and value creation generated by social networks through social software applications, with the idea of contacting friends linked to these applications, facilitating the development, construction and modifying

relationships among individuals, i.e., interactions and social relations.

It is precisely here where understanding the meaning of digital space or informational capital becomes key to the articulation of a public innovation platform. We understand this capital as a tool for streamlining in modern public management supported by civic knowledge, and analyzing relational data in public administration as an existing specific link among the types of information generated (face-to-face or virtual), and the role of the actors who engaged in it. In this sense, it is characterized both by the role played by social partners in the process of creation and ownership as the institutional operation of networks, based on the ideas of free software and code or open source (free software, Open source) and the concepts of Big data (massive data and linked data): 1. Equipment and access to technological networks (installed computer infrastructure, Internet connectivity and interactivity type); 2. use of technology (available instruments and services used, prevailing criteria and modalities of implementation); 3. technological and informative (organizational readiness to integrate resources and uses, human resources, training and skills development to process information and motivation to active citizenship) ownership; 4. network operation (both internal and external information flows and organizational dynamics), and 5. policies and communication strategies (ability to generate and disseminate personal information, public presence, media policies, priorities and lines of action).

Based on previous statement, we form the following question: what are the democratizing effects of informational and civic capital? First, information is made public in the sense that converted data articulates public value. Therefore, it is a transparent relationship among citizens and government directing their work towards what matters most: the incorporation of interactive processes of public services. The second democratizing effect is that the information network accommodates citizens and non-governmental actors to collaborate in the process of making political and public decisions, while enabling their voices to demand that officers be made accountable (Mariñez, 2009). Consequently, citizens are increasingly using Web 2.0 Internet platforms for organizational accountability.

In this context, public servants have a more alert and predictable attitude to better serve citizens. This can be achieved through intensive use of data owned by governments; it will exponentially increase in the coming years as a result of the progress of digitization of processes and files and the Internet of Things (Internet of Things: IoT)², with its thousands of scattered sensors both in urban and in rural areas. Thus, a government that responds to public innovation (Responsive Government) must have the following capabilities: (1) Infrastructure connectivity (fiber) with powerful broadband networks that allow the circulation of large amounts of data. (2) Open data, both to improve internal efficiency and facilitate transparency and accountability. (3) Algorithms (models), which are a simply model of large amount of data ran by citizens for analysis and knowledge. (4) Authorized sensors. The deployment of

sensors of all kinds in cities and in rural areas to measure and monitor information, known as the Internet of Things. Through mobile devices people could even perform as sensors. Sensors will form the core of the Internet of Things, they are the ones that can deliver large volumes of every sort of data. (5) Screens, are nothing more than applications that will allow citizens to interact (mobile or fixed). Smartphones develop more and more applications, allowing new relationships among citizens and State (Goldsmith and Crawford, 2014).

We can state that time has proven us right, information technology and communication, Web 2.0 mainly, has shifted a closed and bureaucratic organization to a flexible one. It has also set the momentum of different actors in network for construction of public and social values; an implementation of the cooperation seen as the exchange of experience, knowledge and expertise among different actors; and new modes of social interaction that generate co-creation. As we approach the concept of Public Innovation, we can define its three key principles: 1) creation of interactive value (social and public); 2) distributed co-creation; and 3) mass collaboration to inspire the public sphere (Hilgers and Ihl, 2010).

Thus, if the purpose of public innovation is to improve the efficiency and quality of processes, organizational dynamics and flows of information in communication in public organizations, as well as the production and provision of public services aiming at achieving public value expressed in the satisfaction of citizens; then it is important to state that these changes would be carried out faster through a digital collaborative platform (Web 2.0). This would facilitate information sharing, interoperability, user-created design and interaction allowing citizens to organize into networks, share their concerns, create groups of co-innovation and co-creation, public services, public decisions and the co-production of public values (see Graph 2).

Therefore we insist, that for public innovation to achieve an impact on improving processes and interactions—deepening their impact on people. It is necessary to adapt, test and verify new ideas, as well as develop something totally new for the purposes of public organizations; which requires three-dimensional capabilities: first, from public organization it requires those concerning the management of digital spaces for professional and skilled public officials focusing on agreements with other actors, decision making, Internet users, informational architecture and agile development of web tools. On the other hand, capabilities give strength to hold public organizations in terms of culture, values and beliefs. “Technology does not keep us from transforming and innovating—organizational and institutional hurdles need to be overcome” (Fountain, 2001: 3, cited by Mergel, Schweik, Fountain, 2009). Finally, Citizensourcing understood as a “commitment to the government through new principles of integration, motivation and society organizations” (Hilgers, Ihl, 2010: 73).

IV. A AS REFLECTION

Reff Pedersen (2013), warns that the success of public

innovation is linked to the degree in which the entire organization—not just a section of it—targets innovation. This leads him to ask the following questions: what kind of public organizations are innovative and who are the drivers of innovation within them? These approach and capacity constraints present two challenges in public innovation. The first question that raises is linked to the form and spaces where it is carried out: How is internal democratization implemented in innovation? The second challenge allows us to analyze innovation management: how the public sector innovates organizations and how they access and use new knowledge generated in co-production and co-creation.

REFERENCES

[1] Borins, Sandford (2002) “Leadership and Innovation in the Public Sector”. *Leadership & Organization Development Journal* 23 (8) 467-476.

[2] Borins, Sanford (2012) *Innovation in business and government: Looking forward*. Australian National University.

[3] Casebourne, Jo (2014) *Why Motivation Matters in Public Sector Innovation*. Nesta, London. www.nesta.org.uk

[4] Edelma, Noella, Johann Höchtl and Michael Sachs (2012) “Collaboration for Open Innovation. Process in Public Administration”. In Y. Charalabidis and S. Koussouris (eds) *Empowering Open and Collaboration Governance*. Springer-Verlag, Berlin Heidelberg.

[5] Fountain, Jane E (2001) *Building the Virtual State*. Information Technology and Institutional Change. Brookings Institution Press, Washington, D.C. 2001

[6] Goldsmith, Stephen and Susan Crawford (2014) *The responsive City Engaging Communities Through Data Smart Governance*. Jossey-Bass Publishers.

[7] Holler, Jan; Tsiatsis, Vlasios; Mulligan, Catharine; Avesand, Stefan; Karnouskos, Stamatis; and Bayle, David (2014) *From Machine-to-Machine to The Internet of Things: Introduction to a New Age of Intelligence*. 1st. Edition. Academic Press

[8] Hilgers, Denis and Christoph Ihl (2010) “Citizensourcing: Applying the Concept of Open Innovation to Public Sector”. *The International Journal of Public Participation*. Vol. 4, No. 1.

[9] Mergel, Ines, Charlie Schweik y Jane Fountain (2009) *The transformational Effect of Web 2.0 Technologies on government*. Disponible en: <http://ssrn.com/abstract=1412796>

[10] Mariñez Navarro, Freddy (2009) “El capital informacional en la gestión pública. Una aproximación al análisis de redes. *Revista Enfoques, Ciencia Política y Administración Pública. Universidad Central de Chile, Vol.VII, No. 11*

[11] Moore, Mark. H (1995) *Creating Public Value*. Strategic Management in Government. Harvard University Press. Cambridge, Massachusetts, USA.

[12] O’Reilly, T (2005) *What is Web 2.0. Desing patterns and business models for the next generation of Software*. Available at: <http://oreilly.com>

[13] Reff Pedersen (2013), “Collaborative Narrative Innovation. A Case of Public Innovation in Denmark” In A.P Müller; L,Becker(eds) *Narrative and Innnovation. Management-Culture-Interpretation*. DOI. Springer Fachmedien Wiesbaden.

Freddy Mariñez Navarro, Research Professor at Universidad Autónoma de Guadalajara (Mexico). Ph.D. in Political Sociology, Université Laval, Québec Canada. Master Cooperation Studies, University of Sherbrooke , Quebec , Canada. Master of Economics (University of Zulia, Venezuela). He was Head of the Master of Public Administration and Public Policy at EGAP Government and Public Policy (Tecnológico de Monterrey, -2008-2014-). Dr. Marínez Navarro served on the Board of Management of the International Association of Schools and Institutes of Administration (IASIA, -2010-2013-): <http://www.iasa-iisa.org/iasia/e/Pages/default.aspx>. He is an active member of the International Sociological Association (ISA), the International Political Science Association (IPSA) and the Inter-American Network for Education in Public Administration (INPAE). Research topics: public policy, networks of actors, public innovation and collaborative governance. Principal Consultant of Policytics Research & Consulting. National researcher Fellow of the National System of Researchers of CONACYT, Mexico, Level II. Author of several books on

Public Policy and Public Innovation. In addition to publishing in national and international journals.

APPENDIX

Table 1: Difference between Public Innovation and Government Innovation

| Characteristics, | Government Innovation | Public Innovation |
|---------------------------------|---|---|
| Kinds of support | The cooperation of all public officials for change processes. | Government officials from all agencies in collaboration with non-governmental actors achieve changes in organizational processes through <u>coo</u> -creation |
| Management of Innovation | The reorganization of management to organizational change is Top-Down | The reorganization of the administration is the product of collaboration (Open Colaboration) between different actors (external and internal). Trend <u>relational</u> organization and horizontal. |
| Type of relationship | Changes in forms of relationship. Online communication between public officials and users and citizens in a unidirectional way. Platforms public consultations. | The shapes of relationship is supported by: Peer Production, Open Source, Open Collaboration and <u>Crowdsourcing</u> |
| Kinds of value creation | Public value produced by the government | Public value produced by the collaboration (co-creation) between government, citizens and private sector. |
| Technological tools | Web 1.0 | Web 2.0 |

Source: own construction.

Table 2: Spaces of Public Innovation

| <u>Public Policies</u> | <u>Public Administration as Collaborative Governance</u> | Relational Government | Public Citizen Organizations |
|--|---|--|---|
| Co-creating methods, techniques and skills, making use of information and communication technologies (Web 2.0) | | | |
| Objective: To improve decisions for production and delivery of public services in order to achieve public value. | Objective: To improve the efficiency and quality of processes, organizational dynamics and communication flows in public administration supported by the collaboration. | Objective: To achieve transparency, participation and collaboration in both its relational dimension and its dimension of access to information. | Objective: To promote collaborative processes and co-creation supported by the participation citizens in associations independent using Web 2.0 to achieve shared results |
| Social space Web 2.0 (open Data, Open Collaboration, Open Knowledge, Citizen 2.0, free software o social- <u>Facebook</u> , <u>MySpace</u> , <u>Open Source</u> , <u>Big Data</u> , <u>linked data</u> -). | | | |