CITIZENS AS THE ENGINE OF TRANSFORMATIONS: AN INVESTIGATION OF THE EFFECTS OF THE NEW FORMS OF GOVERNMENT-CITIZEN INTERACTION ON THE ORGANISATIONAL STRUCTURE AND DYNAMICS OF PUBLIC ADMINISTRATIONS

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Abstract

The intensification of electronic interactions between governments and citizens through channels such as call centres, online service portals, e-mails, online chats, social media, etc. – what I comprehensively denominate e-Government – generates a vast amount of data about those exchanges. These data may have two distinct natures: they can be the result of direct citizens' action to voice their opinion about a public service through complaints or suggestions, but they can also refer to the very use of the service available electronically. In other words, this second type of data is actually the electronic record the citizen leaves when using a public service.

This thesis questions whether this type of communication with citizens, that before was almost non-existent or of little relevance, may be resulting in changes in the work practices and organizational dynamics in two public administrations. Hence, the thesis aims to answer whether the intensification of ICT-based interaction between government and citizens related to public services, which generate voluminous quantities of information, are leading to organizational transformations in the cities of São Paulo and Rio de Janeiro public administrations - Is citizen e-feedback the engine of government transformation? This question unfolds into two others. The first step is to understand how the technology, the ICT-based interaction channels, take form in each case study, as those interaction tools are implemented and used in different institutional and socio-technical conditions. Second, I investigate whether information flows regarding the use of these interaction channels and the data produced are changing the organizational dynamics of public administrations toward more networked forms.

Building upon the social constructivist research tradition and considering that public administrations are not merely passive receivers of technology, where it is simply taken out of the shelf, consumed and used, the thesis is heavily inspired by the Technology Enacted Framework (Jane E. Fountain 2001) and constructs the analytical model upon the Technology in Practice Perspective (W. J. Orlikowski 2000). An essential structural element of this analytical approach is the examination of the differences in technologies-in-practice, the conditions associated with their implementation and use, and their consequences. The ways technological

tools are interpreted, adopted, modified, and translated by public organizations in order to develop e-Government strategies rely on the local characteristics of the formal institutions, rules and structures and at the practices and world views shared by the actors in each region that shape behaviour and preferences. Therefore, the model is divided into two interrelated parts: first, it explores how e-Government emerges, associated with the conditions – interpretative, technological and institutional – present in each case; second, it seeks to understand the consequences – processual, technological and structural – of the technologies-in-practice, leading to an understanding of the type of technology enactment – characterized by either inertia (reproducing the existing structures and forms), application (enhancing or making subtle changes to the existing structures and forms) or change (triggering transformations in structures and forms) – in each case study. By putting the two blocks together, the model finally opens the door to conclusions about the relationship between the intensification of ICT-based interactions between governments and citizens and organizational change.

This research indicates that a combination of initial conditions lead to different technology enactments but also to different forms and intensities of network dynamics. In the cases studied, interpretive, technological and institutional conditions that give prominence to a centralizing body that coordinates and mandates directives regarding ICT interaction channels and service delivery, such as in Rio, facilitates more guided and coordinated networked forms of government and transformations of the administration, with the integration of back office routines and the constant use of citizen data. Furthermore, this type of technology enactment may translate e-Government into a permanent state policy. On the other hand, decentralized and uncoordinated conditions, such as those observed in São Paulo, might promote pockets of networks in government that, through more flexible organizational arrangements, may facilitate innovations and some transformations – for instance the Where's My Bus experience, that involved a municipal Department, citizens and a start-up – although not grouped under a broader and permanent state policy. These types of e-Government-in-practice seem to be complementary – a more coordinated and managerialist strategy for e-Government focused on performance and clusters of decentralized and unrestrained interactions where innovative network forms and transformations in public service may have more freedom to arise.

In the thesis conclusion, I highlight the two main ideas derived from the analysis of the cases studied. First, albeit having similar interpretive and technological conditions, the institutional conditions of both cases are different and, therefore, can affect differently the interest governments have in the treatment and using of data provided by citizens. It is precisely the particular use of this information that explains in each case the degree of transformation of organizational dynamics and administrative structures. Second, participation of citizens via ICTs requesting services, raising complaints, and proposing improvements, generate data ("big data") that may be of great political importance in implementing public policies.

Resumen

La intensificación de las interacciones electrónicas entre los gobiernos y los ciudadanos a través de canales como call centers, portales de servicios on-line, e-mails, chats on-line, redes sociales, etc. - lo que llamo como e-gobierno - genera una gran cantidad de datos sobre estas interacciones. Estos datos pueden tener dos distintas naturalezas: pueden ser el resultado de la directa acción de los ciudadanos expresando su opinión sobre un servicio público a través de quejas o sugerencias, o también pueden referirse al uso del servicio disponible electrónicamente.

Esta tesis cuestiona si este tipo de comunicación con los ciudadanos, que era antes casi inexistente o poco importante, puede dar lugar a cambios en las prácticas de trabajo y en las dinámicas organizacionales en dos administraciones públicas. De manera que, esta tesis quiere responder si la intensificación de las interacciones basada en las tecnologías de información y comunicación (TICs) entre el gobierno y los ciudadanos relacionada con los servicios públicos, que generan grandes cantidades voluminosas de informaciones, están llevando a transformaciones organizacionales en las alcaldías de Sao Paulo y Rio de Janeiro - los feedbacks electrónicos de los ciudadanos son el motor de transformación del gobierno? El primer paso es entender como la tecnología, los canales de interacción con base en TICs, emergen en cada caso de estudio, ya que estas herramientas de interacción son implementadas y utilizadas en diferentes condiciones institucionales y socio-técnicas. En segundo lugar, la tesis investiga si los flujos de información sobre el uso de estos canales de interacción y los datos producidos están

cambiando la dinámica organizacional de las administraciones públicas con mira a formatos en red.

Basándose en la tradición del constructivismo social de investigación y considerando que los administradores públicos no son solamente receptores pasivos de tecnología, en donde esta misma es recibida, consumida y usada, la tesis está inspirada en el framework de *Technology Enactment* (Jane E. Fountain 2001) y construye un modelo analítico basado en la *Perspectiva de Tecnologia-en-Prática* (W. J. Orlikowski 2000). Un elemento estructural esencial de este abordaje analítico es el análisis de las diferencias de las tecnologías-en-la-practica, las condiciones asociadas a su implementación y uso, y sus consecuencias. Las formas como las herramientas tecnológicas son interpretadas, adoptadas, modificadas y traducidas por organizaciones públicas, con el objetivo de desarrollar estrategias de gobierno electrónico, se construyen de acuerdo con las características locales de instituciones formales, reglas y estructuras, así como con las prácticas y visiones de mundo compartidas por los actores en cada región, que dan forma a los comportamientos y las preferencias. Por lo tanto, el modelo está dividido en dos partes interconectadas: primero, explora como el gobierno electrónico emerge, asociado a las condiciones interpretativas, tecnológicas e institucionales presentes en cada caso; segundo, busca comprender las consecuencias procesuales, tecnológicas y estructurales de las tecnologías-en-la-practica, llevando a la comprensión sobre el tipo de *technology enacment* – caracterizada como inercia (reproduciendo las estructuras y las formas existentes), aplicación (reforzando o haciendo cambios sutiles en las estructuras y las formas existentes) o mudanza (provocando transformaciones en las estructuras y las formas) - en cada estudio de caso.

Esta investigación indica que la combinación de diferentes condiciones iniciales resulta en diferentes tecnologías-en-la-practica y también en diferentes formas e intensidades de la dinámica en red. En los casos estudiados, las condiciones interpretativas, tecnológicas e institucionales que resultan en un órgano centra que coordina y guía los medios electrónicos de interacción para la prestación de servicios, como en Rio, facilita el surgimiento de organización y transformaciones en la administración de forma coordinada y guiada, con cierta integración de rutinas de back office y el uso constante de los datos de los ciudadanos.

Además, este tipo de tecnología-en-la-practica puede hacer tornar las acciones de gobierno electrónico en política de Estado. Por otro lado, las condiciones descentralizadas y

descoordinadas, como las observadas en Sao Paulo, pueden promover *pockets of networks* en el gobierno que, por medio de acuerdos organizacionales más flexibles, pueden facilitar innovación y algunas transformaciones - por ejemplo, el proyecto Donde está mi bus?, que envolvió la Secretaria Municipal, ciudadanos y una *startup* - aunque no están agrupados sobre una política de Estado más amplia y permanente. Estos tipos de e-gobierno-en-la-practica parecen ser complementarios - una estrategia más coordinada y gerencial de gobierno electrónico enfocado en el desempeño y clúster de interacciones descentralizadas y libres, en las cuales las dinámicas en red y transformaciones en el servicio público pueden tener más libertad para surgir.

En las conclusiones de la tesis, destaco las dos principales ideas derivadas del análisis de los casos estudiados. En primer lugar, a pesar de que tengan condiciones interpretativas y tecnológicas similares, las condiciones institucionales de los casos son diferentes y, por lo tanto, pueden afectar de manera distinta el interés que tengan los gobiernos en el tratamiento y explotación de los datos aportados por los ciudadanos. Es precisamente el uso particular de estos datos lo que explica en cada caso el grado de transformación de las estructuras administrativas. Finalmente, la participación vía TICs de los ciudadanos – las formas no mediadas de participación – solicitando servicios, elevando quejas, proponiendo mejora, genera unos datos ("big data") de gran importancia política a la hora implementar políticas públicas.

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CHAPTER 1 – INTRODUCTION

Since I started working with Information and Communication Technologies (ICTs) in the public sector, first as an assistant at an IT Department at the São Paulo Municipal Government in 2005, I understood that technologies could have a pivotal role in helping governments improve the lives of citizens in many areas – health, education, finances, service delivery, etc. I also understood, by observing in practice, that although new technologies are fascinating and captivating, those benefits are not direct or straightforward. *E-Government*, as well as *e-Administration, e-Participation, and e-Democracy,* were terms being highly discussed in both the public sector and the academia: e-*Government* promised to revamp public administration's efficiency, effectiveness and transparency by facilitating more networked forms of government.

Fascinated by these discussions, in late 2006 I embarked on the Information and Knowledge Society PhD program, seeking to understand in what conditions e-Government helps administrations to achieve those promised goals. After getting acquainted with Science and Technology Studies, and the important works of Wanda Orlikowski on ICTs and Organizational Theory and of Jane Fountain on ICTs and Institutional Change in governments, the thesis questions *whether the intensification of ICT-based interaction between governments and citizens related to public services, which generate voluminous quantities of information, leads to organizational transformations in public administrations.*

I chose São Paulo and Rio de Janeiro as case studies in order to answer the thesis question. In the initial period of my research, I did extensive documentation analysis and interviews in three other regional governments – Québec, Catalonia and São Paulo State Governments – between 2008 and 2010, which allowed me to undertake more in depth research in the thesis two cases. In 2010, I had to stop the process of preparing the doctoral thesis in order to work. I sought to work with themes completely related to the thesis topics, aiming to one day finish it. I always had the thesis in mind at work, and often during my activities, I brought experiences of previous analysis and wrote down how, in my daily work routines, those previously studied and systematized categories presented themselves. In fact, the thesis question throughout those years has

remained the same.

It is important to note here that between September 2011 and December 2012, I worked as a citizen relationship manager as part of 8-people team who coordinated the 1746 multichannel service at the Chief of Staff Department of the Municipality of Rio de Janeiro. I was responsible for structuring the area of service quality and citizen satisfaction, as well as I actively participated in the modelling of service level agreements with Departments' representatives, in the improvement of the mobile application and the creation of the web application. Between December 2012 and April 2013, I became manager of the entire multi-platform service 1746. Working in the São Paulo municipal government, between April 2013 and August 2014, I coordinated the Working Group that joined all those responsible for interaction channels (face-to-face, telephone and online) to discuss and plan the future of citizen attention in the municipal government. In August 2014, I became the coordinator of Citizen Attention and Service Innovation Unit, supervising a team of four analysts, in charge of producing strategic and on-demand reports and restructuring public services processes.

These professional experiences, intertwined with my academic curiosity and fascination about the theme, helped me gain full and in depth access to informants and documents in both cases studied.

The thesis is organized as follows: Chapter 2 offers a comprehensive literature review on e-Government, its definitions, promises and empirical findings, as well as references about Electronic Participation and Network Administration, raising some important questions that are further developed along the thesis; Chapter 3 presents the Research Questions and the Analytical Framework, based on Wanda Orlikowski Technology-in-Practice lens (W. J. Orlikowski 2000) and Jane Fountain Technology Enactment Framework (Jane E. Fountain 2001); Chapter 4 explains the Methodology and the Operational Variables used in the analysis; Chapters 5 and 6 present the São Paulo and Rio de Janeiro case studies; and finally, Chapter 7 draws comparative conclusions from their analysis.

CHAPTER 2 – E-GOVERNMENT, PUBLIC SERVICES CO-PRODUCTION AND THE NETWORK ADMINISTRATION

1. INTRODUCTION

This chapter aims to introduce the main concepts and the literature review that guide the research presented in the following chapters. After the second section, which gives a brief overview on the study of ICT in the Public Sector, this chapter is divided into three parts. It structures a theoretical analysis on the relationship between e-Government and a) a more efficient and effective delivery of public services, b) citizen participation in public service design, and c) the emergence of the network administration and the network state. In the final remarks, I revisit the main concepts, linking them with the thesis questions, and laying the grounds for the development of the research.

2. THE STUDY OF ICTS IN THE PUBLIC SECTOR

2.1. Computerization and Automation

The study of technology in the public sector is not a new field. Max Weber already recognized the emergence of the rational-bureaucratic state as a sociotechnical system, based on efficiency, rational calculation and control:

> "The primary source of the superiority of bureaucratic administration lies in the role of technical knowledge which, through the development of modern technology and business methods in the production of goods, has become completely indispensable." (Weber 1968, 223)

In addition:

"The decisive reason for the advance of bureaucratic organization has always been its purely technical superiority over any other form of organization. The fully developed bureaucratic apparatus compares with other organizations exactly as does the machine with the non-mechanical modes of production. Precision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs – these are raised to the optimum point in the strictly bureaucratic administration, and especially in its monocratic form." (Weber 1968, 973)

Early applications of microelectronics based information and communication technologies, during the 1950s and 1960s, in the internal business processes of governmental organizations meant essentially the employment of large-scale automatic data processing systems, such as databases of employees, financial management systems, inventories databases, among others (Bellamy and Taylor 1998).

In general, however, from a public management perspective, technology, when remembered, was taken as a simple tool available off the shelf, which was either neutral or had predictable "impacts" and "effects" in the organization (Waksberg-Guerrini and Aibar 2007). Weber's recognition of organizations as socio-technical systems took decades to feed through into subsequent thinking. Over the following years, the focus of attention was primarily on the human and organizational aspects of social-technical systems, leaving aside the process and relevance of the commissioning, design and implementation of IT systems in government activities[1].

Pioneering research that analyzed the interaction and outcomes of the computerization in the public sector in the 1950s and 1960s in organizational power structures date from the 1970s and 1980s (Chadwick 2006). Some researchers started to move away from a perspective that addressed rather simplistically the effects and impacts of technology in governments[2] and began to focus on the multi-way interaction of information and communication technologies with political and institutional characteristics and structures. In general, those studies found that the

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[1] For further discussion on the neglect of information systems and information access within public management and the theory of government organizations, see Dunleavy et al. 2006

[2] Chapter 3 deals with the technological determinist versus the social shaping of technology debate.

implementation and use of information technology tended to mimic and reinforce the hierarchical and power structures in place.

Laudon (1974), for instance, identified two patterns in the interplay between the use of computers - more specifically the implementation of multi-Agency automated information systems - and the activities and interactions between government bureaucracies: the first conforms to the conventional wisdom that information systems increase central control and are thus resisted by the managers of Agencies and Departments; the second pattern conveys that where there are systems that link homogeneous integrated Agencies, which pursue similar objectives and gain from the pooling of data and information, they are administered in a more decentralized way (Dutton 1975). Danziger et al (1982) were more emphatic in showing that information technology reinforces hierarchical and power structures in place, which are usually centralized and hierarchical, by favoring administrative efficiency, financial accountability and social control, as opposed to innovative and decentralized ways of management or enhancing public service delivery (Benjamin 1982; Danziger et al. 1982).

In sum, commentators at that time found that the interplay between the technology available, based on mainframe computing and large databases, and the way it was prevailingly deployed in the public sector – computerization forms which had central, corporate functionality – had the effect of sustaining and strengthening existing bureaucratic features (Bellamy and Taylor 1998).

During the 1980s, the evolution of computerization in governments, the advent of client-server computing, and personal computers increasingly making their presence in civil servants desks, brought about the argument that IT in the public sector would bolster the decentralization of activities, thus augmenting the power of Departments, which could in turn more easily meet the needs of citizens: "The advent of minicomputers and PCs tended to decentralize access to information and led to predictions that decision making would likewise be decentralized as lower-level managers took advantage of the opportunities offered by that access" (Kraemer and Dedrick 1997, 100).

Some authors argued, however, that more than having the effect of decentralizing activities as predicted, the application of information technology represented a "distributed automation" of

activities. In other words, the tendency was for service delivery to be automated throughout the public sector in a decentralized fashion, whereas managerial control would still be centralized. For this commentators, service delivery and the surrounding activities were aided by the implementation of technology, but respected the hierarchical structure in place and the managerialist agenda[3], centralized around large-scale mainframe computer systems (Bellamy and Taylor 1998; Kraemer et al. 1989).

2.2. Informatization and Transformation

Contemporary public administrations have become increasingly more complex, having to coordinate actions with emerging actors in the public sphere, such as non-profit organizations and the private sector, and manage and process increasing amounts of information. The silo like, inward-looking, slow decision-making and knowledge diffusion characteristics of the old bureaucratic model seem to be ill-suited to improve flows of information and cooperation, levels of legitimacy and trust as perceived by citizens, and ultimately efficiency and efficacy.

In this scenario the modern information and communication technologies[4] have, since the middle of the 1990s, begun to be seen as an ideal vehicle to resolve some of the problems of contemporary public administration, such as its lack of flexibility and slow processing times, and its organization in silos, closed to interdepartmental work, coordination and information sharing and feedbacks. Following this trend, several labels have emerged to depict civil society, politicians, and governments relations facilitated by ICTs. Just as it is impossible to box every societal actor into one single category, those labels are useful but tend to overlap in some areas.

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[3]More on New Public Management and the new ICTs in section 3.2.2.

[4] "Information and communications technology (ICT) is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information."

(https://en.wikipedia.org/wiki/Information_and_communications_technology, accessed on 21/06/2015).

The concept of *e-Administration* is perhaps the easiest to define when we consider the managerial aspect of public administrations: most authors use it when referring to ICTs in support of the management of activities inside the organization – for instance, systems and data processing – for intra and inter-Departmental information flows (Welp 2007). *E-Government* has been defined in several different ways, from electronic service delivery, in other words, the digitalization and online delivery of public services (Accenture 2003)), to broader definitions, such as the World Bank's view:

> "E-Government" refers to the use by government Agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government."[5]

In that sense, it encompasses both *e-administration, e-democracy* and *e-participation*. *E-democracy*, in a broad definition, is usually associated with the efforts to broaden political practices, without the limits of time, space, and other physical conditions, by enabling political actors - citizens/voters, governments, elected officials, political organizations, civil society organizations, and even the media - to connect with one another via new information and communication technologies (Hacker and Dijk 2001; Reddick 2008). It assists to set agendas, establish priorities, make important policies and participate in their implementation in more deliberative ways (such as e-consultation or e-voting). *E-participation* is often used interchangeably with e-democracy, depending on the range of each definition. Ann MacIntosh's (2004, 2) definition of e-participation as " "e-democracy is concerned with the use of information and communication technologies to engage citizens, support the democratic decision-making processes and strengthen representative democracy" is very close to the broad definition of e-democracy used above. In this work, participation does not happen only during formal political processes (voting, consulting) or those that attempt to influence the decision making-process

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[5] http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOG IES/EXTE-GOVERNMENT/0,,menuPK:702592~pagePK:149018~piPK:149093~theSitePK:702586,00.html (accessed on 13/07/2015)

(e.g. political activism), but also participation regarding government daily practices (e.g. service quality feedback) that in the medium run can modify public policies[6].

This work uses the broadest definition of e-Government, i.e., defined as encompassing all uses of ICT within public administrations and government Agencies and units. Some of these uses, particularly those involving the Internet, have more recently been considered catalysts of important transformations in the way governments carry on their activities, promising to bring new levels of rationality to governments and overcoming the strains imposed by Weberian Bureaucracy (Margetts 2003; P. Norris 2001)[7]: by improving service delivery, simplifying and cheapening administrative procedures (Jane E Fountain 2003)⍰, and contributing towards a flatter and more networked environment – both intra government and with civil society - which could strengthen transparency and accountability of government activities (Bhatnagar 2003)⍰, citizen participation (Hague and Loader 1999)⍰, as well as transparency and accountability of government activities, therefore reinvigorate citizens' trust in governments.

Although in the early 1990s policy makers were at first suspicious of the new technologies, later e-Government also began to be seen as an opportunity to convey an agenda of innovation and modernity. Many policy makers are still attracted to this view of e-Government and, by the late 1990s, many governments had devised e-Government strategies (Mayer-Schönberger and Lazer 2007). Fifteen years later, governments presence online is not just an interesting option for policy makers, but an obligation for "modern governance". The UK "Digital by Default" strategy – meaning providing digital services that are so easy to use and so convenient that all those who can use them will choose to do so – is a clear example of a method meant to cut costs and to bring government completely to the modern digital era. In March 2015, the UK government ended the Transformation Programme – it gave itself 400 days to transform 25 major services, making them digital by default[8], and expecting to save £1.7 and £1.8bn each year if 82%

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[6]More about e-participation is explored on session 3.2. of this chapter.

[7]More about Weberian bureaucracy on section 3.3.1.

[8] More about the Digital by Default Strategy and the Transformation Programme can be accessed here: https://www.gov.uk/transformation (accessed on 13/07/2015).

transactions for those services were done online (UK Cabinet Office and UK Government Digital Service 2012).

Nonetheless, contrary to the positive views of new ICTs in government, some academics and political activists were more sceptical. First with the increased possibility of government's power to exert control over citizens, "where massive databanks and the convergence of information technologies are used as instruments of control", an anti-utopian view described by Margetts (Margetts 2003). For instance, Burham (1983), in his book "The Rise of the Computer State", perhaps did not imagine the power that the US National Security Agency would hold today, but voiced his concern over the computerized State growing invasion of privacy, threatening personal freedom. Webster (Webster 2009), more than twenty five years later, showed similar concerns about the "surveillance revolution" and the widespread use of CCTV. Other authors believe that the positive impacts of ICTs in governments are a naïve view, as they are organizations that are inherently conservative, hierarchical and bureaucratic, incapable to adapt to the new environment (P. Norris 2001).

Following this debate, in the following sections, I explore what recent empirical research has revealed about the promises of e-Government and their potential transformative effects on public administrations.

3.   THE PROMISES OF E-GOVERNMENT

E-Government was first depicted as the use of ICTs in provision of online services; later, a much broader concept was suggested (Dawes, Pardo, and Cresswell 2004), as detailed in the previous section, defined as the extensive use of ICTs in all government functions to support government operations, engage citizens, and provide services.

3.1.   Better Services with Lower Costs?

One of the first objectives to appear in the discourse and practice of e-Government was the potential of ICTs to increase efficiency and effectiveness of public services. We see this content early on in the development of the very term "electronic government" on state and local governments' strategic reports, the academic literature, as well as the media. These are some examples:

> "More efficient and effective use of resources at a time when there is increased pressure on governments to limit their spending and to reduce the tax burden upon citizens and businesses" (Nixon and Koutrakou 2007, viii)

UN E-Government Survey 2003:

> "Governments are increasingly becoming aware of the importance of employing e-Government to improve the delivery of public services to the people. This recognition has come about as a result of two recent interrelated phenomena. First, the rapid pace of globalization has interwoven the intra-country trade, investment and finance opportunities of the world into transnational networks, with countries seeking new ways to provide more competitive products and services. Second, recent advances in Information and Communication Technology (ICT) have presented new approaches for the integration of these networks and the improvement of the efficiency of businesses and services worldwide. Led by the private sector, innovative applications have highlighted the potential of using ICT to reduce costs and improve the productivity and efficiency of transactions." (UNDESA 2003, 4)

Al Gore's introduction to the "Access America" report:

> *"Among the 1,200 recommended actions was a set of imaginative proposals to make government work better and cost less by reengineering through information technology.*
>
> *The idea of reengineering through technology is critical. We didn't want to automate the old, worn processes of government. Information technology (IT) was and is the great*

enabler for reinvention. It allows us to rethink, in fundamental ways, how people work and how we serve customers." (Gore 1997, 1)

The question is whether this potential has been verified; therefore, I explore research conducted to understand whether more efficiency and effectiveness have been observed as a result of e-Government initiatives, also raising the question as to whether those categories should be applied with those definitions in the public sector.

3.1.1. Efficiency

In economic terms, a system is more efficient when the production process proceeds at the lowest possible per-unit cost. In technological terms, a system is efficient when it is not possible to increase output without increasing inputs – which means that sometimes being technologically efficient is not economically efficient, whereas the reverse is always true. Hence, when we say that a system is "efficient", we are describing an equilibrium state where more output cannot be obtained without increasing the amount of inputs at a given state of available financial, human and technological resources. One key point in the definition of efficiency is the assumption that *all else remains equal*, including the quality of the product. In other words, when we talk about the relationship between government and increased efficiency, we should look at how ICTs help lower costs and/or introduce new ways of "production" that require the use of less input per service delivered, maintaining or increasing the quality of the service provided.

E-Government advocates in the media, government officials and researchers claimed that e-Government would increase the efficiency of service delivery mainly through its rationalizing power: by migrating from paper-based to web-based processing and management of documents and payments, by supplanting some human activities, such as accepting, storing, outputting, or transmitting information (Chadwick 2006; Heeks 1999) and achieving productivity gains in the office work – as more automated service delivery would enable civil servants to handle more cases and/or more extensive amounts of information –, and by increasing managerial control (Danziger and Andersen 2002). Furthermore, by replacing traditional paper-based with web-based procurement systems, efficiency, as advocated, would be gained by reducing the

procedure costs and by expanding the number of buyers, increasing competition and thus reducing prices.

Fountain and Osorio-Urzua (2001) concur that digital government reduces costs of transactions; the authors agree that procurement procedures may benefit from a larger set of participating firms who will force a reduction in prices through competition, but there are still few rigorous studies on the subject. By using an Activity-Based Cost Analysis[9], (Ferrer and Guerrini 2006) compared the costs of the online versus the offline procedures of the São Paulo Water Supply Company procurement process, concluding that online services were less costly for the administration. Nevertheless, this study is a static analysis in time of the two types of transaction – it does not take into account, for example, subsequent maintenance costs of the installed IT infrastructure. Furthermore, as Heeks (2002) argument runs, in the developing world, automating activities means replacing civil servants that usually have low salaries by IT infrastructure that are usually imported and expensive.

Traditionally, studies in the private sector have also been inconclusive about the relationship between the ICTs implementation and increase in productivity. At the firm level, at least at first, we have not witnessed an increase in productivity. This may have had several reasons. First, IT spending increased heavily at the same time where there was a general decrease in productivity growth, particularly in the service sector in the late 1980s. Second, and most importantly, it may have been due to how and why ICTs were implemented. More recently, there has been a shift from focusing on doing the same old things with ICTs but more efficiently (automation of activities), to also trying to innovate in processes and procedures. From this perspective, if we look at the organizational level, ICTs might indeed be linked to firm performance through a transformation of how things are done; furthermore, doing things differently may lead not necessarily to more efficiency, but to more effectiveness, by improving quality, flexibility, and the innovation ability of organizations (Callaghan 2005). Similarly, looking at how e-Government could not only automatize the public sector, but also transform it, commentators see that e-

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[9]"Activity-based costing (ABC) is a costing methodology that identifies activities in an organization and assigns the cost of each activity with resources to all products and services according to the actual consumption by each. This model assigns more indirect costs (overhead) into direct costs compared to conventional costing." (Wikipedia, accessed on 14/07/2015)

Government could catalyse more networked, less bureaucratic, less redundant and more flexible working processes through more collaboration between individual staff, Agencies and Departments (Chadwick 2006)[10].

Reducing administrative costs has been central to the broader agenda of public sector reform since the early 1990s and, with the technological and Internet crisis in the 2000s, the economic downturn and the need to cut public expenditure, value for money became a powerful criterion for investing in ICTs (Chadwick 2006). Thus, a few studies have shifted their concern from the simplistic availability of web portals and services to focus on, besides efficiency and cost-effectiveness, the generation of public value of online services (Accenture 2003; Codagnone, Boccardelli, and Leone 2006; Cresswell, Burke, and Pardo 2003). Although there have been attempts on measuring intangible values[11], such as time, travel, and human effort, they are less easily quantifiable in monetary terms (Jane E. Fountain and Osorio-Urzua 2001). Return on Investment in IT (ROI) models are associated with both tangible and intangible benefits, costs and risks; most often intangible benefits (the "effectiveness" of a project, for instance better quality, variety, speed and citizen customer service) is the most important factor for the decision of investing in IT, but they are typically the most difficult to monetize and measure (Dadayan 2006).

In trying to quantify – not only, but also on financial terms – some of its impacts and outcomes, the European Commission e-Government Economics Project (Codagnone, Boccardelli, and Leone 2006) developed a measurement framework for the evaluation of e-Government based on existing European impact measurement models. It aggregates 92 indicators built around three value drivers: efficiency (cashable financial gains), democracy (openness, transparency and accountability) and effectiveness (reduced administrative burden, increased user value and satisfaction, more inclusive public services). The eGEP framework gives more weight to the indicators of efficiency, whereas indicators for democracy and effectiveness are mostly self-assessments through surveys and do not truly analyse transformations[12]. However, the

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[10] More on network administration on section 3.3.3.

[11] Ferrer and Guerrini equated the time spent on displacement and on waiting online with the average local salary.
[12] E.g.: one indicator of political participation is the availability of online channels for citizen interaction, which does not in fact verify transformations towards more participatory decision-making.

framework successfully develops efficiency indicators derived from transformations as consequence of the implementation of e-Government. For instance, the "percentage change in volume of document exchange digitally within public private partnerships" indicates cashable and time economies and integration with other non-public actors of society. On the other hand, this indicator may hide the very fact that if reengineering of processes and working methods were to take place, such transactions might be considered redundant and fully ceased to exist.

We might question, nevertheless, the relevance of measuring returns on investment by comparing online versus paper-based service provision. First, as e-Government becomes the norm, governments will eventually have to offer services through all channels available, and comparing their costs might not be pertinent[13]. Chadwick (2006) raises a fundamental question in this regard: can we talk about cost reduction in the public sector as in the private sector? Greater efficiency might mean job losses (if governments have the discretion staff to fire employees, which is often not the case), de-skilling, and threats to Agency autonomy by, for instance, outsourcing IT. Public sector organizations have different purposes and goals than private ones; they should be concerned with lower costs, but primarily with improving services and access to public services, and fulfilling political goals such as collaborating with other Agencies, governments and other actors of the society.

The question is whether efficiency in this more strict definition is compatible with the public sector and public values in general. That is the main reason why the search for a set of appropriate measures of "public value" has become more prominent, with a combination of indicators of efficiency, effectiveness, "enablement" of otherwise unattainable activities that try to focus on citizens' needs (Cresswell, Burke, and Pardo 2003).

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[13] Some could argue that multi-channel government could be a transitory phase towards a stronger online government, particularly for services that do not require human contact such as some health-related. The UK government launched in 2014 the "Digital by the Default Service Standard", "a set of criteria for digital teams building government services to meet".

3.1.2. Effectiveness

Effectiveness, on the other hand, in its stricter sense, is simply the ability to produce an effect; in management terms it is a concept that is about the degree to which a purpose is achieved, or "getting the right things done" (Drucker and Maciariello 1967). Efficacy, another term constantly used, is about meeting specific targets, which is about achieving the "right" results and impacts of the actions implemented, although the concept's usefulness in the public sector is questionable, as there are difficulties in measuring it objectively. It has been often said that e-Government could bring more effectiveness to the provision of public services by on one hand, facilitating citizens' ability to gain access to public service providers – improving citizen-government communication, and reducing the time, the number of documents and the steps necessary to access the service – and by placing public information online and making it available to all, therefore increasing government's transparency and political accountability.

E-Government's potential for increasing effectiveness does not only lie in substituting paper-based with online-based services. It could also improve, according to advocates, government's responsiveness to citizens' through facilitating its availability to target public goods to specific citizens, besides being able to offer completely new, beneficial services otherwise unavailable (Danziger and Andersen 2002; Heeks 1999).

Much of the literature on e-Government effectiveness until the mid-2000s has been largely focused, although not exclusively, on the "maturity" and sophistication levels of portals and online services (Layne and Lee 2001; Silcock 2001; Stowers 2004; Undesa 2008; West 2007)⬚. These models viewed the development of e-Government as an evolutionary process that starts from simple government websites that develops into sophisticated transactional portals⬚. Various assessments have categorized countries according to their stages of development based on the existing models (Accenture 2003, 2009, 2014). For example, using a content analysis of government websites in 198 different nations, West (West 2007) measures the online information and services – such as the availability of e-mail addresses, comments areas, non-native language translation, disability access, number of public services fully online, etc. - and discuss how e-Government has progressed overtime globally.

Within this widespread evolutionary view until the late 2000s – often becoming themselves a self-fulfilling prophecy as countries wished to score well in the "modernity" competition – the attention was given to the swift, and inevitable, progression of e-Government through defined stages[14], ranging from the information stage – the web presence of public Agencies – to the transaction stage, where public services would be offered online 24x7. This demand driven and technology-fuelled process, with the purpose of facilitating the life of citizens, would in turn supposedly lead to a transformation of the public sector.

Some researchers agree that the existing evaluations of e-Government effectiveness methodologies do not support a comprehensive and policy relevant assessment of e-Government (Bannister 2007; Heeks and Bailur 2007; Kunstelj and Vintar 2004), as they have been too narrowly focused on services delivery and very little attention has been given to the relationship between back-office of processes and organizational structure and the intensive use of ICTs. In e-Government research there has been a tendency to "decouple" electronic or virtual entities from "real entities", best exemplified by those numerous studies based on websites and e-services analysis, and the e-Government maturity level models (Heeks and Bailur 2007; Waksberg-Guerrini and Aibar 2007). The data about the number of services available, their maturity level, the availability and number of e-mail addresses and contact forms, the usability of the websites and even the availability of electronic participatory mechanisms are interesting and in many cases deserve great attention, but in order to analyse changes within an organization it is not wise to limit the empirical data to the website. They are part of an organization, but they are not mirrors of what happens in governments in terms of the usual e-Government achievements. They are best seen a distorted mirrors producing sometimes-impressive mirages.

Looking deeper at the nature of these indicators, we notice that transformations may not be captured or perhaps even hidden by them: for example, at first sight, having more transactions performed online is a good indicator of more efficiency in terms of paper used, time spent by citizens queuing, etc., but on the other hand, it may hide the very fact that if re-engineering of processes and working methods were to take place, such transactions might be considered

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[14]Some authors agree that these stages could overlap, but generally, these models are thought as a progressive path.

redundant and fully ceased to exist. If we follow this logic, we will continue to see "fully available online services", however designed to be nearly as complex as their paper-based analogues, showing a simple transfer from the offline disorganized logic to the web (J. Fountain 2005; Waksberg-Guerrini and Aibar 2007).

UNDESA may be starting to reflect these changes in measuring e-Government development in their most recent reports. They have published the E-Government Survey report biannually since 2001, assessing websites of all countries that have an online presence, based on a conceptual framework that encompasses three important dimensions: provision of online services, telecommunication connectivity and human capacity. This framework remained consistent across survey periods, while its components have been adjusted to reflect the development of the dimensions. If in the beginning the provision of online services was measured in five stages – "emerging", which referred to a simple Departmental website with government and contact information; "enhanced", a stage where dynamic features appeared, such as links to other Agencies, searching facilities, and email addresses; "interactive", where more sophisticated two-way interactive features were presented; "transactional", where it became possible to run services completely online; and, finally, "networked", where services were fully integrated and portals deliver all services irrespective of the Department - in their latest report, they write, reflecting the changes in aims and hopes surrounding e-Government:

> "The e-Government story may not be new but it is entering a new episode. Lowering costs is still an important consideration in service delivery, but adding public value is gradually taking over as the primary goal of e-Government. The view of an "e-Government maturity model" no longer holds as e-Government goals are constantly evolving to meet emerging challenges and increase public value. Emphasis is now being placed on deploying a portfolio of e-services that spans functions, business units and geographies, at varying local or municipal levels, thus increasing the value of service offerings to citizens by effectively adopting disruptive technologies in an adaptive and scalable manner." (United Nations Department of Economic and Social Affair 2014, 14)

It is important to notice that most studies and reports about e-Government tend to neglect the development of call centres. They evolved from being decentralized Departmental telephone

numbers with no standardized answers and procedures, to being part of multi-channel strategies – where one could call requesting a service and receive an email and/or SMS when it is completed – and most often the preferred mode for getting in touch with public administrations (Klievink et al. 2008). Call centres adopted the emerging Information and communication technologies - to offer consumers easy access, closeness, and personal information – and they frequently gather and process information from citizens in the same systems and databases that are used to offer information and services through the Internet, thus standardizing the contents and quality levels, giving a common look and feel of the whole government interaction experience, and improving the external image of public bodies. Generally speaking, the call centre and its development are one of the most significant tools for the evolution of e-Government.

More recently, some attention has been given to the demand side, with assessments interested in the take-up of services and on citizens' level of satisfaction with digital government: what is the actual use of the existing online services? Are "customers'" needs being met? (Comitê Gestor da Internet no Brasil 2014; Pew Internet Institute 2010; United Nations Department of Economic and Social Affair 2014). For instance, according to a Pew Research Institute report (Pew Internet Institute 2010), in 2010, in the United States of America, 46% of adults have looked up what services a government Agency provides and 33% have renewed a driver's license or auto registration; in Brazil, of the 51% who used the Internet in 2013, 68% used electronic services. Less frequent are detailed surveys about users' opinions about individual e-Government services. Examples of these are the national survey conducted in Brazil (Comitê Gestor da Internet no Brasil 2014), that ask citizens opinion about specific groups of e-services. The general benchmarks about user take-up may be useful for digital inclusion policies, as they identify the users and non-users in different analytical strata, whereas the more specific ones – those that encourage feedback about services from citizens – could be helpful in building more responsive and permeable governments.

Current e-Government research and evaluation methodologies do not easily capture transitional processes towards a *transformed* administration because they mostly focus on the availability of the structure of a digital government, and not on its dynamics. These studies show that there is a trend of improvement in service delivery, because the simple fact that they are made available

online raises an awareness about their quality and the digital inclusion of the population. However, an exclusive look at front-office results may cause a kind of theoretical mirage: they may give a false impression that the rest of the organization has already undergone a deep transformation process. The question remains – are Departments working towards a more collaboratively, relational, networked model of government, moving away from the "silo-like" model? In addition, to what extent is this trend based on ICT innovative uses?

> "The old way of organizing work is patterned on a factory, a hierarchical system. The system has top management, middle management, and workers, who are seen as cogs in a machine, programmed by those at the top of the pyramid to do simple tasks over and over. This approach forfeits the greatest asset of the organization -- the unused brain power, energy, and creativity of the men and women in the organization.
>
> The factory model has outlived its usefulness. Today's computers and communications let us organize to work in a new way. Based on the "distributed intelligence" concept in computing, this new model distributes information and the tools to use that information throughout an organization. Decision-making authority can be placed with employees on the front lines, where change is encountered first." (Gore 1997)

Are we moving toward the view Al Gore had in 1997?

3.2. The Involved Citizen?

3.2.1. Representative Democracy Deficits and Participation

Much has been written about the alleged present crisis in politics, democracy and representation[15]. In the last quarter of the 20th century there was a lively debate about the collapse in the confidence and legitimacy in traditional models of democratic governance,

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[15] For a synthesis of the discussion, see Lavalle, Houtzager, and Castello 2006; Manin 1997.

traditional structures and decision-making processes, which was reflected on, for instance, falling voter turnout, lower levels of public participation in civic life, and public cynicism towards political institutions and parties. In Latin America, although levels of confidence in democracy and institutions have recently increased to levels similar to 1996, after a downturn in the beginning of the 2000s, Latin Americans have more trust in the church, the television, the military and the banks than in government and other state institutions.

FIGURE 1 – LATINOBAROMETRO: CONFIDENCE IN DEMOCRACY
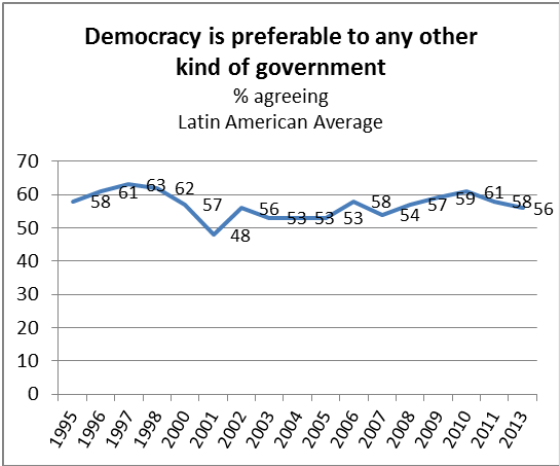
Source: Latinobarometro

FIGURE 2 – LATINOBAROMETRO: CONFIDENCE IN INSTITUTIONS
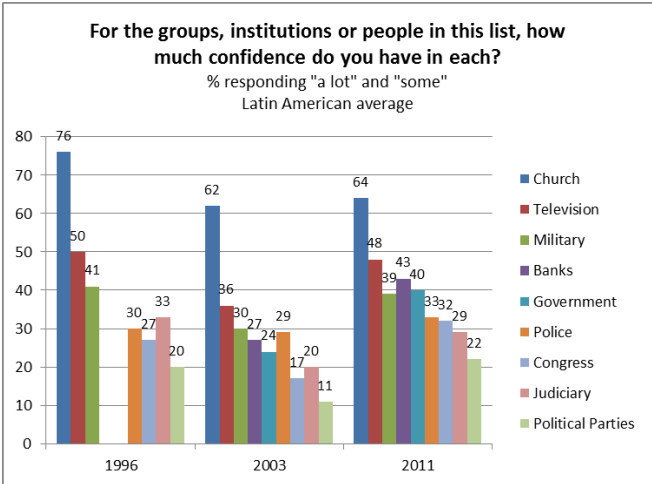
Source: Latinobarometro

Similarly, the Eurobarometer survey asked citizens about their trust in the European Union, their national parliament and their national government. In 2013, trust in political institutions is at a relatively low level and continues to decrease – 25%, minus 10 percentage points since fall 2005 for national parliaments, and 23%, minus 8 percentage points since fall 2005 for national governments.

FIGURE 3 - EUROBAROMETER: TRUST IN EUROPEAN UNION INSTITUTIONS
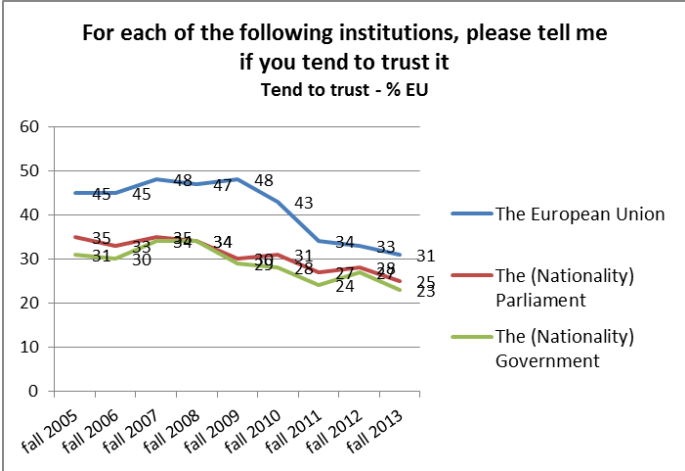
Source: Eurobarometer

Likewise, the Eurobarometer 2001 also asked European citizens whether they would like to take part in a "dialogue on Europe" – 26% said that they would, but 62% said that they would not, with 29% agreeing with the statement "My views would not be taken into account anyway" and 17% agreeing, "It would be a waste of time". In 2006, on average, only 34% of respondents tended to agree that their voice counts in the European Union; in 2013, this number fell to 29%. Worse, in 2008, 60% believed that their voice did not count in their own country.

According to Lavalle et al (2006) this crisis is more likely to be a misjudgement of a reconfiguration of representation; however, as the authors question, even if it is an erroneous interpretation of the transformations taking place, we must examine their effects on the quality of democracy. It is noteworthy that the latest generation of institutional innovations, such as participatory budgeting and thematic councils in, for instance, health, LGBTs rights and the environment, go beyond the electoral process and move in the direction of government continuous accountability and representation, especially in areas of public policy design and implementation.

One of the problems facing modern democracies which is also contributing to the low trust in traditional models of governance is the increasingly high complexity of governments – in the past century, the size and scope of all levels of government have expanded rapidly, as well as the network of actors participating in the public governance. Consequently, the scope and amount of decisions being made have also expanded greatly, which have been most frequently delegated to technical experts instead of being made by elected officials (Creighton 2005). Thus, a point of contention is how to ensure that citizens' will is expressed in those decisions that are not necessarily technical – such as "equity" or "environment sustainability" – taken by non-elected officials. Dewey, in "The Public and Its Problems", talks about the essential need to improve the methods and conditions of debate, discussion and persuasion – not only during the exercise of representative democracy – to ensure that there exists a fully formed public opinion, as experts "[I]n the degree in which they become a specialized class, they are shut off from knowledge of the needs which they are supposed to serve." (Dewey 1954, 364). Dewey concludes:

> "The important consideration is that opportunity be given that idea to spread and to become the possession of the multitude. No government by experts in which the masses do not have the chance to inform the experts as to their needs can be anything but an oligarchy managed in the interests of the few. And the enlightenment must proceed in ways which force the administrative specialists to take account of the needs." (Dewey 1954, 365)

This concept is close to the literature that deals with Empowered Deliberative Democracy (EDD). Fung and Wright (2001) consider that the erosion of democratic vitality is not necessarily an inevitable result of government increase in size and complexity but, instead, "the problem has more to do with the specific design of our institutions than with the tasks they face as such" (Fung and Wright 2001, 6). The authors advance an agenda that focus on alternative political and administrative designs for deepening democracy, most notably, as exemplified by their case studies, on the involvement of ordinary people affected by very tangible problems in developing solutions to these problems.

In its origins, e-Government meant first an opportunity for managerial reform, rather than a way to increase transparency and revitalize democracy and citizenship (Chadwick 2006). Gradually,

these latter aspects appeared as spillovers from the attempt to increase efficiency and effectiveness through e- Government:

> "Direct effects of e-Government include cost effectiveness in government and public operations, significant savings in areas such as public procurement, tax collection and customs operations, with better and continuous contacts with citizens, especially those living in remote or less densely populated areas.
>
> Indirect effects are no less important, and include greater transparency and accountability in public decisions, powerful ways to fight corruption, the ability to stimulate the emergence of local e-cultures, and the strengthening of democracy" (InfoDev and Center for Democracy & Technology 2002, preface)

Given the uncertainties about cost reductions and efficiency gains, perhaps transparency, accountability and participation are in fact the most transformational features of e-Government that have the potential to reinvent the relationship between citizens and the administration.

3.2.2. Transparency and Continuous Accountability

The concept of accountability remains a highly debated theme in the social sciences. Recently, theoretical efforts have shifted from the normative debate about democracy models to understanding the mechanisms of new extra-parliamentary participation (Warren 2009), particularly mechanisms that confer legitimacy and consent to the actors who participate in these spaces. Accountability is beginning to be understood less from the perspective identified with the electoral process and formal mechanisms of procedural control, and more, in the context of new spaces of participation, as a process of "continuous accountability of the government" (Abrucio and Loureiro 2004), where extra-parliamentary participatory mechanisms are incorporated in the concept as components of institutional control during the mandate.

In this context, e-Government has been considered a means to increase transparency and accountability by more effectively facilitating citizen's access to information and their

involvement in governmental activities. However, although the concept of transparency is often identified with the concept of accountability, there are studies that question the very limits of transparency in contemporary society. Although governments worldwide are increasingly committed to providing information, reports and data about their performance, there is little evidence that ordinary people make effective use of this information to monitor and hold governments accountable (Pollitt 2006). Furthermore, the public information about government actions often carry with them political decisions taken in contexts not always understood by citizens. The "principal-agent" model, often used to justify the adoption of greater transparency – as it would reduce the asymmetry of information between governments and citizens – does not cover the complexity of political choices made in the public sphere (Filgueiras 2001); one argument for greater transparency could be that governments may have an interest in reducing information asymmetries, although this may mean a loss of political power, to recover the citizens' trust. Studies about the relationship between making information and interaction channels available online and the opening up of governments are inconclusive. Welch and Wong (2004), analysing the websites of 14 countries found that, while it is true that generally e-Government facilitates more interactivity and transparency, the general characteristics of the civil service as well as the specific characteristics of Agency matter, as technology is adopted and adapted to meet institutional and organizational needs: "It is a myth that e-Government will automatically and dramatically change the accountability nature of public organizations. The question of "whether e-Government promotes accountability" cannot be answered completely without knowing what kind of bureaucracy one is referring to in the first place" (Wong and Welch 2004, 291).

For these reasons, a simplistic conceptualization of transparency seems to be insufficient as a normative foundation for the deepening of democracy in the definition of public policies. The disclosure of increasing amounts of information is essential but insufficient to ensure continuous accountability of governments before society. A concept of transparency that wants to offer a normative foundation for effective democratic accountability cannot be confined to the mere publicization of information about the state of affairs in the public sphere. The decision-making and the information production processes must be understood in light of the political and administrative context that gave rise to them. These complex political processes involve a

sequence of decision-making at different levels of the government administrative apparatus. Chief executives, ministers, secretaries, parliamentarians, control Agencies, bureaucrats and participatory spaces have, depending on the public policy agenda, different roles in the formulation and implementation of policies. There are several reports of successful experiences in which citizens are invited to know the intricacies of decision-making, as the experiences of electronic participatory budgeting in the Brazilian city of Belo Horizonte and the numerous thematic councils in several countries. In addition, there are interesting accounts of experiments in which citizens are called upon to help define the format in which the information about government performance will be disclosed. In Juquiti, in the state of Pará, Brazil, where communities affected by the installation of a large aluminium plant refinement were invited to build indicators from various areas of public policy that would be understandable from their own experience.

Citizen participation in decision-making and formatting the information to be disclosed implies a transparency not only of results, but also of the political and technical processes that produce the information, as well as of the administrative procedures that give support to policymaking or service delivery. Therefore, it seems essential to better qualify the concepts of transparency and accountability within the e-Government context. Transparency does not refer only to publishing information about a government Agency or to facilitating access to service seekers. There is a distinction between what Halachmi and Greiling (2013) call a *passive* form of e-Government, where the relationship between citizens and government Departments comes down to requesting a service or fulfilling a legal obligation, such as updating information or requesting a permit, and a more *active* form of e-Government. An active form of e-Government means enabling citizens to interact and track live and electronically the administrative procedures of a given unit or Department, in such way that they obtain a better understanding of government operations and can influence priorities and operation procedures. This kind of transparency that shows not only static information or financial performance on a particular Department, but allows monitoring of how it conducts itself, for example the workflow of a pothole fixing request and the professionals involved in performing the service, opens an opportunity to make Departments less opaque and more open to participation. This type of transparency and accountability that e-Government may facilitate, may amount to a reconfiguration of the

"bureaucratic experience" for citizens, as some radical views of e-Government advocate, "involving citizens more fully in regular policy making and administrative processes", moving toward a more networked governance (Chadwick 2006, 197).

If we understand that the procedural transparency and the greater public access to technical and political arenas of decision-making are necessary conditions for the concept of accountability to provide answers to the vaunted democratic deficits of representative government, we understand the importance of extra-parliamentary participatory spaces in this context, particularly electronic participatory spaces. Looking at participatory spaces from the prism of theories of accountability and feedback, and no longer from a critical perspective of the representation democracy model, implies resigning, or at least revisiting the ideas historically associated with participation.

3.2.3. Electronic Participation

Contemporary literature on participatory spaces as instruments of accountability aims to provide theoretical support for understanding everyday participation. Issues dear to democratic theory, such as political legitimacy, commitment and quality of representation are no longer restricted to the limits of representative governments and now guide the theoretical analyses of participatory spaces (Lavalle, Houtzager, and Castello 2006; Warren 2009). A strand of the literature is concerned with the design of participatory mechanisms and its implications for participation and accountability (Avritzer 2008; Warren 2009). Another dimension is concerned with the construction of participatory institutions and mechanisms that effectively close democratic gaps of representative governments.

In order to amend the current weak connection between citizens and governments, researchers and commentators increasingly recognized that new forms of interaction between the citizenry and the State must emerge:

> "The old dichotomy between experts and the public is false and sterile. Considerable expertise resides within the public (...) and the trick is to find innovative ways of drawing

out that expertise and feeding it into the hitherto bureaucratized decision-making process."   (Coleman and Gotze 2002, 12)

For some authors, as (Warren 2009), aiming to involve the "average citizen" can be a frustrating task in an era where countless attractions dispute the time and attention of individuals. For this reason, citizens prefer to express the political participation through less costly means, such as voting, or joining neighbourhood associations, social movements and NGOs that act on behalf of the individual and can alert them if engaging in some particular issue becomes necessary. In this context, designing participatory mechanisms that not only involve organized actors but also ensure greater representation of the population may mean a departure from some traditions of participatory processes.

One way to increase the representativeness of participatory spaces – for instance, to overcome the power of social mobilization of organized groups over other fairer criteria as parameters for defining public policy – is to use random selections of the population universe. Another way is to reduce costs for participation in order to make it more attractive to the largest possible number of actors. In this field, the possibilities brought about by recent technological advances are remarkable. In this context, new information and communication technologies would facilitate citizens to enter, at some level, the decision-making processes. Equally important, from the point of view of the administration, as the volume of feedback increases, ICTs can be used by administrations to organize and turn the resulting data into useful information.

E-Participation can be broadly defined as the use of information and communication technologies to broaden and deepen citizen participation, allowing citizens to connect with one another and with their elected representatives, governments, political organizations, social movements and even the media, without the limits of time, space and other physical handicaps (Hacker and Dijk 2001; Macintosh 2004). Forms of asynchronous interaction and without spatial boundaries can reduce the costs of participatory processes for both the public administration and the citizen, especially in large jurisdictions – allowing government Agencies to meet stakeholders, conduct meetings and conversations and present transparent and legitimate reports in a few online sessions, rather than having to go through long processes of public hearings and involving numerous facilitators to record, compile and produce publications; for

citizens, online tools allow participation from the comfort of their homes, without the burden of commuting and working time costs (Aalto-Matturi 2005; Chadwick 2006)).

E-Participation – online voting, sending e-mails to a legislator, filling an online poll about a public service, etc. – is a concept that permeates the main "e" areas of practice and research, such as e-Government, e-Democracy, and e-Governance, and related study of relationships facilitated by ICTs between administrative, political and civil society spheres. As Macintosh, Coleman and Schneeberger (2009) and Sanford and Rose (2007) agree in their literature reviews on the theme, *e-Participation* is an hybrid term, inherently interdisciplinary, fed by theoretical perspectives ranging from "democratic theory (which is concerned with normative arguments for political participation), political science (which studies participation empirically), communication studies (which relate to channels and patterns of mediation), technology studies (which relate to the design and operation of e-tools), and information science (which explores the ways in which data and knowledge are socially produced and distributed)" (Macintosh, Coleman, and Schneeberger 2009, 1).

Its relevance becomes more evident with the emergence of the social web and the web-as-a-platform logic of user-generated content in online economic, social, and lately, political activities. If the logic of citizen participation initiatives have been predominantly top-down, in other words, participatory processes whose directives are defined and shaped institutionally, with the evolution of new ICTs and the intensification of their use, we can also fathom the emergence of bottom-up processes of "joining in". For instance, processes of user content creation such as the ones epitomized by *Amazon, eBay, CouchSurfing* and, more recently, *AirBnB* and *Uber* recommendation systems in the private sector, have been implemented in e-Participation projects such as *Bogota: My Ideal City*[16], a website that allows for citizen participation at every stage: citizens can share ideas, respond to one another, and urge local officials to introduce initiatives in their neighbourhood.

We can also include under e-Participation a mix-match of top-down and bottom-up projects, such as deliberative polling, whose purpose is to establish a base of informed public opinion on a

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[16] http://www.miciudadideal.com/

specific theme by randomly inviting a small group of participants of a large public poll to discuss it. Finally, more recently, as governments open their data online, such as the *Rio Datamine[17] and Portal de Datos Públicos de Chile[18]* initiatives, citizens, private and not-for-profit organizations can participate in remixing and redesigning government information for creative and useful applications.

E-Participation deals not only with formal political processes of citizen participation. Sanford and Rose (Sanford and Rose 2007) define e-Participation as "joining in" in a communal discussion (political deliberation) or taking some role in the process of decision-making, both of which can take place in interactions between the civil society and the political sphere, or between civil society and the administration. In other words, we can talk about participation in the formal political sense or outside this system but with the purpose of influencing decision-making (political activism) – both themes commonly dealt in the e-democracy literature – but we also call e-participation the participatory initiatives of citizens directly towards administrations with the goal of improving public information and services. It is exactly in this second type of e-participation where one of the main themes of this work fits in: the online involvement of citizens, through complaints, suggestions and information requests.

More recently, the topic of *citizen as a producer* in e-Government has emerged, particularly with the rise of the concept of Web 2.0. in the late 2000s. As we have learned from recent contributions in Science and Technology Studies (STS) scholarship, the traditional understanding of users in the social study of technology as passive actors in the development of technical artefacts, is presently being challenged by new insights that grant users a more active role: users are not always passive receivers or mere consumers of technical devices, but may have an active role in shaping their design and ultimate fate, through different processes of domestication and appropriation by which they adapt technology to their own objectives and interests and to their specific contexts of use (Katz and Rice 2002; Oudshoorn and Pinch 2003; Silverstone and Hirsch 1992).

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[17] http://riodatamine.com.br/

[18] http://datos.gob.cl/

E-Government research has not been very sensible to the role of users. Most initiatives are analysed with an almost exclusive focus on the design side, paying less or little attention to their actual use (Heeks and Bailur 2007) and assuming a passive and uninteresting role for users. However, if until recently the "focus on the needs of the citizen" was more of a rhetorical concept than actually present in government websites, things might be changing with electronic interaction channels, social media and the opening of government raw data for public manipulation. The web has more intensively become an "Internet-as-platform"(O'Reilly 2007) as opposed to the Web as a "source of information ", one that supports the use of social networking sites, wikis, blogs, vlogs, *tumblrs*, tags, RSS, mashups, etc., facilitate creativity, collaboration the development of social ties, and sharing content through peer-to-peer networks.

Within this bottom-up *e-Participation* logic emerges the concepts of *government 2.0*, *open government* or even *Wiki government*. They are based in similar concepts of governance, *network government* or *relational government*, as weight is given to the co-production through networked collaboration - of services, legislation, decision-making etc. Trust and the *hacker ethic*[19] (Himanen, Torvalds, and Castells 2001) become the ligament of these interactions. It is about constant conversations between all actors. Some advocates would say that e-Government could facilitate the emergence of a flexible and dynamic model of the public sector, giving users convenience, accessibility, and timeliness with regard to public service delivery, at the lowest possible cost in terms of time and effort (Chadwick 2006). But are those promises of e-Government happening? Is it a space for extra-parliamentary participation, where citizens would be the co-producers of public services, by easily giving constant feedback with the pursuit of improving and reengineering them?

The European Commission report "Web 2.0 in Government: Why and How?" (Osimo 2008) indicates some areas where Web 2.0 is already applied in public administration: In the back office, Web 2.0 tools can be used to facilitate interdepartmental cooperation, as is the case of *Intellipedia*, a wiki platform managed by the CIA that allows the direct private collaboration

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[19] "The hacker ethic refers to the feelings of right and wrong, to the ethical ideas this community of people had -- that knowledge should be shared with other people who can benefit from it, and that important resources should be utilized rather than wasted", interview with Richard Stallman at Meme Online Magazine (Bennahum 1995).

between analysts of all U.S. intelligence Agencies, and also for Departments-citizens collaboration, such as *HumanizaSUS Network*[20], a social network of health care professionals and ordinary citizens interested or already involved in processes of humanization of the health management and care in the public health system. In the front office, cases like the website *Mybikelane*[21] in the Toronto, Canada, a non-governmental website that allows cyclists to post photographs of illegally parked cars, show that although far from co-producing of services, Web 2.0 may facilitate some citizens' involvement.

3.2.4. Organization Survival and Feedback Loops

Public participation that goes beyond the traditional democratic institutions is not only important for political and civic reasons, but also, at the organization level, the availability of feedback channels and active listening to citizens is also paramount for the good functioning of the organization.

Early researchers on complexity theory (Ashby 1956; Wiener 1965), have stressed the importance of the role of positive and negative feedbacks to the working of a system or the mind of an individual. Although constrained by bounded rationality (Simon 1955) – the decision making process is limited by the information available, cognitive restrictions, and the amount of time a person has to make the decision – individuals do not simply stop thinking, or making predictions and decisions because they do not possess complete information; individuals are reasonably good at deductive logic and use it sparingly, but are excellent at observing and recognizing patterns. Through this special ability, when we face our problems, we seek to recognize patterns. We then simplify the problems, using the patterns to construct temporary working internal models or hypotheses. Next, we make localized deductions from these temporary situations, and act. Finally, with the feedback received from the environment, according to our actions, we strengthen or weaken our beliefs in our current models and hypotheses, leaving aside those that

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[20] http://www.redehumanizasus.net/

[21] http://www.mybikelane.to/

no longer work, and replace them with new ones. Thus, when we cannot reason with perfection, we create models from our observations to fill the "gaps" that exist in our knowledge.

The importance of feedback is dealt with in the literature of sociology of organizations as well. Hirschman (1970) sees that the incorporation of mechanisms of collection and compilation of feedback are vital for the development and surviving of organizations. We can look at organizations as complex organisms that learn from the feedback received from the system (Easton 1965). Being successful in this process, or closing the feedback loop, requires not only that citizens be listened to but that their voices be acted upon – "Even for top-down projects driven by experts, new technologies can help determine whether the projects are working well or not, and allow for midcourse corrections to help the projects achieve the desired impact" (Whittle 2013).

Furthermore, citizens may alienate themselves from participative processes if they feel they are not being listened to, leading to a deterioration in the organization, the policy making process and the delivery of public services (Hirschmann 1970). In his treatise "Exit, Voice, and Loyalty" (Hirschmann 1970), Hirschman states that members of an organization, or any form of human grouping, have essentially two possible responses when they perceive that the organization is demonstrating a decrease in quality or benefit to the members: they can exit (withdraw from the relationship) or they can voice (attempt to repair or improve the relationship through communication of the complaint, grievance or proposal for change). The greater the availability of exit, the less likely voice will be used. Conversely, by providing opportunity – by offering channels and listening for instance – for feedback and criticism, exit can be reduced.

This is applicable for citizens of a country who may emigrate or protest, or to customers of a shop, who may ask for the manager or shop elsewhere. However, the same logic cannot be exactly applied to public policies and services, as in most cases citizens do not have the option to "exit". If that is the case, why citizens do not voice their dissatisfaction? How to explain the lack of participation? One possible explanation is that "exiting" does not have to be physical, but can be mental or emotional. Citizens, when feeling that they are not being heard, could be said to exit from civic or political participation (when for instance vote is not mandatory). This exit could provide an explanation for the resignation with the low quality of public services in low income

countries, or for protest voting, such as electing a clown for the deputy house, as it happened in the 2010 Brazilian elections. Citizens may also feel compelled to use extra-parliamentary and non-official spaces to voice their opinions, as seen in the protests of the "indignados" in Spain, the "occupied" in the USA, the "spring revolutionaries" in the middle East and the "vinegar uprisers" in Brazil – the question is whether governments are listening and incorporating these feedbacks into policy-making. On the other hand, if channels for feedback - criticisms and suggestions - are strengthened and placed as a central mechanism for organizational, policy making and service delivery improvement, citizens may feel compelled to continuously voice and participate.

In this sense, electronic participation, by enabling greater participation at lower costs, could reduce the deficits shown by representative democracy. However, data transparency and more channels of participation are not sufficient for citizens to join in and improve the quality of decision making about complex issues. As we have argued so far, continuous accountability requires transparency of data and information on government performance but also transparency of the processes that influence policy-making decisions. In this respect, if electronic participation is presented as one of the most promising mechanisms for continuous accountability and ultimately, organization survival, it is essential to look for systematic evidence looking at what extent the input given by citizens is actually taken into account for policy making an service delivery.

One could argue that the lower costs to participants using electronic channels, as internet becomes increasingly available to citizens, are passed on to government Agencies – which need to store and process a larger number of data and information and respond to citizens –, therefore the adoption of digital mechanisms should be seen more as a way to broaden and deepen citizen participation in the process of proposing, planning and monitoring of public policies rather than a way to increase efficiency in the public sector. On the other hand, from the prism of the organization survival, citizen input may not directly decrease costs, but in the long run, by calibrating decision-making, may help governments opt for more efficient and effective projects.

3.3.   Network Administration: the End of Silo-Government?

3.3.1. Weberian Bureaucracy

The theory of modern bureaucracy, central to the development of 20th century governments, emerged with Weber, who constructed an "ideal type" of public administration, which he believed was the only form of organization able to cope with the complexity of modern enterprise of industrial capitalism and parliamentary democracies. There is a clear separation between the State and the Market and the State and civil society, which oversees it. In a Weberian Bureaucracy, it is the first time that the politician and the public administrator are two separate figures (Bresser-Pereira 1996); leadership and authority are derived from a rational-legal framework (instead of charisma and tradition) and guided by the objectives of efficiency, calculability, predictability and stability. In other words, optimum means to given ends. It is based on i) functional differentiation, precise division of labour, and clear jurisdictional boundaries; ii) hierarchy of offices and individuals; iii) files, written documents, and staff to maintain and transmit files; iv) employees who are neutral, impersonal, attached to a particular office, and finally v) on an office system of general rules, standard operating procedures, and performance program (Bresser-Pereira 1996; Peters and Pierre 2003). The main function of the traditional bureaucracy, what Rhodes (2014) calls its "craft", is to "provide policy advice for their political masters and oversee the implementation of the politician's decision", according to the structure, rules and rational-legal guidelines.

The welfare state period saw its peak over a decade World War II, where the small liberal state of the nineteenth century, whose function was to secure property rights and contracts, gave space to the portentous welfare state which it was expected that the State should provide all citizens social and economic needs (Osborne 2006). There is no consensus over the reasons for the welfare state crisis in 1970s, or whether it was a crisis of the model or capitalism itself, but in late 1970s and 1980s neoliberalism arose, which generally represented a set of ideas associated with the liberal *laissez-faire,* with less market interventions, represented by policies such as privatization, deregulation, free trade and cuts in government spending. Decentralization and administrative flexibility ideas began to emerge in the 1950s and 1960s, but an administrative

reform gains momentum in the 1970s, with the said crisis of the welfare state, culminating in major changes in the 80 and 90 toward a managerial public administration, inspired by market principles. The main criticisms to the Weberian Bureaucracy are that rules become ends in themselves, it lacks flexibility, which leads to a system that is poor at innovating or at embracing new ideas, there is a slow processing time due to batch processing and long cycles of feedback and adjustment, which in turn leads to sub-optimization of activities, and it is a structure is little oriented to meet citizens demand (Bresser-Pereira 1996).

3.3.2. New Public Management

One of the alternatives to overcome the Weberian bureaucracy shortcomings and the neoliberal and market-oriented critics with the welfare state was the belief in market principles to stimulate economic growth and boost innovative forces in all productive activities (Mayntz 2003). In this context, good management meant the adoption of private sector practices. The New Public Management has been characterized in various ways (Dunleavy et al. 2006; Hood 1991; Pollitt 1995). Many authors, in fact, believe that the NPM should be seen as a management tool menu. Rhodes (2014) summarizes its development in three waves. The first was the managerialism or professional management, with well-defined standards of performance, management by results and the concept of "value for money"; the second generation was characterized by ideas of market competition, such as decentralization and the restructuring of the incentive model in the provision of public services through outsourcing, for example. The third generation focused on excellence and efficiency in delivering public services.

Peters & Pierre (2003) summarize the structural changes in two points. The first change is the emphasis on the transformation of the public administrator into a manager and the importance of using the management tools of the private sector. These techniques possibly increased efficiency and performance of the public sector, especially in providing services, but less importance was given to the *public* nature of management in government and the need to discuss the values that guide the public sector with the various sectors of society (Stein 2002). The second big change is the very focus of public administration, which turns to the citizen-client and her

individual relationship with the state, since government is taken as a firm and citizens are considered service costumers. The government comes to depend more often on the private or third sector to deliver services to citizens, presumably more efficiently and effectively. In the same direction, the reforms also emphasized more proximity between citizens and the public bureaucracy through administrative decentralization and devolution projects. More accessible and informal forms of interaction between the government and the citizen became central to this model; e-Government portals are examples of this effort, but always within the context of public service delivery and "customer" satisfaction.

In this context, we could say that there are clear links between NPM and the promises of better services with lower costs associated with many ICT and e-Government initiatives. Beyond the individual and customized proximity with the citizen, it was thought that ICTs and e-Government could be a tool to break with certain hierarchies and bureaucratic obstacles, making it possible to decentralize efficiently the management of various Agencies and Departments (Heeks 1999).

One of the common criticisms toward NPM lies in the debate surrounding the very meaning of efficacy and efficiency with regards the objectives of the public sector; second, it also lies on the increased level of complexity of the relationships between public sector Agencies and Departments and the private sector, showing an inability to articulate the governance of public services in an increasingly pluralistic world (Dunleavy et al. 2006; Osborne 2006; R.A.W. Rhodes 2007). Even if we consider the increase in performance in the provision of public services, transparency and accountability may have decreased in some respects, since, with the justification to preserve commercial competitiveness, the content of contracts with the private sector many times is kept secret. Moreover, by focusing on management techniques aimed at efficiency and performance, and marginalizing the policy-making process, which involves different actors in society, the new public management often ignores ethical, political and social dimensions – aspects that differentiate the public from the private sector.

3.3.3. Collaboration, Coordination and Transformation

The critique of the hierarchical bureaucratic model is relevant but perhaps unfair, because public administrations were not originally designed to be efficient and offer customized services to citizens, but mainly to ensure compliance with the law uniformly in a fair and responsible manner (Peters and Pierre 2003). Is it possible, then, to have the efficiency and flexibility of the private sector without giving effectiveness and accountability up?

The concept of 'network administration' is closely related to the network structure identified by several authors (M Castells 1996; Dijk 1999; Powell 1990) in order to characterize the new social morphology of the informational society, largely grounded in electronically based information and communication technologies (ICTs), where more and more social dimensions structure their relations and activities in networks. Networks are an old form of social organization – for personal interaction, reciprocal support – and offer flexibility and adaptability, essential characteristics for a complex and fast changing world as ours, but they have been bad performers in mobilizing and coordinating resources to execute projects. For instance, large centralized structures are the chosen model to conduct war or in the organization of mass production. Only with the emergence of the Internet, have ICTs taken a central place in the organization and network literature, as they allow networks to decentralize, with adaptation and flexibility, while coordinating objectives and decision-making. Economic activity in general adopted this organizational form as a strategy to provide a response to the crisis of capitalism in the 1970s. Financial markets are now structured as a network of flows of information and capital that occur for the first time in history in real time and on a global scale. Companies increasingly incorporate the network model to restructure their core activities as the sole means of surviving in the context of globalization.

Castells (1996) stresses that the phenomenon of the network structure that characterizes the information and communication society is aided by, although not a simple consequence of, the intensive use of ICTs. He elaborates on how businesses and the economy in the globalized world operate nowadays, pointing out to important characteristics of this new organizational form, such as the organization of activities around projects (of limited duration), the flexibility in reconfiguring to complete them, the internal decentralization and cooperation with other

companies (with the proliferation of alliances and connections between networks), affecting the core operations of the business activity (Manuel Castells 2001).

By way of analogy, the network administration could be conceptualized as an organizational form characterized not only by the connection and level of interoperation between the information systems and the management procedures but also by a tendency to change the operation of the organization towards more flexible management, more adaptable to changes of the environment and with relationships that are more horizontal than those which predominate in the traditional administration. Finally, the network administration could be associated with the concept of modern governance, inspired not only on the network organization literature (Manuel Castells 2003; Powell 1990), but also on social and organizational capital (Granovetter 1973; Tsai 2000) and organizational sociology and policy networks (J.E. Fountain 2007; Milward and Provan 2000; Osborne 2006; Uzzi 1997), which refer to a more distributed and relational manner of governing than that found in the old hierarchical model, involving the direct cooperation between public and private actors in the public networks to achieve shared objectives, leading to an increase in trust, and political legitimacy (Mayntz 2003; R A W Rhodes 2014). In this system, citizens have a double role of users of public services and co-managers of administrative and political procedures, through new forms of participation and interaction (Chadwick 2006; Welp, Urgell, and Aibar 2007).

In e-Government front office, the network configuration is clearer, as it is essentially independent from a physical integration of systems and databases. This online network arrangement can be exemplified by the "virtual Agency" (Jane E. Fountain 2001). Although initially government's presence online was represented by scattered Departmental and Agencies websites, with no design and information standards, in the last decade public administrations have placed special effort into centralizing services and information around life events[22] or themes. Virtual Agencies signal an important shift toward a citizen-centred service delivery approach, as it recognizes that having a detailed knowledge of the structures of the government, which Department is

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[22]Online services organized around life events themes, such as "birth", "marriage", "divorce", "death", etc.

responsible for each procedure, is not a prerequisite for accessing public services (Chadwick 2006).

Generally speaking, interdepartmental websites allow for integration of distinct Agencies and Departments in a way only visible on the Internet, but most often programs and services are not fully integrated in the back office, therefore structure, jurisdiction and budgetary autonomy of these organisms remained unchanged (Jane E. Fountain 2001). In the USA, the *GovBenefits.gov*[23], a portal that offers information and services related to grants, is indeed a partnership of Federal Agencies with a shared vision that only exists online. In the same vein, the *Igualdade*[24] portal in Portugal brings together information and services about gender equality at all levels of government (local, regional and national). Most electronic services portals still are, in 2015, at best virtual Agencies that materialize an integration only in the online front office. In a citizen-centric perspective – or the "client" or "user" perspective – the guiding north that organizes the offer of services shifts to being focused on the citizen (demand) instead of auto-focused on the administration itself (supply) (Milner 1999). Ideally, the administration's web portal becomes the online single point of contact of services, offering one-stop-shop connected services, whose parts may belong to several different Agencies, of which the citizen does not need to be aware of in order to receive the service. Even being only "virtual Agencies", that does not mean, however, that there are no implications of these networked information and organizations for policymaking, organizational structure, culture, power, the capacity of the state, and governance (Jane E. Fountain 2001). The argument goes that, with time, organizational change will occur, "as the virtual Agency cannibalizes the "real" Agencies out of which it grew" (Chadwick 2006, 191).

A more networked administration shows further intertwined flows between the front office and the back office, representing a more complex inter-Agency coordination and collaboration. These types of arrangements have been usually focused on specific actions or services and not on one-stop-shops that are more comprehensive. For instance in Québec, Canada, it is possible to change a citizen's home address in several Departments and Agencies with a single online transaction.

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[23]www.govbenefits.gov

[24]www.igualdade.gov.pt

In British Columbia and Ontario, parents can use the "New-born Registration Service" to complete their new-borns Birth Registration at the Canadian national level and apply for their child's Social Insure Number card at the provincial level, and also have the option to apply for a Birth Certificate – all through a single integrated bundled service from Service Canada and the provincial partners.

So far, this section has been discussing the network administration in the sense of more horizontal, collaborative and integrated work within the administration itself, but we can also talk of a network state, with a more frequent, open and horizontal relationship with citizens. According to advocates, the existence of electronic participatory spaces, and more specifically, the availability of constant feedback mechanisms about public services, can be the ligament for "outward-facing networks", where governments go beyond electronic service delivery (passive e-Government), and use the new ICTs and the internet to incorporate citizens' opinions and deliberations on the process co-producing and reengineering public services (Chadwick 2006). The thesis will investigate whether this is happening and to what extent.

The "E-Governance and Citizen Information: The Generalitat of Catalonia in the International Context", conducted in 2004-2006 under the larger *Project Internet Catalunya* (Eduard Aibar, Welp, and Urgell 2006), is a comprehensive in depth study that analyses the organizational changes taking place as a result of the incorporation of technological innovations involving ICT. The authors analysed in the Catalan[25] government how the public and the administration relate with each other with the advent of ICTs, the transformations in the internal operation and organization of the administration with respect to the changes in the channels for communication with users and, lastly, the transformations in the way change and innovation are managed with the involvement with different players. Although the authors found clear indications of a transition towards a network-based model of public administration, they also identified main factors impeding or delaying this change: on one hand, the oppressive hierarchical structures that condition information flows – in that sense, this study agrees with Danziger et al (1982) that technological systems reinforces existing political structures, and with

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[25]They also carried out a short comparative study with Quebec, Emilia-Romagna and Scotland.

Meijer's (2008) empirical research, that showed that electronic communication does not transform Agencies into post-bureaucratic organizations, but instead facilitate informal horizontal communication directly linked to vertical structures – and on the other, the subsistence of a regulatory and legal framework that hinders the redesign of processes and procedures. Finally, they conclude that the result is "a complex situation in which procedures, projects and structures belonging to the two models coexist in a more or less tense fashion" (Eduard Aibar, Welp, and Urgell 2006, 142).

Other studies focused not on how and if governments collaborate and work in network to bring government information and services online, but instead on the barriers that prevent this movement to happen. A three-year project funded by the European Commission and led by the Oxford Internet Institute, "Breaking Barriers to e-Government" (Eynon 2007) investigates the legal, organizational, technological and other barriers to expanding e-Government services at the European level and attempts to define solutions to overcome such obstacles. Through review of existing e-Government research and analysis of the results of the online survey with key stakeholders in Europe, the project identified seven main categories of barriers: i) leadership failures; ii) financial inhibitors; iii) digital divides and choices; iv) poor coordination; v) workplace and organizational inflexibility; vi) lack of trust; and vii) poor technical design. Castells (2009) identifies several coordination problems related to the "network state", in particular those that emerge from the conflicting needs for efficiency (which led to devolution, fragmentation) and at the same time political legitimacy (as states have opened up more channels of communication with civil society "in the hope of halting their crisis of political legitimacy by connecting with people's identity"): (i) organizational, as Departments are more concerned with protecting their turf, since there are not appropriate incentives for networking; (ii) technical, when communication protocols do not work or when Departments have different levels of adoption of communication technologies, often times because they want preserve their control over their bureaucratic turf.; (iii) political, when the coordination strategy, both vertically, with political leaders, and horizontally, with citizens, it is not well designed and do not make clear the gains from networking, as the organizations involved lose bureaucratic autonomy (vertically) and should increase accountability (horizontally); iv) ideological, because coordinating a common policy means sharing a similar set of values, which requires certain compatibility that is not

always obvious; and v) geo-political, as nation-states are still guided by traditional political principles, i.e. to maximize the interests of nation-state and the personal and political interests of political leaders. Not denying that there are emerging coordination problems with the intensification of ICTs use and the questions they raise – for instance, is it possible to have a coordinated network administration and have the efficiency and flexibility of the private sector without giving effectiveness and accountability up? – we should also be careful not to conclude that the effects or consequences of technological innovation are universal, predictable and unidirectional. On the same token, social actors or social aspects involved are sometimes considered as "obstacles" to the autonomous path of technological momentum. When some authors talk about social or cultural "barriers", or even human "resistances" to e-Government, they are actually implying that technology is the natural and necessary path to which society should accommodate without much interference[26][27].

4.   CONCLUSIONS

The development of e-Government focused initially on the idea of a modern state that would be able to offer better services at a lower cost by placing services online and working collaboratively, reducing inefficiencies and the poor flexibility of the hierarchical bureaucratic administration. Early studies - academic and grey papers – centred around the level of maturity of online services. These studies focused mostly on the automation of services, not so much on their transformation. More recent studies target the back office, particularly on systems interoperability. However, those studies do not analyse the relation between what happens in the front office – how the final users interact with the services and other features available online or in shared service call centres – and the back office, in terms of organizational transformation. With the advent of the Web 2.0 - and to the turn to the original logic of the Internet, the co-producing of content between its users - and the rise of the concept of "citizen-centricity" in e-

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[26] For a detailed discussion about the different views of technology, see Chapter 2.

[27] For a critical discussion on the use of "resistance to change" as an explanatory concept for e-Government analyses, see Welp et al., 2007.

Government projects, it becomes even more imperative to study the confluence of the Internet and Information Systems and the rest of the organization.

When we look at the disruptive potential of e-Government in citizen participation – by extending citizen involvement to regular policy making, to tracking administrative processes and procedures, and to giving constant feedback about public services – we begin to question whether this is happening and having organizational implications. The dis-intermediation process that characterizes the web logic (Dunleavy and Margetts 2000) could allow for a co-production and co-design of services, through using citizens' explicit feedback and the information about their on-line behaviour, for the restructuring of the administration and public services. Therefore, in this thesis I explore the issues that come from the analyses of what happens in the middle, that is, in the traffic between webs and information systems and the rest of the organization. The transactions between on-line and off-line elements – the information flows – are the best site to discover, albeit subtle, organizational transformations.

Specifically, I will analyse, from an empirical point of view, if and how the new channels of communication and interaction between governments and citizens regarding public services that have emerged with the intensive use of ICTs (email, online forms, forums, chats, call centres, etc.) affect the organisational structure and dynamics of the administrations and how this in turn is reflected into the delivery of public services. Particularly, this research will focus on the *destiny* of the vast amount of aggregate information, produced by these interactions, about citizens' preferences and behaviour *regarding public services*, and how and if they affect the administrations. If we take a broad idea of Web 2.0 in the public administration context as the co-production and design of services, it becomes extremely relevant to answer if the above mentioned class of information is being used by governments, whether it is pressuring it to be more open and less hierarchical, and whether it is shaping and transforming the delivery and quality of public services, through simultaneously reorganising the administration and re-constructing services. Is the citizen becoming, besides the "final user", the engine of the transformation process, through her patterns of online service use and demands (Dunleavy and Margetts 2000)?

CHAPTER 3 – RESEARCH QUESTIONS AND ANALYTICAL FRAMEWORK

1. RESEARCH QUESTIONS

One of the hopes for E-Government, as detailed in the previous chapter, was that it would revamp public administration's efficiency, effectiveness and transparency by facilitating more networked forms of government. Following the development of the initial problematic presented in the introductory chapter, this research's interest falls on whether with the intensification of ICT-based interaction between governments and citizens, public administrations are experiencing some level of organization change.

The intensification of electronic interactions generates a vast amount of data and records on these exchanges. These data may have two distinct natures: they can be the result of the direct citizens' action to voice their opinion about a public service through a complaint or a suggestion, but they can also refer to the very use of the service available electronically. In other words, this second type of data is actually the electronic record the citizen leaves when using a public service. Aibar and Urgell (2007) theorize that the first type of data is used, if used, by the public administration in times of crisis in the provision of a service - that is, when a large number of complaints are received, the government acts reactively to improve service and mitigate the crisis. The second type of data could be used to improve and customize services to citizens, according to citizens' patterns of use and preferences.

It is noteworthy that, with the intensification of ICT-based interactions through channels such as call centres, online service portals, e-mails, online chats, etc., often centralizing a type of communication with citizens that before was almost non-existent or of little relevance, there are, as a result, possible changes in the work practices and organizational dynamics of public administrations as these technologies are enacted.

In this research, "ICT-based interaction" is understood as the set of new forms of interactive communication between governments and citizens made possible through the internet, mobile apps and call centres. A result of their use is a vast amount of aggregated information about

citizens' demands, complaints, and suggestions, on one hand, and patterns of use of online and telephone services, on the other. The search for transforming the vast quantity of data generated by online interactions into information and knowledge about customers has become paramount for the private sector, in the direct relationship with citizens, through CRM (Customer Relationship Management) tools and techniques, or in the redesign of process and improvement of service delivery. For instance, Customer Relationship Management (CRM), which has been adapted to the public sphere as "Citizen Relationship Management" (Schellong 2005), has been discussed as a concept for the private sector to start, maintain and improve relationships with customers to increase loyalty and, therefore, profitability. It is based on the collection of data about users' behaviour patterns, but it has traditionally emphasized the relationship with the citizen, rather than service improvement e an organizational change. Weinberger(2007) examines how Staples stores emulate online shopping to increase sales. Based on the data about how consumers go about to find the product they are looking for, Staples placed printer cartridges and cables in more than one place, because not every customer walks into a store to buy cartridges and cables for the same reason.

At the micro-level, several web analysis tools have become exponentially more sophisticated and offer new resources. At the macro-level, and outside the e-commerce world, "Web Science" intends to understand how the web works. For instance, from a computational perspective (e.g. semantic web), analysing how social coordination and collaboration systems can lead to the emergence of large-scale, coherent resources such as Wikipedia, or from a social science perspective, by analysing how digital records of network use could be used to understanding the sociological aspects of the Web.

In the public sector, this tendency of reorganizing and reutilizing data with the aid of new ICTs is more visible in the new wave of "open government" initiatives, as detailed in the previous chapter, that allow civil society to use and remix public data for their own projects and applications, increasing transparency and political trust. The concept of "big data" – what data scientists call the vast pools of unprocessed information in their networks as solution, if used intelligently, to the most pressing and complex problems - is also trying to find its way inside government work practices. For instance, the New York City has a tech-savvy and civic-minded

statisticians' team that has found a way to crack down on restaurants that were illegally dumping cooking oil into sewers in their neighbourhoods by comparing data of restaurants that did not have a carter service to haul away their grease with geo-spatial data on the sewers (Feuer 2013). Therefore, in this research I ask what happens with the large amount of data generated by citizens' involvement – through giving their opinion about services - and about their records of service use online and via telephone, and whether this influx is somehow changing the organizational dynamics of governments.

Hence, the thesis aims to answer:

> *i. Is the intensification of ICT-based interaction between governments and citizens related to public services, which generate voluminous quantities of information, leading to organizational transformations in public administrations?*

To answer this question, it seems essential to understand how the technology, the ICT-based interaction channels, take form in each case study, as those interaction tools are implemented and used in different institutional and social contexts.

Therefore, the main question unfolds into two others. First:

> i.a. *How are e-Government applications being enacted by governments and used by citizens, taking into account institutional and socio-technical conditions?*

Finally, we ask what happens with the communication flows that result from the ICT-based interaction between citizens and the administration, as well as with the flows of the vast amount of aggregate information produced by these interactions about citizens' preferences and behaviour regarding public services.

An example of the first case are the paths taken by an email received through the main email address or online form of a government's one-stop-shop. Does a specialised Agency have civil servants to answer those emails? Are they forwarded to the Departments in charge of the service and under which circumstances? What kind of agreements between Departments and Agencies are there for dealing with these emails?

The second type are flows of metadata extracted from these interactions. These can be data about active involvement of citizens – for instance feedback about a specific service – or about the interaction itself – for example, patterns of use of online services. How are these data used and shared between Departments for service improvement? What are the incentives and impediments for their collaborative use between Departments and Agencies?

I focus on both flows as an analytical lens in this research since in order to understand the implementation and use of new channels of interaction and its relation to changes in organizational and institutional forms, it is useful to examine the information flows among the actors involved: "[O]organisations are information processing units, and the central means of understanding and analysing organizations is by illuminating the structures and channels organizational actors develop to regularise information collection, storage, use, and flows" (J.E. Fountain 2007; March and Simon 1958, 1993). Therefore, I explore the issues that arise from the analyses of what happens in the middle, that is, in the traffic between webs and information systems and the rest of the organization. The transactions between on-line and off-line elements - the information flows - may be the best site to discover, albeit subtle, organizational transformations.

i.b. Are the information flows regarding the use of these interaction channels changing the organizational dynamics of public administrations?

The hypothesis is that those information flows show a change toward more network forms of organization, albeit co-existing with hierarchical structures.

It is essential to emphasize that, for this research, these online applications – although they might look similar at first - have been implemented and are used under different institutional and organizational settings which might mean different technology enactments, different information flows, and different organizational outcomes – either reproducing the existing structures and forms or, during the day-today activities, triggering subtle or radical transformations in them. This work seeks to understand whether these new and intensive flows are pressuring governments to be more open and less hierarchical, and whether they are shaping and transforming the delivery and quality of public services, through simultaneously reorganizing the administration and re-

constructing the user.

The next section details the theoretical framework used for the analytical model, which draws from institutional and organizational theory, and it uses analytical lenses from science and technology studies perspectives.

2. THE ANALYTICAL FRAMEWORK

Although recent studies show that the situation might be changing, there is a long-standing "tool" view of technology in organization studies, "where technology is considered independent of the social context in which it is developed and used" (Bridgman and Willmott 2006, 112). This view is summarized by Orlikowski and Barley (2001, 147) as "most organizational theories have conceptualized technology abstractly, have treated it deterministically (often as a material cause), and have largely ignored the role of human Agency in shaping either the design or the use of technology."

2.1. Social Construction of Technology

In recent years, instead of the traditional analytical model of the social or organizational impact of technology, students of technology moved toward a conception of technology as social objects and opted for an analytical perspective that emphasizes the two-way process of interaction between technological innovations and the specific social contexts where these are designed or adopted. This line of research examines how interpretations, social interests and disciplinary conflicts shape the production of technology (Bijker, Hughes, and Pinch 1987; Bijker and Law 1992; Latour 1991; Mackenzie and Wajcman 1985). For instance, Social Construction of Technology scholars have shown through several case studies (E. Aibar and Bijker 1997; Bijker 1997) that the way a technology is designed or used could not be understood without taking into account how that technological artefact is embedded in its social context. Social constructionists also introduced the concept of *stabilization,* referring to the process whereby former contending

interpretations and meanings about a technology end up producing a more or less common understanding, both at the semiotic level as well as a at the material level. Stabilization is thus a by-product of the "closure" of controversies and it is never absolute: there are always "degrees" of stability and even high degrees are never irreversible. One of the main points of the constructivist view is the critique of the lineal model of technological development, i.e. the idea that the construction/design of technology takes place until a definite time and then it is used and have social effects; instead, constructivists understand that technologies can be modified during the period it is being used because, among other things, of their consequences.

This thesis builds upon this research tradition and considers that public administrations are not merely passive receivers where technology is simply taken out of the shelf, consumed and used. It is important to remember that public administrations have always been organized around some kind of technical system of information processing. The Weberian bureaucratic administration was constituted around a system to store data, decisions and rules through documents, files, and methods to index information. In other words, the new ICTs arrive in a public administration that has to be considered already a socio-technical system (Eduard Aibar and Urgell 2007). Public administrations' regulations, processes and own organizational forms play an active and determinant role in the configuration of the ICTs and are, at the same time, transformed in the process of incorporating the technology. Therefore, in order to examine the emergence and use of new ICTs in public administrations, it seems more adequate to adopt a theoretical perspective that does no place so much emphasis on technological completeness and stability at arrival, but instead develops a practice-oriented analysis of the recursive interaction between individuals, technology and social action.

2.2. The Situated Technology

The technology-in-practice (TIP) framework (Schultze and Orlikowski 2004) may offer a way to examine recursive relationships between technology, individuals and organizations, , building upon the structuralist and social constructivist intellectual traditions, that at the same time does not disregard the consequences of those relationships for work practices, the technology and the

organization. This framework attempts to examine technology and organizational structures in a way that neither treats technology as a material given that determines organizational change nor pushes technology and work practices to the background (Bridgman and Willmott 2006). It offers a lens to overcome difficulties associated with specifically two long-standing common, not constructivist, views of technology: that technologies can become absolutely stable, neglecting that people can redefine the meaning and use of technology after it has been developed, and that they embody structures which represent various cultural interpretations, social rules and political interests, which is problematic because it sees structures as something "outside" or "external" to human action.

This empirical-based perspective is grounded on the micro-level ongoing practices of organizational actors with technology and states that transformations emerge out of both their adaptations and active experiments with daily contingencies, exceptions and opportunities that they encounter. In other words, change emerges out of the practice of organizing with the new technologies. Through constant interaction of individuals with the technology, specific structures of rules and resources of technology use emerge – in that sense, structures are virtual entities. In other words, , technology-in-practice is a structure that emerge out of the ongoing, situated use of technology – i.e., out of the facilities/resources available, the existing norms and the interpretive schemes, including those about the technology artefact, in that context:

FIGURE 4 - ENACTMENT OF TECHNOLOGY-IN-PRACTICE
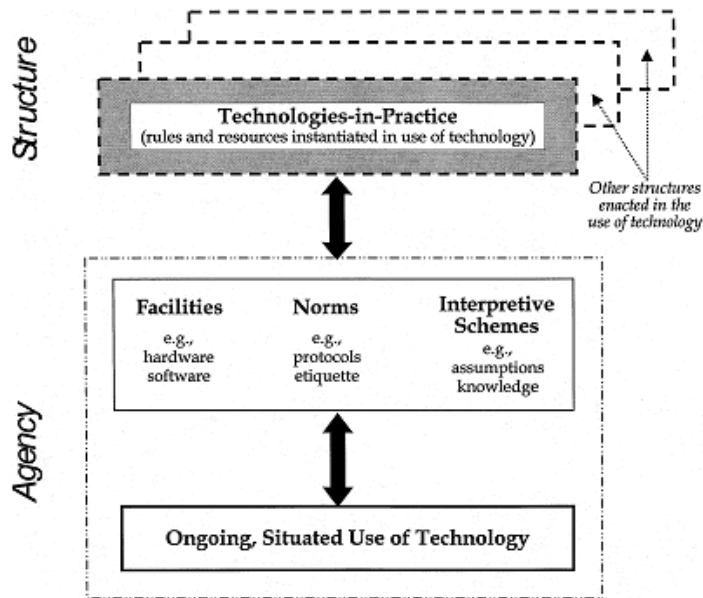
Source: W. J. Orlikowski 2000, 410

The focus of the analysis is on emergent rather than embodied structures, as the properties inscripted in the design and development of the technology are not appropriated, but interpreted and enacted. At the same time, user's interaction with technology is recursive: "in their recurrent practices, users shape the technology structure that shapes their use" (W. J. Orlikowski 2000). This perspective allows for an alternative view of technology uses. It is important to stress that, according to this framework, technology never achieves a state of final stability, although the researchers may choose to treat them as fixed for a period for analytical purposes. Users can change their awareness regarding the technology, or can experience change in power, motivations, time, circumstances and the technology itself, therefore changing the technologies-in-practice. For instance, actors can become more knowledgeable about using the technology through formal training, security regulations can make users more careful when sending emails, or users may also improvise in response to unexpected opportunities or challenges.

The thesis analytical model is also fed by the Technology Enactment Framework, developed by Fountain (2001) in the electronic administration context, which is closely related to the TIP theoretical model. She also attempts to overcome the simplistic models that try to examine the relationship between technology and organizational change, by developing a framework for the

analysis of dynamic processes, rather than predictive outcomes: "Individuals often enact existing performance routines and network relationships in the way they design and use web-based information and communication systems. Nevertheless, the unintended consequences of these enactments occasionally lead to subtle modifications of structure to accommodate new technology. The accumulation of unintended, subtle modifications may lead to more dramatic shifts in structure and power, but actual outcomes are indeterminate in the enactment framework" (Jane E. Fountain 2001, 90).

Fountain brings together elements of new institutional theory derived from political science and economics, on one hand, and from sociological and organizational theory perspectives, on the other. A common distinction made in the institutional theory literatures is that rational choice institutionalists (in political science and economics) emphasize how rules and structures give incentives to or limits certain actions, shaping individual choices, whereas the sociological perspective emphasizes how socially accepted norms and standardized practices shape behaviour. One views institutions mainly from an exogenous perspective, whereas the other sees them as endogenous to actors' activities (Heikkila and Isett 2004). As both are mechanisms that guide behaviour – including rules, norms, strategies, cognition and culture – Fountain in her framework for analysing e-Government enactments tries to link them together.

The enacted technology has four specific elements: perception, design, implementation, and use. The actors' perceptions of and behaviour concerning technology are shaped by institutional arrangements in which predominant organizational forms are embedded (Schellong 2007). The latter include factors such as cognition, culture, socio-structure and formal government systems (Zukin and Dimaggio 1990). Cognitive elements refer to mental habits and cognitive patterns, widely shared and largely taken for granted, that influence behaviour and decision-making. Cultural institutions refer to shared symbols, myths, worldviews, such as narratives or meanings and shape behaviour, preferences, calculations of effectiveness and efficiency[28]. The socio-structure refer to the environment in which Agencies operate, such as the inter-organizational systems that include other Agencies, other branches of government, economic actors, and other

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[28] These two elements could be associated with Orlikowski's "interpretive" schemes/conditions.

interest groups. Although some relationships at this level are formalized, many are less formal ongoing social relations. Finally, the formal government systems refer to the legal, regulatory, and political environments that consist of hundreds of rule systems, some of which are contradictory[29] (J.E. Fountain 2007).

Fountain, although criticized for ignoring in her work the vast literature on technology and organizations (D. F. Norris 2003; Yang 2003), brings to the debate useful elements to complement the technology-in-practice framework to examine the case of digital government implementation and organizational change. Nevertheless, the technology enactment framework lacks a practical method to analyse how technology is enacted in the work practices and results in processual or structural changes, if any.

Orlikowsky (W. J. Orlikowski and Yates 2006; W. J. Orlikowski 2000) offers a more useful lens to examine the process of change, comparing conditions and consequences associated with whether and how humans use the technology to enact different technologies-in-practice. This research uses this framework as a methodological starting point, with insights about e-Government and organizational change brought by the technology enactment framework, as well as from the concept of Information Government developed by Mayer-Schönberger and Lazer (2007), explained in the next section, that helps us examine work practices and structural changes in the public administration.

For Orlikowski, the more salient conditions associated with humans enactment of different technologies-in-practice are the i) interpretive conditions, which refer to the conventional understandings and shared meanings that members of a community have built to make sense of their world, including the technology they use; the ii) technological conditions, which refer to the technological properties available to the users in their work practices; and the iii) institutional conditions, which refer to the social structures that constitute part of the social system in which users are participating.

The author identifies three types of technology enactment schemes that emerge according to the

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[29] These two elements could be associated with Orlikowski's "norms" and "institutional" condition.

combinations of the conditions above described and the processual, technological or structural consequences. The first type of technology-in-practice enactment is characterized in terms of *inertia*, where users choose to use technology to retain their existing way of doing things, using it rarely and with little or no interest in integrating its use into their work practices. In other words, there are no evident change in process, technology, or structure. The second type of TIP is characterized in terms of *application,* where actors use the new technology to refine their existing ways of doing things. Users have a clear intention to use the technology to improve their work processes, which may lead to an enhancement the structural status quo. This type of enactment result in some change in one or more process, technology, or structure. The third type of TIP may be characterized in terms of *change*, where users choose to use the new technology to alter significantly their existing way of doing things, which may result in the transformation of the structural status quo, modifying users' work ongoing work practices, as well as the technological artefacts.

These types of enactment are not exhaustive and on our research, we may find other kinds that are associated with the conditions and consequences of the technologies-in-practice. In the next section, I detail the analytical lens that serves as a practical tool to examine electronic government implementation and organizational change.

3.   THE ANALYTICAL MODEL

Each sub-question (i.a and i.b) finds in the analytical model an explanatory path that, when placed together, answers the main question by depicting the local differences and levels of organizational change facilitated by the intensification of the use of ICTs in government-citizen interactions.

An essential structural element of this analytical approach, when answering question i.a., is the examination of the similarities and differences in technology-in-practice, the conditions associated with their implementation and use, and their consequences. The ways technological tools are interpreted, adopted, modified, and translated by public organizations in order to develop e-Government strategies rely on the local characteristics of the formal institutions, rules and structures and at the practices and world views shared by the actors in each region that shape

behaviour and preferences, and provide a "toolkit" which people may use to solve different kinds of problems in varying configurations (Jane E. Fountain 2001).

Therefore, the model is divided into two interrelated steps: first, it explores how technology emerges, associated with the conditions – interpretative, technological and institutional – present in each case; second, it seeks to understand the consequences – processual, technological and structural – of the technologies-in-practice, leading to an understanding of the type of technology enactment – characterized by either inertia, application or change – in each case study. By putting the two blocks together, the model finally opens the door to conclusions about the relationship between the characteristics of intensification of ICT use for interaction and organizational change.

3.1. Interpretive Conditions

Interpretive conditions refer to the conventional understandings and shared meanings that members of a community have built to make sense of their world, including the technology they use. In this research, I address variables that illuminate the informal shared ideas and practices that shape behaviour and preferences:

- Knowledge About the Use of the Technology

Users can have different levels of knowledge about the technology – from being very knowledgeable about e-Government features and interaction channels to having limited understanding and/or being sceptical of the technological artefacts available to them.

- Shared Ideas and Practices about e-Government

Public managers and street level bureaucrats may lay out several objectives for e-Government projects in strategic and performance plans. For instance, objectives may be linked to the idea of "modernization" in relation to e-Government implementation, as seen in international e-Government rankings and benchmark studies, as well as to performance definitions, with concepts such as "success", "efficiency" and "effectiveness" regarding service delivery. New ICT-based interaction channels may be seen not only from a better performance perspective, but also

in relation to a more relational and collaborative form of government, with the notion of citizen-centricity assuming greater importance.

- Political Leadership

Aligned with the two previous variables is the role of political leadership. The literature about the successes and failures of e-Government implementation underscores the pivotal role of political leadership from high level government officials in defending the central role of technology in modernizing the public sector, improving service delivery, increasing transparency and accountability, strengthening the relationship between the administration and the citizen, etc.

3.2. Technological conditions

Technological conditions refer to the technological properties available to the users in their work practices. In this research, the new "technological artefact" in public administrations is understood to be the set of tools and possibilities made available under the umbrella of "ICT-based interaction channels". Examples of their properties are detailed below, but not all of them are necessarily available to users in each case study.

TABLE 1- PROPERTIES OF THE ICT-BASED INTERACTION CHANNELS TECHNOLOGICAL ARTEFACT

Properties of the "ICT-based interaction channels" Technological Artefact	
Elements	**Technological Properties**
Telephone Contact Centre	Citizen relationship management system that can be used by Departments or that is connected and/or integrated with Departments' own service request workflow systems Information and service requests Providing information about the status of a service request Call-back
E-mail	Electronic messaging to and from citizens via e-mail Electronic messaging inter Departments via e-mail
Electronic forms	Information and service requests

	Making an appointment
	Dispatching of information and service requests to Departments
Official Mobile Applications	Services Mobile Apps
Social Media Channels	Services Social Media Channels
CzRM – Customer Relationship Manager	Simple Workflow System and/or advanced CzRM
Document management Integration	Creation and management of databases of documents in a variety of views
Application development	Statistical/ Business Intelligence reports

3.3. Institutional conditions

Institutional conditions refer to the social structures that constitute part of the social system in which users are participating.

- Laws and Regulations

The existence of laws and regulations regarding service may influence whether and how e-Government projects are implemented. Another important characteristic that may facilitate or hinder inter-Departmental and Agency collaboration and cooperation – for instance online one-stop-shops – is the existence of regulated oversight methods and procedures that arbitrate relationships between the various actors involved in providing joint services.

- Organizational Forms

The organizational forms of governments, whether they present a more bureaucratic or networked layout, may be replicated or changed in the implementation and use of e-Government. For example, one would think that a more hierarchical mode of organization would impose restrictions on more networked information flows or generate conflicts that could hinder more collaboration and cooperation between Departments and Agencies.

That is why it is important to look at formal organizational charts, but also of fundamental

importance to look at the regulatory framework and the existence of oversight Agencies created to facilitate these multiple interactions between Departments and citizens and between Departments themselves.

3.4. Processual consequences

Processual consequences refer to changes, if any, in the execution and outcome of users' work practices. The ICT-based interaction channels in practice might have, if any, consequences in the users' work practices, such as improved or a shift in type of collaboration, increased efficiency in communication within and among Departments, improvement of management tools, increased managerial knowledge, increased efficiency and effectiveness in service delivery, increased effectiveness in citizen service.

- Information Handling and Processing

I give special attention to the analysis of the information flows within the Departments and Agencies involved in providing services online and over the telephone to be able to examine "where, when, and why they change and what the interaction is between these changes and the public-sector activities" (Mayer-Schönberger and Lazer 2007). In order to analyse the interactions and transactions between the off-line and the on-line spheres and the processual consequences of the interaction channels in practice, I focus on the information flows and micro-practices related to the enactment and use of new ICTs and compare them with institutional conditions given before and the formal structures in place. Are there any changes in the information flows analysed? If there are, are they mirroring the old hierarchical structure or are the information flows moving towards a different organization dynamics? Are there consequences on collaboration, communication, management tools, efficiency, and effectiveness in service delivery and citizen service?

I analyse information flows and processual consequences by focusing on the following three categories:

i.   Online contact and telephone calls information flows

Who answers them, forwards them, and gives them answers/solutions; the information flows between Departments and Agencies.

ii.   Data Collection

Collection of data generated by citizen-government interaction: whether it is collected and systematically organized in reports/business intelligence applications by service type, themes, and Departments.

iii.   Feedback Information Use

Use of the data collected about citizens' use and "voicing" about public services and information: who has access to the information, how information is presented, actions carried out with the knowledge acquired.

3.5.   Technological consequences

Technological consequences refer to changes, if any, in the technological properties available to the users. One of the main premises of the analytical framework is that technology is not a closed system, but that its use is always situated and emergent. However, as people recurrently use the same technology, enacted technology structures become routine and even institutionalized; in that sense they become "stabilized-for-now". On the other hand, when a technology does not help users achieve what they were originally thought for, they abandon it, work around it, adjust it, change it, or even think about changing their ends.

3.6.   Structural consequences

Structural consequences refer to changes, if any, in structures that users enact as part of the larger social system in which they are participating. If processual and technological consequences are

often a change resulting from people's knowledgeable actions, structural consequences are more likely to be unintended results of actions. Those structural consequences, given the conditions and the processual and technological consequences for a technology-in-practice structure are associated with the types of technology enactment: reinforce and preserve status quo (inertia), reinforce and enhance status quo (application) and transform status quo (change). The technology-in-practice represent the rules and resources instantiated in the use of technology. In other words, given the technological, interpretive and institutional conditions, in what form e-Government emerges in each case. For instance, the "ICT-based interaction channels" in practice can have limited-use or have widespread usage among government and citizens, they can be isolated electronic channels or present themselves as a multichannel strategy with integration of call centres, web and mobile apps, they may have been planned or improvised, they can offer support for greater collaboration or for Departmental individual productivity, they can offer process enhancement support and/or it can help collective service-improvement, they can ben instrument for one-way-interaction with citizens or they can serve as a tool for interactive communication and recurrent feedback.

Useful categories to help this analysis are the emergence of formal interdepartmental collaboration and coordination structures, such as joint ventures, oversight bodies, strategic alliances, joint budget and accountability mechanisms, etc.

I also give special attention to what I call e-Government Morphology.

- E-Government Morphology

The "E-Government Morphology" deals with the online characteristics of e-Government implementation that indicate whether e-Government strategies mirror the formal institutions, rules and structures and the traditional practices and world views shared by government actors, or instead suggest an enactment that drifts away from established organizational characteristics, such as vertical hierarchy, and more towards networked and collaborative arrangements.

- Automation vs Transformation:

Automation of old processes or transformation into networks; structure of websites and call centres; organization of services or "digital by default services"; jurisdiction boundaries; links to other levels of governments, private and non-profit sites.

- Standardization vs Fragmentation:

"One government" or Departmental "brand" with regards to electronic interaction channels; integrated systems, consistency of webpages, layouts, information, logins, and points of contact.

- Centralization vs Decentralization:

Emergence of centralized bodies with the sole function of coordinating the interaction with citizens, organizing the workflow with Departments and collecting and systematizing data and information or all or some of these activities are left to the Departments.

With this model, I intend to analyse the enactment of ICT-based interaction channels in São Paulo City and Rio de Janeiro City governments and their consequences.

CHAPTER 4 – METHODOLOGY

1. INTRODUCTION

In order to meet the objectives and answer the questions posited in Chapters 1 and 3, this research uses a qualitative method centred around a multiple case study strategy. The research took place in two municipal governments – Rio de Janeiro and Sao Paulo – and limited its scope to their respective online and call centre-based Citizen Attention Agencies. The data collection was carried out through semi-structured interviews with key actors, participant observation and relevant documentation analysis about the Departments and Agencies studied.

In the following sections, I detail each step of the research design and procedures, namely: 1) the research method, 2) the research strategy, 3) the data collection, and 4) the analysis and interpretation. In "research method" I explain the choice of a qualitative method by depicting the main differences between qualitative and quantitative methods and expliciting the reasons why my research questions require a qualitative approach. In "research strategy" I explain the usefulness of comparative case studies for qualitative works that deal with emergent themes, such as the subject covered in this thesis, and also justify the choice of the cases in this research. The "data collection" section deals with the techniques used to gather data – i.e. semi-structured interviews, participant observation and documentation analysis – and details where and with whom the interviews took place. It also makes explicit the difficulties encountered during the process of data collection and how they were overcome. Finally, in "analysis and interpretation" I summarise the analytical categories and operational variables that were developed in conjunction with the analytical model (Chapter 3). I conclude by explaining how the analysis and interpretation were carried out and organised, leading up to the next two chapters of results and analysis.

2.   THE CHOICE OF THE QUALITATIVE METHOD

In order to define the research method and the data collection techniques it is necessary to understand the main aspects that characterise the quantitative and qualitative methodological approaches to research (Lima, p.28). Although both are ways to reduce the complexity of reality, they support different research strategies, therefore we need to examine the research objectives and questions to make an appropriate choice of analytical procedures (Duarte and Barros 2006, 27).

The quantitative method is mainly useful for operationalizing theoretical relations that need to be empirically tested. It emphasises the statistically valid measurement and analysis of causal relationships between independent and dependent variables, allowing prediction and the generalization of findings (Denzin and Lincoln 2005, 10). In contrast, the qualitative research does not seek statistical generalisations, but instead logical generalisation, i.e. the results may be transposed to subjects that have strong similarities to the subjects studied (Appolinário 2006, 159) or understanding the qualities of entities, as well as processes and meanings, that are not experimentally examined or measured in terms of quantity, amount, intensity or frequency (Denzin and Lincoln 2005, 10), by exploring "the richness, depth, and complexity of phenomena" (Strauss and Corbin 2008). As it sees all entities in a state of mutual simultaneous shaping, qualitative researchers are concerned primarily with processes, rather than outcomes or products.

This research's main question is answered by sub-questions that inquire about processes and information flows that may indicate how and toward what direction organisational changes are occurring in each region as a consequence of the intensification of ICTs use in government and citizen communication and interaction. Therefore – and added to an STS and social constructivist perspective adopted throughout this study in which technology, culture, skills, etc., are deeply intertwined – I leave aside quantitative methods and use an interpretative qualitative approach. I start from an analytical model and working propositions (developed in chapter 2) – built after careful literature review of theories and empirical cases – which fixes some variables, and allows the analysis of the relationship

between relevant variables identified during the research process.

3.   RESEARCH STRATEGY: MULTIPLE CASE STUDY

The case study method is not necessarily a form of qualitative research and indeed some case study research uses a mix of quantitative and qualitative evidence; as Stake states "Case study is not a methodological choice but a choice of what is to be studied" (Stake 2005, 443). However, the qualitative method is most often part of a case study strategy. Yin defines the strategy differently from positivist and historical approaches, as:

"1) A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident."

"2) The case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development o theoretical propositions to guide data collection and analysis." (Yin 2009, 18)

It is, as with the qualitative method, a preferred strategy to answer questions of "how" and/or "why" something happens or has happened. Case study strategies are particularly useful, as in the present type of research, when we want to uncover the transformations that are not necessarily radical or planned, but emergent, more subtle and smooth. More comprehensive and detailed contact with concrete instances of the events and behaviour about which one wishes to generalize sharpens distinctions, stimulate fresh concepts, typologies, and hypotheses, and generate or refine received theory. They are also a better method for documenting processes, which is our focus of analysis, in opposition to statistical methods, which tend to bias theory away from processes and toward structures. Finally, contrasting between cases that are similar in several ways creates interesting questions

when there is variation in the processes examined (Odell 2001) – e.g. this research analyses the process of enactment of government-citizen relationship through ICTs in two cities and examines the variation in the outcomes, according to the most relevant variables posited in the analytical model.

3.1. THE CASES

The choice of the cases studied – the municipal governments of Rio de Janeiro and Sao Paulo –, researched between 2011 and 2015, was based on the following reasons:

- Both are megalopolis that have similar levels of political and financial autonomy and offer similar services.
- They represent the opportunity to study administrations that have close and almost daily contact with citizens, because of the nature of municipal public services in Brazilian cities.
- Although they are under similar political and societal contexts, the available technologies are basically the same for both of them and there is a mimetic tendency to try to implement similar e-Government solutions – following for instance the recommendations of global e-Government rankings and reports –, they represent different styles of administrative organization evolution and e-Government development, which enrich the comparison and analysis
- On the other hand, e-Government literature shows that governments face similar problems when implementing e-Governments projects; hence, the use of two cases increases the significance of the study.
- Finally, and very importantly, those cases were also chosen because they could offer a deeper insight into the studied phenomenon, going beyond the interviews and documental analysis, as the researcher had wide access to both citizen attention centres.

4.   RESEARCH TECHNIQUES

4.1.   FIELD WORK

Field work through participant observation was carried out between September 2011 and June 2015. Between 2011 and 2013 I lived and worked in Rio de Janeiro, and between 2013 and 2015, I lived and worked in São Paulo. Additionally, a set of semi-structured interviews were carried out with key actors in both administrations, such as public executives, public managers and IT staff, and documentation analysis collected *in loquo* and found on official governmental websites and other media outlets.

In the following sections, I detail the actors and dates when the interviews took place, the particularities of the participant observation and the set of documents analysed in all cases.

4.1.1. Participant Observation

Participant observation, in which the researcher immerses in the setting of interest, often for long periods that can last for years, observing people in their surroundings and interacting with them in their daily activities, is used when one wishes to prioritize the point of view of the actors involved in social phenomenon. In that sense, the researcher becomes part of the social phenomenon studied; the researcher is faced with the challenge of keeping the balance between an excessive distance that prevents her to comprehend the object being studied and the complete immersion, which could also be an obstacle. As the focus of participant observation has shifted from fringe cultures to "normal society", studies on social relationships and interpersonal dynamics that develop inside originations began to emerge. They examined the culture of an organization, i.e. the tacit knowledge shared by their members, the reference models used to interpreted reality, the unwritten rules that guide an individual's action, and the way in which this culture is enacted, by analysing formal and informal groups, the structure of decision-making processes, interpersonal

relationships, symbols and rituals (Corbetta 2003, 241). Participant observation, therefore, is the ideal strategy to deepen our analyses about the effects of the intensification of the ICT interaction on the public administration organizational settings.

In the initial period of my research I did extensive documentation analysis and interviews in three other cases – Québec, Catalonia and São Paulo State Governments – between 2008 and 2010, which allowed me to undertake more in depth research in the thesis two cases, São Paulo and Rio de Janeiro municipal governments, where I also worked from 2011-2013 (Rio de Janeiro) and 2013-2015 (São Paulo) and undertook participant observation. What I bring to this thesis from the previous three cases studied is experience and motivation to understand the phenomenon. Participant observation "emerges as a natural investigative tool when the researcher intends to study a situation in which he has taken (or takes) part himself (…). Examples taken from the extremely vast literature include the research on gamblers by Scott (1968), a long-time frequenter of illicit gambling schools; on jazz musicians by Becker (1963), a musician; on the socialization of children to the dancing profession by Hall (1976), who was a student at a dance school for 16 years; on Mexican women who illegally cross the US-Mexico border every week to work for American families by Mary Romero (1992), who was a servant for a family in El Paso at the age of 15, along with her mother and sisters; on American prisons by Irwin (1970; 1980), who started a five-year prison term at the age of 21 (…)" (Corbetta 2003, 238).

4.1.2. Semi-Structured Interviews

Semi-structured interviews were used to collect the main data because this approach was more likely to encourage people to disclose information[30] than a structured interview format, particularly because I was dealing with public sector internal politics and group interests. For this same reason, some interviews were not recorded: most Departments and

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[30]Among the qualities of the in depth interview – open and semi-structured – is the flexibility if gives the informant to define the terms of his/her answers and the interviewer to freely adjust the questions (Duarte and Barros 2006, 62).

Agencies directors explicitly asked the interviewer not to bring a recorder to the meetings. Although some agreed to have their names published, most directors and managers asked for anonymity of all their employees, therefore I decided to omit the names of all informants in this research, only disclosing their job title.

The semi-structured in depth interview brings together the flexibility of the open interview with a control script, which facilitates the systematisation of results in later stages of the research. Based on theories and previously defined propositions, it seeks answers from the subjective experience of the informants, who are specifically selected because it is believed that he or she possesses the information the researcher wants to know (Duarte and Barros 2006, 62). In order to identify patterns and details, the questions may help to describe processes and flows, analyse, discuss and make propositions in an interactive process with the interviewer - "interviews are seen as negotiated accomplishments of both interviewers and respondents that are shaped by the contexts and situations in which they take place"(Fontana and Prokos 2007, 83).

The logic of interviews of São Paulo and Rio de Janeiro was as follows: in São Paulo, as centralized citizen attention channels have existed since 1998 and have experienced various institutional settings, I interviewed key-actors related to e-Government, who worked in the municipal government between 1998 and 2009, as well as public officials who are still working there. In Rio de Janeiro, as the 1746 multichannel solution was born in 2011, I only interviewed people involved in its implementation and a few who still work there.

TABLE 2 - LIST OF INTERVIEWEES - SÃO PAULO AND RIO DE JANEIRO

Organization	Post
Chief of Staff Department, Mayor's Office	Under Secretary of Planning and Modernization – (2011-2015)
Chief of Staff Department, Mayor's Office	Under Secretary of Performance Management – (2010-2015)
Chief of Staff Department, Mayor's Office	Former 1746 General Manager and 1746 Special Advisor – (2011-2012)

Organization	Post
Chief of Staff Department, Mayor's Office	1746 General Manager (2014-2015)
Chief of Staff Department, Mayor's Office	Former 1746 General Manager and 1746 Special Advisor (2013-2014)
IPLAN – Rio	IT Manager (2010-2013)
Department of Public Order	Focal Point (2011-2015)
Organization	**Post**
Department of Management	Former Electronic Government Unit Coordinator (2006-2009)
PRODAM	Former Electronic Government Unit Analyst (2008-2010)
Department of Communication	156 Call Centre Assistant Manager (2006-2015)
PRODAM	PRODAM Manager in Charge of SAC (1998-2015)
Garbage Collection Department	Coordinator Citizen Attention Unit (2011-2015)
Department of Budget, Planning and Management	Current Citizen Attention and Service Innovation Unit Coordinator (2015)
Department of Transportation	Chief of Staff (2013-2015)

These interviews were intended, first, to uncover the perceptions of actors with regards to the intensification of the use of ICTs for interacting with citizens, the emergence of Citizen Care centres based on ICTs, and their relationships to other Departments and Agencies; second, to create a narrative of the changes of information flows and processes related to the enactment of ICTs within this context; and finally, to gather quantitative data about the availability of online and telephone services, the use of interaction channels, and the handing and processing of citizen data[31].

On average, interviews were 45-90 minutes in length. Participants were intentionally selected[32] by their potential knowledge about the processes studied, and included specialists, managers, technology workers and public servants with direct contact with

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[31] See the analytical model in Chapter 3 and the analytical categories and operational variables in the following section.

[32] Instead of being selected by convenience (availability).

citizens (internet and telephone). Theory says that descriptions and analysis are found to be more consistent are usually given by technicians and workers directly involved in the process studied (Duarte and Barros 2006, 66) and this was verified in our research.

In a few cases, observation also took place in the form of sitting with attendants when they were on and off the phones, answering emails, and using the data systems.

4.2.   Documentation Analysis

Additional data was gathered through secondary sources, including websites, legislation, internal documentations, published and unpublished reports, office memos, organizational charts, systems user guides, samples of database records, all of which provided useful insights in both organizational and institutional aspects of the Departments and Agencies, and very importantly, were a valuable method for triangulation with the knowledge gained in the interviews and the participant observation, increasing the rigour and validity of the research findings (Heeks and Bailur 2007).

5.   ANALYSIS AND INTERPRETATION

This research analyses various sources of evidence to examine the actors' points of view, the information flows and processes, and the actual use of technology enacted in specific organizational and institutional settings. The analytical framework described in the previous chapter helps us to focus the research effort and capture relevant details and simultaneously facilitate the analysis of complex interactions among a variety of organizational and institutional elements interlinked with the enactment of the Citizen Care Agencies.

I first read all the interview/observation notes and documents to identify issues and topics that related to the analytical categories identified in the analytical model summarised

below. After aggregating these to arrive at a set of common or recurring themes, I then re-examined the data in terms of the new set of common themes, paying particular attention to the information flows, the role of technology, and the enactment of organisational change.

TABLE 3 - ANALYTICAL CATEGORIES, OPERATIONAL VARIABLES AND SOURCES

ANALYTICAL CATEGORIES	OPERATIONAL VARIABLES	SOURCES
	Conditions	
Interpretive Conditions	➤ Knowledge about the use of the technology: low, moderate, high ➤ Shared Ideas and Practices about e-Government: unfavourable, indifferent, favourable; success/efficiency/effectiveness, democratic/participation, or indifferent. ➤ Political Leadership: unenthusiastic, indifferent, enthusiastic; control, coordination, accountability, transparency, performance.	▪ Interviews ▪ Government reports ▪ Government strategic and performance plans
Technological Conditions	➤ Technological properties: • Telephone Contact Centre • E-mail • Electronic transaction forms • Official Mobile Applications • CzRM – Customer Relationship Manager • Document management • Integration • Social Media	▪ Interviews ▪ Official IT Documentation ▪ Call Centre/ Website / Mobile Applications / CzRM properties
Institutional Conditions	➤ Laws and Regulation regarding interaction channels and service delivery: hierarchical, contract-based, collaboration, integration ➤ Organizational Forms regarding interaction channels and service delivery: hierarchical, coordination, collaboration	▪ Interviews ▪ Legislation and regulations regarding electronic interaction channels and oversight bodies ▪ Organizational charts regarding service delivery and interaction channels
	Consequences	
Processual Consequences	➤ Information flows among the Departments and Agencies: hierarchical/routine, coordination/contract-base, networked/relational • Online contact and telephone calls information flows (who answers them,	▪ Interviews ▪ IT Systems workflows ▪ Government reports

		forwards them, give them answers/solutions; hierarchy level of employees with access to interaction systems; information flows between Departments and Agencies) • Data Collection information flows (Collection of data generated by citizen-government interaction, by service type, themes, and Departments; web and telephone metrics; information flows between Departments and Agencies) • Feedback Information Use (the data collected about citizens' use and "voicing" about public services and information: who has access to the information, how information is presented)	
Technological Consequences	➢	Changes, adjustments, workarounds in the technological properties available to the users or change in their ends: • Types and uses of interaction channels (email, forms, telephone numbers, apps). • Workflow and CRM systems • Social media development • Multichannel strategies: integration of telephone, mobile, Internet, face-to-face services and interaction channels in the front- and in the back-office.	▪ Interviews ▪ Website analysis / Mobile application analysis ▪ IT and CzRM systems analysis

Structural Consequences	➢	Technology-in-practice: reinforce and preserve status quo (inertia), reinforce and enhance status quo (application) or transform status quo (change)
		• E-Government Morphology:
		  o Automation vs Transformation (automation of old processes or transformation of how things are done concerning service delivery).
		  o Standardization vs Fragmentation (unique governmental "brand" and points of contact or Departmental fragmentation).
		  o Centralization vs Decentralization (centralized or decentralized citizen attention care coordination, directives and budget).
			▪ Legislation and regulations regarding interdepartmental collaboration and coordination structures with regards to electronic service delivery (joint ventures, oversight bodies, strategic alliances, joint budget and accountability mechanisms, etc.)
			▪ Call centre/ Website / mobile application / CzRM analysis
			▪ What is done with the knowledge acquired from feedback and service usage information

Both cases are examined following the sequence presented above, with inclusion of comments made in interviews, excerpts of documents analysed, and tables and graphs

created by the author based on the data provided by the interviewees and the secondary sources available. The cases are analysed in Chapter 5 and 6. Chapter 7 will draw conclusions based on parallels and differences among all cases and point toward topics for further research.

CHAPTER 5 – SÃO PAULO E-GOVERNMENT EVOLUTION

1. INTRODUCTION

The city of São Paulo is a megalopolis of 12 million inhabitants, the largest in Brazil. It embarked on a first wave of e-Government in the late 1990s, making an online form for public works and urban services available to citizens, the SAC Online; before that, citizens had to call different telephone numbers to find out the correct Department to request a service or go in person to a Subprefecture. Today, the 156 Call Centre receives around 700,000 calls a month, for services ranging from tree pruning requests to bus itinerary inquiries, and SAC Online receives almost 300,000 services requests a year. In the following sections, I will analyse how and under which circumstances electronic interaction channels evolved since 1998 and their processual, technological and structural consequences in the municipal administration of São Paulo.

2. CONDITIONS

A. INTERPRETIVE CONDITION

In this section, I analyse the interpretive conditions – the shared meanings, conventional understandings and general mind-set – that São Paulo public managers, Department Holders and Mayors have built that illuminate, shape behaviour and preferences and the general rationale for e-Government initiatives. The analysis runs through a fifteen-year period, covering four municipal administrations: between 2001 and 2004 (Worker's Party), 2005 and 2012 (Brazilian Social Democratic Party/Democratic Party), and the first two years of the current administration, between 2013 and 2015 (Worker's Party). The first initiated the e-Government development process and the second gave it weight and importance in

the administration. Although both runs had a positive and encouraging view of e-Government, they differ in some aspects with regard to its role in public administration and society. The first two years of the 2013-2015 administration has hinted different views and uses for the ICT-mediated interaction between government and citizens.

i.   DECENTRALIZATION, LOCAL GOVERNMENT EMPOWERMENT AND DEMOCRATIZATION (2001-2004)

São Paulo began early its foray into the world of e-Government, if we compare it with city governments with similar socioeconomic conditions and policies. Between 2001 and 2004, during the administration of Mayor Marta Suplicy (Workers Party), there was an intense political process aimed at improving the delivery of public services with a focus on citizens. During those four years, the concept of *all-encompassing services to citizens* was forged, which led to the creation of the main interaction channels in São Paulo that endure to this day: the face-to-face attention care *Praças de Atendimento*, as one of the central pillars of administrative decentralization reform, the *156 Call Centre*, and the strengthening of *SAC Online,* the online services requests channels created in 1998. Furthermore, early in 2001, Ms Suplicy's administration created the first e-Government oversight body, which would be in charge of fostering online services, digitally include the population, as well as coordinate SAC – Citizen Attention System, the workflow system used by all service channels.

In January 2001, one of the Mayor's first acts was to institute a new e-Government Coordination Unit in her own office, although formally linked to Department of Communication and Social Information. It had clear responsibilities to promote people's access to the "information society and knowledge" and it was inspired by concepts developed a few years earlier by scholars such as Manuel Castells:

> "I – **to ensure universal access to information and knowledge society** [emphasis added];

II – **to coordinate the formulation and implementation as well as overseeing Electronic Government policies** [emphasis added] within the Direct and Indirect Administration, in order to:

a) integrate the information produced by the government in a single system available to the public

b) implement public telecentres and similar facilities required for the exercise of "e-citizenship";

c) **implement civil society interaction mechanisms with the Administration** [emphasis added];

d) implement programs of **modernization and democratization of public service delivery** [emphasis added];

e) implement **call centres** [emphasis added] integrated with the City Hall network on the Internet;

f) implement the provision of municipal communication services mediated by computers;

g) manage the Citizen Attention System – SAC;

(...)

IV – to plan and manage the information content and the portal of the City of São Paulo City Hall on the Internet (...)."

(*Decree 40265* 2001)[33]

We see that, in its infancy, the mind-set about of e-Government was focused on democratizing access to new technologies to enable *e-citizenship* (for example, through the creation of telecentres) and on bringing the administration closer to the population through

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[33] At the beginning of the mandate, the Department of Communications did not exist, only the position of the Secretary. In July 2001, the law 13.166 created the Department of Communication and Social Information and the structure and attributions laid out in the decree were transferred to the newly created Department (*Law 13166* 2001).

new technologies. To this end, in addition of implementing electronic services and administering SAC – Citizen Attention System, the workflow system used by all channels to receive and dispatch requests, e-Government encompassed the use of call centres integrated with the same system of information management and service requests. It is important to note that at that time there were no explicit e-Government guidelines aimed at increasing efficiency and effectiveness of the public sector and modernizing public management.

In 2003, the City Administration implemented the first version of the 156 Call Centre, called *São Paulo Answers,* under the responsibility of the E-Government Coordination Unit of the Department of Communication and Social Information. The 156 Call Centre – a large outsourced telecentre structure counting with 500 attendants – was created to provide information and service requests, such as repair of street lighting, complaints about bus lines, garbage collection requests, noise pollution inspection requests, requests for tree trimming, pothole repair and pest control in public areas. It is important to note that joining in was not mandatory for Departments and Agencies, and although there was an effort to centralize all services into a single number, some chose to keep their own phone numbers.

Despite the initial focus on simply facilitating the access to public service information to citizens, the 156 Call Centre had already incorporated the delivery time concept; nevertheless, as it was not part of a Service Level Agreement (SLA), times varied greatly and there was no punishment for not complying with the established deadline.

"The delivery time for the requested service varies between 24 hours and 30 days"

2001-2004 Management Report (Secretaria de Governo Municipal 2004, 25)

It is important to notice that the 156 Call Centre was not a mere call centre, but from its very beginning, it was implemented as one of the pillars of the new form of citizen attention

care. Initially, its main objective was not to improve efficiency nor enhance strategic management, but to facilitate the life of *Paulistano* citizens:

> "As part of a new policy of Citizen Attention, with respect and appreciation of citizenship, the São Paulo Answers program was created and, through the 156 Call Centre, the city administration offers uninterrupted operation, capable of receiving 700,000 calls per month and registering requests for information and services."

2001-2004 Management Report (Secretaria de Governo Municipal 2004, 25)

I will address in more detail the administrative reform that took place between 2001 and 2004 in section *C – Institutional Conditions*, but it is important to point out here that, in order to understand better the onset and the development of e-Government initiatives in the City of São Paulo, it is necessary to reflect on the process of administrative decentralization. The idea of improving public service delivery was directly related to the devolvement of political and budgetary autonomy to the newly created 31 Subprefectures and their face-to-face citizen attention units, *Praças de Atendimento*, that offered over 150 services, from public works to payment of taxes. The 156 Call Center and the online services tool, SAC Online, in fact, offered services mostly related to the Subprefectures, usually public works and urban services. SAC Online, the online front office version of SAC, which will be detailed in section *B – Technological Conditions*, had a list of services only pertaining to the Subprefectures and not, for instance, related to the Departments of Education and Health. Therefore, the early days of e-Government in São Paulo were directly associated with improving the life of citizens through decentralized service delivery.

It is also worth addressing that the same decree that created the e-Government Coordination Unit created an Advisory Committee responsible for defining the guidelines and strategically planning for the Coordination Unit to achieve its goals. It was composed of representatives of various core Departments of the municipal government, such as the Department of Finance, the Department of Urban Planning, the Department of Government and the Information and Communication Technology Company of the Municipality of São

Paulo - PRODAM. Thus, we see that e-Government gained political weight from the first month of Mayor Marta Suplicy mandate.

ii.   THE MANAGERIALIST AND THE INFORMATION SOCIETY AGENDAS (2005-2012)

The following administration, governed by the centre-right party coalition formed by the Brazilian Social Democratic Party (PSDB) and Democratic Party (PFL/DEM), as of January 2005, was fascinated with the possibilities offered by the 156 Call Centre, particularly related to its strategic management potential – not surprisingly, as PSDB party was responsible for implementing some of New Public Management ideas in the federal government during their the 1994-2001 period in office. According to the then coordinator of the E-Government Coordination Unit:

> *In 2005, at the beginning of Mayor José Serra mandate, public managers were enchanted with the idea of using the 156 Call Centre as a **powerful tool of interaction with citizens and management of services** [emphasis added]. Mr Serra ordered, in 2005, that all City government telephone numbers to migrate to the 156 Call Centre.*
>
> *Interview with the 2005-2008 e-Government Coordination Unit Coordinator*

Following this logic, in 2006, the Call Centre, SAC, SAC Online and the e-Government Coordination Unit itself were transferred from the Department of Communication to the Department of Management, indicating a new understanding about e-Government, with a strong emphasis on its managerial possibilities. Coherently, the responsibilities related to Digital Inclusion programs remained with the Department of Communication, as access to technology and information was relegated to a second-class theme.

Consolidating a vision of e-Government, about which the previous administration was still brainstorming, in May 2006 a decree created the Electronic Government and Information and Communication Technology Policies, clearly stating that the main managerial concepts

should guide their development, aligned with concepts of efficiency, efficacy and effectiveness in the delivery of public services to the citizen-client:

> *For this purpose, the latest studies and benchmarks point toward the development of e-Government initiatives with far-reaching concepts than those who once drove governments to create websites and electronic services on the Internet. [They] (...)* ***address the way ICTs should assist Municipal Public Administrations to turn into high-performing organizations*** [emphasis added], *with visible impact on society (...)*

> *These studies and benchmarks show that governments should expand the quality of electronic services, particularly in priority areas of government; establish a legal framework to give support to the functioning of government in the information society; (...)* ***Improve public management with the support of ICTs; rationalize the use of resources and reduce costs for the Public Administration; and have the provision of municipal services focused on the citizens*** [emphasis added].

> (*Decree 47267* 2006, 2)

The four guiding principles of the Electronic Government Policy were *Governance, Accountability, Transversal Integration,* and *Transparency and Democratic Participation*. These four, together, clearly indicate an idea of e-Government focused on the use of new technologies to interact with citizens, based on management principles and control over the implementation of public policies – both by the administration and by society –, the integration of databases and systems to establish a single view of government to the citizen, and the participation of society in the administration's decision-making processes:

- *Governance: (...) citizen-focused,* ***emphasizing the control of results through monitoring mechanisms, by adopting management principles*** [emphasis added] *(...);*

- *Accountability: (...) **increase the responsiveness** [emphasis added] of Agencies and entities, as well as imposing on public officials the obligation to acquire information and explain their actions;*

- *Transversal Integration and Transparency: (...) eliminate duplicate databases, data redundancies and implement the **philosophy of citizen-centred government** [emphasis added];*

- *Transparency and Democratic Participation: (...) use of information and communication technologies in order to **enable greater and more active participation of citizens in democratic and decision-making process** [emphasis added] in the municipal administration (…).*

(*Decree 4267 Annex: Electronic Government and ICT Policies* 2006, 2)

Those guiding principles permeate the Electronic Government Policy, making clear that the modernization of the municipal government involved defining rules and procedures for the use of ICT in public services, with the following objectives:

- ***efficiency*** *[emphasis added] , by rationalizing the acquisition of technological resources and optimizing existing ones;*

- ***application of ICTs in internal processes*** *[emphasis added] and, in particular, on those related to core activities of public bodies and entities in the pursuit of continuous process improvement;*

- ***efficacy*** *[emphasis added] in quantity and quality of public service delivery;*

- ***effectiveness*** *[emphasis added] of those services in the quality of life of citizens.*

(*Decree 47267* 2006, 2)

In the following years, until 2012, the guiding principles of e-Government remained the same; however, particularly after the second term of Gilberto Kassab[34] in 2009, e-Government, for its lack of institutionalization and technological development, as we will see in further sections, suffered a gradual political weakening, losing its motivating force for public managers.

iii.   DATA SCIENCE AND SERVICE IMPROVEMENT (2013-2015)

In the beginning of Mayor Fernando Haddad (Workers' Party) term, in 2013, the 156 Call Centre and SAC were under the responsibility of the Department of Communication[35], whose head had a public relations manager profile rather than the manager of a large citizen interaction infrastructure. On the other hand, the new Secretary of Finance, a former McKinsey consultancy partner, and the Secretary of the Coordination of Subprefectures, responsible for the face-to-face attention care, saw the opportunity to revamp the network of interaction channels by contracting out a comprehensive citizen care solution, encompassing, besides the call centre, a proper citizen relationship manager (CzRM) and a complete workflow system, together with web and mobile applications.

A few consultancy firms presented their preliminary proposals for a new citizen attention model, and Accenture made the strongest impact[36]. According to this model, e-Government meant, in 2013, reclaiming the managerial ideas of the 2006 Electronic Government Policy through a portentous CzRM system with dashboards in mobile gadgets for public officials, the remodelling of services delivery processes, entering the new world of social media, and

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[34] José Serra (PSDB) took office in 2005 and gave up his seat to his Deputy Mayor Gilberto Kassab in 2006 to run for presidential elections. Kassab was reelected and started his second term in 2009.

[35] As we will see in the Section *C – Institutional Conditions*, the Electronic Government Unit and the interaction channels changed Departments several times, which was probably one of the reasons e-Government never really took the form of a cohesive state policy.

[36] Accenture became known in the e-Government business because its annual white papers about the state of e-Government in the world.

having a strong team of data analytics to dynamically understand the demands and important issues of the city. By 2015, this model had not been implemented, but some of these ideas made a strong impact in the workings of existing interaction channels.

The Department of Planning, Budget and Management became in charge of an Interdepartmental Working Group, including all those responsible for citizen interaction channels that, along the declining e-Government years, grew apart and were completely uncoordinated. As a result, the Citizen Attention and Services Innovation Unit (CACISP) was created in August 2014 to re-establish the articulation of interaction channels, and set standards to public service delivery. Among its objectives was to recuperate the concept of "optimize, rationalize and standardize procedures", but, differently from the other attempts to have an integrated network of interactive channels coordinated by a single oversight body, it took for granted that those channels were scattered among Departments; the understanding was that with the advances of social media, one could not possibly foresee or pretend to have a technological and human system that would integrate all of them. CACISP's role was, instead, to give directives about citizen attention and service level agreements, set standards for websites and data transparency, and focus on integrated data analysis to diagnose and subsidise public policies. As we will see in the *Structural Consequences* section, support also came from high public officials, including the Mayor, through demands made to CACISP of data and policy analysis to improve public services.

iv.   SYNTHESIS OF INTERPRETIVE CONDITIONS

In this section, I detailed the three main phases of what was understood of and expected from e-Government in the São Paulo municipal administration.

São Paulo was one of the first cities to develop e-Government strategies, along with major world capitals. For example, the online service channel SAC Online, although restricted to a specific group of services related to Public Works and Urban Maintenance, was created in

1998; the 156 Call Centre was launched in the same year as the New York City 311 Call Centre, in 2003. We should note that, in the three distinct phases of e-Government in the municipal administration, knowledge about the use of e-Government tools was high, according to the period the initiatives were carried out. In the first years, with direct support from the Mayor's Cabinet, the *Paulistano* government invested on expanding citizen attention through a call centre and strengthened the existing online services channel, supporting the face-to-face attention centres around the city. This first phase was marked by a belief that electronic government could facilitate access to information and public services, foster democratic participation and local empowerment, and, therefore, improve service delivery effectiveness. The longer second phase of e-Government in São Paulo saw the rise of New Public Management ideas among the Mayor and top public executives, enthusiastically equating e-Government as a managerial tool to achieve more efficient and effective service delivery to serve better the citizen-customer. In the last years of this phase, enchantment with e-Government and political support decreased, as the expected results were not observed. With a new party in Government in 2013, although not abandoning previous beliefs, electronic government began to be seen under a slightly different light, influenced by consultancy firms ideas of efficiency and effectiveness, but also by international trends about the use of big data to improve service delivery and solve government complexities – high public officials, including the Mayor and the Vice-Mayor, showed their support by requesting a new integrated channels solutions, including social media and mobile applications, and also by demanding and utilizing data to improve service delivery and articulate interdepartmental work.

TABLE 4 - SYNTHESIS OF INTERPRETIVE CONDITIONS – SÃO PAULO

INTERPRETIVE CONDITIONS	
KNOWLEDGE ABOUT THE USE OF THE TECHNOLOGY	• HIGH
SHARED IDEAS AND PRACTICES ABOUT E-GOVERNMENT	• FAVOURABLE • DEMOCRATIC PARTICIPATION AND EFFECTIVENESS (2001-2004) • EFFICIENCY, EFFECTIVENESS, CITIZEN-CLIENT FOCUSED (2005-2010)

	• Efficient and Effectiveness Based on Data Science (2013-2015)
Political Leadership	• Enthusiastic (between 2001-2004), Focused on Decentralization and Local Empowerment
	• Enthusiastic (between 2005-2008), Focused on Coordination and Control to Achieve Higher Performance
	• Indifferent (between 2009-2012)
	• Enthusiastic (between 2013-2015) Focused on Collaboration to Solve Problems and Improve Performance, Transparency and Accountability

Source: Author's own construction based on interviews, decrees and reports

B.   Technological Conditions

This section details the properties of the "ICT-based interactional channels" available at the São Paulo municipal government. Features such as online forms, e-mail addresses, social media, call centres, mobile applications, citizen relationship managers, etc., are technologies that are available on the market and as general e-Government concepts, but not all of them are necessarily available to users – public administration officials and as well as citizens – in São Paulo.

i.   Pioneering Citizen Attention Channels and Relationship Manager (1998-2004)

As stated in the introductory part of this chapter, São Paulo was a pioneer in e-Government initiatives. Before the administrative decentralization in 2002, the City administration was divided into 28 Regional Administrations (RA), which had little political and budgetary

autonomy. Each of them had a NAP[37], the face-to-face Citizen Service Units, created in 1989; however, did not work in an integrated way, neither in terms of procedures nor regarding the IT systems they used. The SAC – Citizen Attention System, was developed by PRODAM[38] to substitute the individual workflow systems in each NAP that worked standalone, i.e. until 1998, the RAs systems were not networked and did not communicate with other Departments or RAs. Therefore, citizens could only request a service in a NAP pertaining to that Regional Administration area. Furthermore, Secretaries and the Mayor could have a complete view of services requests and delivery of the whole city without asking each RA and Department individually.

> "At the end of a period, the RAs forwarded their individual reports to the mayor's office and the information needed to be consolidated so that the Mayor received a single report of services delivered by the administration.
>
> SAC came to solve this situation because all RAs began to register their demand via the Internet in a single database. The administration then had managerial information about consolidated services delivered through queries, charts and reports also available on the Internet in real time."

Interview with IT manager in charge of SAC development

Not only this information was made available online, but SAC was developed from the start to have an online presence. SAC Online was launched concomitantly to SAC, the workflow system; it did not have a Services Portal *feel*, it only showed an alphabetical list of the services and their specifications available on the same workflow system used by the face-to-face units and Departments[39], in order to receive online requests. Below is the SAC

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[37] *Núcleo de Atendimento ao Público*.

[38] Information and Communication Technology Company of the Municipality of São Paulo.

[39] Departmental services were included later on SAC and SAC Online. Those systems were originally developed to serve the face-to-face attention centers.

Online as of 2015 – its structure remained the same, with minor changes in design in 2004:

FIGURE 5 - SAC ONLINE LIST OF TOPICS
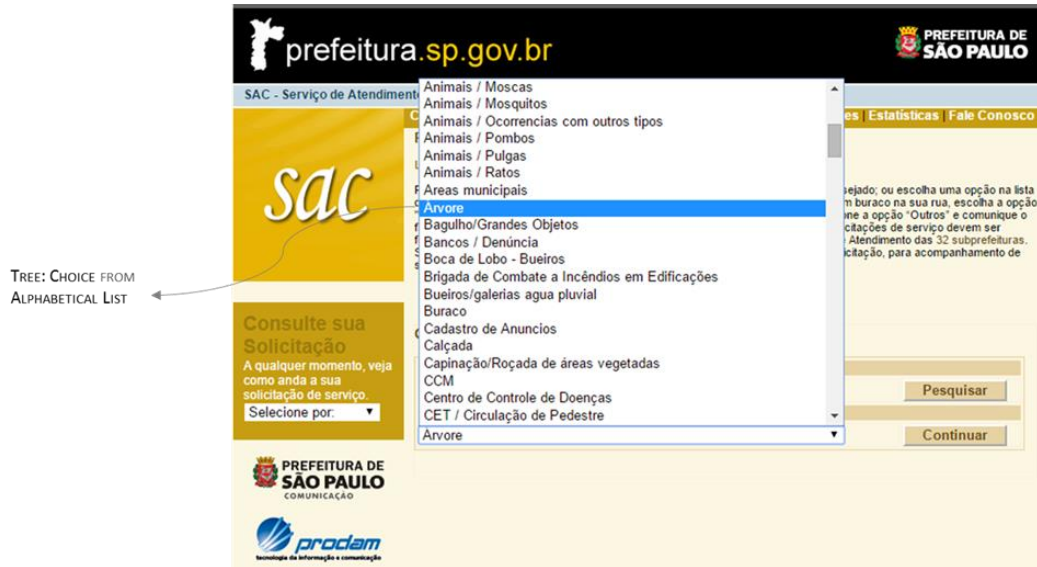
Source: SAC Online - http://sac.prefeitura.sp.gov.br/ (retrieved on 08/092015)

The citizen chooses a topic (i.e. *tree*), which is listed in alphabetical order, followed by a choice of specifications for this topic (i.e. *inspection for tree pruning*):

FIGURE 6 - SAC ONLINE SERVICE SPECIFICATION
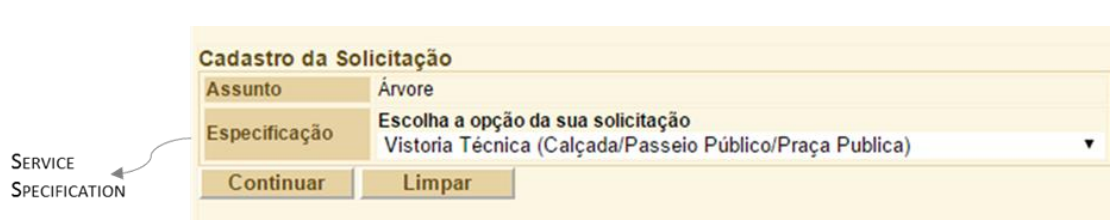
Source: SAC Online - http://sac.prefeitura.sp.gov.br/ (retrieved on 08/092015)

She then fills in the address and request details:

FIGURE 7 - SAC ONLINE SERVICE FORM

Source: SAC Online - http://sac.prefeitura.sp.gov.br/ (retrieved on 08/092015)

The demand workflow is established from the choice of topic, street and number. When the citizen terminates the registration of a request, the SAC delivers it in real time to the Department and unit responsible for implementing the service.

Albeit innovative for when it was launched, SAC Online has not structurally changed since 1998. Its technology does not allow for analytic tools to identify citizens browsing habits, therefore this information is not used for improving the website usability nor for understanding citizens' profiles for certain services. In section *E – Technological Consequences* we will analyse the failed attempts to implement one-stop-shops portals based on life events and other initiatives to overcome SAC shortcomings.

SAC Management, an administrative SAC module that consolidates information about services requests and delivery, was implemented in 1999. As SAC was first customized to meet the needs of RAs and the delivery of public works and urban maintenance services, and later adopted by the Subprefectures with their creation in 2001[40], we can see below that SAC Management ready-made reports are organized around the Subprefectures logic. The first dashboard shows the total of services requests, delivered and percentage of successful service delivery until 25th April 2013, by Subprefectures:

FIGURE 8 - SAC MANAGEMENT SUBPREFECTURES DASHBOARD

SECRETARIA MUNICIPAL DE COMUNICAÇÃO SOCIAL E INFORMAÇÃO
SISTEMA DE ATENDIMENTO AO CIDADÃO

SOLICITAÇÕES RECEBIDAS / CONCLUÍDAS POR SUBPREFEITURA
Resumo até 25/04/2013

	Órgão Responsável	Recebidas	Concluídas	% de Conclusão
1	Subprefeitura Butantä	148.812	134.940	91
2	Subprefeitura Sé	145.559	124.035	85
3	Subprefeitura Pinheiros	127.341	117.247	92
4	Subprefeitura Ipiranga	124.466	114.871	92
5	Subprefeitura Penha	123.563	108.234	88
6	Subprefeitura Vila Mariana	123.063	106.928	87
7	Subprefeitura Lapa	122.350	113.057	92
8	Subprefeitura Pirituba	119.675	110.166	92
9	Subprefeitura Mooca	114.326	102.276	89
10	Subprefeitura Campo Limpo	110.657	100.950	91
11	Subprefeitura Itaquera	110.007	93.337	85
12	Subprefeitura Santana/Tucuruvi	107.925	97.393	90
13	Subprefeitura Santo Amaro	106.874	99.822	93
14	Subprefeitura Vila Prudente/Sapopemba	99.787	96.140	96
15	Subprefeitura Capela do Socorro	99.466	86.878	87
16	Subprefeitura Casa Verde/Cachoeirinha	97.021	89.064	92
17	Subprefeitura MBoi Mirim	93.688	84.246	90
18	Subprefeitura Freguesia/Brasilândia			

Source: SAC Management Dashboard Print Screen

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[40] More on the administrative decentralization process and the creation of the Subprefectures on section *Institutional Conditions.*
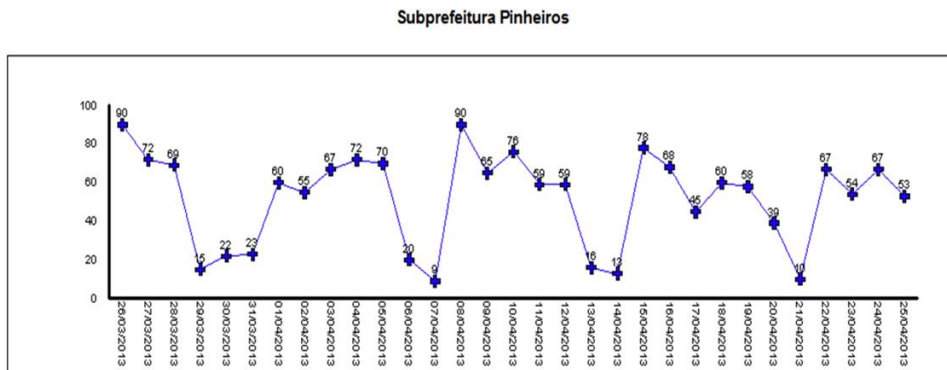
The second dashboard shows the daily evolution of requests received by *Pinheiros* Subprefecture over a period of 30 days:

FIGURE 9 - SAC MANAGEMENT PINHEIROS SUBPREFECTURE: EVOLUTION OF REQUESTS

Source: SAC Management Dashboard Print Screen

Finally, a dashboard that shows, for *Sé* Subprefecture, all the reports available (i.e. pending requests, average time for service delivery, etc.), the ten most requested services, the number of services delivered, and the number of pending requests by service type):

FIGURE 10 - SAC MANAGEMENT SÉ SUBPREFECTURE: MAIN DASHBOARD
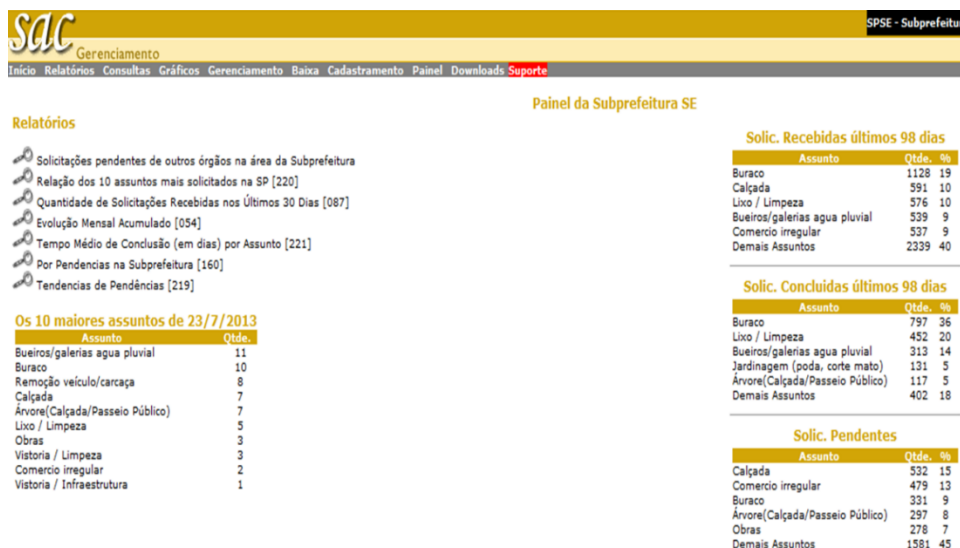
Source: Print Screen of SAC Management dashboard

As we can see, SAC Management reports have shown very detailed information, at least for 1999 available technologies. Nevertheless, this module has been clearly designed to attend only Subprefectures needs and did not offer the possibility of manipulating the reports in order to display other Departmental views or cross data from different services and public bodies; furthermore, still being used in 2015, this system is a decade behind today's georeferencing and mapping technologies.

ii.　THE 156 CALL CENTRE (2003)

The 156 Call Centre was implemented in 2003, under the brand name *São Paulo Answers*, as part of a broad concept of e-Government and citizen attention care. At that time, the Call Centre had five hundred attendants[41], working over a period of 24 hours. It started offering 22 services with over 1.112 different specifications, plus information, suggestions and complaints about public services. After one year of operation, the 156 Call Centre received 700,000 calls; about 65% of them were to request information and 75,000 originated a service request[42], which were registered on SAC and forwarded to the respective Subprefecture (pothole repair, tree pruning, noise complaints, etc.) or Department (public lighting repair, garbage collection, etc.). When a citizen requested a service, she received a protocol number to follow up on her request by calling back the Call Centre or checking its status on SAC Online.

Although it started with a few services, it was conceived from the beginning to be a single entry point for requesting all City Hall services over the phone. SAC was adopted as the main workflow system for registering services requests, as it was already in use by Subprefectures and on SAC Online. The public lighting, garbage collection and public transportation Departments already used SAC since 1998 to capture citizens' requests, therefore when the

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[41] In 2015, there were over 1.100 attendants over the 24-hour period.

[42] This proportion remains the same until today.

telephone channel was added in 2004, SAC was the natural choice for a workflow system. Other Departments, such as the Sanitary Inspection Department, integrated their systems with SAC through individual web services; however, none of the Departments present in the 156 had access to managerial and business intelligence reports about requests pertaining their services, since SAC Management, as previously highlighted, displayed only information about services delivered by the Subprefectures.

It is worth noting that in the early 2000s, smartphones had not been created[43], therefore mobile apps were not an option, neither were social media. In the section *Technological Consequences* we will explore the evolution of these technologies in São Paulo Administration.

iii.   Synthesis of Technological Conditions

São Paulo, since the late 1990s, had *SAC,* a workflow system developed originally to capture and integrate citizens' demands for the decentralized face-to-face attention units scattered around the city. Services available on this system were directly linked to the attributions of Regional Administrations and later Subprefectures, such as public works and urban maintenance. The online channel, *SAC Online*, was launched as an online presence of its back office twin, with online forms to request the same services available at the face-to-face attention units and later other Departmental services, but still far from being a services portal. The SAC management module, *SAC Management,* offered a few business intelligence capabilities, however only related to the Subprefectures services. The 156 Call Centre was originally established to support the decentralized and devolved services under the Subprefectures responsibility, by centralizing services requests and allowing citizens to more easily carry out their demands. In sum, the initial conditions of e-Government technology were advanced for that time, developed with a focus on the decentralized

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[43] The iPhone was launched in 2006.

provision of services, but did not evolve over the following 10 years, as we shall see in later sections. Newer technologies such as mobile applications and the use of social media have only recently began to be considered for citizen-government interaction regarding information and services requests.

TABLE 5 - SYNTHESIS OF TECHNOLOGICAL CONDITIONS – SÃO PAULO

TECHNOLOGICAL CONDITIONS	
TECHNOLOGICAL PROPERTIES	• TELEPHONE CONTACT CENTRE CAPABLE OF ANSWERING 700.000 CALLS MONTHLY FOR INFORMATION AND SERVICE REQUESTS • ELECTRONIC SERVICE REQUEST FORMS • INEXISTENCE OF SERVICE REQUEST MOBILE AND SOCIAL MEDIA APPLICATIONS • WORKFLOW SYSTEM, BUT WITHOUT CZRM CAPABILITIES; INTEGRATION WITH DEPARTMENTAL SYSTEMS THROUGH WEBSERVICES; DOCUMENT MANAGEMENT

Source: Author's own construction based on interviews, decrees and reports

C.   INSTITUTIONAL CONDITIONS

This section analyses the social structures in São Paulo city government that constitute part of the social system in which e-Government users are participating. It investigates the laws and regulations regarding citizen attention and service coordination and delivery, which may influence how e-Government initiatives are implemented and linked to each other. It also analyses organizational forms, usually represented in formal organizational charts, that give support to those initiatives – do e-Government initiatives originate in more hierarchical or collaborative modes of organization in São Paulo?

i. ADMINISTRATIVE DECENTRALIZATION, COMMUNICATION AND APPROXIMATION WITH CITIZENS (2001-2004)

E-Government in São Paulo was marked by a major political push in its early years, but that did not meet the initial expectations over the following decade, afflicted by several changes in command and directives. The idea of e-Government emerged during Marta Suplicy administration (2001-2004), but some online services existed since 1998.

In order to understand better the concepts that guided the first developments of e-Government in the City of São Paulo, it is important to reflect on the administrative organization of the public government. This administration undertook a major reform focusing on political and administrative decentralization, creating the Subprefectures with administrative and financial autonomy to implement local policies. The decentralization of government in the city of São Paulo was structured in four areas: budgetary autonomy and transparency, citizen planning and participation, information about the territory and integration of policies (FINATEC 2004). It was believed that decentralization was necessary not only to facilitate and streamline the delivery of services, but to regionalize and encourage popular participation. In that sense, the expansion of local democratic processes, either through Participatory Budget initiatives or the participation of Regional and Thematic Councils in policy making, for example, would contribute to greater responsiveness of the public sector in providing services (Grin 2010).

Before the reform, the municipal government was organized in twenty-eight Regional Administrations, whose main function was limited to a few street maintenance services in their areas. The 13.399 Law of 2002 defined the process of implementation and the responsibilities of Subprefectures, as well as established the gradual transfer of attributions of the Health, Education, Social Assistance, Culture and Sports and Leisure Departments, and urban and road system maintenance, to the 31 Subprefectures. The guidelines for Administrative Reform determined that policies should be established based on the needs of the citizens, allowing for the provision of better services and, with proper coordination,

maximizing the use of resources. Planning groups located at the Subprefectures should, first, be horizontally coordinated with regional groups, and vertically coordinated with the Department, which was responsible for defining the guidelines of that sector of the city as a whole (Polo et al. 2005)

> "This path was trodden through the creation of 31 Subprefectures, which replaced the Regional Administrations and incorporated functions of the Departments, which now tend to act more and more as regulators, directors and coordinators of major projects or urban interventions, leaving the operational part of day-to-day for the Subprefects. It is the largest administrative decentralization process ever seen in the country. Gradually, the population is solving their demands with the regional municipal power, closer to their home, holding the municipal administration more accountable to the control and the legitimate social pressures (…)"

> (Secretaria de Governo Municipal 2004, 8)

A central tenet of the administrative reform was to improve citizen attention and service delivery; in the process, the face-to-face attention care units *Praças de Atendimento* were created in August 2003, which should function as the municipal government entry point for the citizen, revamping the old NAPs. The *Praças de Atendimento* became the municipal one-stop-shops, offering over 150 services performed by the Subprefectures in places with modern facilities, following the guidelines efficiency in service delivery, information democratization and citizen satisfaction (Polo et al. 2005). As explored in the paragraphs below, the evolution of the electronic interaction channels in São Paulo intrinsically related to administrative devolution and decentralization – from the type of services provided to workflow system management module, with dashboards and reports useful only for Subprefectures.

In 2003, the 156 Call Centre was created, but there was no legislation that defined its attributions and objectives. The 156 Call Centre may have appeared in the 2001 decree that created the Electronic Government Unit, as one of its attributions was to manage all municipal call centres. Therefore, in 2003, the main channels of interaction, already integrated via SAC, were related as follows:

FIGURE 11 – SÃO PAULO CITIZEN ATTENTION MAIN STRUCTURE: 2003-2005
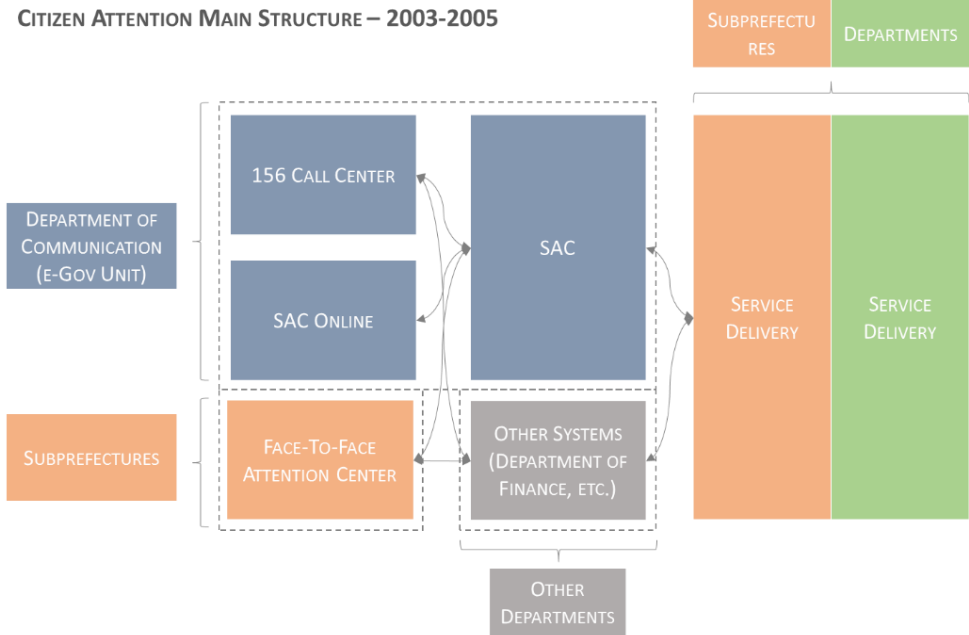
Source: Author's own construction based on interviews and decrees

The Department of Communication, through the *E-Government Coordination Unit*, was in charge of the 156 Call Centre and the technical supervision of SAC and SAC Online. Subprefectures took care of face-to-face attention and the delivery of about 70% of City Hall services requests, mainly related to public works and urban maintenance. Departments in charge of public lighting and garbage collection also received notifications via SAC; other Departments, such as Finance, Health and Education, had their own workflow and management of requests systems.

The scheme above shows that what linked those channels and Departments was one system, SAC – which was originally designed to meet the needs of decentralized service delivery –, since there was no legislation that regulated a unique and integrated view of e-Government; in fact, the only interaction channel created and regulated by decree was the face-to-face *Praças de Atendimento*. Although an ideal concept of e-Government was delineated in the 2001 decree that created the *Electronic Government Unit*, it did not establish practical directives about the functioning, organization and coordination of the interaction channels.

ii.   E-GOVERNMENT TENTATIVE COORDINATION (2005-2013)

In 2006, the first attempt to coordinate the interaction channels under a single concept of citizen attention was laid out in the *Electronic Government Policy*. Besides setting out the main directives that should guide the development of e-Government in São Paulo, as we have analysed in the previous section *Interpretive Conditions,* the 83-page document also proposed the working structure in which the main actors take responsibility in the definition, management and execution of e-Government initiatives, as well as the articulation among them and with society. The Policy emphasizes that the structure is not hierarchical; it only clarifies the functional relationships between channels, Departments and actors:

FIGURE 12 - SÃO PAULO ELECTRONIC GOVERNMENT POLICY WORKING STRUCTURE
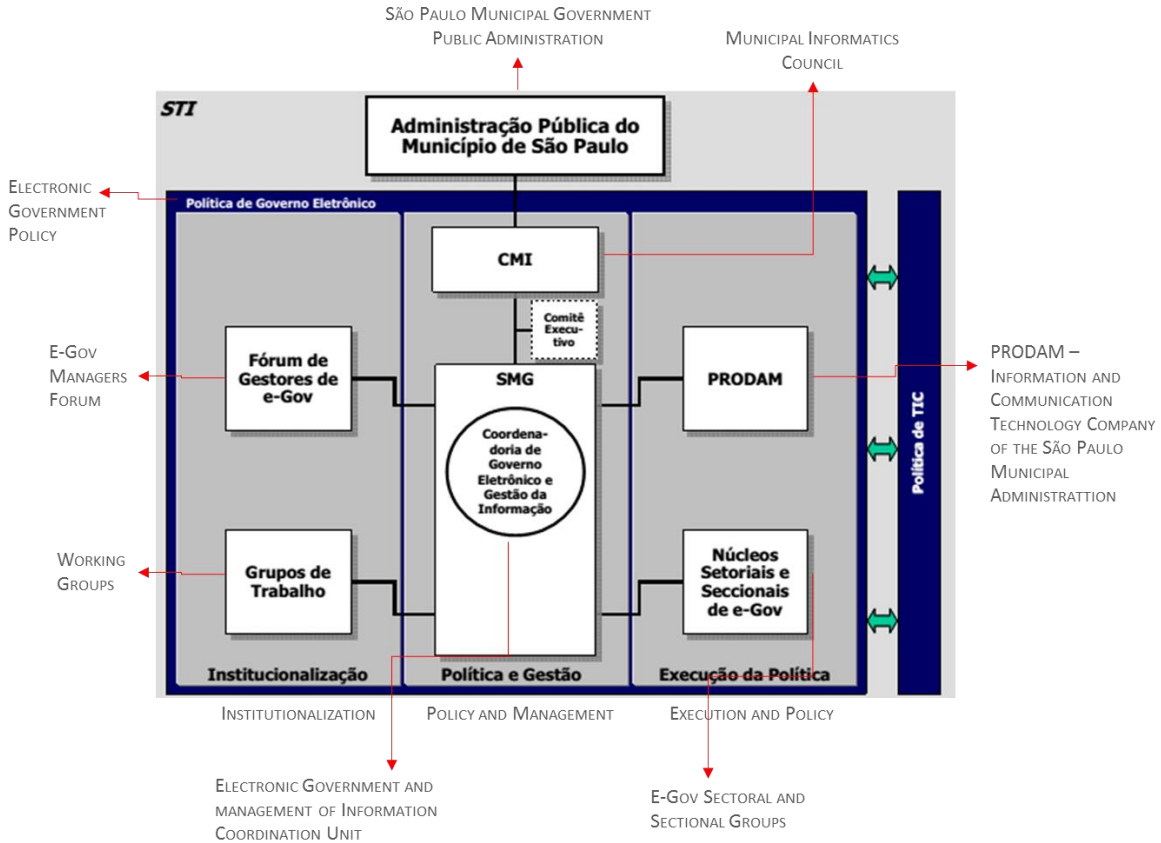
Source: Electronic Government and Information Technology Policies (*Decree 4267 Annex: Electronic Government and ICT Policies* 2006, 22)

One of the main propositions of the Policy was to highlight structural systems of the municipal administration that should be coordinated by a central body to "reduce the incidence of duplication of efforts in decentralized environments and vertical coordination" (Secretaria Municipal de Gestão - Prefeitura do Munícipio de São 2006, 9). The 156 Call Centre and SAC were among them.

The document also remarkably criticizes the radical decentralization carried out in the previous administration:

"In information technology activities, **sometimes decentralization processes caused uncontrolled rising costs and limited mechanisms for resource management**

[emphasis added].(…) However, there are alternatives to the "anything goes" of decentralized management (...) or fully centralized control where only one body makes the rules and exercises control and supervision. (…) the processes of democratization and the exercise of participation reinforce the support of a model of "managed freedom" for information and communication technology resources. Thus, **some coordination, articulation, implementation and infrastructure planning functions can remain centralized in a specialized structure, not necessarily in one Department, while others, of execution, can and should be decentralized to accelerate the delivery of benefits and reduce management and control costs** [emphasis added]."

(*Decree 4267 Annex: Electronic Government and ICT Policies* 2006, 26)

This vision is clearly reflected in the above proposal for the working structure of the Electronic Government Policy: a "managed freedom", with centralized control over structural systems and general IT infrastructure, with decentralized execution of e-Government. Furthermore, the document also made practical proposals for the effective implementation of e-Government, such as building a communication strategy about e-Government, building a legal and regulatory framework for e-Government, assigning responsibilities to actors and structures for the institutionalization, execution, formulation and management of the *Electronic Government Policy*, implementing projects to citizens and businesses with the innovative use of technology, preparing and training managers in the municipal administration in e-Government, and implementing internal and external projects of great impact (for instance, the New Citizen Services Portal).

The *Electronic Government Policy* was a very comprehensive document, with theoretical substance and practical proposals for the organization and implementation of e-Government in the São Paulo Municipal Administration. Nevertheless, the following years – between 2006 and 2011 – saw several failed attempts to formulate and put into practice its guidelines – the administration was able to centralize the coordination of structural IT systems and infrastructure, but it repeatedly failed to coordinate the execution of e-

Government directives. Below is a summary of the main decrees and ordinances that directly addressed the organization and relevance of electronic interactive channels:

FIGURE 13 - ELECTRONIC INTERACTIVE CHANNELS LEGISLATION

YEAR	LEGISLATION	MAIN CHANGES AND DIRECTIVES
2005	DECREE 45.820	*E-GOVERNMENT COORDINATION UNIT* TRANSFERRED FROM COMMUNICATION TO MANAGEMENT DEPARTMENT
2006	DECREE 47.267	CREATES THE *ELECTRONIC GOVERNMENT AND INFORMATION TECHNOLOGY POLICIES*, GIVING DIRECTIVES ABOUT POLICY GOALS, STRUCTURE AND PRACTICAL PROPOSALS
2009	DECREE 50.378	156 CALL CENTRE, SAC AND SAC ONLINE SEPARATED FROM THE *E-GOVERNMENT COORDINATION UNIT* AND TRANSFERRED BACK TO THE DEPARTMENT OF COMMUNICATION
2010	DECREE	THE *E-GOVERNMENT COORDINATION UNIT* IS DOWNGRADED TO A DIRECTORSHIP IN THE NEW DEPARTMENT OF BUDGET, PLANNING AND MANAGEMENT
2011	DECREE 52.269	CREATES THE INFORMATION AND COMMUNICATION TECHNOLOGY MUNICIPAL POLICY, ALIGNED WITH THE PREVIOUS 2006 POLICY, HOWEVER LEAVING ASIDE E-GOVERNMENT. THE NEW UNIT IS CALLED *MODERNIZATION AND INFORMATION AND TECHNOLOGY COMMUNICATION UNIT*.

Source: Author's own construction based on interviews and decrees

Generally speaking, except for the 2006 *Electronic Government Policy* and the 2011 *Information and Communication Technology Municipal Policy*, the decrees dealt with organizational changes, not with responsibilities, attributions, service agreement levels, etc., for the Departments in charge of citizen attention and service delivery.

The main changes in the organizational structure are presented as follows, with electronic channels moving from the Department of Communication to Management and back to the Communication Department, with the *e-Government Coordination Unit* remaining in the Department of Management.

FIGURE 14 - SÃO PAULO CITIZEN ATTENTION MAIN STRUCTURE: 2005-2009
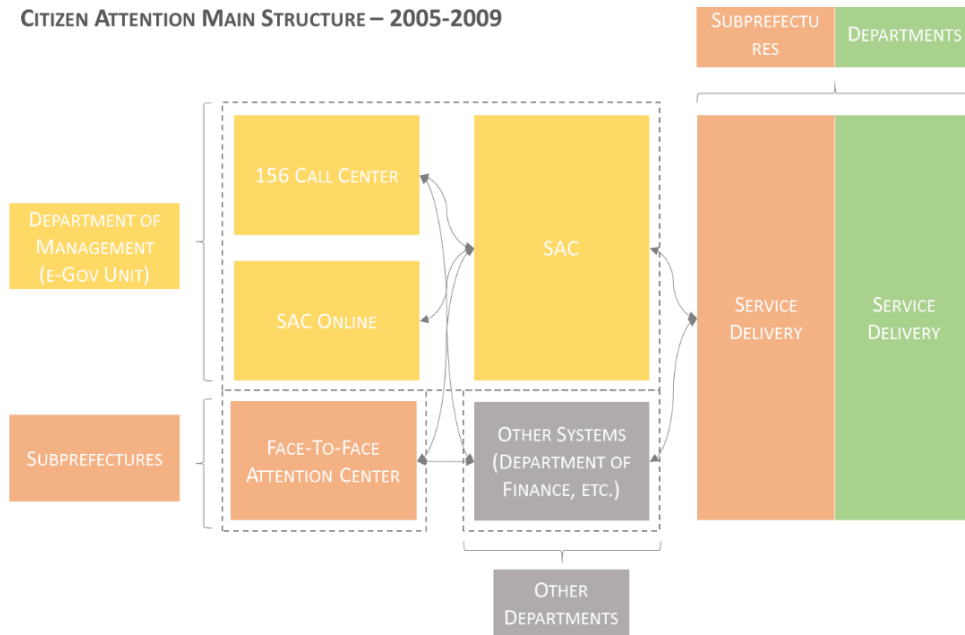
Source: Author's own construction based on interviews and decrees

**FIGURE 15 - SÃO PAULO CITIZEN ATTENTION MAIN STRUCTURE: 2009-2014**
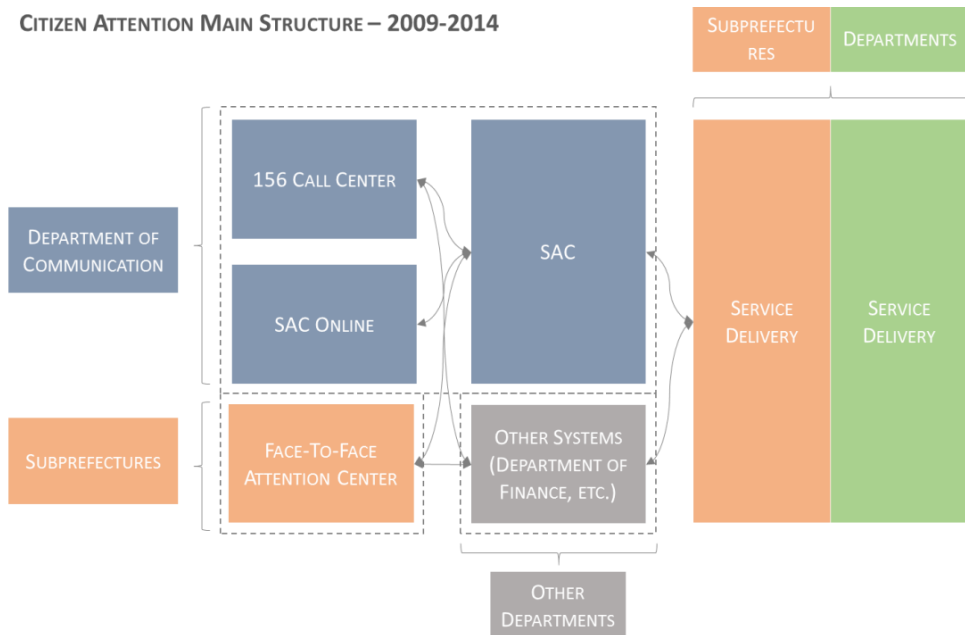
Source: Author's own construction based on interviews and decrees

iii.   COORDINATION OF PROCESSES IMPROVEMENT AND DATA MANAGEMENT (2013-2015)

Given the undefined e-Government organizational structure, the *Ordinance 185/2013* of the recently elected Mayor Fernando Haddad (Workers Party) created the Working Group in June 2013, in order to "coordinate studies related to the organization, standardization, regulation and rationalization of citizen attention care" (*Portaria 185/13* 2013). The main result of this Working Group was the creation of the Citizen Attention and Service Innovation Unit (CACISP) in August 2014, as already mentioned in the section *Interpretive Condition,* taking up the role of setting standards, service level agreements and focusing on data analysis to subsidize the evaluation and formulation of public policies and decision making processes. The unit became technically in charge of SAC, but only because it gave the staff access to its database. The 156 Call Centre remained at the Department of Communication.

FIGURE 16 - SÃO PAULO CITIZEN ATTENTION MAIN STRUCTURE: 2013-2015
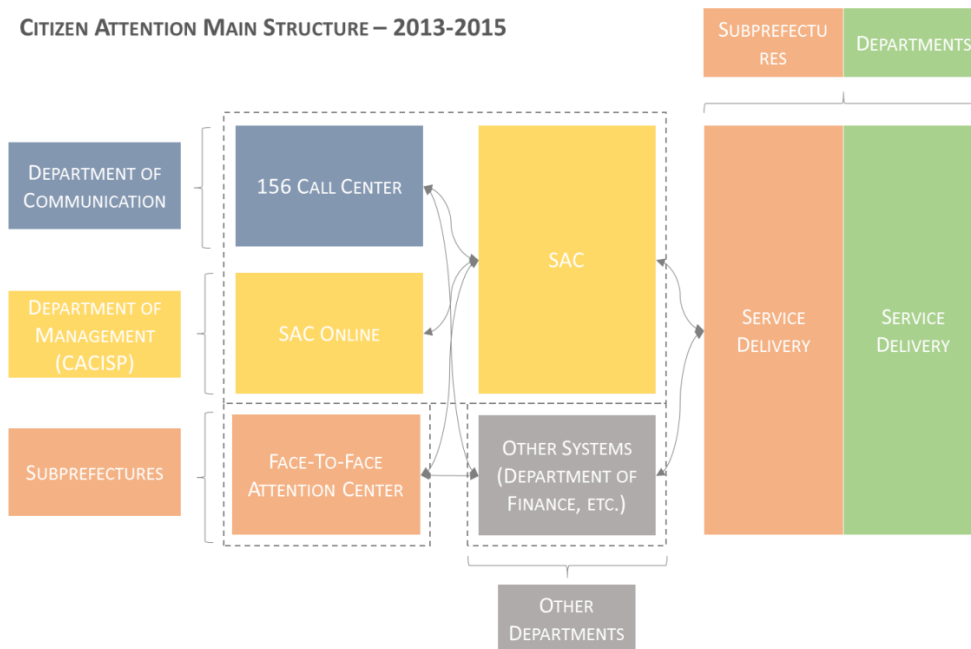
Source: Author's own construction based on interviews and decrees

As we can see, in the last period studied, administrative responsibilities over interaction channels were again changed and the organizational fragmentation was further intensified.

IV. SYNTHESIS OF INSTITUTIONAL CONDITIONS

The evolution of laws and regulations regarding electronic interaction channels shows that, since its beginning, there was no consensus over having an oversight body to coordinated e-Government channels and their attributions in São Paulo. The development of electronic interaction channels, despite the push given by the *Electronic Government Policy in 2006* toward more coordinated channels to improve government performance, initially occurred due to the Subprefectures decentralized services. The organization of these channels, which were never fully regulated, neither had their attributions well defined, was carried out according to the beliefs of the governments in power in each period. In the beginning, the interaction channels fell under the responsibility of the Department of Communication, with the objective of supporting decentralized and devolved service delivery (2001-2004). Then, they became controlled by the Department of Management, following the logic exposed in *Interpretive Conditions* of equalizing e-Government tools to higher performance and serving the citizen-customer better; the central idea of this period, highlighted in in the *Electronic Government Policy* was to centralize structural IT systems and decentralize the execution of e-Government actions, under a model of "managed freedom". The administration was only successful in the first part of the policy. At last, a new e-Government organizational model arose in the midst of completely undefined organizational structure: CACISP would only coordinate standards and service level agreements, and carry out citizen data analysis to aid Departments and Subprefectures to improve their services and work together to find solutions to common problems.

TABLE 6 - SYNTHESIS OF INSTITUTIONAL CONDITIONS – SÃO PAULO

INSTITUTIONAL CONDITIONS	
LAWS AND REGULATIONS REGARDING INTERACTION CHANNELS AND SERVICE DELIVERY	• UNCOORDINATED INTERACTION CHANNELS. CHANNELS BUILD WITH FOCUS ON DECENTRALIZED AND DEVOLVED SERVICE DELIVERY (2001-2004) • INTENTION OF INTEGRATION AND CENTRALIZED CONTROL OF IT SYSTEMS AND COORDINATION OF DECENTRALIZED EXECUTION OF E-GOVERNMENT (2006 ELECTRONIC GOVERNMENT POLICY) • FAILED E-GOVERNMENT CHANNELS COORDINATION ATTEMPTS (SEVERAL DECREES CHANGING DEPARTMENTS IN CHARGE OF INTERACTION CHANNELS 2005-2013) • COORDINATION OF ATTENTION STANDARDS AND SERVICE LEVEL AGREEMENTS; FOCUS ON DATA ANALYSIS OF TO SUBSIDIZE DEPARTMENTAL SERVICE IMPROVEMENT AND POLICY MAKING (2013 CITIZEN ATTENTION AND SERVICE INNOVATION UNIT)
ORGANIZATIONAL FORMS REGARDING INTERACTION CHANNELS AND SERVICE DELIVERY	• INTEGRATION OF SYSTEMS, INCOORDINATION AMONG CHANNELS, COLLABORATION BETWEEN INTERACTION CHANNELS AND DEPARTMENTS IN CHARGE OF SERVICE DELIVERY

Source: Author's own construction based on interviews, decrees and reports

3. CONSEQUENCES

A. PROCESSUAL CONSEQUENCES

This section analyses the changes in the work practices of São Paulo municipal government public officials as consequence of the increasing use of ICT-based interaction channels. This might be, for instance, more collaboration and communication among Departments, improvement of management tools and knowledge, increased effectiveness in citizen attention and service delivery, etc. In order to carry out this analysis, I focus on the evolution of information and service request flows and the citizen feedback and service usage

information flows between public officials, Departments and units involved in citizen attention and service delivery.

i. EVOLUTION OF INFORMATION AND SERVICE REQUESTS FLOWS

The several organizational changes regarding electronic interaction channels, as analysed in the previous sections, did not have the expected impact on information and service requests flows, mainly because interaction channels remained connect through the same workflow system, SAC. Those information and service requests flows had only two distinct phases: in the first phase (2003-2007) the information and services requests flows did not had changes in directions, sender or recipients, it was only augmented with the inclusion of new interaction channels; and, in the second phase, other IT systems began to be used for dispatching requests besides SAC (2008-2015).

a. INITIAL INFORMATION AND SERVICE REQUESTS FLOWS (2003-2007)

After the three main interaction channels were established (SAC Online in 1998, Face-to-Face Citizen Attention in 2002 and 156 Call Centre in 2003), the initial information and services request flows had SAC as the central workflow system, capturing requests and automatically dispatching them to the Departmental focal points[44], who would then send the service order to the units in charge, through their own departmental service order management system. After the Department staff delivers the service, the focal point registers its change in status on SAC, and the information runs back to the citizen if she actively calls the 156 Call Centre or checks her request status on SAC Online. During this

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[44] The Department may have more than one focal point, who may be related to a specific unit.

initial period, only the face-to-face citizen attention units used workflow systems other than SAC (for instance, the Department of Finance systems for emitting tax slips duplicates).

INFORMATION/SERVICE REQUESTS FLOWS
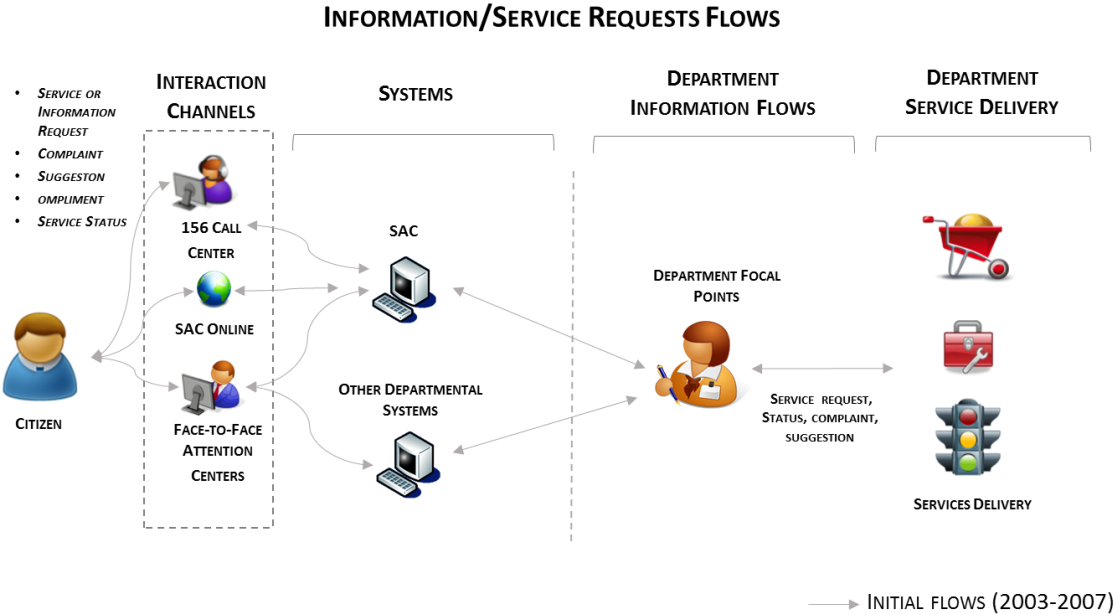
Source: Author's own construction based on interviews, decrees and reports

b.   ENACTED INFORMATION AND SERVICE REQUESTS FLOWS (2008-2015)

Over the years, as consequence of the many organizational changes regarding interaction channels, their owners and their roles, the idea of a central coordinating unit of all channels lost political power.

> "(…) over the years, claiming that their services required much technical knowledge, some Departments began to leave the 156 Call Centre, such as CET, ILUME and Amlurb[45]."

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[45] CET – Transit Department; ILUME – Public Lighting Department; Amlurb – Garbage Collection and Urban Cleaning Department.

Interview with Former Coordinator of the E-Government Coordination Unit (2006-2009)

Departments such as the *Public Lighting (ILUME),* who at first used SAC to capture and manage citizens requests, pulled out of the system and of the 156 Call Centre, creating one of its own. Others, such as the *Garbage Collection Department (AMLURB)*, continued to use SAC and be part of 156, but created other call centres and channels to interact with citizens. Finally, some Departments joined the 156 Call Centre but as SAC did not meet their needs – for instance, the Department of Health and its appointment service – the attendants also used their departmental system. The enacted flows are represented in the figure below:

FIGURE 18 - ENACTED INFORMATION AND SERVICE REQUEST FLOWS (2008-2015)
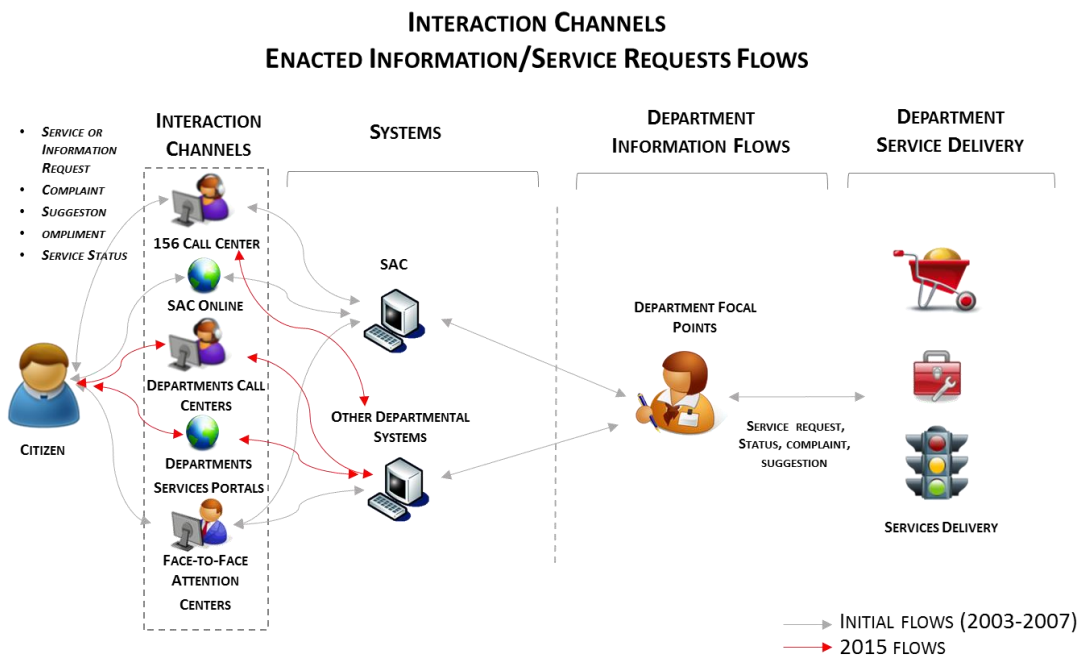
Source: Author's own construction based on interviews, decrees and reports

Therefore, in 2015, SAC is still of great importance but other systems also intermediate the service requests flows.

a. Initial Feedback and Service Usage Flows (2003-2004)

The initial feedback and service usage information flow were simple and involved few public bodies, as performance reports were not at the centre of citizen attention initiatives. *SAC Management* (*Gerenciamento*) collected and organized pre-defined and inflexible reports with information about the requests and the delivery of services. These reports, as we have seen in the *Technological Conditions* section*,* could be checked online by the Subprefectures and used mainly for resolving individual pending requests, speeding up service delivery and for other operational purposes. During these first years, the *E-Government Coordination Unit* did not have an active role in setting standards or monitoring Subprefectures and Departmental delivery performances.

FIGURE 19 - INITIAL FEEDBACK AND SERVICE USAGE INFORMATION FLOWS (2003-2004)
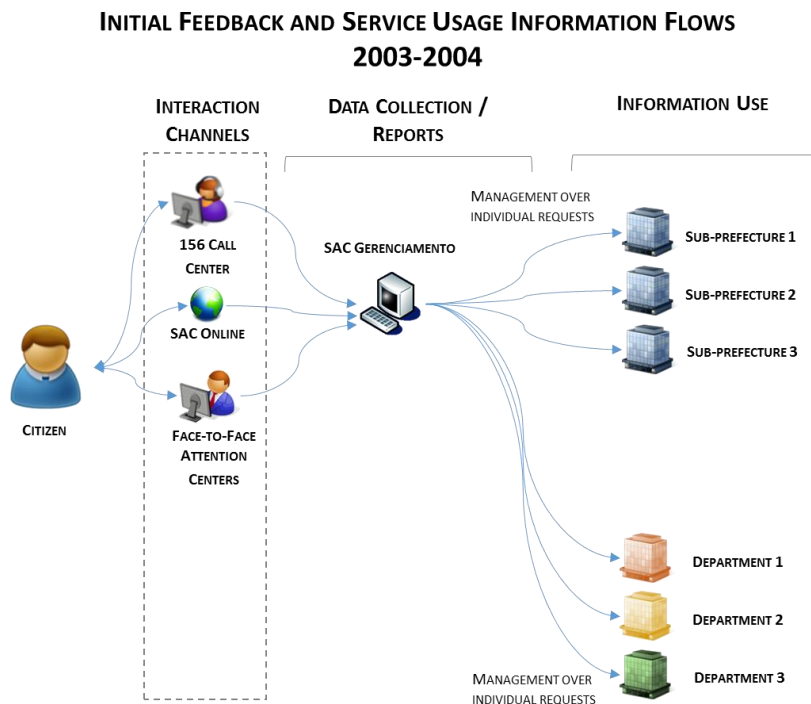
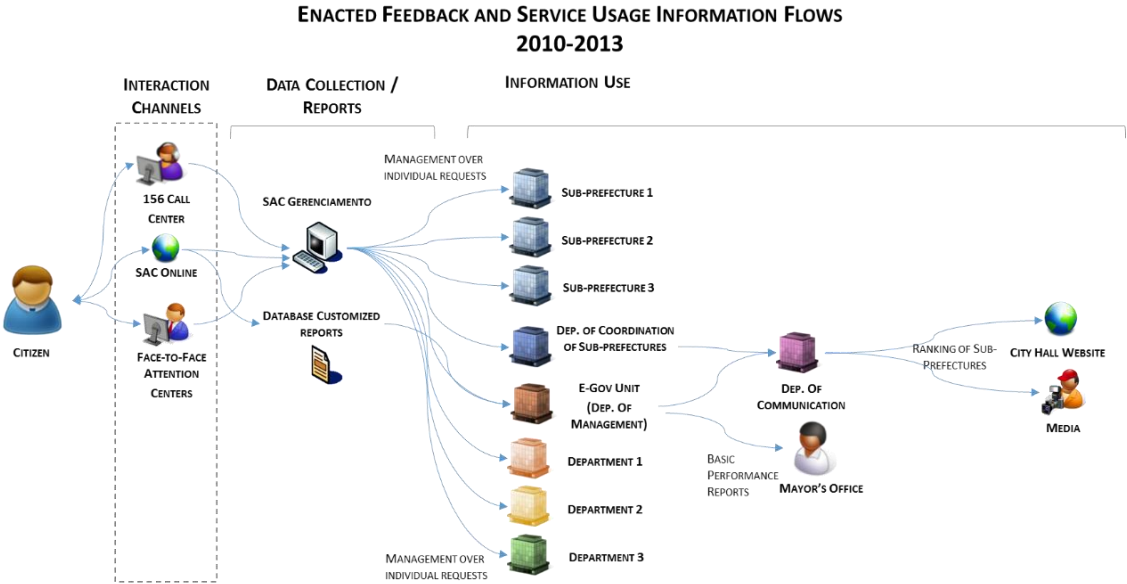INITIAL FEEDBACK AND SERVICE USAGE INFORMATION FLOWS
2003-2004

Source: Author's own construction based on interviews, decrees and reports

After the *E-Government Coordination Unit* was transferred to the Department of Management, and the *Electronic Government Policy* was published, the unit's roles and attributions became more clear, at least on paper; with information from *SAC Management* and a few customized reports by PRODAM, it began to monitor pending requests and informing Subprefectures and Departments heads about them. The unit also provided the Department of Communication and the Mayor Office with basic performance reports (percentage of service delivery in time, the ten most requested services, etc.), without, yet, with a cohesive strategic vision about the main problems in the city; this type of information was not used at the technical level as a diagnosis and planning tool. During this period, the Department of Communication began to publish online a performance ranking of Subprefectures, who started to be held accountable by the media – the goal was to foster competition and speed up service delivery, following one of the tenets of New Public Management.

FIGURE 20 - ENACTED FEEDBACK AND SERVICE USAGE INFORMATION FLOWS (2006-2009)
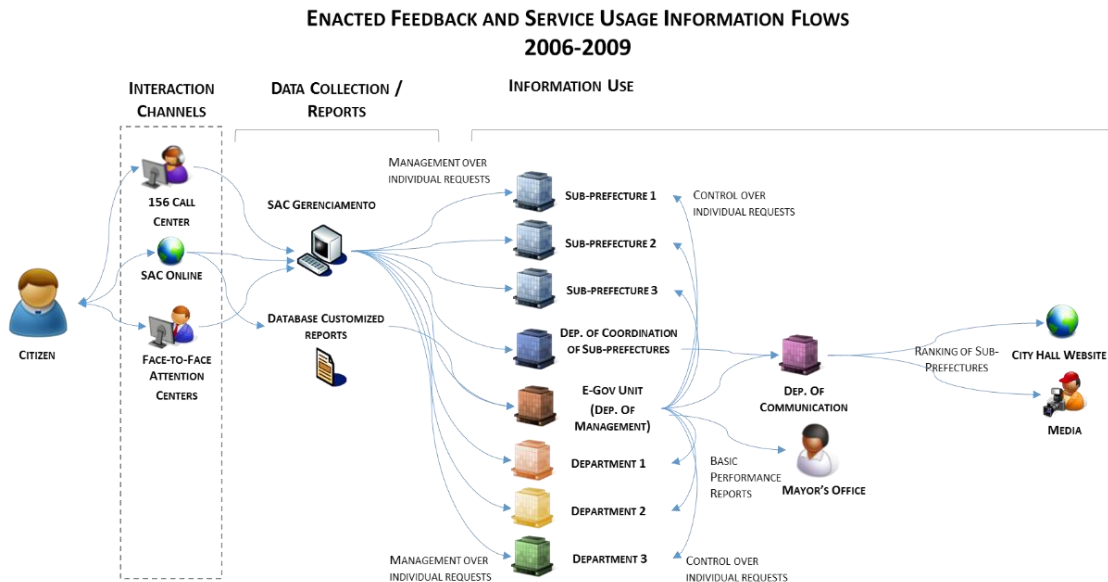
Source: Author's own construction based on interviews, decrees and reports

Between 2009/2010 and 2015, as a consequence of the electronic government institutional and political support decline, as explored in the *Institutional Conditions* section, the *e-Government Coordination Unit* gradually abandoned the role of monitoring requests and informing senior public officials about their Departments performances, returning to a situation similar to the 2003-2004 period.

FIGURE 21 - ENACTED FEEDBACK AND SERVICE USAGE INFORMATION FLOWS (2010-2013)

Source: Author's own construction based on interviews, decrees and reports

Beginning in the first year of Fernando Haddad's administration (2013), citizen attention initiatives gained a political and institutional upgrade, helped by the rise of new social media tools and the big data hype. The *Citizen Attention and Service Innovation Unit (CACISP)* began in 2014 a new phase of feedback and service usage information analysis. Beyond the ready-made *SAC Management* reports and those customized by PRODAM, CACISP received access to raw data from SAC and other Departmental databases. CACISP's team developed a data-crossing and mapping mechanism to produce, together with Departments' technical staff, customized and on-demand studies to help the diagnosis, formulation and evaluation of public policies. Data, information and analysis began to flood the technical groups in the departments, in a more informal and relational way of collaboration.
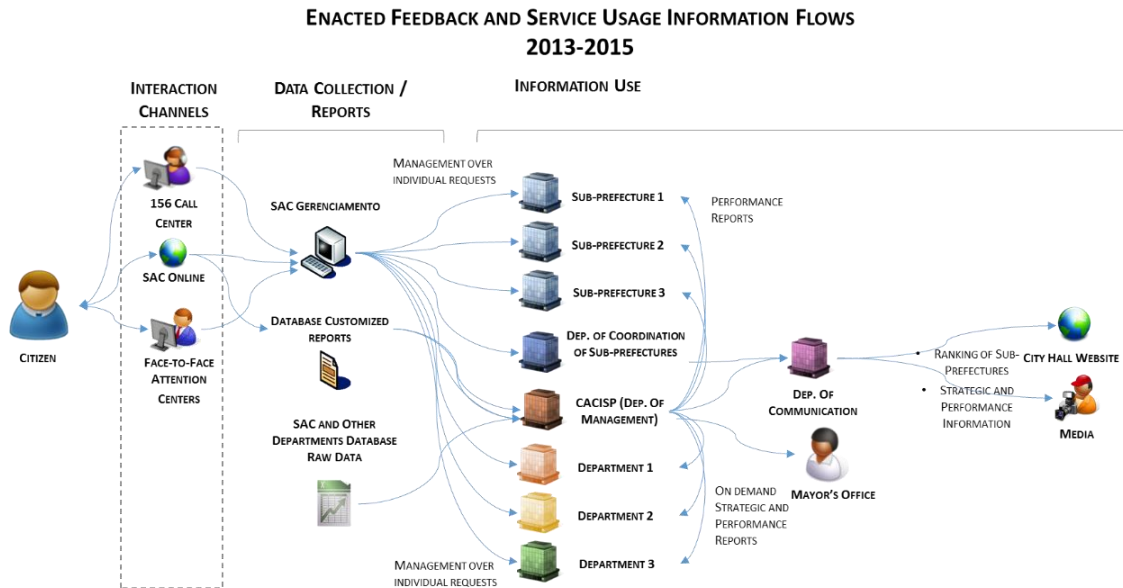
Source: Author's own construction based on interviews, decrees and reports

Not only the flows of these types of feedback information increased greatly, but also the *quality and complexity of the information* circulating inside government and irrigating public managers' minds improved substantially.

iii.   SYNTHESIS OF PROCESSUAL CONSEQUENCES

Information flows of information and services requests between interaction channels and Departments did not significantly change since the beginning of e-Government initiatives in the early 2000s.   They are mainly individual flows between SAC and the Department responsible for delivering the requested service; in other words, they one-to-one horizontal flows between citizens and Departments/Subprefectures, where the electronic channels are simply mediating interactions. The visible change since the late 2000s was the inclusion of other Departmental systems to mediate those interactions, as a result of the inability to

institutionalize an oversight body in charge of coordinating the actions of all interaction channels.

Until 2013, the use of feedback and service usage data was incipient and routine, only for monitoring individual pending requests, since the data and information available on *SAC Management* offered an incomplete view of service requests and delivery in the city, as it displayed only macro, non-georeferenced information about the Subprefectures, leaving aside other Departments' services information. As of 2013/2014, with the creation of CACISP, more data about citizen feedback and service use began to be collected and crossed with the other Departmental data, in order to provide analytical intelligence for service improvement and to solve common issues to different Departments. Therefore, a more collaborative and relational dynamic began to emerge among CACISP, Departments, Subprefectures and the Mayor and Vice-Mayor offices.

TABLE 7 - SYNTHESIS OF PROCESSUAL CONSEQUENCES – SÃO PAULO

PROCESSUAL CONSEQUENCES	
INFORMATION FLOWS AMONG THE DEPARTMENTS AND AGENCIES: HIERARCHICAL, COLLABORATION, NETWORKED	• ONLINE CONTACT AND TELEPHONE CALLS INFORMATION FLOWS: HORIZONTAL/ROUTINE BETWEEN INTERACTION CHANNELS AND DEPARTMENTS/SUBPREFECTURES • DATA COLLECTION: HIERARCHICAL/ROUTINE (UNTIL 2013); NETWORKED/RELATIONAL (2013-2015) • FEEDBACK INFORMATION USE: HIERARCHICAL/ROUTINE (UNTIL 2013); NETWORKED/RELATIONAL (2013-2015)

Source: Author's own construction based on interviews, decrees and reports

B.   TECHNOLOGICAL CONSEQUENCES

This section analyses the changes, if any, in the e-Government technological properties available to the São Paulo municipal government users and citizens. One of the main

premises of the analytical framework is that technology is not a closed system, but that its use is always situated and emergent. As people recurrently and routinely use the same technology, they enact technology-in-practice structures that are "stabilized-for-now"; on the other hand, when a technology does not help users achieve what they were originally thought for, or what they would like to achieve in the present, they might abandon it or work around it and/or change it.

i. SAC: WORKAROUNDS TO PROVIDE BUSINESS INTELLIGENCE REPORTS

Created in 1998, *SAC* was fit for Subprefectures services and their decentralized working logic. It worked perfectly for managing individual requests, but it has never offered a comprehensive and customized view of the City's demands. Although other Departments joined in, *SAC* only worked for them for capturing and delivering services requests. Several custom-made reports based on *Excel* had to be produced by PRODAM, extracting data directly from the *SAC* database, so that Departments other than the Subprefectures could have the most basic performance numbers regarding their services.

FIGURE 23 - SERVICE REQUESTS CUSTOM-MADE DATASHEETS REPORTS

CUSTOM-MADE REPORT

Assunto	Recebidas (Requested)	Concluidas (Delivered)	TMA (Average Delivery Time)
Árvore(Calçada/Passeio Público)	4524	4428	142
Buraco	4329	3820	36
Transporte publico / Conduta de Trabalho	3274	3586	19
População ou Pessoa em Situação de Rua	2706	2677	0
Poluição Sonora	2403	3120	139
Remoção veículo/carcaça	2002	2005	209
Lixo / Limpeza	1807	1551	54
Transporte publico / Linha e Itinerário	1784	2823	23
Bagulho/Grandes Objetos	1597	1694	78
Processo Encerrado/Solicitacao Vistas/Cópias	1592	1577	31
Entulho	1366	924	30
Animais / Cão	1257	5286	1283
Comercio irregular	1001	675	404
Calçada	984	641	379
Obras	901	568	303
Bueiros/galerias agua pluvial	869	720	183
Capinação/Roçada de áreas vegetadas	857	1181	151
Dengue (Mosquito Aedes aegypti)	787	4231	101
CET / Fiscalização	734	739	21
Varrição/Limpeza	732	550	38

JOINTLY VIEW OF SUBPREFECTURES AND DEPARTMENTS SERVICES

Source: Prodam Custom-Made Datasheets Reports

SAC has not structurally changed since 1998 and its management reports only partially cater to the Subprefectures needs. As Departments needed improved features and a proper Business Intelligence tool, some migrated to other systems and/or had to order *Excel*-based reports to PRODAM. This considerable deficiency reflected in the loss of relevance of the 156 Call Centre as well as in the possibility of developing digital channels as part of a unique e-Government Policy.

ii.   156: FROM BEING THE MAIN CALL CENTRE TO NOT HAVING THE CAPACITY TO SERVE ALL DEPARTMENTS

Originally, the *156 Call Centre* was conceptualized to facilitate communication between citizens and City Hall, by bringing all municipal public bodies into one single telephone number. The following administration saw its managerial potential and tried to elevate its status as part of a comprehensive *Electronic Government Policy*, but over the years, as the administration was unable to organize the coordination of channels, e-Government lost political support. Furthermore, the *156* used *SAC* as its main service dispatcher system from the beginning but, over the years, it became its prisoner. Because of SAC's deficiencies and, in order to keep its relevance and serve the population by keeping the highest number of Departmental services available through one single number, it began to use Departmental systems to register their services requests. Departments left and came back, such as the Department of Garbage Collection or the Department of Health, as long as 156 attendants used their systems. It was not uncommon for an attendant to use, for the same call, about three different systems. With the proliferation of workflow and management systems, top officials faced even more obstacles when trying to have a comprehensive view of citizens demands and Departmental performances in delivering them.

FAILED ONLINE ONE-STOP-SHOPS (2006 AND 2013) AND SOCIAL MEDIA

IMPLEMENTATION

The year of 2006, based on the *Electronic Government Policy* directives, saw a first attempt to organize the City Hall' web site with sections for citizens, businesses and tourists, along the lines of *life events*. The hired IT consultancy firm standardized the visual identity of the City Hall Portal and Departmental websites, as well as created a Services Guide, but failed to create a unique portal of interactive services.

FIGURE 24 - SÃO PAULO CITY HALL PORTAL: 2006-2013

Source: Department of Communication archives

SAC Online remained the main channel for service requests, coexisting with an increasing number of digital services on Departmental websites.

FIGURE 25 - SÃO PAULO ONLINE SERVICES GUIDE

Source: São   Paulo   Services   Guide   Print   Screen   –
http://www.prefeitura.sp.gov.br/guiadeservicos/cidadao (retrieved 09/09/2015)

Once again, in 2013, there was another attempt to organize online services. SAC Online corresponds to 33% of services requests registered on SAC. Public managers thought that this number would rise if all other services scattered through Departmental websites were organized according to citizens' needs.

FIGURE 26 - DISTRIBUTION OF SERVICES REQUESTS BY INTERACTION CHANNELS

INTERACTION CHANNEL	2014	%	2015	%
SAC Online	243.332	34,2%	72.418	33,3%
156 Attention Center	424.533	59,7%	130.750	60,1%
Face-to-Face Attention Centers	43.174	6,1%	14.249	6,6%
Total	711.039	100,0%	217.417	100,0%

Source: CACISP, 2015

Below is a screenshot of the current City Hall portal with the division of services in three blocks, geared toward citizens, businesses and tourists, a common and perhaps already old-fashioned division observed in many government websites. An unwary citizen would think that by clicking on *Street and Neighbourhood (Rua e Bairro)*, she would have at her disposal all transactional services related to the topic.

FIGURE 27 - SÃO PAULO CITY HALL PORTAL: 2013-2015

Source: São Paulo City Hall Portal - http://www.capital.sp.gov.br/ (retrieved 22/10/2015)

She would then be faced with a choice of subtopics and, by guessing on *Urban Maintenance* first, and then on *Tree Pruning*, she would arrive at the information about tree pruning. In order to request a tree pruning service, she would have to call 156, as told in the FAQ below, or click on the top of the page link to *SAC Online.* In other words, the 1998 SAC Online is still the main electronic channel to request services. But why is that?

FIGURE 28 - SÃO PAULO CITY HALL PORTAL – SERVICES FOR CITIZENS: 2013-2015

Source: São Paulo City Hall Portal - http://www.capital.sp.gov.br/ (retrieved 22/10/2015)

SAC, as workflow and online request system, is a pioneer for Brazilian and other developing countries standards. However as its use was rapidly consolidated in the Subprefectures and, not too much later, by various Departments, the cost of moving to a more modern system, that would allow for more flexibility in creating and eliminating fields, georeferencing data,

comprehensive dynamic data reports and easy integration with web applications and mobile, was and is still very high.

Departments who felt that their needs were not being met by *SAC* and who wanted to develop new digital tools have, over the years, developed small, individual online service systems and mobile applications themselves. The Department of Finance, for instance, has its own set of digital services and a recently launched mobile application, neither at all related to SAC or the visual identity of the main City Hall Portal.

FIGURE 29 - DEPARTMENT OF FINANCE PORTAL AND MOBILE APPLICATION
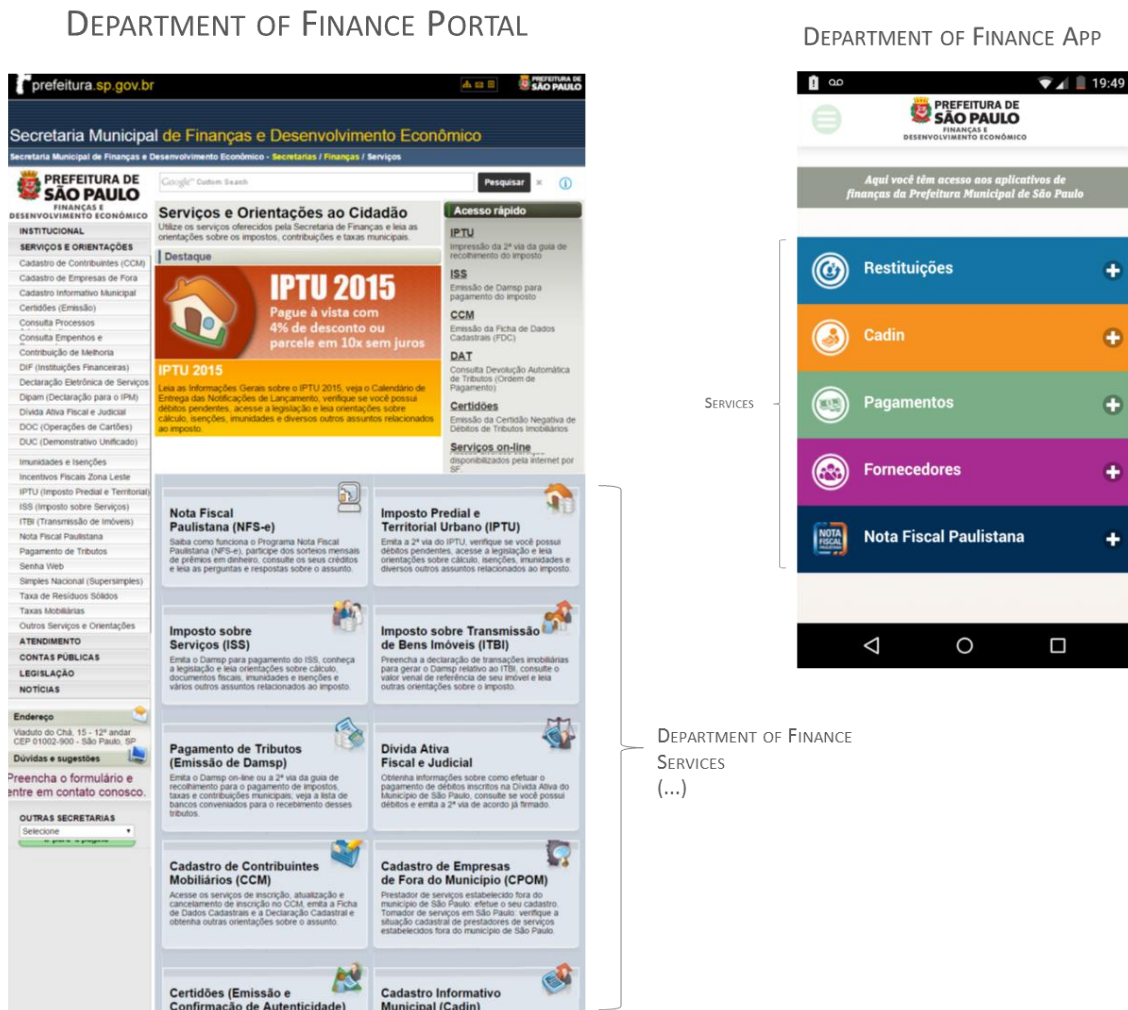
DEPARTMENT OF FINANCE PORTAL

DEPARTMENT OF FINANCE APP

Source: Department of Finance Portal (and Mobile Application Print Screens -

http://www.prefeitura.sp.gov.br/cidade/secretarias/financas/ (retrieved on 05/10/2015)

The development of social media for service and information requests in the São Paulo municipal administration faced the same problems as those who tried to developed online one-stop-shops: *SAC* as the main workflow system had no instruments for integrating with social media applications. Some Departments have recently start to use third-party mobile and social media apps, such as *TakeVista*[46] and *Colab.Re*[47], as SAC does not have the GPS, photo and web integration capabilities. The problem with adopting those applications are already surfacing: the raw data stays with the application developer, who is interested in making commercial use of it, and not with the municipal administration. Meanwhile, the City Hall official *Facebook*[48] profile, which is coordinated by a team at the Department of Communication – nevertheless working completely apart from the 156 team – has begun to interact with citizens more frequently, giving them information about public services. It is reaching a wide audience (it has more than 150,000 followers and an average of 500 likes per post). The example below shows the City Hall informing its followers about the opening of a library 24x7. A citizen asked whether there were 24h buses to get there and the City Hall profile answered back with a list of buses and their times.

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[46] http://takevista.sisplus.com.br/

[47] http://www.colab.re/

[48] https://www.facebook.com/PrefSP/

FIGURE 30 - SÃO PAULO CITY HALL FACEBOOK PROFILE

Source: São Paulo City Hall Facebook Profile - https://www.facebook.com/PrefSP

Although taking the role of a service interactive channel, the official *Facebook* profile team has not stared to compile the information about questions asked and answered, and it has not established a formal exchange of information flow with the *156 Call Centre* and *SAC* staff.

iv. SYNTHESIS OF TECHNOLOGICAL CONSEQUENCES

The SAC workflow system has taken a prominent role since the implementation of the first e-Government initiatives. However, as it has not significantly evolved since the early 2000s, its increasing deficiencies with regards newer technologies has triggered the E-Government Coordination Unit and Departments to develop *Excel*-based performance reports. Furthermore, added to the lack of legitimized oversight body to coordinate e-Government initiatives, Departments began to develop their own departmental services portals and mobile applications to circumvent SAC's limitations. Although there is an increasing use of Departmental systems to register requests in the 156 Call Centre, however, SAC is still the hub of most public services requests. It must be also noted that, the City Hall Facebook Profile has been also taken the role of giving information about public services, though it has not articulated with the other electronic channels nor has it began to systematized data about citizens feedback.

FIGURE 31 - SYNTHESIS OF TECHNOLOGICAL CONDITIONS – SÃO PAULO

TECHNOLOGICAL CONSEQUENCES	
CHANGES, ADJUSTMENTS, WORKAROUNDS IN THE TECHNOLOGICAL PROPERTIES AVAILABLE TO THE USERS OR CHANGE IN THEIR ENDS	• DEVELOPMENT OF SIMPLE PERFORMANCE REPORTS FOR DEPARTMENTS TO CIRCUMVENT SAC'S LIMITATIONS
	• INCREASING USE OF DEPARTMENTAL WORKFLOW SYSTEMS FOR CAPTURING SERVICES REQUESTS
	• FAILED ONE-STOP-SHOP, LIFE-EVENT BASED SERVICES PORTAL
	• DEVELOPMENT OF DEPARTMENTAL SERVICES PORTALS AND MOBILE APPLICATIONS TO CIRCUMVENT SAC'S LIMITATIONS AND THE INEXISTENCE OF AN E-GOVERNMENT POLICY IN PRACTICE
	• CITY HALL FACEBOOK PROFILE INCREASING ROLE IN ANSWERING CITIZENS ABOUT SERVICES, IN A MORE DYNAMIC AND INFORMAL WAY

Source: Author's own construction based on interviews, decrees and reports

C.   STRUCTURAL CONSEQUENCES

This section delves into the structural unintended changes, if any, that São Paulo ICT-interaction channels users enact, given the conditions (interpretive, technological and institutional) and the processual and technological consequences explored in the previous sections. These structures are associated with technology enactments that preserve the status quo, i.e. reproduce the former organizational structures, reinforce and enhance *status quo*, i.e. reinforce the current structure by making improvements to it and to its outputs, or transform status quo, i.e. change the configuration of the existing forms of organization - in this research, toward more networked ones. In order to understand whether these changes took place in São Paulo, I give special attention to the emergence of interdepartmental collaboration and coordination structures, in the back office, and to the e-Government morphology, or the online characteristics that may point towards joined up arrangements.

i.   E-GOVERNMENT AS NEW TECHNOLOGY: ENHANCING STATUS QUO (2003-2004)

It is undeniable that the simple implementation of centralized electronic interaction channels focused on the citizen, and not simply mirroring the administration structure, is a disruptive element against the usual functioning of the Departments. In its early years, e-Government initiatives, first with *SAC Online* in 1998, and not much later with the *156 Call Centre*, in 2003, immediately showed great potential for not only facilitating citizen attention, but also for stimulating Departmental performance in delivering public services. In those years, however, the idea of transforming service provision was not yet clear in policy makers' minds. In that sense, in those first years, e-Government reinforced and enhanced the status quo.

ii.   e-Government as Uncoordinated Initiatives: Preserving Status Quo (2006-2013)

As discussed in previous sections, the interaction channels are widely used by the population but are not yet institutionalized as core State policies. It is striking that between 2006 and 2013/14 there were several attempts to put the *Electronic Government Policy* into practice through centralizing strategic planning and the execution of some directives through a centralized *e-Government Coordination Unit.* However, with the Unit swinging from the Communication to the Management and then back to the Communication Department, the *Electronic Government Policy* did not become an institutionalized State Policy. The interaction channels owners and roles changed all the time; this uncertainty did not allow the channels to evolve as an integrated citizen service policy, with a systemic view of the needs of citizens and the city's problems, whether by sector or regionally.

The incipient e-Government initiatives originated in the context of the decentralization of public services and, over the years, there have been movements, sometimes stronger, sometimes weaker, of centralizing the coordination of these activities, with not much success. As the interaction channels were born in different Departments, São Paulo has not seen the creation of an empowered oversight body to coordinate the development of e-Government activities distributed in various Departments.

It seems clear that there was a process of path dependence in relation to the adopted technology. From pioneer to stagnation, City Hall has been stuck with the *SAC* system for 15 years. *SAC* functions as a workflow system, with few management and intelligence capabilities. Thus, the service channels, in general, served only to centralize requests for information and service, with nothing very innovative beyond that. Therefore, the evolution of the main digital interaction channels – the *156 Call Centre* and *SAC Online* – did not represent a revolution, nor great enhancements in service delivery. Advances in the front office, common to e-Government strategies in other administrations, such as the organization of services in life events or the customization of websites, were tried out but

not completed. Facing similar barriers, mobile applications have recently been developed independently by a few Departments.

Nevertheless, there are, what I call *pockets* of great enhancement in the back office and, in a few cases, real transformation of service delivery, with a clear inclination toward network forms of organization with the participation of civil society. Some of these examples are detailed next.

iii.   POCKETS OF ENHANCEMENT AND TRANSFORMATION OF STATUS QUO (2013-2015)

As of 2013-2014, given the constraints of the structures and the available system, strategic visions by type of service requests and regions have begun to be made on demand to CACISP by Department heads and the Mayor. Below are some examples of what I call pockets of enhancement and transformations in service delivery and, in some cases, in organizational dynamics, as a result of this new shared vision about the potential of ICT-mediated interaction channels.

Unavailability of Medicines in Health Facilities

When visiting public Health facilities, the Mayor received numerous complaints about the lack of medicines and the quality of human care. He requested to CACISP staff that the claims made through *SAC Online* and *156* had to register in which hospitals or health centres those complaints happened. By mapping all requests and complaints made between September 2014 and January 2015, CACISP provided visual information to the Mayor and the Health Department Secretary about which Subprefectures received more complaints in general, indicating, for instance, where there were issues related to human resources, lack of medicines, diapers, etc.

FIGURE 32 - HEALTH OMBUDSMAN DATA BY SUBPREFECTURE AND TYPE

HEALTH OMBUDSMAN DATA
BY SUBPREFECTURE AND TYPE

SUBPREFECTURE

TYPE (SERVICE REQUEST, COMPLAINT) AND ESPECIFICATION OF MANIFESTATION (HUMAN RESOURCES, MEDICINE, DIAPERS)

M'BOI MIRIM	
SOLICITACAO	144
CONSULTA/ATENDIMENTO/TRATAMENTO	94
CIRURGIA	38
DIAGNÓSTICO POR ULTRA-SONOGRAFIA	12
RECLAMACAO	126
RECURSOS HUMANOS	71
CONSULTA/ATENDIMENTO/TRATAMENTO	28
ESTABELECIMENTO DE SAÚDE	27
DENUNCIA	12
RECURSOS HUMANOS	5
ESTABELECIMENTO DE SAÚDE	4

CAPELA DO SOCORRO	
SOLICITACAO	210
CONSULTA/ATENDIMENTO/TRATAMENTO	173
CIRURGIA	28
FRALDA DESCARTÁVEL	9
RECLAMACAO	126
CONSULTA/ATENDIMENTO/TRATAMENTO	58
RECURSOS HUMANOS	43
ESTABELECIMENTO DE SAÚDE	25
DENUNCIA	11
RECURSOS HUMANOS	7
SERVIÇOS DE INTERESSE À SAUDE	2
CONSULTA/ATENDIMENTO/TRATAMENTO	1

PENHA	
SOLICITACAO	210
CONSULTA/ATENDIMENTO/TRATAMENTO	163
CIRURGIA	31
FRALDA DESCARTÁVEL	16
RECLAMACAO	150
RECURSOS HUMANOS	87
CONSULTA/ATENDIMENTO/TRATAMENTO	40
ESTABELECIMENTO DE SAÚDE	23
DENUNCIA	9
RECURSOS HUMANOS	5
-	2

ITAIM PAULISTA	
SOLICITACAO	239
CONSULTA/ATENDIMENTO/TRATAMENTO	189
CIRURGIA	24
FRALDA DESCARTÁVEL	13
DOCUMENTOS	13
RECLAMACAO	89
RECURSOS HUMANOS	46
CONSULTA/ATENDIMENTO/TRATAMENTO	27
ESTABELECIMENTO DE SAÚDE	16
DENUNCIA	7
RECURSOS HUMANOS	7

ITAQUERA	
SOLICITACAO	191
CONSULTA/ATENDIMENTO/TRATAMENTO	147
CIRURGIA	38
DIAGNÓSTICO POR RESSONANCIA MAGNÉTICA	6
RECLAMACAO	139
RECURSOS HUMANOS	84
CONSULTA/ATENDIMENTO/TRATAMENTO	37
ESTABELECIMENTO DE SAÚDE	18
DENUNCIA	17
RECURSOS HUMANOS	11
ESTABELECIMENTO DE SAÚDE	3

Source: SUS Ombudsmen Report, January 2015

The Mayor and the Health Department Secretary could also pinpoint which health facilities in each Subprefectures received more complaints:

FIGURE 33 - HEALTH OMBUDSMAN DATA BY SUPREFECTURE AND HEALTH FACILITY

BY SUBPREFECTURE AND HEALTH FACILITY

HEALTH FACILITY

M'BOI MIRIM	
HM DR. FERNANDO MAURO PIRES DA ROCHA - CAMPO LIMPO	22
RECLAMACAO	22
UPA CAMPO LIMPO	15
RECLAMACAO	15
UBS CHÁCARA SANTANA	15
SOLICITACAO	15
AMA. ESPECIALIDADES JARDIM SÃO LUIZ	13
SOLICITACAO	13
UBS JARDIM SOUZA	12
SOLICITACAO	12
UBS CIDADE IPAVA	9
SOLICITACAO	9

CAPELA DO SOCORRO	
UBS JARDIM REPÚBLICA	37
SOLICITACAO	37
UBS JARDIM ELIANE	33
SOLICITACAO	33
UBS JARDIM ICARAÍ - QUINTANA	28
SOLICITACAO	28
UBS JARDIM CASTRO ALVES	25
SOLICITACAO	25
UBS/AMB ESPEC JARDIM CLIPER	21
SOLICITACAO	21

UBS VILA ESPERANÇA - DR. CASSIO BITENCOURT FILHO	28
SOLICITACAO	14
RECLAMACAO	14
UBS ENGENHEIRO GOULART - DR. JOSÉ PIRES	23
SOLICITACAO	23
AMA MAURICE PATE	15
SOLICITACAO	15
UBS VILA SILVIA	14
SOLICITACAO	14

ITAIM PAULISTA	
UBS JARDIM NÉLIA	53
SOLICITACAO	53
UBS JARDIM DAS OLIVEIRAS	41
SOLICITACAO	41
UBS ITAIM PAULISTA - DR. JÚLIO DE GOUVEIA	30
SOLICITACAO	30
UBS JARDIM CAMARGO NOVO	22
SOLICITACAO	22
UBS JARDIM SILVA TELLES	17
SOLICITACAO	17

ITAQUERA	
AMA. ESPECIALIDADES ITAQUERA	27
SOLICITACAO	27
HM PROF. DR. WALDOMIRO DE PAULA - ITAQUERA/PLANALTO	18
SOLICITACAO	18
UBS VILA SANTANA	14
SOLICITACAO	14
UBS JARDIM BRASILIA	14
SOLICITACAO	14
UBS JARDIM NOSSA SENHORA DO CARMO	13
SOLICITACAO	13

Source: SUS Ombudsmen Report, January 2015

Drilling down the information, managers were also offered a detailed view about which health facilities improved and which worsened in the previous 30 days.

FIGURE 34 - HEALTH OMBUDSMAN DATA: HEALTH FACILITIES RANKING

# fev/15	# 7 meses anteriores	Δ Ranking	UBSs (Adm. Indireta)	Manifestações	Subprefeitura	Organização da Saúde
1	123	⬆ 122	UBS JARDIM JOAMAR	22	Jaçanã/Tremembé	SANTA CASA - SP
2	10	⬆ 8	UBS JARDIM SOARES	19	Guaianases	SANTA MARCELINA
3	1	⬇ 2	UBS JARDIM ELIANE	16	Capela do Socorro	ASF
4	43	⬆ 39	UBS VILA CURUÇÁ	14	Itaim Paulista	SANTA MARCELINA
5	76	⬆ 71	UBS GAIVOTAS	13	Capela do Socorro	ASF
5	2	⬇ 3	UBS JARDIM CASTRO ALVES	13	Capela do Socorro	ASF
7	286	⬆ 279	UBS REPUBLICA	11	Sé	ASF
7	18	⬆ 11	UBS VILA SONIA	11	Butantã	FFM
9	18	⬆ 9	UBS CARANDIRU	10	Vila Maria/Vila Guilherme	SPDM
10	26	⬆ 16	UBS VILA CONSTÂNCIA - DR VICENTE OCTAVIO GUIDA	9	Cidade Ademar	SANTA CATARINA

# fev/15	# 7 meses anteriores	Δ Ranking	UBSs (Adm. Direta)	Manifestações	Subprefeitura	Organização da Saúde
1	2	⬆ 1	UBS JARDIM REPÚBLICA	22	Capela do Socorro	ADMINISTRAÇÃO DIRETA
2	9	⬆ 7	UBS VILA PROGRESSO - JD MONTE ALEGRE	19	Freguesia/Brasilândia	ADMINISTRAÇÃO DIRETA
3	5	⬆ 2	UBS ITAIM PAULISTA - DR. JÚLIO DE GOUVEIA	17	Itaim Paulista	ADMINISTRAÇÃO DIRETA
4	84	⬆ 80	UBS ADELAIDE LOPES	15	Casa Verde/Cachoeirinha	ADMINISTRAÇÃO DIRETA
4	34	⬆ 30	UBS JARDIM VERA CRUZ - PERDIZES	15	Lapa	ADMINISTRAÇÃO DIRETA
6	18	⬆ 12	UBS VELEIROS	14	Capela do Socorro	ADMINISTRAÇÃO DIRETA
7	206	⬆ 199	UBS J BRASILIA	13	Itaquera	ADMINISTRAÇÃO DIRETA
7	4	⬇ 3	UBS JARDIM JAQUELINE	13	Butantã	ADMINISTRAÇÃO DIRETA
9	3	⬇ 6	UBS DR. HUMBERTO PASCALE - SANTA CECÍLIA	12	Sé	ADMINISTRAÇÃO DIRETA
9	74	⬆ 65	UBS JOSE BONIFACIO III - DRA. LUCY MAYUMI UDAKIRI	12	Itaquera	ADMINISTRAÇÃO DIRETA

# fev/15	# 7 meses anteriores	Δ Ranking	AMAs/AMEs (Adm. Indireta)	Manifestações	Subprefeitura	Organização da Saúde
1	1	-	AMA. ESPECIALIDADES VILA CONSTÂNCIA	43	Cidade Ademar	SANTA CATARINA
2	5	⬆ 3	AMA. ESPECIALIDADES PARQUE PERUCHE	26	Casa Verde/Cachoeirinha	ASF
3	7	⬆ 4	UBS/AMB ESPEC JARDIM CLIPER	13	Capela do Socorro	ASF
4	39	⬆ 35	AMA ESPECIALIDADES VILA BERTIOGA	12	Mooca	CEJAM
4	3	⬇ 1	AMA. ESPECIALIDADES VILA ZATT	12	Pirituba	ASF
6	9	⬆ 3	AMA SOROCABANA	10	Lapa	ASF
7	16	⬆ 9	AMA JARDIM ICARAÍ	9	Capela do Socorro	ASF
7	12	⬆ 5	AMA. ESPECIALIDADES BURGO PAULISTA	9	Ermelino Matarazzo	SECONCI
7	19	⬆ 12	UBS/AMB ESPEC SÃO CARLOS	9	Guaianases	SANTA MARCELINA
10	32	⬆ 22	AMA ESPECIALIDADES DR HUMBERTO PASCALE SANTA CE	7	Sé	SIRIO LIBANES

# fev/15	# 7 meses anteriores	Δ Ranking	AMAs/AMEs (Adm. Direta)	Manifestações	Subprefeitura	Organização da Saúde
1	1	-	CER IV/ AMB ESPEC DR. FLÁVIO GIANNOTTI	41	Ipiranga	ADMINISTRAÇÃO DIRETA
2	2	-	AMB ESPEC FREGUESIA DO Ó	17	Freguesia/Brasilândia	ADMINISTRAÇÃO DIRETA

Source: SUS Ombudsmen Report, May 2015

Furthermore, they were offered a full list of types of complaints for each health facility, which were ranked from worst to best.

MANIFESTATION'S SPECIFICATION (HUMAN RESOURCES, MATERIAL RESOURCES, MEDICINE, ULTRASOUND, SURGERY, ETC)		
RECURSOS MATERIAIS	19	
CONSULTA/ATENDIMENTO/TRATAMENTO	8	
FUNCIONAMENTO	4	
DIAGNÓSTICO POR ULTRA-SONOGRAFIA	4	
CIRURGIA	4	
DIAGNÓSTICO POR RADIOLOGIA	3	
OUTROS	3	
DOCUMENTOS	3	
MATERIAL DE USO HOSPITALAR (GAZE, ESPARADRAPO, OUTROS)	2	
DIAGNÓSTICO - COLETA DE MATERIAL	1	
CREDENCIAMENTO	1	
SERVIÇOS DE SAÚDE	1	
INCLUSÃO DE MEDICAMENTOS NA REDE SUS	1	
DIAGNÓSTICO EM GINECOLOGIA/OBSTETRÍCIA	1	
AMA. ESPECIALIDADES VILA CONSTÂNCIA	139	Cidade Adem
CONSULTA/ATENDIMENTO/TRATAMENTO	109	
ESTABELECIMENTO DE SAÚDE	8	
CIRURGIA	7	
DIAGNÓSTICO	4	
DIAGNÓSTICO POR RESSONANCIA MAGNÉTICA	3	
RECURSOS HUMANOS	3	
OUTROS	1	
ATENÇÃO BÁSICA	1	
DOCUMENTOS	1	
DIAGNÓSTICO EM CARDIOLOGIA	1	
DIAGNÓSTICO POR RADIOLOGIA	1	
UBS JARDIM NÉLIA	97	Itaim Paulist
CONSULTA/ATENDIMENTO/TRATAMENTO	61	
DOCUMENTOS	9	
RECURSOS HUMANOS	8	
CIRURGIA	5	
ESTABELECIMENTO DE SAÚDE	3	
NÃO ESPECIFICADO	3	
ATENÇÃO BÁSICA	2	
ASSISTÊNCIA BÁSICA	1	
DIAGNÓSTICO POR ENDOSCOPIA	1	
SERVIÇOS DE SAÚDE	1	
DIAGNÓSTICO EM LABORATÓRIO CLÍNICO	1	
DIAGNÓSTICO EM NEUROLOGIA	1	
HM DR. CARMINO CARICCHIO - TATUAPÉ	95	Mooca
RECURSOS HUMANOS	44	
ESTABELECIMENTO DE SAÚDE	17	
CIRURGIA	11	
CONSULTA/ATENDIMENTO/TRATAMENTO	10	
DOCUMENTOS	3	
DIAGNÓSTICO	3	

Source: SUS Ombudsmen Report, May 2015

Even more detailed, the mayor could visualize in which Subprefectures there was a lack of medicines:

FIGURE 36 - MAP OF COMPLAINTS REGARDING UNAVAILABILITY OF MEDICINES

COMPLAINTS REGARDING
UNAVAILABILITY OF MEDICINES
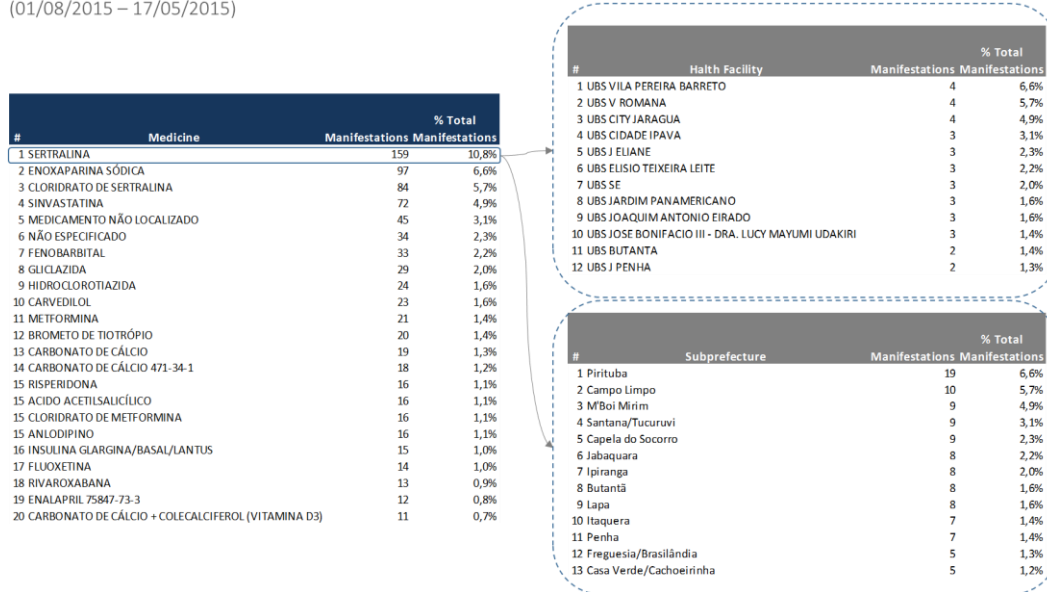(1.471, BETWEEN 01/08/2014 AND 17/05/2015)
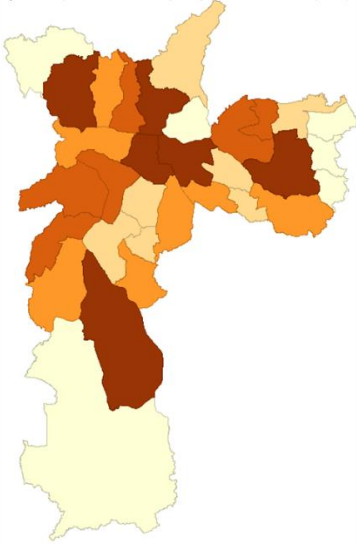
Source: SUS Ombudsmen Report, May 2015

Finally, the analysis detailed the type of medicine lacking by Subprefecture and health facility.

FIGURE 37 - HEALTH OMBUDSMAN DATA: UNAVAILABILITY OF MEDICINES BY TYPE AND LOCATION

UNAVAILABILITY OF MEDICINES – TYPE AND LOCATION
(01/08/2015 – 17/05/2015)

#	Medicine	Manifestations	% Total Manifestations
1	SERTRALINA	159	10,8%
2	ENOXAPARINA SÓDICA	97	6,6%
3	CLORIDRATO DE SERTRALINA	84	5,7%
4	SINVASTATINA	72	4,9%
5	MEDICAMENTO NÃO LOCALIZADO	45	3,1%
6	NÃO ESPECIFICADO	34	2,3%
7	FENOBARBITAL	33	2,2%
8	GLICLAZIDA	29	2,0%
9	HIDROCLOROTIAZIDA	24	1,6%
10	CARVEDILOL	23	1,6%
11	METFORMINA	21	1,4%
12	BROMETO DE TIOTRÓPIO	20	1,4%
13	CARBONATO DE CÁLCIO	19	1,3%
14	CARBONATO DE CÁLCIO 471-34-1	18	1,2%
15	RISPERIDONA	16	1,1%
15	ACIDO ACETILSALICÍLICO	16	1,1%
15	CLORIDRATO DE METFORMINA	16	1,1%
15	ANLODIPINO	16	1,1%
16	INSULINA GLARGINA/BASAL/LANTUS	15	1,0%
17	FLUOXETINA	14	1,0%
18	RIVAROXABANA	13	0,9%
19	ENALAPRIL 75847-73-3	12	0,8%
20	CARBONATO DE CÁLCIO + COLECALCIFEROL (VITAMINA D3)	11	0,7%

#	Halth Facility	Manifestations	% Total Manifestations
1	UBS VILA PEREIRA BARRETO	4	6,6%
2	UBS V ROMANA	4	5,7%
3	UBS CITY JARAGUA	4	4,9%
4	UBS CIDADE IPAVA	3	3,1%
5	UBS J ELIANE	3	2,3%
6	UBS ELISIO TEIXEIRA LEITE	3	2,2%
7	UBS SE	3	2,0%
8	UBS JARDIM PANAMERICANO	3	1,6%
9	UBS JOAQUIM ANTONIO EIRADO	3	1,6%
10	UBS JOSE BONIFACIO III - DRA. LUCY MAYUMI UDAKIRI	3	1,4%
11	UBS BUTANTA	2	1,4%
12	UBS J PENHA	2	1,3%

| #	Subprefecture	Manifestations	% Total Manifestations
1	Pirituba	19	6,6%
2	Campo Limpo	10	5,7%
3	M'Boi Mirim	9	4,9%
4	Santana/Tucuruvi	9	3,1%
5	Capela do Socorro	9	2,3%
6	Jabaquara	8	2,2%
7	Ipiranga	8	2,0%
8	Butantã	8	1,6%
9	Lapa	8	1,6%
10	Itaquera	7	1,4%
11	Penha	7	1,4%
12	Freguesia/Brasilândia	5	1,3%
13	Casa Verde/Cachoeirinha	5	1,2%

Source: SUS Ombudsmen Report, May 2015

This analysis raised a concern about why medicines were not reaching some places – for instance, why *Sertralina* was not available in some *Pirutuba* Subprefecture Health Facilities? The conclusion, knowing that the problem was not budget-related, was that there were logistical bottlenecks in the distribution of medicines. Based on this diagnosis, a project of process mapping was initiated to resolve the issue.

Albeit as a single enterprise, this example shows the technology-in-practice *enhancing service provision*, whereby CACISP is called upon by the Mayor to help the Health Department to diagnose and find a solution for the ill-distribution of medicines in health facilities by using citizen data to subsidize service delivery improvement.

FIGURE 38 - HEALTH COMPLAINTS DATA: ENHANCEMENT OF PUBLIC SERVICES
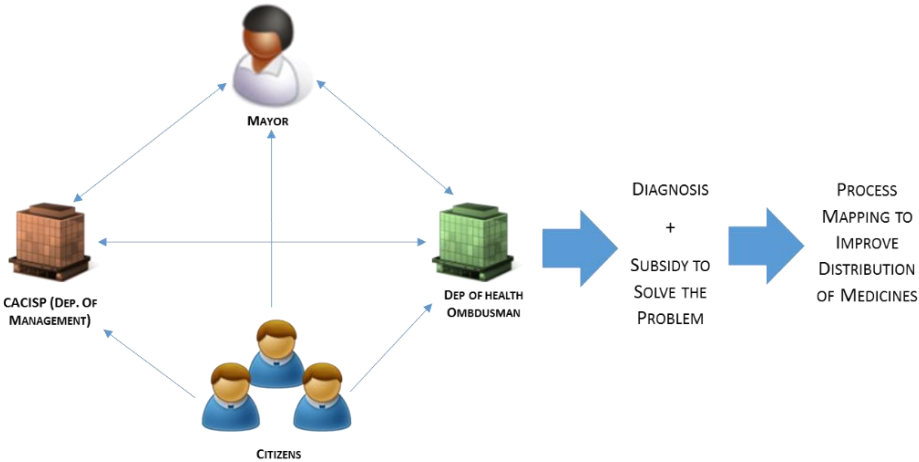
Source: Author's own construction based on interviews, decrees and reports

Noise Pollution Complaints

The Coordination of Citizen Attention Service Innovation was solicited again by the Mayor to cross noise pollution complaint data over the years with the data regarding the actions carried out by the Department of Racial Equality. In São Paulo, a cultural movement of *Pancadões* has taken the periphery streets, i.e. parties playing Brazilian funk music geared toward the youth; although a great social movement of cultural expression from the city fringes, it also involves large amounts of drugs, alcohol and gangs, and causes noise

disturbances in the neighbourhoods. The Department of Racial Equality mapped those open-air parties, negotiated with some of the organizers and, by offering the some infrastructure, was able to set parameters for the parties – regarding location, functioning time, controlled alcohol selling - , hoping to diminish the neighbourhood discontent

Below is the evolution of noise complaints related to trucks with loudspeakers in the city, showing a considerable increase from 2013 (728 complaints) to 2014 (2.660 complaints).

NOISE COMPLAINTS – CAR WITH LOUDSPEAKERS
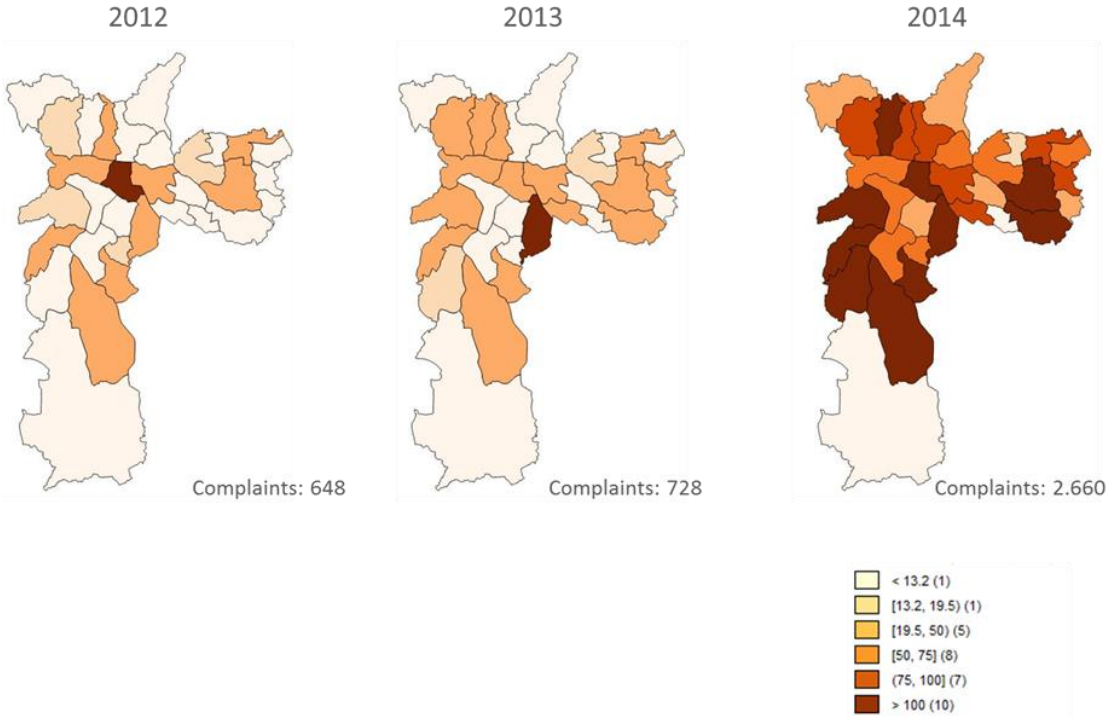
Source: CACISP internal report for the Mayor, May 2015

Departmental actions initiated in the first half of 2014. In the figure below, legalized open-air parties are dotted in green, beige and blue on the map; when plotting those dots against noise pollution data from the first five months of 2015, we see that the Departmental actions were effective and should continue.

FIGURE 40- MAPS OF OPEN AIR PARTIES VERSUS NOISE COMPLAINT DATA
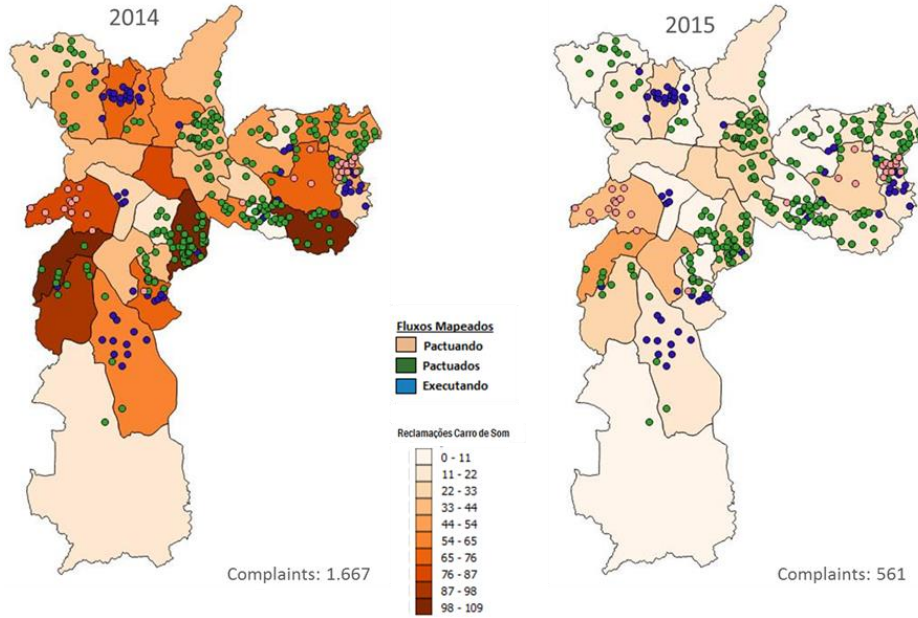
Source: CACISP internal report for the Mayor, May 2015

This analysis was not only used to reinforce the program, but to convince the Police Department – under the State Government responsibility – to get involved in it and act together with the City Hall.

FIGURE 41 - NOISE COMPLAINT DATA – ENHANCED AND COLLABORATIVE SERVICE DELIVERY
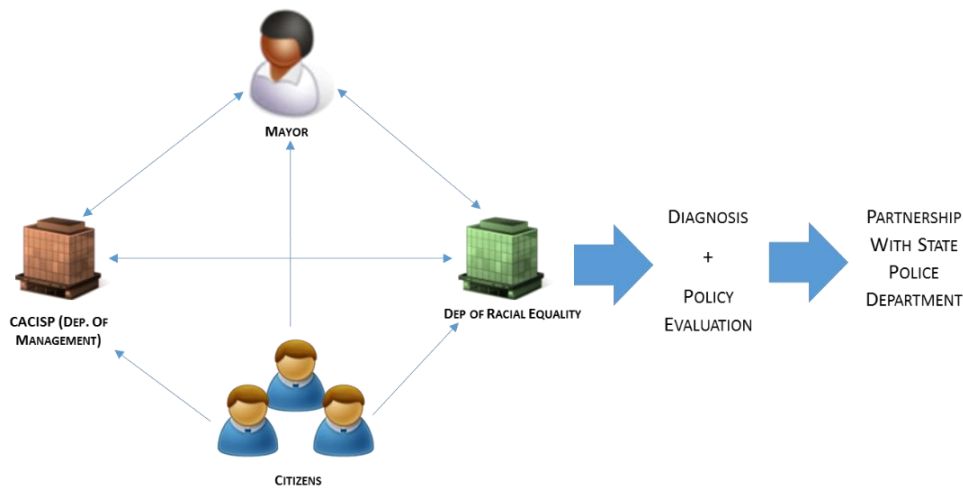
Source: Author's own construction based on interviews, decrees and reports

By using noise complaint data from *SAC* raw database and crossing them with other Departmental policy data, CACISP, instigated by the Mayor, with the Department of Racial Equality was able to diagnose and evaluate the current policy and, through the analysis, forge a partnership with the State Police Department, thus showing an effective use of citizen data for *enhanced and collaborative* service delivery.

Tree Pruning Planning

Perhaps the most interesting – and transformational – example of data usage is about tree pruning in the city. Seemly an easy task, it is in fact very complex as it involves biologists, agronomists and traffic control staff, among others. In São Paulo, the service worked reactively until recently – in other words, trees were pruned when the citizen warned the administration. As there was no planning, each 31 Subprefecture answered tree-pruning requests and executed the service one by one, as requests arrived. Obviously, the administration was always lagging behind – the average time for a tree pruning request was over 365 days in 2013 and, considering the dangers of a falling twig or tree, this has constantly been one of the worst evaluated public service by the population.

The Coordination of Citizen Attention and Service Innovation, drawing from its recent experiences with data science, experimentally crossed total requests data, pending requests data, and average time to execute the service with data from falling trees from the previous three years, provided by the Civil Defence Department. By doing that, CACISP arrived at the following map, which details the areas that deserved special attention in the *Sé* Subprefecture, with the respective number of trees to be inspected.

FIGURE 42 - SÉ SUBPREFECTURE: TREE PRUNING PLANNING MAP
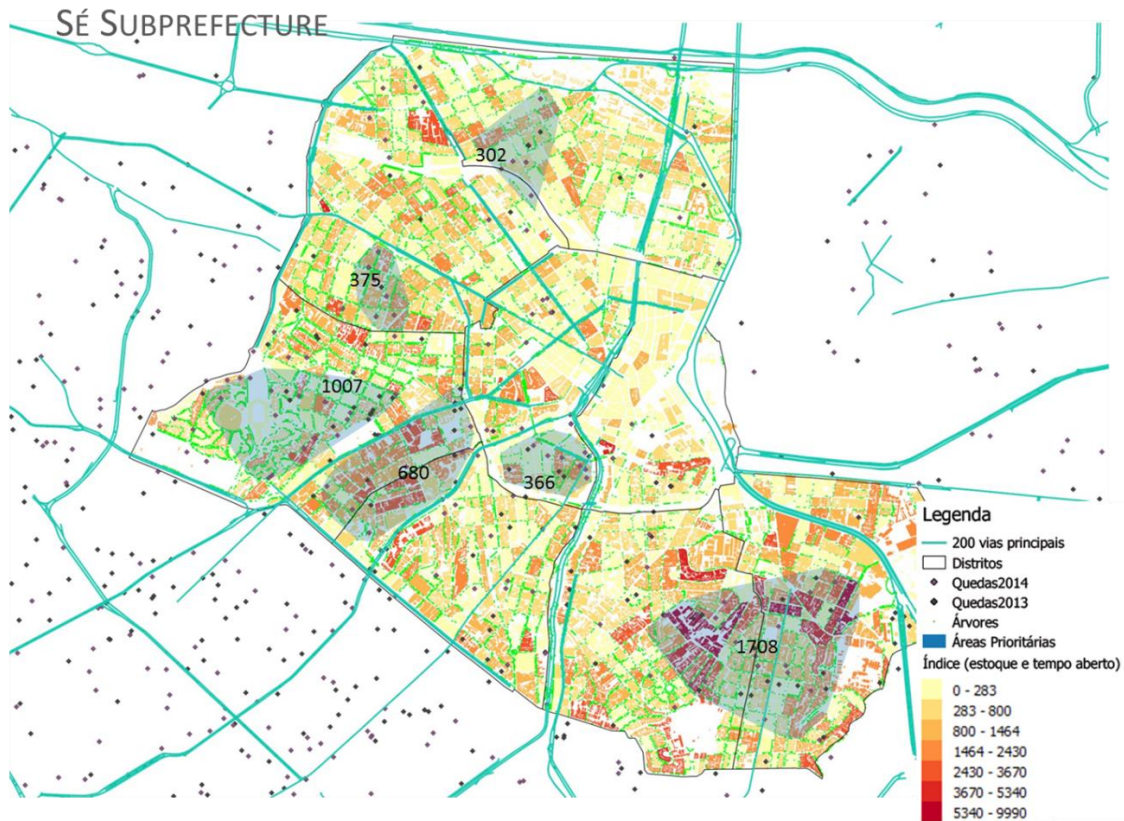
Source: CACISP internal report for the Mayor, May 2015

In order to subsidize a tree-pruning plan for the whole city, the CACISP staff prioritize critical Subprefectures for a pilot project carried out by the Deputy Mayor, based on tree pruning requests and the number of tree falls divided by the numbers of trees located in the area.

FIGURE 43 - TREE PRUNING REQUESTS AND TREE FALLS, BY SUBPREFECTURE

TREE PRUNING REQUESTS AND TREE FALLS

SUBPREFECTURES	NUMBER OF TREES	FALLS (2013-2014)	TREE PRUNING REQUESTS JUN/13-JUN/15	FALLS/1.000 TREES
Santo Amaro	39.466	256	8882	19,09
Vila Mariana	32.672	440	8855	40,26
Pinheiros	49.883	570	8803	48,91
Butantã	48.766	349	8081	34,69
Sé	21.009	243	8057	102,54
Ipiranga	28.817	296	7764	31,95
Lapa	25.356	204	7527	40,24
Moóca	17.729	156	6562	51,58
Penha	24.311	107	6322	18,19
Itaquera	25.526	82	5251	12,61
Pirituba	26.960	143	4838	15,71
Campo Limpo	26.345	84	4568	9,89
Santana/Tucuruvi	21.234	89	4533	13,06
Aricanduva/Formosa/Carrão	14.231	51	4153	10,70
Cidade Ademar	16.088	92	3925	11,72
Casa Verde/Cachoeirinha	15.783	78	3868	14,20
Vila Maria/Vila Guilherme	20.370	36	3718	5,28
Vila Prudente	13.819	69	3562	9,69
Capela do Socorro	36.477	145	3487	11,67
Jabaquara	8.721	42	3434	4,82
Jaçanã/Tremembé	10.758	39	3330	6,80
Itaim Paulista	9.784	55	3324	11,20
M Boi Mirim	15.701	51	3234	6,26
Freguesia do Ó/Brasilândia	11.785	49	3199	8,06
São Miguel	14.910	79	3016	16,17
São Mateus	23.367	31	2735	3,30
Sapopemba	8.256	34	2286	4,12
Ermelino Matarazzo	11.787	43	2023	7,35
Guaianases	7.872	36	1997	8,97
Perus	9.526	16	1250	3,35
Cidade Tiradentes	3.520	6	987	1,70
Parelheiros	5.481	51	405	13,16
São Paulo	646.310	4.022	143.976,00	18,66

Source: CACISP internal report for the Mayor, May 2015

They also calculated the productivity of an agronomist to check the health of one tree and order the service, and arrived at the conclusion that individually, with the human resources they had, each Subprefecture would not be able to inspect all critical areas in less than five years. However, if they organized themselves in task forces, they would be able to run the pilot project involving the six most critical Subprefectures in less than three years. Therefore, all trees would be checked every three years, which, according to the agronomists themselves, was adequate. The pilot started in August 2015, with the Subprefectures agronomists working together with the Department of Transit and the Department of Lighting from the State Government.

**FIGURE 44 - TREE PRUNING REQUEST DATA: TRANSFORMATION OF SERVICE DELIVERY**
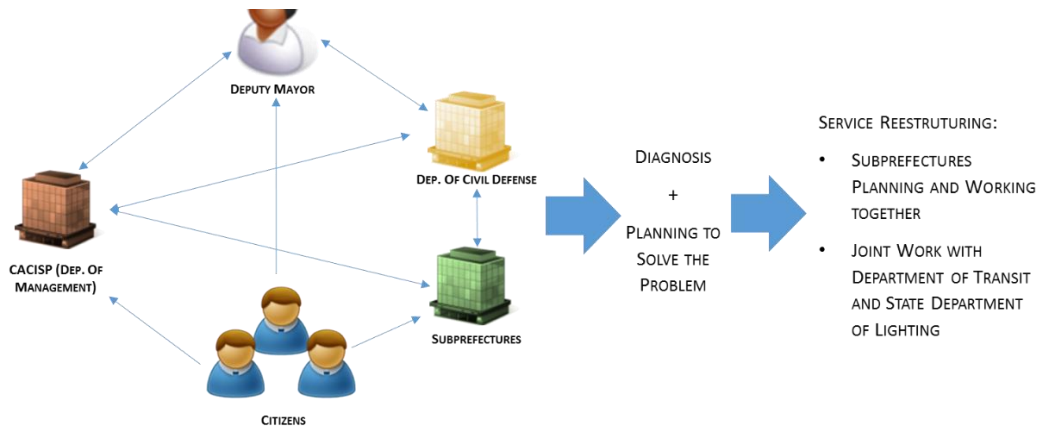
Source: Author's own construction based on interviews, decrees and reports

The service was, therefore, completely restructured based heavily on citizen feedback information, with municipal and state Departments and Subprefectures collaborating in a work format previously inexistent. In this case, the problem's diagnosis and solution arose from the experimental data work carried out by CACISP team, who then called upon the Deputy Mayor leadership to coordinate the Subprefectures and other public bodies collaborative work.

Where's My Bus?

The Department of Transportation, for the lack of options given by *SAC*, has also developed their own mobile apps, such as one to recharge the transportation card, and other, in partnership with a *startup,* to give users the exact location of the desired bus, called *Where is my Bus?.* Until 2013, transportation data was not publicly available and urban mobility movements made a high profile internet campaign to have the buses GPS data publicized in open formats. The Department of Transportation published the data and organized a hackathon, where the winner was the *Where's My Bus?* mobile Application.

FIGURE 45 - WHERE'S MY BUS MOBILE APPLICATION
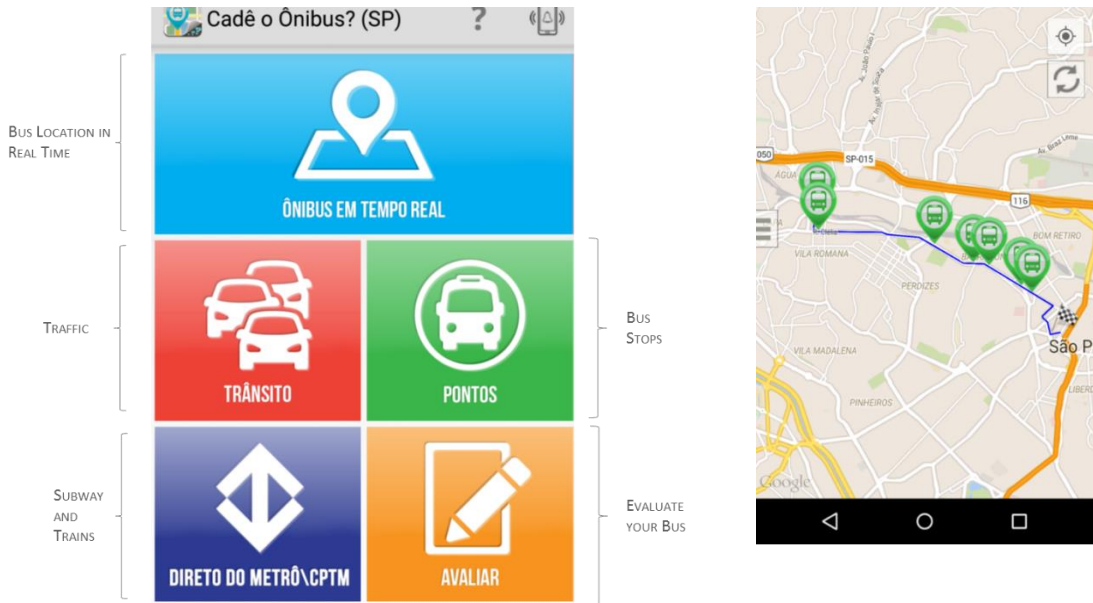
Source: Where's My Bus Mobile Application Print Screen (15/10/2015)

It could have been only a great app for citizens, but it also had an bus evaluation button, which has been one of the most used features since its launch – the app has more than 500,000 registered users, who have made over 2 million evaluations about the buses they rode. All this information is made available to the Department of Transportation, which uses it to improve the quality of buses and human resources.

FIGURE 46 - WHERE'S MY BUS DATA: COLLABORATION FOR SERVICE DELIVERY ENHANCEMENT
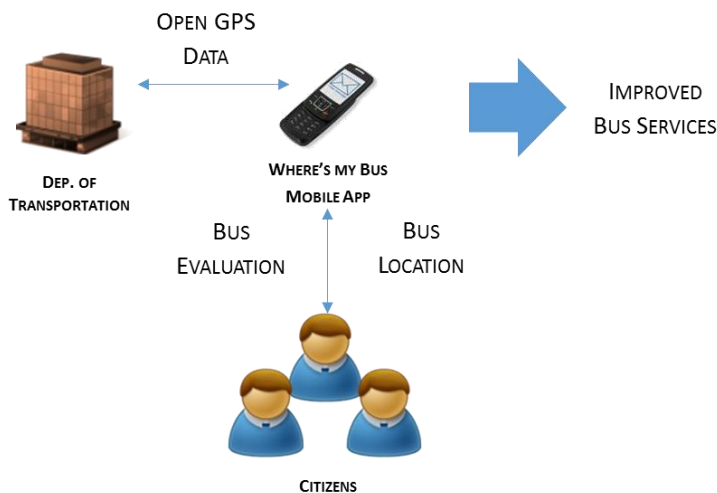
Source: Author's own construction based on interviews, decrees and reports

This example shows how Departments in São Paulo, outside the logic and structures of the main electronic interactive channels, are collaborating with non-governmental actors to improve service delivery by using citizen data.

iv.   SYNTHESIS OF STRUCTURAL CONSEQUENCES

The very implementation of electronic channels that centralize interactions with channels was in itself a disruptive action for the São Paulo municipal Departments, as they had to be forcibly aware of their own services procedures, sometimes redundant and illogical, in order to explain them to citizens. These new channels, however, did not change the way departments work; they simply automatized and centralized the relationship with citizens.

Even with favourable and enthusiastic interpretive conditions and being a pioneer in e-Government initiatives, São Paulo municipal government was not able to capitalize on it, and failed to organize and coordinated further innovative solutions for electronic interaction channels. During the 2006-2013 period, it therefore preserve status quo, by continuing offering the same citizen attention routines during all those years. Furthermore, as the technologies became obsolete, Departments began to foray into individual e-Government initiatives, starting a fragmentation process contrary to the ideas of centralized service attention channels.

In 2013, pockets of enhancement and transformation in service delivery and organizational dynamics began to arise, mostly *outside* the main interaction channels organization logic and structure – i.e. *SAC, SAC Online and 156 –,* particularly with the increasing role of the small CACISP team in facilitating more relational and network ways of working among public bodies and civil society, based on citizen data. We must highlight that these initiatives have been most often championed directly by the Mayor or Deputy Mayor to solve specific issues in service delivery or policy making, thus we called the *pockets of enhancement and transformation* as they definitely are not institutionalized in the administrations' structure and dynamics.

TABLE 8 - SYNTHESIS OF STRUCTURAL CONSEQUENCES – SÃO PAULO

STRUCTURAL CONSEQUENCES	
TECHNOLOGY-IN-PRACTICE: REINFORCE AND PRESERVE STATUS QUO (INERTIA), REINFORCE AND ENHANCE STATUS QUO (APPLICATION) OR TRANSFORM STATUS QUO (CHANGE)	• REINFORCE AND ENHANCE STATUS QUO (BETWEEN 2001-2004): AUTOMATION AND CENTRALIZATION OF CITIZEN ATTENTION • REINFORCE AND PRESERVE STATUS QUO (BETWEEN 2005-2013): CONTINUATION OF OLD CITIZEN ATTENTION ROUTINES; FRAGMENTATION AND DECENTRALIZATION OF E-GOVERNMENT CHANNELS AND INITIATIVES • TRANSFORM STATUS QUO (BETWEEN 2013-2015): POCKETS OF TRANSFORMATION OF HOW THINGS ARE DONE IN SERVICE DELIVERY; RELATIONAL/NETWORKED WAYS OF WORKING BETWEEN PUBLIC BODIES

Source: Author's own construction based on interviews, decrees and reports

4. CONCLUSIONS

In this chapter, according to the above in the analytical model, I carried out an iterative analysis of how e-Government in the municipality of São Paulo turned out and evolved in practice, over a period of 15 years, looking at the interpretative, technological and institutions conditions that gave rise to it.

Through this first part of the investigation, I answered the first part of the main question of the thesis for the São Paulo case: "How are e-Government applications being enacted by governments and used by citizens, taking into account institutional and socio-technical conditions?" Then I analysed the procedural, technological and structural consequences of e-Government-in-practice in São Paulo in order to answer the second part of the thesis question: "Are the information flows regarding the use of these interaction channels changing the organizational dynamics of public administrations?" By putting the two analysis together, I attempt to answer the thesis question as to whether the intensification

of ICT-based interaction between governments and citizens related to public services leads to organizational transformations in public administration, more specifically toward more networked forms of organization.

- **Interpretive, Technological and Institutional Conditions**

The Municipal Government of São Paulo had an early development of e-Government initiatives, at a time when the very concept of e-Government was being coined. Inspired by a *decentralization* and *local empowerment* vision, the initial purpose of e-Government was to facilitate the life of citizens and to democratize information about public services. The developed technologies served this purpose. First, the City first developed the SAC system for the face-to-face attendance to capture and send requests to the public bodies in charge of the services.

The online channel, *SAC Online,* which initially centralized 150 services, was the front office version of the *SAC* itself, also followed the logic of operation and decentralized visions of the Subprefectures. The Call Centre 156, created in 2003 as a fundamental part of the citizen attention policy, initially offered information and services mainly related to services performed by Subprefectures; as with the other interaction channels, since its creation it uses SAC for registering services requests and sending them to those in charge. The shared vision surrounding the implementation of the main electronic interaction channels was to centralize the requests of decentralized and devolved delivery of services

The second phase of e-government in the city of São Paulo began in 2005 with a ruling party that, ten years earlier, brought the ideas of New Public Management to the federal government. With strong political support of the Mayor and the Department of Management Secretary, the design of the *2006 Electronic Government Policy* followed the international trends of the time, indicating clear managerial concepts, such as the centralization of IT coordination and the decentralization of e-Government execution, and the establishment of control procedures and guidelines for service delivery. It was a fairly detailed policy, with clear ideas for the e-Government development. Institutionally,

however, there was no empowerment of the e-*Government Coordination Unit* as oversight body legitimized by legal rules and procedures. On the contrary, top executives initial enchantment with e-Government as powerful management tool greatly diminished and the e-*Government Coordination Unit* gradually lost control over the channels and service delivery quality. The electronic interaction channels, widely used by the population, remained about the same for over a decade, connected together only by their common use of the SAC workflow system; however, each channel belonged to a Department and interacted individually with Departments.

From 2013, the return of the Workers Party to the São Paulo municipal government resulted in a movement of recovery and strengthening e-Government. This time, the focus was not on the democratization of access to information and local empowerment, neither on the managerial potential of e-Government tools – these were considered very important and to be recovered; however the focus has been on the *making open data available, using social networks and mobile applications, improving transparency of government actions and, especially, on the concept of big data to improve planning and municipal management.* In 2015 the interaction channels technologies remained the same – the *156 Call Centre, SAC Online* and S*AC* – but, in 2014, the *CACISP* team initiated the design of Terms of Reference to contract a new citizen attention solution, that would have a Citizen Relationship Management System as hub able to connect to all current and future electronic channels.

- **Processual, Technological and Structural Consequences**

The e-government initiatives, which I consider to have begun in 2001 with the mention of the term in a Mayor's decree, immediately resulted in significant changes in citizen attention services. The *156 Call Centre* and *SAC Online* were clear initiatives of joined up government, in which different government agencies joined in one single place, facilitating the lives of citizens, who do not need to know the administrations' organization chart to request a service. Nevertheless, the managerial step forward proposed by the 2006

Electronic Government Policy did not prosper. The idea of using electronic interaction tools to help diagnose problems and improve centralized control of decentralized service delivery did not occur in practice; nor the development of an online portal based on life events and tailored to citizens.

The following years saw frustrated attempts to advance e-Government; if São Paulo did "everything right" and before others in the beginning, it seems to have become a prisoner of the decentralized service delivery model, unable to centralize and coordinate citizen attention standards and procedures. The *SAC* system, whose design and functionalities are geared towards the Subprefectures very decentralized works and routines, did not meet other Departments' needs; neither offered strategic data intelligence for public managers, Secretaries and the Mayor. Thus, a policy aimed at greater coordination and collaboration among Departments would necessarily confront the dilemma between keeping the interaction channels as they were, linked through *SAC*, or redo all the municipal technological and organizational model of service delivery, a costly and time-consuming Project that may run beyond a term's administration. Until 2015, the second option had not been carried out.

The procedural effects of this e-Government framework in practice were *one-to-one* integration – through *SAC* – and *one-to-one* collaboration between electronic channels and the Departments responsible for delivering services, without a collaborative platform for the whole citizen attention system. Here we are talking about systems and information and services requests flows; when we talk about guidelines, standardization, citizen attention and service delivery quality control, as well as interdepartmental integration of back office activities, we do not see coordinated nor integrated activities. Each channel, each Department and Subprefecture works according to its own parameters.

In technological terms, the main e-Government structure – *SAC, SAC Online and 156 Call Center* – stopped in time, attached to old technologies and routines. We observed examples of adaptations and workarounds to circumvent SAC shortcomings, such as the production of tailor-made reports, drawing raw data directly from SAC database, and the use of

Departmental systems in the in the 156 Call Centre to capture services requests. In the front office, since SAC does not support easy integration with customized web pages and services, neither with mobile applications and social media, a few Departments are starting to develop their own electronic solutions, such as services portals and mobile apps, indicating a return to the fragmented service attention of the 1990s.

However, at the confluence of the old organizational and technological model and the new technology initiatives that coexist the municipal administration, CACISP took up a role that is not one of coordination of interaction channels, but of a more relational and information bridge among the several actors in charge of service attention and delivery. This technical team, by using aggregated citizen data and data from other departmental systems to design solutions for the many public services problems and deficiencies jointly with Departments, has began to trigger networked practices – often in temporary projects with practical objectives. Thus, although the main systems and organizational structure remain the same, we observe that, in a dynamic structure that is off the main structure, there is a movement toward network forms of working; in recent years, citizen data have started to transform the way a few Departments provide services in São Paulo, often collaboratively. On the other hand, we should highlight – and raise awareness – that CACISP is a small team that is beginning to *interpret* citizen data and actively influence policy making in other Departments, often backed by the Mayor or other high level public executives; policy decisions that perhaps otherwise, without the data, would have been carried out with more extensive political and technical discussion in each Department.

The São Paulo case shows that the intensification of interaction between government and citizens through new technologies has initially resulted in significant improvements to citizens, but it does not necessarily have a direct and straightforward relationship with organizational changes. For a decade, electronic service channels served in practice to mediate citizen communication with the Departments. Even with the vast quantity of interactions –almost 500,000 services requests a year through the telephone and internet – those data were barely used to improve services; at best, the e-Government Unit

controlled the Departments' performance and responses regarding individual requests. The initial desire to centralize the coordination of interaction channels encountered difficulties in the way electronic government was implemented and the e-Government Unit turned out to be unable to control anything. Only with the political support to have a Unit that focused on delivery service guidelines and standards, and particularly on analysing citizen data to subsidize public policies, there has been a movement toward greater collaborative interdepartmental work and network forms of government.

CHAPTER 6 – RIO DE JANEIRO'S CITIZEN ATTENTION CENTRE

1. INTRODUCTION

The city of Rio de Janeiro is the second largest in Brazil, with about 6.3 million dwellers. Until 2011, citizens who wanted to request a public service had to guess which Department was responsible and then find the appropriate channel for making her solicitation. The City of Rio de Janeiro City municipal government consists of several Departments and Agencies, which had independent approaches and structures to citizen attention care. Until 2011, there were over 67 face-to-face attention units, 16 call centres and 51 telephone numbers for the Departmental ombudsmen. Adding to those, there were several telephone numbers for the 6 Subprefectures and 33 Regional Administration, the face-to-face ombudsman attention units and its internet website.

In March 2011, the *1746[49] Citizen Attention Centre* was created, with the objective of integrating and consolidating access to public services offered to Rio de Janeiro citizens. In 2015, the Carioca citizen makes contact with the *1746* through the telephone, website or mobile application, and registers her request, complaint or suggestion. These are sent to different municipal Agencies or Departments. On average, by March 2013, the *1746* offered more than 700 services, such as removal of debris, street light repair, potholes repair, tree pruning, and tourist information, and received an average of 350,000 contacts per month.

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[49] 1746 stands for 1-RIO

2.   CONDITIONS

In this section, I analyse the interpretive conditions – the shared meanings, conventional understandings and general mind-set – that Rio de Janeiro public managers, Department Holders and the Mayor have built that illuminate, shape behaviour and preferences and the general rationale for e-Government initiatives. The analysis runs through four-year period, from 2001, when e-Government started in Rio, covering one and a half municipal administrations by Mayor Eduard Paes.

A.   INTERPRETIVE CONDITIONS

i.   MONITORING AND CONTROLLING THE QUALITY AND STANDARDS OF SERVICE DELIVERY

Until 2011, there was not an objective concern with a single citizen attention view in the Rio de Janeiro Municipal Government. There were several call centres and phone numbers, as well as non-standardized face-to-face attention centres. Rio de Janeiro was far behind other Brazilian capitals in terms of e-Government. In fact, the Terms of Reference (ToR)[50] to hire the *1746 Solution* was one of the first municipal documents to mention citizen attention transformation through ICTs, with theoretical references and benchmarks from Brazil and the world.

In 2010, in the second year of his term, Mayor Eduardo Paes made a trip to New York, invited by the consultancy firm *Accenture*, which implemented the *311* project in the New York City Hall. Inspired by this experience and willing to break down his own administration bureaucratic barriers, the Mayor demanded the Chief of Staff Secretary the implementation of a Call Centre and an accompanying mobile application named *1746*, or *1-RIO*. According

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[50] Terms of Reference describe the purpose, structure and development terms of a project, IT solution, consultancy work, etc., to be hired by a public body.

to the first *1746* manager, the Project became the highest priority in government, especially for the Chief of Staff Secretary. The deadline given from the moment of hiring to the implementation was so short (three months) that it influenced the implementation process format – the manager opted for bringing in the Departments in waves, over a period of 14 months, in order to meet the Mayor's style of governing: "Quick implementation; later repairs". It is important to note that joining in was not mandatory by decree, but as it was a government flagship project, according to the interviews, all office holders implicitly knew that they would be part of the *1746 Attention Centre*, eventually.

The guiding concept behind the creation of the *1746 Attention Centre* was to facilitate the communication between the municipal government and citizens by providing a single service channel, with standards and delivery deadlines for each public service available.

For the administration, the guiding north was to control and monitor the quality of service provision. As an example of the focus on the view of the citizen as client, the initial wish of the Deputy Secretary of Modernization was to avoid using IVR (Interactive Voice Response), the most common technological feature of call centres, so that citizens could be directly served by a human attendant[51]. This view is also identified in the 2001 decree that created the Attention Centre:

> "Considering the need to **facilitate the communication of citizens with the municipal administration of Rio de Janeiro** [emphasis added] in order to receive information and make requests and complaints about municipal public services;
>
> Also considering the need to provide **quick access to Public Services through standardized telephone attention and at a quality level consistent with the best market practices** [emphasis added];

---

[51] His wish was not put into practice because it was too costly.

And finally considering the need to provide the Rio de Janeiro municipal government with instruments of **monitoring and control of citizen attention care** [emphasis added] (...)"

(*Decree 33530* 2011)

Mayor Eduardo Paes, in the preface of the book *High Performance Management - Rio de Janeiro City Government*, edited by the Chief of Staff Secretary, which tells the story of the 2009-2012 administration, also makes clear the direct inspiration in managerial techniques to improve service delivery to citizens:

"One of the major challenges for any government is to ensure **the greatest possible efficiency in its management** [emphasis added]. This means **delivering services to the population within a defined deadline, at the expected cost and with quality** [emphasis added]. Nevertheless, it also means giving **priority to projects that will bring useful and enduring results, maintaining financial health and following a plan with clearly defined goals for the short and long term** [emphasis added].

Although this set of rules is not new to large corporations and important institutions, it is not largely typical in Brazilian public management, greatly based on the intuition of its officials or on political influence. The administration of the city of Rio de Janeiro which took office in 2009 chose a different path: to **follow the best management practices, absorbing successful experiences from both the private and public segments** [emphasis added]."

(Rio de Janeiro City Government 2012, 8)

In 2012, one year after the *1746 Attention Centre* was implemented, the same preface to "High Performance Management" shows a Mayor's speech already mentioned the advantages of centrally understanding the demands of citizens:

"The effort was translated into strategic measures such as improving the City Government´s communication channels with the population, **leading to a better understanding of the city´s demands and enabling the efficient selection of priorities** [emphasis added]. It also brought the payment of performance bonus to city officials, as in many large corporations, raising employee satisfaction and productivity levels. But the most important change was the development of a Strategic Plan with clearly defined goals for the short and long terms, supported by a structure to ensure their practical feasibility."

(Rio de Janeiro City Government 2012, 8)

The Chief of Staff team was composed by a technical group fresh out of big strategic planning and management consultancy firms and of recent graduates from PhD programs interested in public management. Elements of strategic management appear early in the creation of the *1746 Attention Centre,* such as the definition of *Service Level Agreements* (SLAs) and coupling them up with goals in the Result-Oriented Agreements with the Departments established in 2010.

"The initial focus was on serve the citizen better, even though the Mayor took notice of the strategic management reports in the NYC 311. Over a short period, the issue of performance and managing by results tied to service delivery goals began to gain strength. It was an evolution from the initial necessity of better serve the citizen."

Interview with the First *1746 Attention Centre* Manager

The definition of *Service Level Agreements* is one of the pillars that structure the *1746 Attention Centre.* The ToR already defined the need to map the main services processes, in order to stablish the correct deadline for their delivery and inform the citizen. This concept was well defined in the decree that created the *1746*, in March 2011:

"§ 3º There will be Service Level Agreements (SLAs), for all requests made through 1746 – SLAs, particularly regarding service delivery deadlines.

§ 4º Deadlines, which vary according to the type of service, including the SLAs mentioned in the preceding paragraph, may be of three types:

I – answer;

II – diagnosis or inspection;

III – solution."

(*Decree 33530* 2011)

The first *1746* manager, who coordinated the design of the *1746* terms of reference, was aware that a large part of the bidding winner work would be focused on mapping public services delivery processes. Without this mapping process, it would not be possible to aggregate services into a single citizen telephone and mobile application attention centre. However, the *1746* team realized that the winning company had no expertise in process modelling and hired the consultancy firm *Accenture*, who first introduced the Citizen Attention Centre to the mayor, to carry out the work. Their influence role in the project only grew throughout the years.

As mentioned, the launch of the *1746 Attention Centre* was in March 2011, but services were implemented in phases, with two or three Departments at a time:

"The choice of the first Departments to join in was based on the volume of services delivered, number of services available, and visibility and knowledge of the population about their services."

Interview with the *1746* Deputy Manager (2011-2012) and Manager (2013-2014)

Interestingly, even without seeing the powerful management tool in which *1746* would become in less than two years after its release, the terms of reference made one timid but powerful mention of the potential use of data by coordinating the actions of service providers:

"[The municipal administration] does not have a centralized view of service delivery information, which leads to a lack of management reports and consequent lack of understanding of citizen needs. **There is virtually no functionality to assess the demands made on call centres to identify trends in public concerns, or even to obtain feedback about the services or the information available** [emphasis added]*"*

<div align="right">

(*1746 Terms of Reference* 2009, 8)

</div>

The ToR also identifies as one of the benefits of implementing a Citizen Attention Centre the better allocation of resources by analysing the data collected of interactions with citizens:

"[The implementation of a Citizen Attention Centre allows for] the identification of the main demands of citizens through a centralized information database, enabling the targeting of actions and investments to improve the quality of Rio's population"

<div align="right">

(*1746 Terms of Reference* 2009, 8)

</div>

Also:

"The intention was from the beginning to have more control over the delivery of services, even if we still did not know exactly the layout and all the data that would be required to format the strategic management reports"

<div align="right">

Interview with 1746 Deputy Manager (2011-2012) and Manager (2013-2014)

</div>

As we can observe, monitoring and control the quality and speed of service delivery were seen as the main tools of e-Government to serve better the citizen-customer.

ii. FASCINATING NEW TECHNOLOGIES

The launch of *1746* took place on March 22, 2011, comprising a call centre and a mobile application. It is important to note that the *1746* has always been a solution that had the mobile application as the main attraction. The demand to launch the Citizen Attention Centre with a mobile application came directly from the Mayor, who was known to be a man fascinated by new technologies, particularly by the then recently launched iPad, and his Blackberry.

FIGURE 47 - MAYOR EDUARD PAES - TECHNOLOGY ENTHUSIAST

Source: Istoé Magazine, February 2009 -

http://www.istoe.com.br/reportagens/6884_RAINHA+CONECTADA (retrieved on 8/08/2015)

iii. SYNTHESIS OF INTERPRETIVE CONDITIONS

Since Rio de Janeiro's foray into e-Government started late in comparison with other world capitals, e-Government concepts were already well studied and widespread in

governments, academia and the private sector. Highly influenced by both academia, through the Chief of Staff Department new comers, and the private sector, particularly by a well-known consultancy firm in the field of e-Government, *Accenture*, the knowledge about e-Government tools and potentials was high. The Mayor and the Chief Staff Secretary, early technology adopters and enthusiasts, as well as the technical staff, had very favourable views of e-Government, as they could facilitate more efficiency and effectiveness through monitoring and controlling services quality and delivery speed.

TABLE 9 - SYNTHESIS OF INTERPRETIVE CONDITIONS - RIO DE JANEIRO

INTERPRETIVE CONDITIONS	
KNOWLEDGE ABOUT THE USE OF THE TECHNOLOGY	• HIGH (MAYOR, CHIEF OF STAFF SECRETARY AND 1746 MANAGING TEAM)
SHARED IDEAS AND PRACTICES ABOUT E-GOVERNMENT	• FAVOURABLE, FOCUSED ON EFFICIENCY-EFFECTIVENESS, CONTROL AND THE CITIZEN-CLIENT
POLITICAL LEADERSHIP	• ENTHUSIASTIC; COORDINATION TO MONITOR AND CONTROL TO ACHIEVE BETTER PERFORMANCE

Source: Author's own construction based on interviews, decrees and reports

B.   TECHNOLOGICAL CONDITIONS

This section details the properties of the "ICT-based interactional channels" available at the Rio de Janeiro City government. Features such as online forms, e-mail addresses, social media, call centres, mobile applications, citizen relationship managers, etc., are technologies that are available on the market and as general e-Government concepts, but not all of them are necessarily available to users – public administration officials and as well as citizens – in Rio de Janeiro.

i.   1746 CALL CENTRE AND RIO'S CITIZEN RELATIONSHIP MANAGEMENT SYSTEM

The *1746* solution was conceptualized from the start as a combination of a call centre and a mobile application, supported by a CzRM (Citizen Relationship Manager). Upon launch, in March 2011, the call centre had the capacity to receive 400,000 calls per month and a mobile application to the most requested services, with georeferencing and photographing tools.

Call, the *1746* call centre provider, developed the Rio's *Citizen Relationship Management System – SGRC* -, customized for the Rio de Janeiro municipal administration, according to the ToR. The ToR, however, did not predict all necessary features needed for a CzRM and the *SGRC* resulted in a workflow system coupled with a few CzRM features, as we can see in the comparative tables below:

TABLE 10 - SGRC FEATURES VERSUS COMMON CzRM FEATURES

SGRC Features	Common CzRM Features	
Register of requests	Register of requests	
Attention Scripts	Attention Scripts	Integrated Application for Attendant
Workflows and Service Level Agreements	Integration with Call centre software	Integrated Application for Attendant
Search and Queries	Service and Information Knowledge database	
Integration with Departmental Legacy Systems through Web services	Global Integration with Departmental Legacy Systems through Bus Interface	
	Management of Requests	
	Workflows and Service Level Agreements from attention to service execution level	
	Automation of Business Rules	Management of Departmental Service Delivery
	Reports and Analysis	

Source: Author's own construction based on interviews, decrees and reports

According to the *1746* first manager, during the elaboration of the Terms of Reference there was no discussion about which CzRM would be ideal for the administration, only about some essential features it should have – such as basic integration with Departmental systems, registering of requests, a dashboard with attention scripts for attendants, and workflows with flags and e-mail alerts to supervisors and the *1746* team when service level agreements were not met –, as their primary concern was not strategic management, but to give the best attention and care to citizens. The *SGRC* lacked two important features for appropriate operational and strategic management of information and services requests: Management of Requests and Reports and Analysis (Business Intelligence) modules.

ii.   MOBILE APPLICATION

The *1746* mobile application has not changed much since its launch in 2011; it shows the citizen complete information about her service request, including a protocol number, the request date, the request status and both the description of the problem and of the service delivery.

FIGURE 48 - 1746 MOBILE APPLICATION
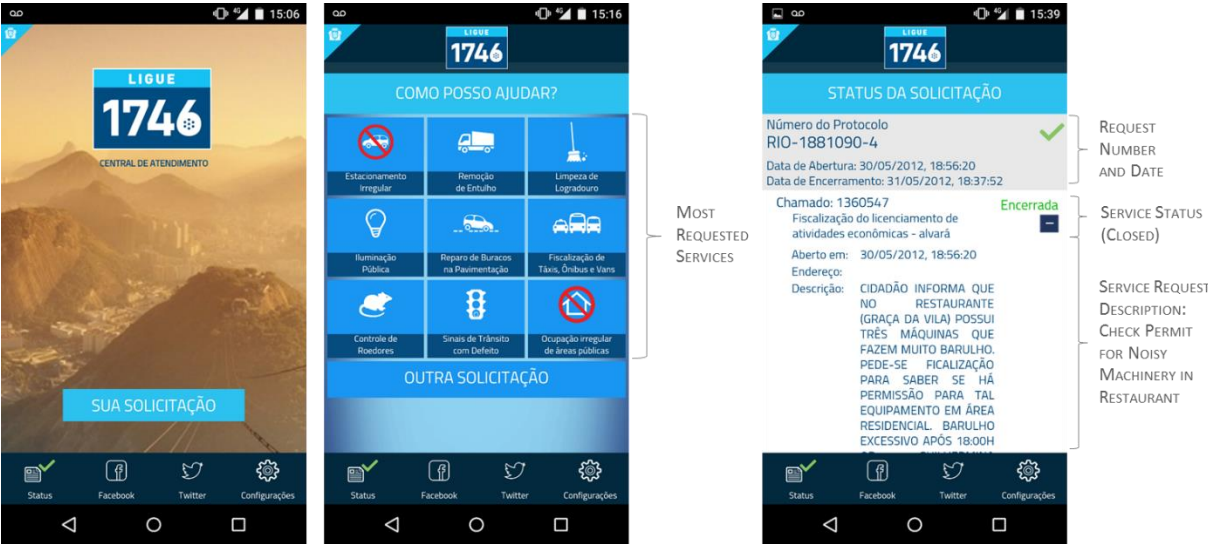
Source: 1746 Mobile Application Print Screen (retrieved on 08/08/2015)

For the first three years, the requests made though the app had to be registered manually on the *SGRC* by a *1746 Call Centre* attendant, as the mobile application was not integrated with the *SGRC*. The response and the updates in status were always delayed by a few hours – the time it took the attendant to read all information in the SGRC and register it in the mobile app system.

During the first two years, the *1746* solution was restricted to the Call Centre and the Mobile Application, supported by the SGRC.

iii.   SYNTHESIS OF TECHNOLOGICAL CONDITIONS

The 1746 Solution was launched recently, in 2011. One of the advantages of joining in late in the game, is that most e-Government concepts had been already explored and tested in other governments. The choice to launch the 1746 with the Call Centre and the Mobile Application, leaving aside, for instance a services portal, derived from a belief that in 2011 people used services while moving around the city, working, studying, etc. Therefore, the Call Centre was launched with a large capacity to answer 600,000 calls a month, and after a year and a half had most of the City Hall services and/or information about services available on the phone, with the most requested ones available on the official *1746 mobile app.* Both electronic channels were linked with Departmental systems through the SGRC, the citizen attention workflow system.

FIGURE 49 - SYNTHESIS OF TECHNOLOGICAL CONDITIONS - RIO DE JANEIRO

TECHNOLOGICAL CONDITIONS	
TECHNOLOGICAL PROPERTIES	• TELEPHONE CONTACT CENTRE, centralizing all INFORMATION AND SERVICES REQUESTS, CAPABLE OF ANSWERING 600.000 calls MONTHLY
	• OFFICIAL MOBILE APPLICATION
	• WORKFLOW SYSTEM (SGRC), with Few CzRM CAPABILITIES

- INTEGRATION OF THE WORKFLOW SYSTEM (SGRC) WITH DEPARTMENTAL SYSTEM THROUGH WEB SERVICES, BUT NOT WITH MOBILE APPLICATION

Source: Author's own construction based on interviews, decrees and reports

C.   INSTITUTIONAL CONDITIONS

This section analyses the social structures in Rio de Janeiro municipal government that constitute part of the social system in which e-Government users are participating. It investigates the laws and regulations regarding citizen attention and service coordination and delivery, which may influence how e-Government initiatives are implemented and linked to each other. It also analyses organizational forms that give support to those initiatives in order to understand as to whether e-Government initiatives originate in more hierarquical or collaborative modes of organization in Rio de Janeiro.

i.   CITIZEN ATTENTION CHANNELS: THE 1746 BRAND

At the time of its launch, the 1746 Solution had a clear focus on the Call Centre and mobile application and became known as simply *1746* – this number, in fact, was unique for municipal administrations, which normally used *156*, because the Mayor wanted it to be *1-RIO*. The organizational structure defined by the decree that created 1746 described a matrix relationship between the Heads of Departments and the Chief of Staff Secretary – that is, both on the same hierarchical line – and a coordinated relationship between the *1746* managing team with the technical staff of the City Hall Departments.

> "Article 4. The 1746 Attention Centre will work in a coordinated way with the other Departments of the Rio de Janeiro Municipal Administration, in accordance with the diagram in Annex, attached to this Act.

Article 14.

Unique Paragraph. For the purposes of this Decree object and the whole process of responding to requests from citizens, the Head of the Department will respond in matrix to the Mayor and the Chief of Staff Secretary."

(*Decree 33530* 2011)

FIGURE 50 - 1746 MATRIX WORKING STRUCTURE
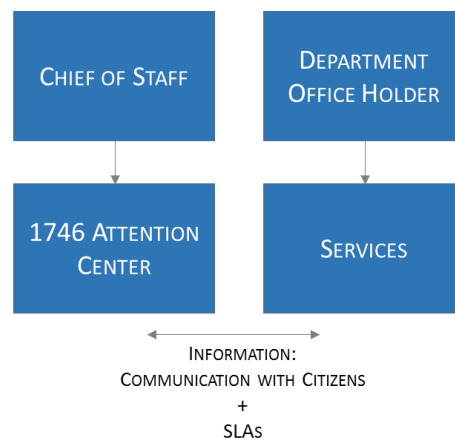
Source: Author's own construction based decrees

In addition, the same decree forbade the creation of new call centres in Rio's municipal administration:

"Art 3. The creation of new telephone numbers for customer services is prohibited as of the publication date this Decree.

Unique Paragraph. Any demand for creating new telephone numbers, as mentioned in this article, shall be forwarded for inclusion in the set of services served by Central in 1746. (...)"

It is noteworthy that the *1746 Attention Centre* organization as well as directives and standards have often been made through decrees, and rarely defined informally. For instance, at the end of 2011, the Decree 34.805, established the visual standards to be used in all 1746 publicity or official communications.

FIGURE 51 - 1746 VISUAL STANDARDS DECREE

(*Decree 34805* 2011)

The decree that created the 1746 Solution defined and detailed the roles and attributions of the various participating actors: the 1746 Manager, the Departments' Central Dispatchers and Local Dispatchers, and the General and Departmental Ombudsmen.

The 1746 Manager, which has Undersecretary status in the Chief of Staff Department, would be responsible, among other activities, for overseeing the operation of the 1746 Attention Centre; suggesting guidelines for improvement in citizen attention processes;

ratifying the approvals made by the Heads of Departments about the service information scripts and their updates; act as co-manager of Departmental systems integrated to the 1746 Attention Centre SGRC; and authorize and register the users of the 1746 Attention Centre SGRC.

The Departments' Central Dispatchers, the main 1746 actors located in each Department, should report to the Head of Department the status of services requested through 1746; oversee the activities of the Local Dispatchers, ensuring the quality of information on the progress of services requests and on their deadlines; moderate local dispatchers' responses to citizens on the progress of their requests; and update the service information scripts. Finally, the Local Dispatchers, usually located at Departmental Units, would be responsible for forwarding services requests to the operational team and monitor the progress of their status, always informing the Central Dispatcher

In parallel, the structure of the 1746 Citizen Attention incorporated the General Ombudsman and the ombudsmen of the Departments, who existed prior to the creation of 1746. The main function of the General Ombudsman and the Local Ombudsmen is to identify situations of deficiencies in service delivery, through complaints, criticism, praise and suggestions about services requested through *1746.*

1746 CITIZEN
ATTENTION
CENTER

CHIEF OF STAFF
SECRETARY

CVL

CENTRAL 746

CENTRAL
OMBDUSMAN

OUVIDORIA GERAL

CITIZEN
- INFORMATION
- SERVICE
  REQUEST
- COMPLAINTS
- COMPLIMENTS
  AND
  SUGESTIONS

CIDADÃO

INFORMAÇÕES

SERVIÇOS

RECLAMAÇÕES
OU CRÍTICAS

ELOGIOS OU
SUGESTÕES

ÓRGÃO

TITULAR DO ÓRGÃO

DESPACHADOR CENTRAL

OUVIDORIA

DEPARTMENTAL
OMBDUSMAN

DESPACHADOR LOCAL

DEPARTMENTAL
CENTRAL AND LOCAL
DISPATCHERS

DEPARTMENT
HEAD

SOURCE: 1746 CREATION DECREE
(DECREE 33.530, MARCH 22ND 2011)

Source: *Decree 33530* 2011

In summary, the *1746 Solution* was conceptualized to operate in matrix way with its operation coordinated by the Chief of Staff Department and the execution of services under the responsibility of the Departments. Its structure was designed to minimize communication errors between the municipal administration and citizens and to maximize control of the quality of service delivery and responses, as shown by the various levels of attributions of the actors in the chain of responsibility.

It is important to note here – we will return to this point when we talk about the procedural, technological and structural consequences – that the *1746* solution was originally conceptualized by the technical team as a more encompassing framework for citizen attention, beyond the call centre and mobile application. According to the first Central manager *1746*, which helped in drafting the terms of reference for hiring the *1746 Call Centre* operator, the initial service model was thought of having a face-to-face attention coordination unit, as well as a Web Portal coordination. Furthermore, it should connect with other Departmental systems through the Operational Centre, a citywide system integrating

data from over 30 Agencies and Departments, as well as sensors, video cameras and GPS devices, all under the same roof, to prevent disasters, such as floods, fires, etc.

FIGURE 52 - INITIAL CONCEPTUALIZATION OF THE CITIZEN ATTENTION STRUCTURE

INITIAL CONCEPTUALIZATION OF THE CITIZEN ATTENTION STRUCTURE
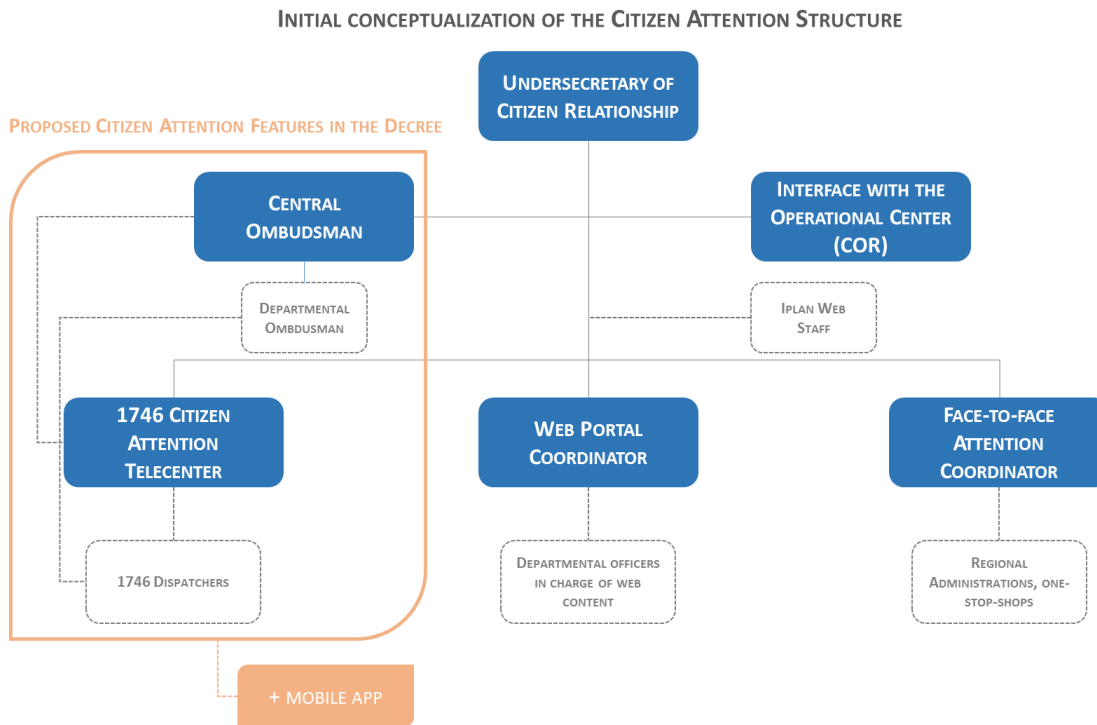
Source: Author's own construction based on interviews, decrees and reports

Nevertheless, the concept of e-Government implemented in the City of Rio de Janeiro, inspired by the New York 311 model, focused on the phone – citizens should use the call centre or the mobile application. Other technologies, such as online services portals, were set aside at the launch of the centrally coordinated Citizen Attention Centre.

ii.   Results-Oriented Management

The 1746 Citizen Attention Centre was created within the idea to serve the citizen better, through standardization, monitoring and control of the quality and provision of services. When the *1746* was created, the Results-Oriented Agreements – a result oriented bonus program – was in its second year. As with the *1746*, participating in the program was not mandatory; however, as by achieving results civil servants received financial bonus, they pressure their Supervisors to join in. The 2010 Mayor's Communique about the program reveals an alignment with the objectives of the *1746*:

> "The idea is to establish a new culture of public management and create a greater commitment of employees to improve public services to the population, by valuing their individual performances."

> (*Mayor's Communique* 2010)

The 2011 Results-Oriented Agreements, released months after the launch of *1746*, already included targets for service delivery requested through the *1746 Citizen Attention Centre,* for instance:

> "Deliver at least 90% of environmental emergency services requested through the 1746 Citizen Attention Centre within 72 hours in 2011" (Target Established for the Department of Environment)

> (*Order of the Mayor - 02/06* 2011, 5)

> "Arrive within 30 minutes in 89.6 % of services requested through the 1746 Citizen Attention Centre for Inspection of Irregular Parking and Route Clearance" (Target Established for the Municipal Guard) .

> (*Order of the Mayor - 02/06* 2011, 6)

These *1746*-related targets were eventually incorporated by the results-oriented management program. By 2014, 9.6% of Results Oriented Agreement targets were *1746*-related, as shown in the table below:

TABLE 11 - RESULTS ORIENTED AGREEMENT TARGETS

Year	Number of Participant Departments	Total Targets	1746-Related Targets	% of 1746-Targets
2010	19	77	-	
2011	34	187	4	2,1
2012	38	221	20	9,0
2013	35	208	15	7,2
2014	36	146	14	9,6

Source: Author's own construction based on interviews, decrees and reports

The Chief of Staff Secretary Resolution 9 of 20th September 2011 gave further power and control over services delivery to the Chief of Staff Department. It stated that service level agreements, including the deadlines for delivering services, could only be modified with the authorization of the Chief of Staff Secretary.

Finally, not too long after, in February 2013, to further the process of controlling and monitoring the quality of service delivery, the decree 36.755 created the *1746* Conformity Inspection Team to check *in loquo* the status of services requested through the *1746*. The increasing power of the *1746* to monitor and control the delivery of services in the whole administration is represented in the picture below, where the inspection cars with the *1746* logo looked like "services police" cars.

FIGURE 53- 1746 CONFORMITY INSPECTION CARS

Source: 1746 Archives

This team was created for two reasons: first, because *1746* was the flagship project of Mayor Paes administration and could not fault; second, because many of the services available on *1746* were linked to targets with financial bonus and some services began to be wrongly reported as solved, but in reality had not yet been delivered. The decree established the procedures for the inspection, as well as the punishments for not complying with the services delivery status reported in the SGRC:

> "Considering the pursuit of citizen satisfaction in relation to requests made through the 1746 Citizen Attention Centre;
>
> Considering the need to ensure, for requests made through the 1746, the trust between the service performed and the responses given to citizens;
>
> (…)
>
> Considering the need to carry out processes of monitoring the quality of services delivered, and the control of process, procedures, rules and documents related to 1746;
>
> (…)

Paragraph 1. It will be up to the management of 1746 and the General Ombudsman's Office to coordinate the timing of field inspections, to audit answers given by the Departments, and the analysis needed to identify the deviations detected in the answers to citizens.

(...)"

(*Decree 36755* 2013)

This was another measure that strengthened the 1746 as an oversight body, which increasingly became an auditor of services delivery.

iii. SYNTHESIS OF INSTITUTIONAL CONDITIONS

The Rio de Janeiro City Government displayed clearly in decrees and regulations the roles and attributions of all actors involved. Departments and the 1746 Management Team, according with the decree that created the 1746 Attention Center, should work in a matrix way, with the latter in charge of monitoring and securing quality and speed standards for all service deliveries, including carrying out a *in loquo* conformity check of services delivered, and the former responsible for delivering services. Furthermore, the 1746 performance data was tightly linked to the Results Oriented Agreements and was one of the main instruments to check Departmental performance.

FIGURE 54 - SYNTHESIS OF INSTITUTIONAL CONDITIONS

INSTITUTIONAL CONDITIONS	
LAWS AND REGULATION REGARDING INTERACTION CHANNELS AND SERVICE DELIVERY	• COORDINATION, INTEGRATION AND CONTROL (1746 CREATION DECREE) • MONITORING AND CONTROL (RESULTS ORIENTED AGREEMENTS) • COORDINATION AND CONTROL (1746 CONFORMITY CHECK DECREE)

ORGANIZATIONAL FORMS REGARDING INTERACTION CHANNELS AND SERVICE DELIVERY	• INTEGRATION OF SYSTEMS, COORDINATION OF INTERACTION CHANNELS AND COLLABORATION BETWEEN 1746 AND DEPARTMENTS IN CHARGE OF SERVICE DELIVERY

Source: Author's own construction based on interviews, decrees and reports

3.   CONSEQUENCES

A.   PROCESSUAL CONSEQUENCES

In this section, I analyse the procedural consequences in two blocks, as drawn from the analytical model. I analyse the changes in the work practices of Rio de Janeiro municipal government public officials as consequence of the increasing use of ICT-based interaction channels. This may mean, for instance, more collaboration and communication among Departments, improvement of management tools and knowledge, increased effectiveness in citizen attention and service delivery, etc. In order to carry out this analysis, I focus on the evolution of information and service request flows and the citizen feedback and service usage information flows between public officials, Departments and units involved in citizen attention and service delivery.

i.   EVOLUTION OF INFORMATION AND SERVICE REQUESTS FLOWS

a.   INITIAL INFORMATION AND SERVICE REQUESTS FLOWS (2011-2012)

The *1746* workflow system was defined by decree at the time of its implementation. The citizen could request information or services, out of those that were part of the first phase of implementation (pothole repair, tree pruning, dengue mosquitoes inspection, etc.), by calling the *1746 Call Centre* or by using the mobile app (the latter only to service requests).

From this contact, the workflow is relatively straightfoward. If the citizen wants information, the attendant queries the SGRC and noticeboards, when the information is dynamic (e.g. cultural events), and responds to the citizen. If it is a service request, the attendant registers it the *SGRC*, which is programmed to automatically send the request to the Department Central Dispatcher, who then forwards it to the Unit Local Dispatcher. For instance, the Dartment of Environment is in charge of noise pollution inspection as well as silvester animal care. In this case, there is one Local Dispatcher for each area. The Department dispatchers then forward the request to the service execution/delivery team. The deadline for service delivery begins to count as soon as the request is registered in the SGRC. When service is delivered, for instance the pothole is repaired, the Local Dispatcher registers the uptaded information, with the description of the service execution, which is then confirmed by the Central Dispatcher and the status automatically changes to "closed". Throughout all steps of the workflow, citizens can check where and with whom her request is and its status. On the mobile app, nevertheless, citizens requested a service, which was received in the *1746 Call Centre* and had to be registered manually by an attendant in the *SGRC*, as the mobile app system was not integrated with it. When there was a change in status, the attendend had to manually change it in the mobile app system. Therefore, on the mobile app, citizens could only check the status of services made through it, not through the call centre.

In parallel, citizens could also make a complaint to the *General Ombdusman* if the service is not delivered or if they are not satisfied with its quality. This could be done online, through a specific Ombudsman website, or through the *1746 Call Centre*, where the attendant had to access the *Ombdusmen system – SISO –* to register the citizen's manifestation. Again, the workflow worked similarly to a service request workflow: the manifesation was then sent to the Departmental Ombudsman, who would check reasons for inconformities and transmits suggestions and compliments to the Department's areas.

FIGURE 55 - 1746 CITIZEN ATTENTION CENTER INITIAL INFORMATION/REQUEST FLOWS
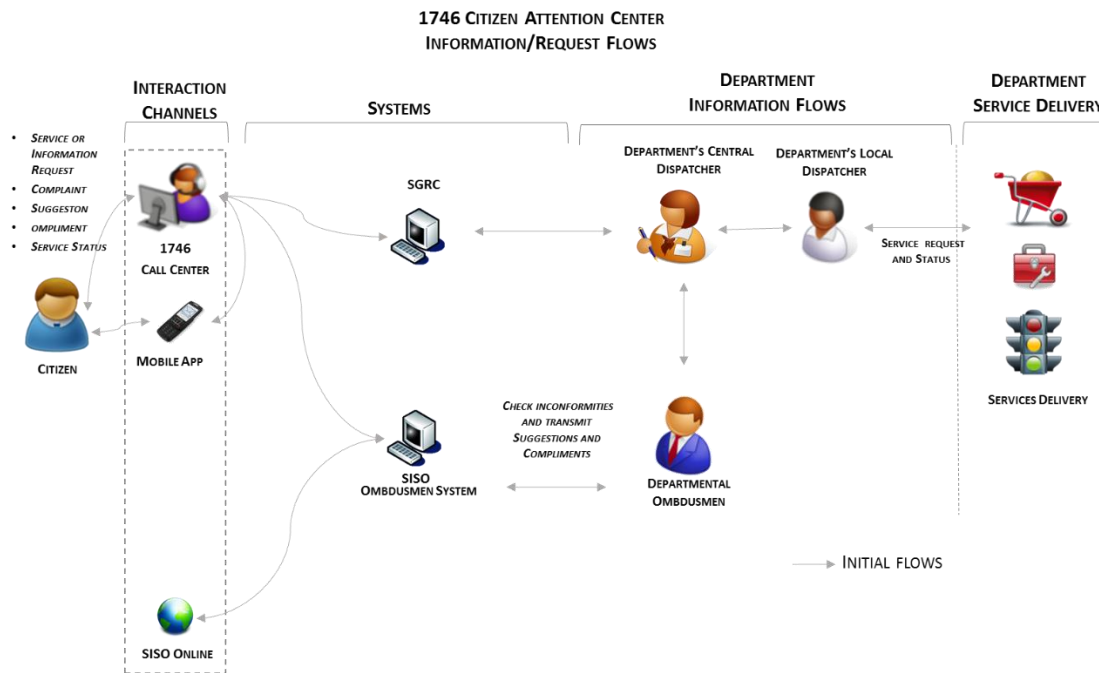
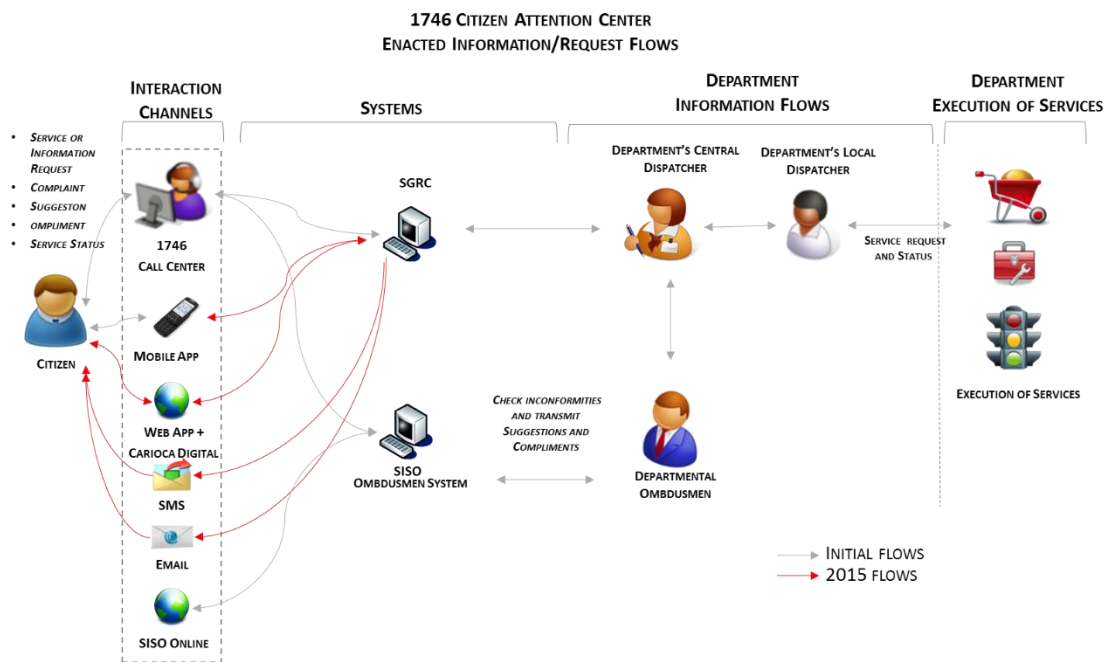Source: Author's own construction based on interviews, decrees and reports

The Ombudsmen, as we see in the figure above, had political strength in the previous administration, as they were the only channel of communication with citizens, were incorporated in the *1746* as a second level of appeal.

b. ENACTED INFORMATION AND SERVICE REQUESTS FLOWS (2013-2015)

The *1746 solution* has quickly evolved to incorporate other interaction channels. In the beginning of 2012, citizens could already receive service status updates via SMS and e-mail and, in the second semester of the same year, the *1746* launched its web application – it was called an *web app* because it was very similar to its mobile version, with a screen popping up and looking as an app. Furthermore, a request made through the web application followed the same workflow of the mobile app; in other words, during its first year, it was not integrated to SGRC and had to go first through the 1746 call centre. From

2013 on, both electronic channels became partially integrated with SGRC; therefore, requests did not have to go through a human attendant anymore. As we can see in the scheme below, most information and service requests flows now go through the SGRC:

FIGURE 56 - 1746 CITIZEN ATTENTION CENTER ENACTED INFORMATION/REQUEST FLOWS

Source: Author's own construction based on interviews, decrees and reports

In the first quarter of 2014, as I will analyse in more detail in the *Technological Consequences* and *Structural Consequences* sections, another interaction channel was created, the *Carioca Digital*. The *1746* was part of this customized citizen portal and, from the start, its application was fully integrated with *SGRC,* i.e. citizens could send requests but also monitor requests made in any of the interaction channels.

ii.   EVOLUTION OF FEEDBACK AND SERVICE USAGE FLOWS

In the previous section, I have analysed the workflow of information and services requests. Next, I dive into the details of the flows of aggregate information about feedback from citizens as well as the information on the use of services. Is this information collected? By whom? How is it compiled and how it circulates inside the administration? Is it used for strategic management? Do those in charge of delivering services have access to it?

a.   INITIAL FEEDBACK AND SERVICE USAGE FLOWS (2011-2012)

 The *SGRC* features did include analytical reports and intelligence tools to understand the peculiarities of the city's services request and deliveries. In order to produce management reports for monitoring and control the delivery of services, the consultancy firm *Accenture*, which was first hired to map the processes of services delivery in 2011, also structured the *1746* analytical area. It designed the format and content of initial reports, with data extracted directly from *SGRC* database. They were very simple, built on *MS PowerPoint* and *Excel*, with basic information about the most requested information and services, their regional distribution, the Departmental performances in delivering services according to the SLAs, as well as information about complaints about services requested, originated in the Ombudsman office.
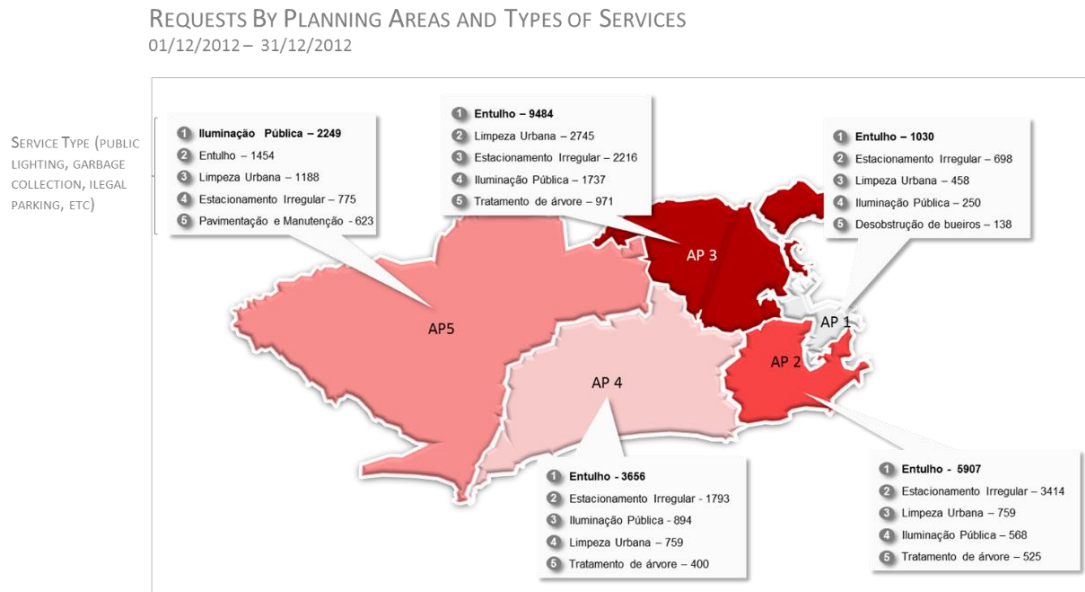
FIGURE 57 - EXECUTIVE MONTHLY 1746 PANEL
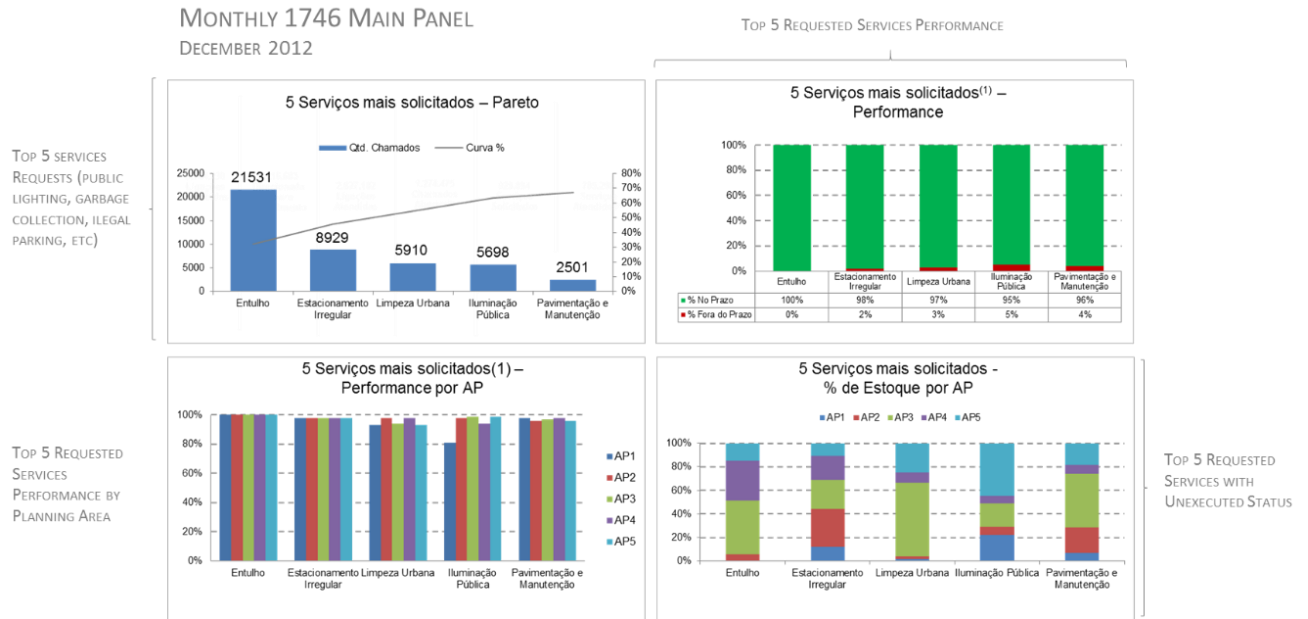
Source: Rio de Janeiro Chief of Staff Secretary December 2012 Report

Those first reports also showed the five most requested services by City regions, as seen below:

FIGURE 58 - MAP OF REQUESTS BY PLANNING AREAS AND TYPES OF SERVICES

Source: Rio de Janeiro Chief of Staff Secretary December 2012 Report

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Flows of performance reports had as its hub the *1746* team, in accordance with its task of ensuring the quality and timing of services. In addition to the Departments, the Chief of Staff Secretary, the team responsible for the Results Oriented Agreements, and the Mayor also received these reports. Although the Mayor also had an active role, the Chief of Staff Secretary was the main mediator to demand results from Departments that were underperforming.

FIGURE 59 - ENACTED FEEDBACK AND SERVICE USAGE INFORMATION FLOWS (2011-2012)

ENACTED FEEDBACK AND SERVICE USAGE INFORMATION FLOWS – 2011-2012
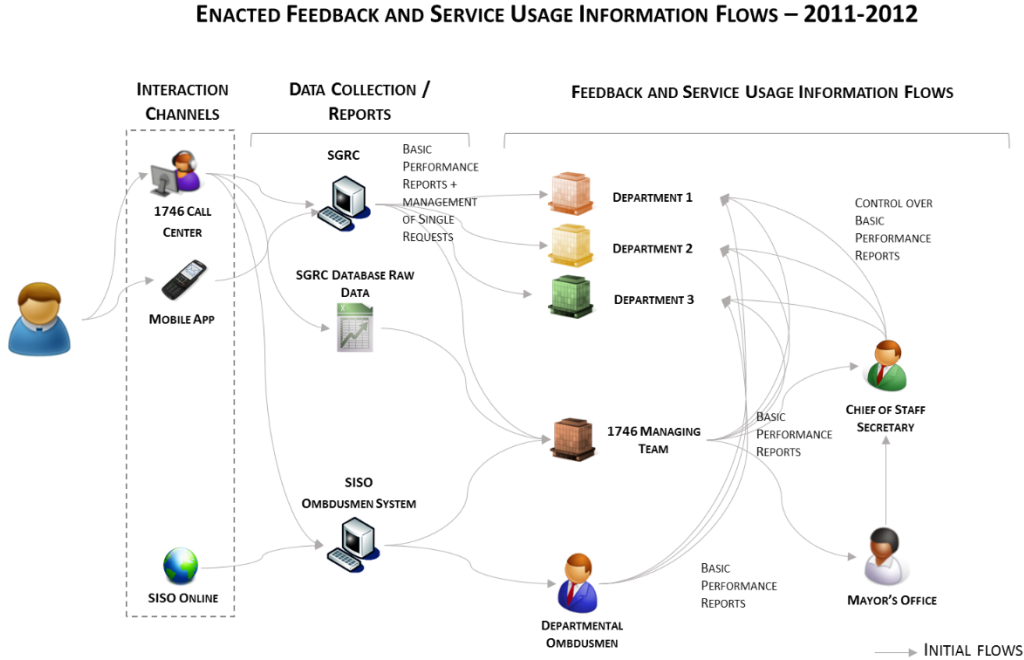
Source: Author's own construction based on interviews, decrees and reports

b.   ENACTED FEEDBACK AND SERVICE USAGE FLOWS (2013-2015)

With the intensification of interactions between government and citizens through the *1746* and the use of data to manage and monitor the achievement of goals, it became more evident the importance of having more detailed information about city services' demand and delivery. In 2014, the *1746* management team enhanced the report, which began to

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look like a business intelligence dashboard, as I will detail in the *Technological Consequences* section. Feedback and Service Usage Flows, however, have not changed much since the *1746* implementation, incremented only by the information collected about interactions through the web application and *Carioca Digital* and the conformity inspections and satisfaction surveys carried out by the *1746* managing team.

FIGURE 60 - 1746 ENACTED FEEDBACK AND SERVICE USAGE FLOWS (2013-2015)
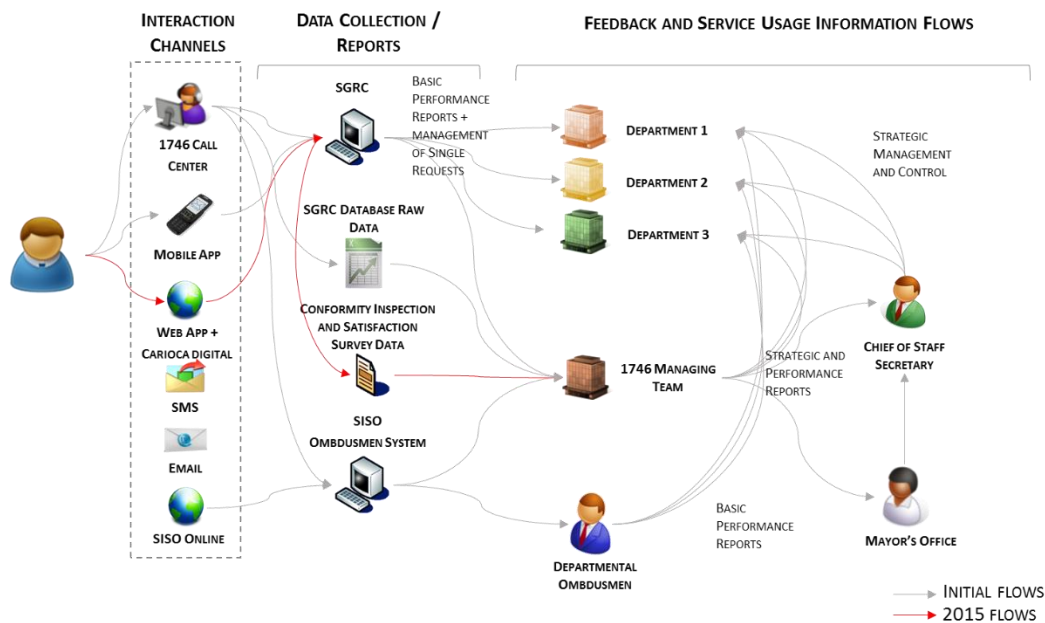
Source: Author's own construction based on interviews, decrees and reports

The very significant changes were not in the flows, but in the *quality and complexity of information* that began to circulate through the municipal administration. Reports were greatly incremented with information about the types of service demands in every neighbourhood of the city, detailed by Departments and units in charge, as well as with information about satisfaction surveys with citizens and conformity inspections carried out by the *1746* managing team. For instance, the figure below shows an example of a Conformity Inspection Form, whose aggregated data are used in management reports:

FIGURE 61 - 1746 MANAGING STAFF CONFORMITY CHECK FORM

Source: Source: Rio de Janeiro Chief of Staff Secretary Report, January 2013

iii.   SYNTHESIS OF PROCESSUAL CONSEQUENCES

In Rio, the new electronic channels initially disrupted Departmental routines. The *1746* team built a routine of horizontal collaboration with Departments, according to the organizational structure laid out in the creation of the *1746 Attention Centre*. In the first few years, service and information flows most often required the presence of an attendant, as, besides the Call Centre itself that depended on them, the mobile application was not integrated with the SGRC and required manual registration of services requests. Later on,

with the development of the new Web application and *Carioca Digital*, and the increasing use of e-mail and SMS, the SGRC gained prominence in the workflow.

Citizen data collection was centrally carried out by the *1746* team – at first, they only produced simple overarching reports; a few years later, they had in their hands potent business intelligence reports, useful for strategic management purposes, such as the Target-Driven Agreements, as well as for improving services operational procedures. It is important to notice that those information flows have not significantly changed over the years, yet the quantity and quality of information produced by the *1746* team, such as comprehensive and detailed views about services demands in every neighbourhood of the city, as well as information about citizen satisfaction about each service in each region, began to flood Departments and influence service delivery and policy-making.

TABLE 12 - SYNTHESIS OF PROCESSUAL CONSEQUENCES - RIO DE JANEIRO

PROCESSUAL CONSEQUENCES	
INFORMATION FLOWS AMONG DEPARTMENTS AND AGENCIES: HIERARCHICAL, COLLABORATION, NETWORKED	• ONLINE CONTACT AND TELEPHONE CALLS INFORMATION FLOWS: 1746-DEPARTMENT ROUTINE HORIZONTAL COLLABORATION • DATA COLLECTION: CENTRALLY CARRIED OUT BY 1746 OVERSIGHT BODY • FEEDBACK INFORMATION USE: 1746-DEPARTMENT COLLABORATION: DATA USE FOR RESULTS AGREEMENT; HIERARCHICAL ROUTINE: EACH DEPARTMENT DEALS INTERNALLY WITH DATA COLLECTED

Source: Author's own construction based on interviews, decrees and reports

B.   TECHNOLOGICAL CONSEQUENCES

This section analyses the changes, if any, in the e-Government technological properties available to the Rio's municipal government technical staff and citizens. As people

recurrently and routinely use the same technology, they enact technology-in-practice structures that are "stabilized-for-now"; on the other hand, when a technology does not help users achieve what they were originally thought for, or what they would like to achieve in the present, they might abandon it or work around it and/or change.

i.   SGRC: SMS AND E-MAIL

The first adaptations in SGRC were to include a tool to send alerts to citizens via SMS and e-mails when the status of the service requested was modified. For example, below is an SMS with the following information: "citizen, there is a response to the request RIO-10755776-2. For more information, check on our web or mobile app, or call 1746":

TABLE 13 - 1746 SMS STATUS UPDATE
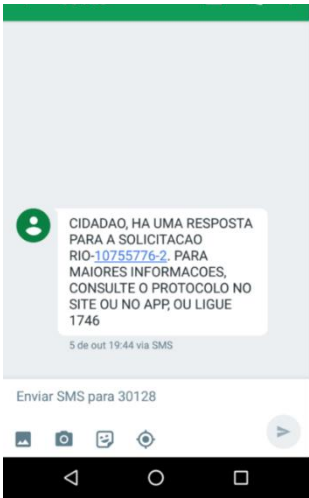
Source: 1746 SMS print screen

### ii.   SGRC WORKAROUNDS: REPORTS

As *1746* turned into a managerial tool based on the collected data, the *1746* team wished that the *SGRC* produced strategic management reports. As many of these desired features were not part of the *ToR*, they were not developed and *Accenture* took the role of producing increasingly sophisticated reports. In the beginning, those reports showed only basic

demand and performance information. From 2014, those reports were greatly enhanced and looked like business intelligence dashboards.

The *1746* Manager Dashboard gives access to the Indicators Panel, and the details about Citizen Satisfaction Surveys, Departmental Performance, Conformity Inspections and the Evolution of Service Demands:

FIGURE 62 - 1746 MANAGER DASHBOARD
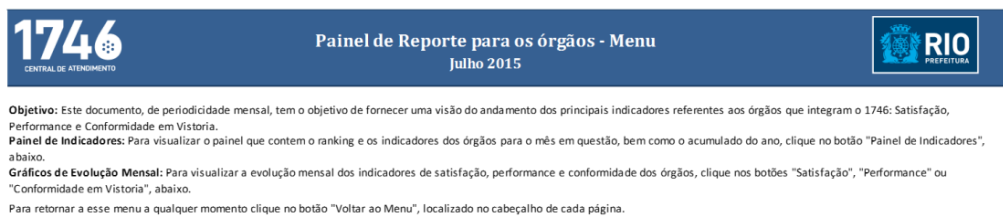
Source: Chief of Staff Secretary 1746 Control Panel, July 2015

The Indicators Panel synthesized the Demand, Performance, Conformity and Citizen Satisfaction for each Department for a given month. These results were marked in green, yellow or red, according to their match with the targets established in the Service Level Agreements.

1746 MANAGER VIEW OF EACH DEPARTMENTS' PERFORMANCE, CONFORMITY AND CITIZEN SATISFACTION

		Satisfaction Level				Performance				Conformity				Ombdusman Satisfactory Response
Ranking Satisfação (Jul)	Órgão		Satisfação (%) (Acumulada)		Satisfação (%) (Jul)		Performance (%) (Acumulada)		Performance (%) (Jul)		Conformidade (%) (Acumulada)		Conformidade (%) (Jul)	Resolutividade da Ouvidoria (%) (Jul)
-	1746	✖	68,5	🙂	69,7	🟢	93,9	🟢	92,2	✖	80,5	🙂	89,3	67,5
1	RIOLUZ	🙂	82,8	🙂	81,6	🟢	98,5	🟢	98,2	✖	78,5	✖	76,7	80,6
2	COMLURB	🙂	75,3	🙂	79,8	🟢	96,1	🟢	95,7	✔	91,2	✔	94,6	81,2
3	SMS	✖	75,1	🙂	79,1	🟢	93,8	🟢	96,1		N/M		N/M	74,2
4	SMF	🙂	80,8	✖	74,8		N/M		N/M		N/M		N/M	99,3
5	Defesa Civil	🙂	62,8	✔	72,4	🟢	88,5	🟢	99,5		N/M		N/M	96,4
6	CET-RIO	🙂	57,9	🙂	60,8	🟢	92,9	🟢	96,7	🙂	87,1	🙂	89,8	65,1
7	GM-RIO	✖	49,9	🙂	52,7	🟢	97,3	🟢	96,4	✖	60,3	✖	57,4	61,7
8	SECONSERVA	✖	45,0	🙂	47,9	🟢	90,6	🟢	87,4	✖	71,8	✖	75,3	35,4
9	VISA	🙂	52,5	✖	44,7	🟢	87,9	🟢	86,2		N/M		N/M	97,1

Legenda - Órgãos com meta para 2015						
Satisfação (% em relação à meta 2015)	✔	100%	🙂	>= 90%	✖	< 90%
Performance (% em relação à meta 2015)	✔	100%	🙂	>= 90%	✖	< 90%
Conformidade	✔	> 90%	🙂	>= 81%	✖	< 81%
NM		Não medido				

% of the Satisfaction Level, Performance and Conformity Targets

Legenda - Órgãos com meta para 2015						
Performance	🟢	> 80%	🟡	>= 60%	🔴	< 60%
NM		Não medido				

Source: Chief of Staff Secretary 1746 Control Panel, July 2015

The Indicators Panel has also a dashboard that shows the same synthesis by service type of each Department; therefore, all those in monitoring and control may have a broad Departmental view but can also pinpoint which service is underperforming and who might need a tougher SLA.

FIGURE 64 - 1746 MANAGER VIEW OF DEPARTMENT OF PUBLIC WORKS' PERFORMANCE, CONFORMITY AND CITIZEN SATISFACTION

1746 MANAGER VIEW OF DEPARTMENT OF PUBLIC WORKS' PERFORMANCE, CONFORMITY AND CITIZEN SATISFACTION

	Satisfaction Level				Performance				Conformity			
Tipo		Satisfação (%) (Acumulada*)		Satisfação (%) (Jul)		Performance (%) (Acumulada)		Performance (%) (Jul)		Conformidade (%) (Acumulada)		Conformidade (%) (Jul)
Pavimentação	🙂	48,2	✔	51,9	🟢	98,2	🟢	98,6	✖	71,8	✖	72,3
Drenagem	✖	44,7	✔	54,9	🟢	97,5	🟢	98,3	✖	71,9	🙂	87,5
Vias públicas	✖	32,7	✖	37,9	🟢	93,3	🟢	91,2		N/M		N/M
Quebra-molas		N/M		N/M	🔴	17,2	🔴	19,0		N/M		N/M
Mobiliário Urbano		N/M		N/M	🔴	0,0	🔴	0,0		N/M		N/M
Monumentos e Chafarizes		N/M		N/M	🔴	0,0	🔴	0,0		N/M		N/M
Conservação de vias		N/M		N/M		N/M		N/M		N/M		N/M

Meta de satisfação 51.1%

Source: Chief of Staff Secretary 1746 Control Panel, July 2015

The *1746* team, helped by *Accenture*'s in-house team, has also established a routine of producing detailed operational management reports for Department Heads, at the level of units and sub-units. For instance, the dashboard below shows the performance, satisfaction level and conformity percentage in relation to (i) their targets and (ii) the evolution of the Department (SECONSERVA) in the satisfaction level ranking amongst Departments, (iii) the evolution of Department services demand, and (iV) the distribution of the Department's total demand among its services:

FIGURE 65 - DEPARTMENT OF PUBLIC WORKS DASHBOARD

Source: Chief of Staff Secretary 1746 Control Panel, July 2015

The Department of service manager can also have a detailed view of one specific service – in our example, "street paving", by Departmental unit. The manager can identify the underachiever unit and act on it; she can also identify the most demanded specification for that type of service, for instance regular paving, pothole repair, etc.

FIGURE 66 - DEPARTMENT OF PUBLIC WORKS DASHBOARD - STREET PAVING
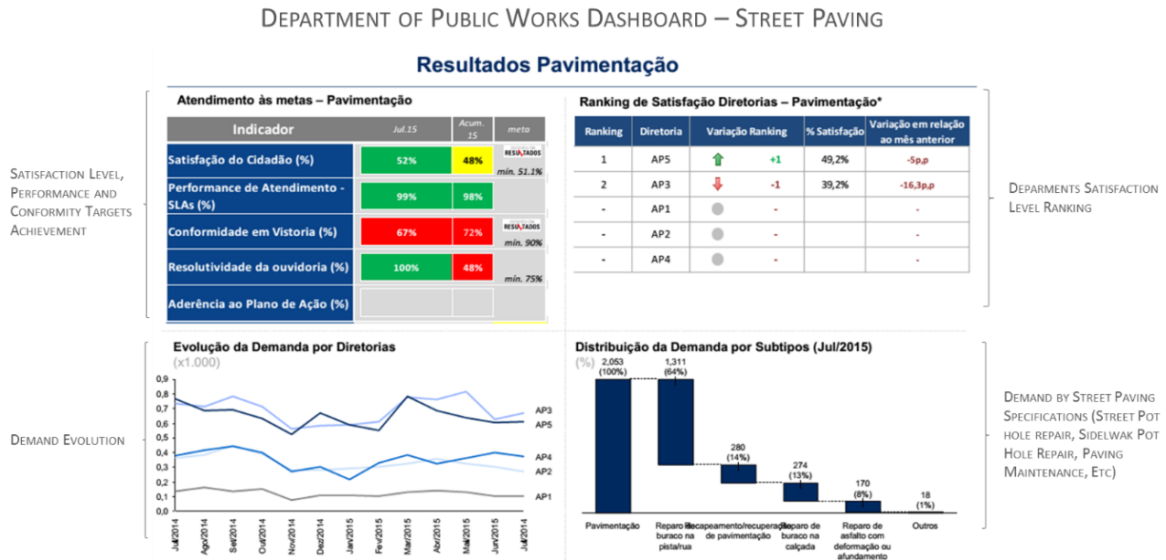
Source: Chief of Staff Secretary 1746 Control Panel, July 2015

One can also drill down further and receive performance and satisfaction levels information about street paving for a specific unit and its different operational teams:

FIGURE 67 - DEPARTMENT OF PUBLIC WORKS DASHBOARD - STREET PAVING BY DEPARTMENT UNIT
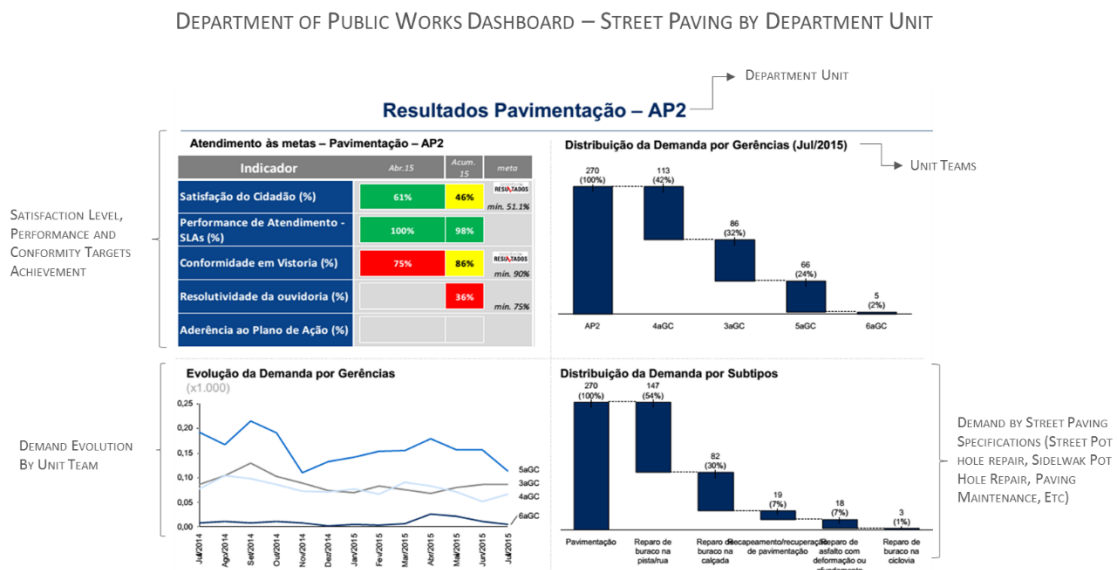
Source: Chief of Staff Secretary 1746 Control Panel, July 2015

Finally, all 1746 and Departmental managers can know exactly which unit is underperforming with regard to citizen satisfaction and specific motives for the dissatisfaction, for instance quality of service delivery, delivery time, etc.

FIGURE 68 - SATISFACTION SURVEY BY DEPARTMENT UNIT

SATISFACTION SURVEY BY DEPARTMENT UNIT
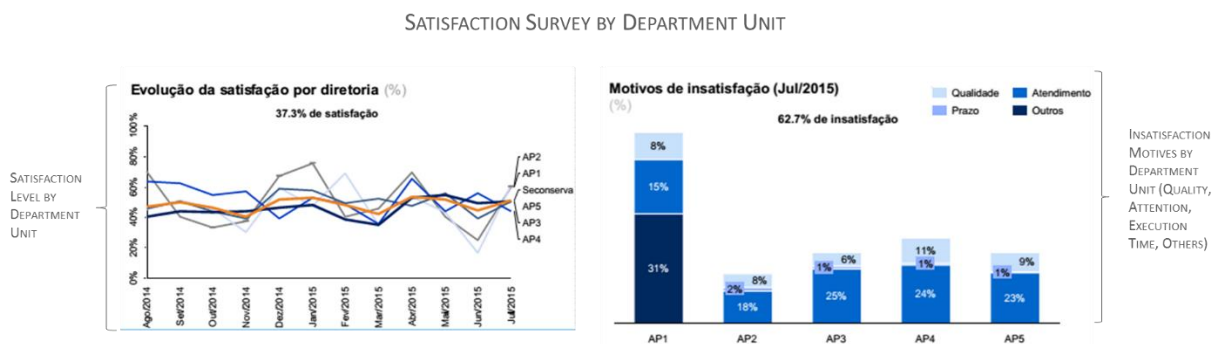
Source: Chief of Staff Secretary 1746 Control Panel, July 2015

As we have observed, the SGRC workaround business intelligence reports gave an incredibly detailed view of the dynamics of services requests and departmental performance, which could be used at a more strategic level, as a subsidy for the Target-Driven Agreements, but also at the more operational level to diagnose which Departments and Units are underperforming and where and how they could improve their service delivery.

iii.   1746 ONLINE AND CARIOCA DIGITAL

An electronic channel that was not foreseen in the creation of 1746 was a service portal. The Mayor and the Chief of Staff Secretary believed that in 2011 citizens would rather use a mobile application instead of going online through a computer. However, to meet a demand from the media, according to the second manager of the 1746, the team did not create a services portal, but reproduced online the existing application for mobile phones and tablets, as we see below:

**FIGURE 69 - 1746 WEB APPLICATION**

Source: 1746 Web Application Print Screen - http://www.1746.rio.gov.br/ (retrieved on 08/08/2015)

A team of developers at IPLAN – the technology company of Rio's municipal administration – saw an opportunity to create a services portal and went further. The *Carioca Digital's* logic is completely focused on citizen needs. To enter the system, citizens must create an account and log in to have a portal fully customized to their needs. For instance, the initial page showed all education, health, police, firefighters, markets and events facilities located around the citizen's address. Services available on the *1746 Citizen Attention Centre* were also made available in the *Carioca Digital* portal, among others[52].

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[52] I will analyze the Carioca Digital in more detail in the next section

FIGURE 70 - CARIOCA DIGITAL ENTRY SCREEN

HEALTH AND EDUCATION FACILITIES CLOSE
TO USER'S ADDRESS
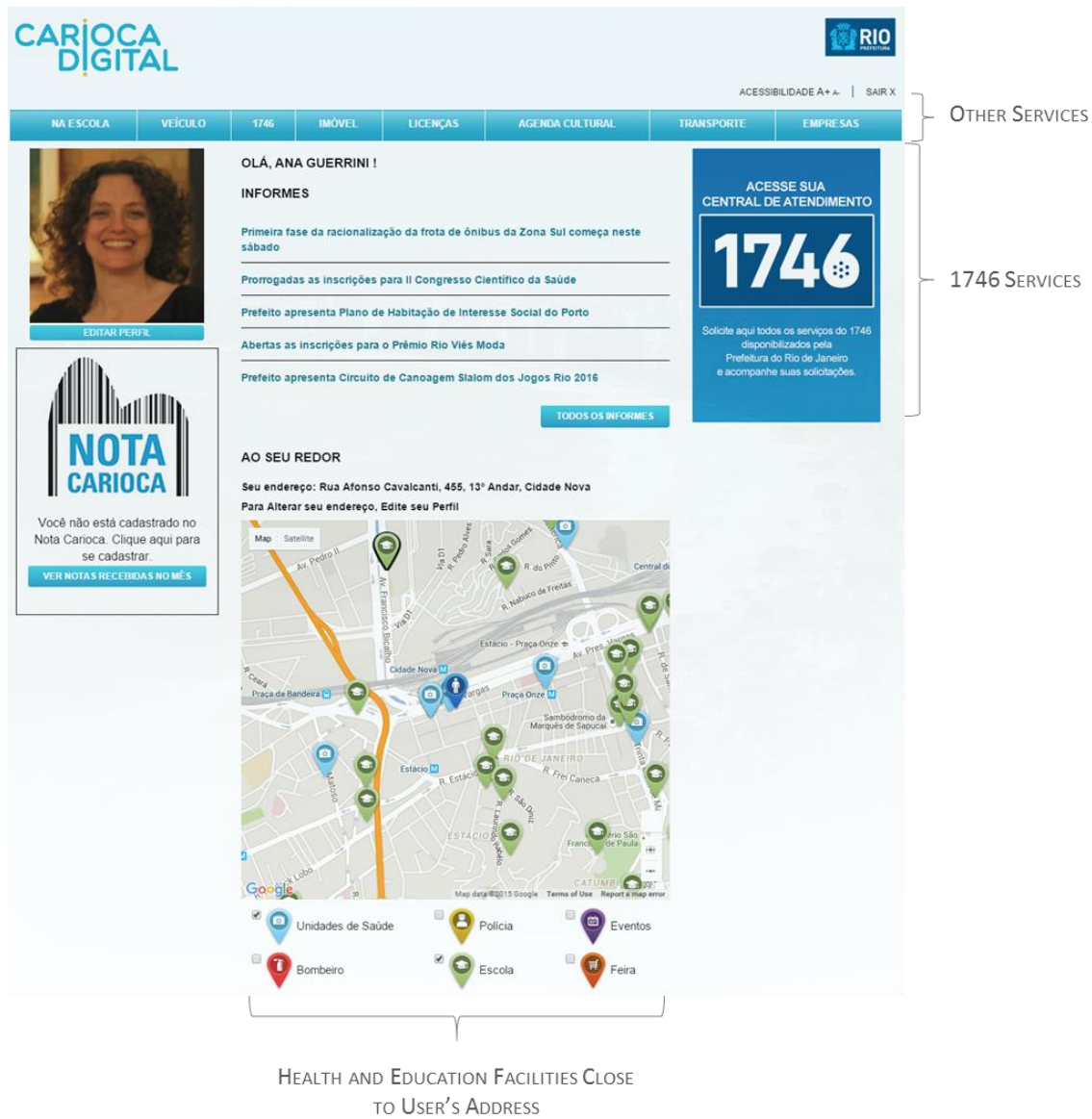
Source: Carioca Digital Print Screen - http://carioca.rio.rj.gov.br/ (retrieved on 08/08/2015)

The *Carioca Digital* has been developed to fully integrate with the *SGRC*; therefore, this is currently the only online channel where citizens can check information about services requested in any of the interaction channels.

iv. SYNTHESIS OF TECHNOLOGICAL CONSEQUENCES

In general, the *SGRC* served well as a working flow and dispatcher system. The inclusion of SMS and e-mail alerts when there as a change of status on service requests was straightforward, adding another leg to the feedback loop opened by the citizen. The main workarounds and adaptations were in the business intelligence features not available on *SGRC*. The *1746* team, to circumvent SGRC's limitations, quickly developed, with the help of a consultancy firm working in-house, simple (2011-2013) and then sophisticated (2014-2015) performance reports to provide the Target-Driven Agreement Team with accurate information, and operational reports to help Departments to improve their service delivery.

In the front-office, the initial belief that a Call Centre and a mobile application would take care of the demand was soon faced with requests for a services portal as well. Instead of a services portal, the *1746 Web Application* replicated the mobile application features. In 2014, outside the 1746 main structure and the Chief of Staff Department, a fully customized Citizens' Portal, the *Carioca Digital,* was created, which also included *1746* services and fully integrated with SGRC.

TABLE 14 - SYNTHESIS OF TECHNOLOGICAL CONSEQUENCES - RIO DE JANEIRO

TECHNOLOGICAL CONSEQUENCES	
CHANGES, ADJUSTMENTS, WORKAROUNDS IN THE TECHNOLOGICAL PROPERTIES AVAILABLE TO THE USERS OR CHANGE IN THEIR ENDS	• INCLUSION OF ALERTS SYSTEM VIA SMS SAND E-MAILS TO CITIZENS • DEVELOPMENT OF SIMPLE (2011-2013) AND SOPHISTICATED (2014-2015) PERFORMANCE REPORTS FOR DEPARTMENTS AND RESULTS AGREEMENT TEAM TO CIRCUMVENT SGRC'S LIMITATIONS • CREATION OF 1746 WEB APPLICATION BY 1746 TEAM, NOT FULLY INTEGRATED WITH SGRC

- CREATION OF CARIOCA DIGITAL, CUSTOMIZED CITIZEN PORTAL THAT INCLUDED 1746 WEB APPLICATION INTEGRATED WITH SGRC

Source: Author's own construction based on interviews, decrees and reports

C. STRUCTURAL CONSEQUENCES

This section analyses the structural unintended changes, if any, that Rio's ICT-interaction channels users enact, given the conditions (interpretive, technological and institutional) and the processual and technological consequences explored in the previous sections. These structures are associated with technology enactments that preserve the status quo, i.e. reproduce the former organizational structures, reinforce and enhance *status quo*, i.e. reinforce the current structure by making improvements to it and to its outputs, or transform status quo, i.e. change the configuration of the existing forms of organization – in this research, toward more networked ones. In order to understand whether these changes took place in Rio de Janeiro, I give special attention to the emergence of interdepartmental collaboration and coordination structures, in the back office, and to the e-Government morphology, or the online characteristics that may point towards joined up arrangements.

i. COORDINATED e-GOVERNMENT STRATEGY

As we can see, if in early times the *1746* was seen as a way to serve the citizens better through strict monitoring and control procedures, this tool has been strengthened and transformed into a set of electronic interaction channels and a data source for the teams concerned with strategic management of the government as a whole. After only four years, *1746*'s management team has established its power of monitoring and controlling the quality and speed of services delivery, and went further: it has become an oversight body

that dictates the rules of citizen attention and the performance standards of service delivery within the Units of each Department.

The information and service requests flows between the 1746 Attention Centre, the management staff and the Departments have not changed much since their inception, but when we look at the service feedback and usage information flows, though changes are also not visible, we realize that the *1746* management team has been empowered by the complexity and growing importance of the information it produces. Therefore, the matrix-working format originally thought for the *1746* structure – i.e., the *1746* Manager would be in charge of citizen attention, monitoring and controlling services quality and speed, whereas the Department Heads would be responsible for the delivery of services – is tilting to the *1746* team side, as its staff is increasingly interfering on service delivery operational procedures as a consequence of the powerful information it produces.

As noted in the content covered in the previous sections, the *1746* interaction channels were born already in a coordinated manner. Those who came after were also already under this unique coordination. In addition to the individual control of services delivery and the answers given to citizens, the *1746* managing team has an overall and in-depth view of each Department's works. I ask in this section what is actually done with the information produced – are there changes in how services are provided and in how Departments relate to each other and with citizens?

**Planning Focalized Service Delivery**

A simple and first example of how the feedback and service usage information has been used in practice is given by the Department of Urban Cleaning, which is also responsible for tree pruning services. A Urban Cleaning Department communique of July 6th 2015 stated that the Revitalization of Public Squares Program would focus first on those squares that

needed the most, based on the aggregated data of citizens requests made through the *1746 Citizen Attention Centre*.

> "The Revitalization of Public Squares Program revitalizes 20 public squares every week. Service is carried out after careful needs assessment based on the City Hall 1746 Attention Center data, as well as on the inspections carried out by the Green Areas Units in the whole City."

(*Urban Cleaning Department Communique - 6/07* 2015)

FIGURE 71 - REVITALIZATION OF PUBLIC SQUARES PROGRAM - ENHANCEMENT OF PUBLIC SERVICES
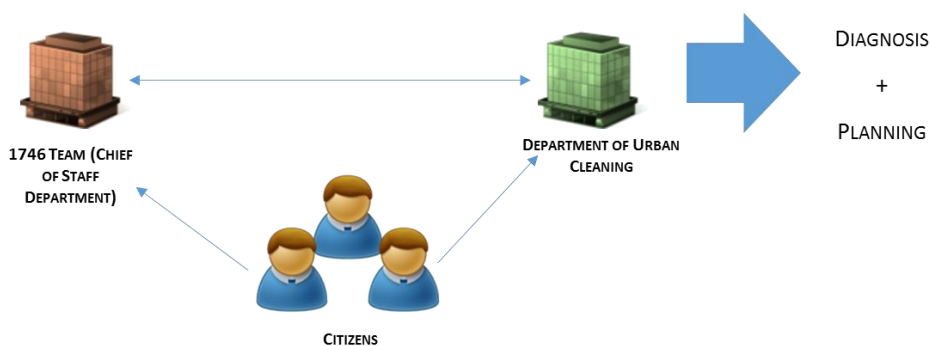
Source: Author's own construction based on interviews, decrees and reports

A simple and straighforwad assessment of *1746* citizen data allowed for a more focused diagnosis and planning for the Revitalization of Public Squares Program.

Changes in Dengue Fever Inspection Routines

A second example regarding changes in working routines is given by the active data use produced by the *1746* technical staff about inspection requests on possible sots of Dengue Fever mosquitoes. The 1746 team mapped the inspection requests and, therefore, knew the riskiest regions in the city.

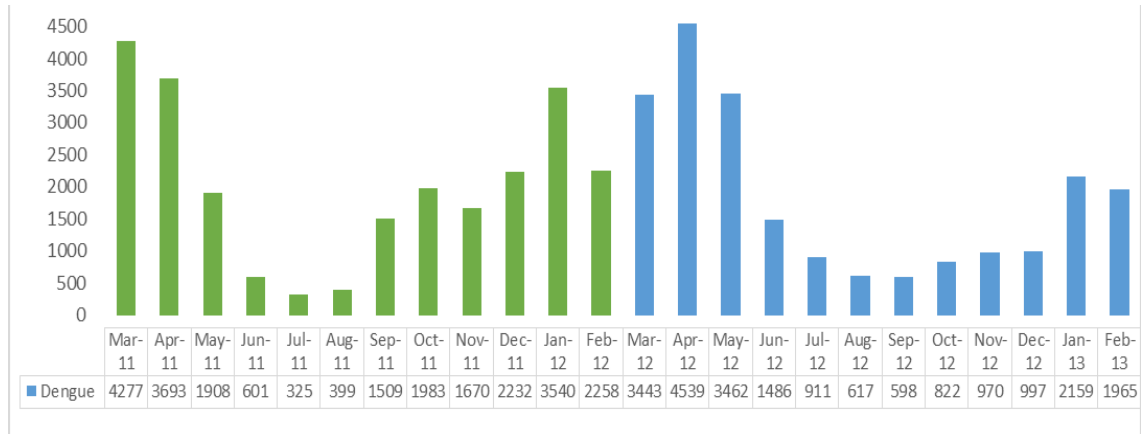**FIGURE 72 - DENGUE FEVER MOSQUITO SPOT REPORTS**
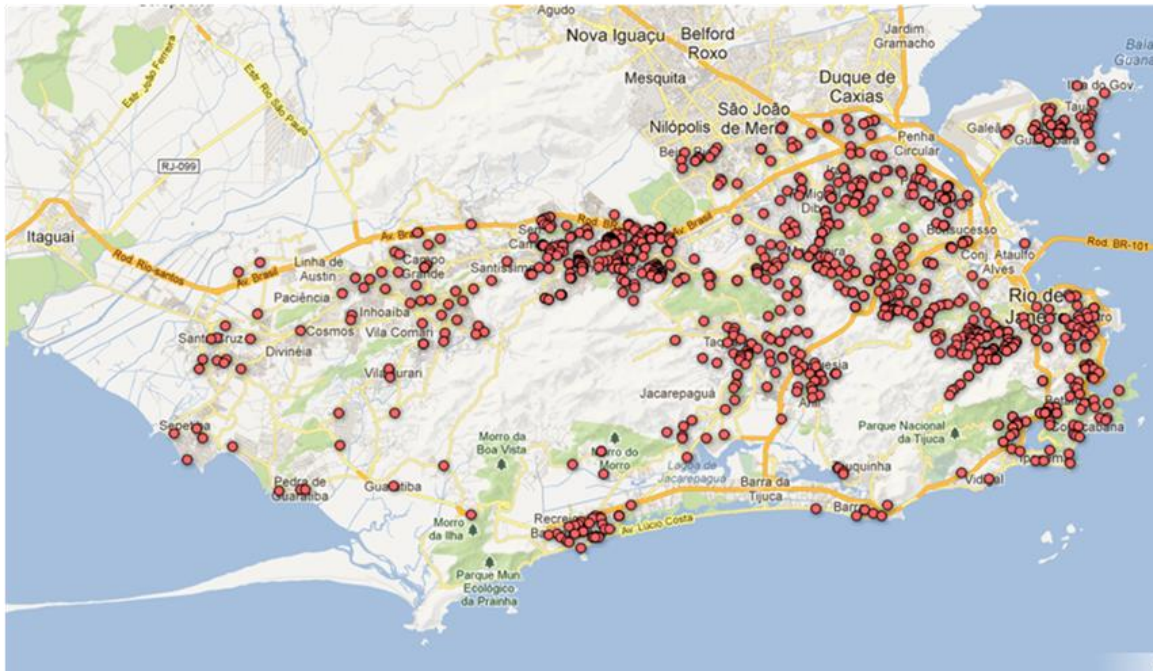
Source: Rio de Janeiro Chief of Staff Department Executive Report, February 2013

Public health managers, aided by the *1746* data analysts, noticed that inspections were not being effective in reducing the epidemic outbreak and realized that this was probably related to the Service Level Agreement established with the inspectors – the life-cycle of the *Aedes Aegypti* mosquito was shorter than the deadline for inspection (7 days against 10) – and, therefore, reduced the service resolution time from 10 to 4 days, expecting that the in the following summer the outbreak would be less severe.

The dengue fever usually peaks during the summer period, a pattern clearly seen on the graph below, which shows the number of requests for inspection on possible spots of Dengue Fever mosquitoes.

FIGURE 73 - REQUESTS FOR INSPECTION ON POSSIBLE OUTBREAK OF DENGUE FEVER


Dengue	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13
	4277	3693	1908	601	325	399	1509	1983	1670	2232	3540	2258	3443	4539	3462	1486	911	617	598	822	970	997	2159	1965

Source: Chief of Staff Department, Rio de Janeiro Municipality

Nevertheless, we can observe a downward change of requests from one summer to the other. After looking at these data, specialists from the Department of Health said that one of the explanations could be in fact the results of the changes implemented on the inspection procedures after careful analysis of the data generated by the *1746* requests. From 2011 to 2013, there was a 10% reduction in average requests and the epidemic became less severe.

In this case, the *1746* team used citizen data to help public health technical staff to diagnose and change routines and procedures to improve service delivery.

**FIGURE 74 - DENGUE FEVER INSPECTIONS – ENHANCEMENT OF PUBLIC SERVICES**
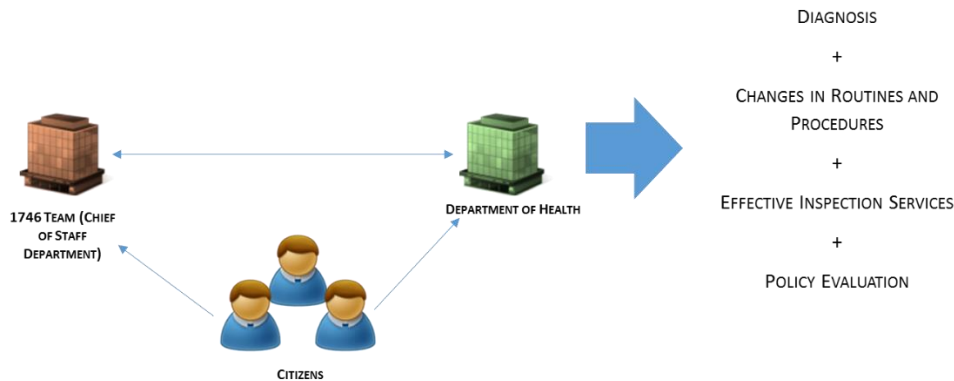
Source: Author's own construction based on interviews, decrees and reports

Changes in Inspection Routines of Tables and Chairs in Public Spaces

Another example of how aggregate data generated from services requests, collected and analysed by the *1746* staff, served as input to changes in policy-making and work routines is the analysis of requests of inspection on tables and chairs in public areas. Bars and restaurants in Rio de Janeiro frequently place tables and chairs on the sidewalk without a license for doing so, oftentimes blocking pedestrians from walking freely. Citizens frequently contact the *1746* to report the irregularities, leading to inspections, but the problem remains throughout the city. After analysing the *1746* data and the routines of inspections, the analytical staff concluded that the frequency of inspections – and therefore the penalties applied – in a single establishment was too low, promoting the continuity of the irregularity. For instance, they realised that if an irregular table generates R$ 900.00 per night in consumption, one citizen service request should translate into seven or more inspections over a month in order to cause losses to the establishment and induce a change in behaviour.

FIGURE 75 - PENALTY FOR TABLE AND CHAIRS ILLEGALLY OCCUPYING A PUBLIC AREA
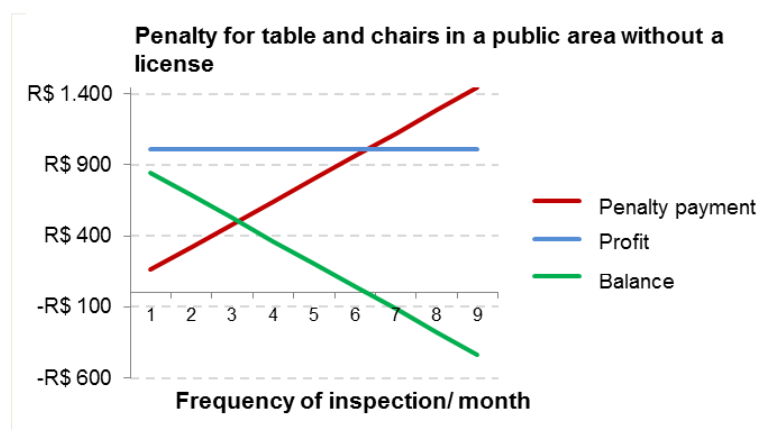
Source: Chief of Staff Department, Rio de Janeiro Municipality

Another course of action would be increasing the penalty value, therefore reducing the need to inspect a bar or restaurant several times a month.
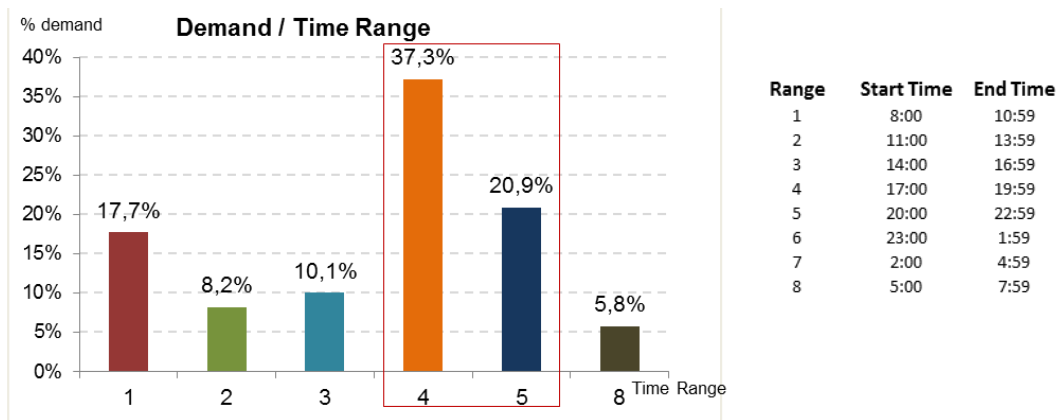
Penalty for table and chairs in a public area without a license

—	$200
—	$250
—	$320
—	$400
—	$600
—	Profit

LOSS

Frequency of inspection/ month
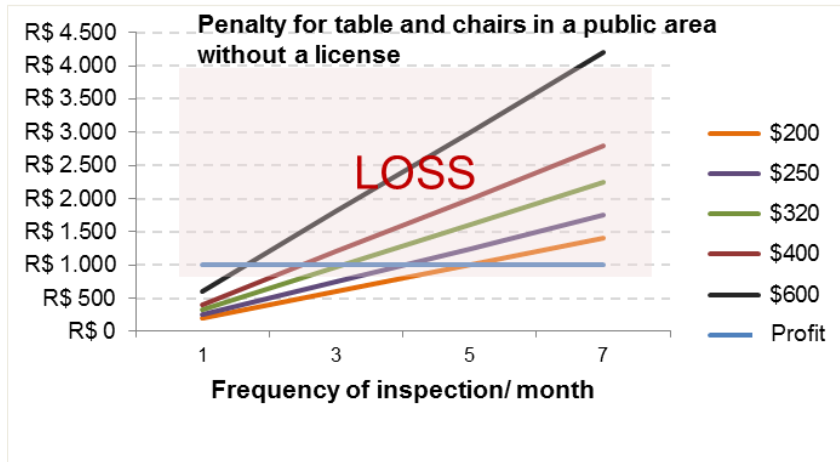
Source: Chief of Staff Department, Rio de Janeiro Municipality

As this option, probably more efficient, would require legislation modifications, the Department of Public Order inspection team opted for the first option and reorganized its human resources in running repeated inspections in the locations with the highest numbers of requests, between 17h00 and 23h00 (see below).

FIGURE 77 - INSPECTION OF TABLES AND CHAIRS - DEMAND AND TIME

Demand / Time Range

% demand

- 1: 17,7%
- 2: 8,2%
- 3: 10,1%
- 4: 37,3%
- 5: 20,9%
- 8: 5,8%

Time Range

Range	Start Time	End Time
1	8:00	10:59
2	11:00	13:59
3	14:00	16:59
4	17:00	19:59
5	20:00	22:59
6	23:00	1:59
7	2:00	4:59
8	5:00	7:59

Source: Chief of Staff Department, Rio de Janeiro Municipality

Once again, by using citizens data and adding data and calculations about productivity and cost-effectiveness of fines, the *1746* Team led the reorganization of the Department of Public Order routines and inspection procedures.

FIGURE 78 - INSPECTION OF TABLE AND CHAIRS - ENHANCEMENT OF SERVICE DELIVERY
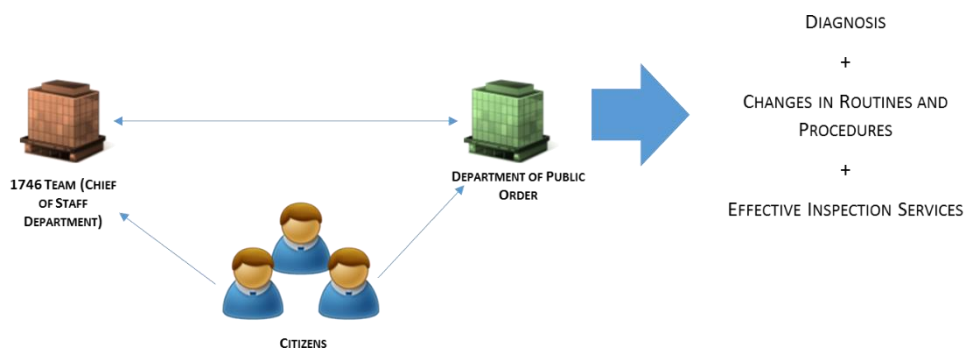
Source: Author's own construction based on interviews, decrees and reports

Departments Working Together: Transformation in Noise Inspection Routines

Noise complaints are rarely often unaccompanied of other public disturbances. Most often, in the city of Rio de Janeiro, citizens complain about high levels of noise coming from bars that illegally occupy sidewalks with tables and chairs for their customers. Citizens are seldom satisfied with public administration actions to reduce noise levels in the neighbourhood because, in fact, public officials can usually carry out only one part of the job. The Department of Public Order (SEOP), as explained above, is in charge of inspecting illegal occupancy of sidewalks; on the other hand, the Department of Environment (SMAC) is responsible for inspecting and fining establishments that emit high levels of noise. When a citizen contacted the *1746 Attention Centre*, depending on the information transmitted, the attendant registered the request for one or the other Department. What followed was the SEOP inspector arriving to check the establishment license for placing tables and chairs on the sidewalk and, if it had it, the noise problem was not solved. If the SMAC expert

arrived and saw the tables and chairs on the sidewalk, she would probably say that the issue should be resolved by the Department of Public Order, and again the original demand – the inspection of noise levels – would not be solved.

After carefully analysing the requests data, the *1746* staff decided to create a working team with inspectors and experts from both Departments, who should jointly carry out inspections if the reported problem was related to tables and chairs on sidewalk and noise levels, or only noise levels, as summarized in the figure below:

FIGURE 79 - NOISE POLLUTION JOINT INSPECTION ROUTINES

Source: Author's own construction based on interviews, decrees and reports

As a result, the citizen satisfaction survey improved after a few months of joint action coordinated by the *1746* managing team. This example shows that an interdepartmental problem was identified not by the Departments, as they separately could only see part of it, by the *1746* team themselves, by clearly being obsessed with service performance improvement based on citizen data.

FIGURE 80 - NOISE POLLUTION JOIN INSPECTION ROUTINES – TRANSFORMATION IN SERVICE DELIVERY
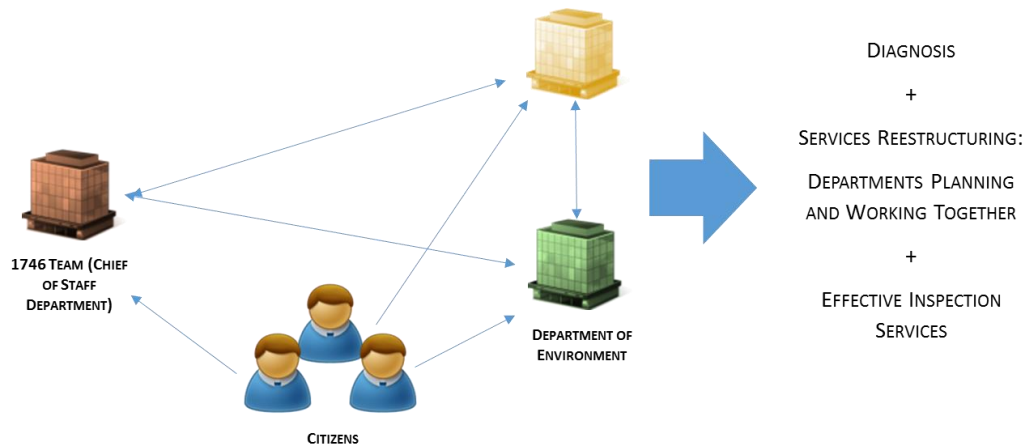
Source: Author's own construction based on interviews, decrees and reports

As observed in the introduction of this section, the *1746* management team was able to implement these changes in inspection routines by making Departments work together mainly because the Chief of Staff Department Secretary increasingly concentrated data about other public bodies and also held the Target-Driven Program tool to enforce those improvements

ii.   INNOVATIVE INITIATIVES OUTSIDE THE 1746 OVERSIGHT BODY

We have seen examples of changes and transformations in the back office of service delivery, but few in fact in the front office; in other words, in the way the administration first interacts with citizens. The creation of the *1746 i*nteraction channels were revolutionary in itself, but after 2011 not much has changed in the front office. The *Carioca Digital* portal is the most innovative initiative since the creation of the *1746 Attention Centre* and, perhaps not surprisingly, was developed outside the *1746 Oversight Body*. An IPLAN team developed portal fully customized to the citizen, with information and services from different Departments and from different governmental levels. Besides the *1746* application, a logged in citizen can see, for instance, her child enrolment details and grades,

as well as the list of the 10 best schools nearby her address according to the national school ranking *IDEB*. In other words, the website integrates information from the municipal Department of Education and with the Federal ranking of schools, customized according with the information given by the user.

FIGURE 81 - CARIOCA DIGITAL – MY SCHOOL

Carioca Digital Print Screen - http://carioca.rio.rj.gov.br/ (retrieved on 08/08/2015)

Carioca Digital also shows information about the transit fines received by the State Transit Department and notifies the user if her vehicle has been towed, a municipal public service.

FIGURE 82 - CARIOCA DIGITAL – MY VEHICLE

Carioca Digital Print Screen - http://carioca.rio.rj.gov.br/ (retrieved on 08/08/2015)

Carioca Digital offers similar services, grouped in themes. It was launched as a pilot in April 2014 and only 1,5 year later not only absorbed a repressed demand for well-designed online services portals, as shown in the graph below, but its *1746*-related services usage increase has proportionally captured users from the *1746 Call Centre.*

FIGURE 83 - SERVICES AND INFORMATION REQUESTS BY CHANNEL
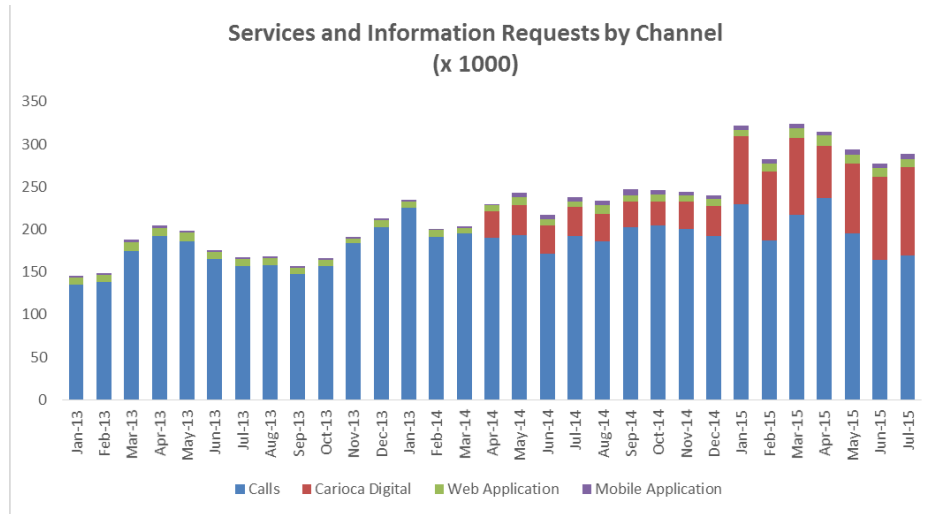
Source: Author's elaboration based on data provided by the 1746 Management Team

FIGURE 84 - SERVICES AND INFORMATION REQUESTS BY CHANNEL (%)
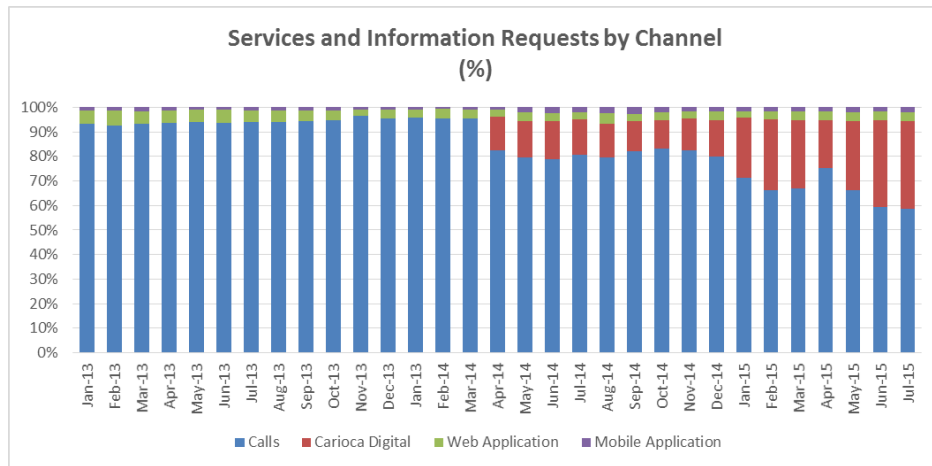
Source: Author's elaboration based on data provided by the 1746 Management Team

These figures show that, although the *1746* team has changed and, sometimes transformed, the way services are provided, in the front office innovations arose outside of this rigid structure of monitoring and control that focused on performance and results.

iii. Synthesis of Structural Consequences

The very implementation of the *1746 Attention Centre,* initially composed of a call centre and a mobile application that centralized all City Hall services in one single number, greatly improved citizens' access to public information and services, also forced Departments and Agencies to examine their own working procedures in order to inform them to citizens. The new technologies intentionally automated and standardized previously relationships and information flows, refining existing ways of doing things.

Besides the *1746* team attribution of monitoring and controlling service quality and speed, it began to take up the role of leading services improvement and transformation. By using citizen data and in depth analysis of service delivery procedures, in some cases it has started to help Departments to diagnose problems and enhance their provision of public services. In other cases, it is also leading interdepartmental work to transform completely how service delivery is carried out, toward a more network organizational dynamics.

In the front office, *Carioca Digital*, an e-Government initiative created and developed outside the *1746* oversight body, is leading the most innovative transformations – the *1746 team* is mostly concerned with service performance, not with citizen-user experience – through a fully customized portal centred around citizens' needs, joining up several municipal and state information and services in one single place.

TABLE 15 - SYNTHESIS OF STRUCTURAL CONSEQUENCES - RIO DE JANEIRO

STRUCTURAL CONSEQUENCES	
TECHNOLOGY-IN-PRACTICE: REINFORCE AND PRESERVE STATUS QUO (INERTIA), REINFORCE AND ENHANCE STATUS QUO (APPLICATION) OR TRANSFORM STATUS QUO (CHANGE)	• REINFORCE AND ENHANCE STATUS QUO: AUTOMATION, STANDARDIZATION AND CENTRALIZATION OF CITIZEN ATTENTION • TRANSFORM STATUS QUO: IN SOME CASES, RELATIONAL/NETWORKED WAYS OF WORKING BETWEEN PUBLIC BODIES WITH CITIZEN INPUT HAVE TRANSFORMED SERVICE DELIVERY; FRONT OFFICE (CARIOCA DIGITAL) HAS BEGUN TO

Source: Author's own construction based on interviews, decrees and reports

4.   CONCLUSIONS

In this chapter, according to the concepts developed in the analytical model, I sought to answer the main question of the thesis in two stages. In the first stage of the research, in order to answer how *e-Government applications have been enacted by governments and used by citizens, taking into account institutional and socio-technical conditions*, I analyzed the interpretive, technological and institutional conditions during the implementation of e-Government initiatives in Rio de Janeiro Municipal Government since 2011. Next, in order to answer the second part of the thesis main question, *whether the information flows regarding the use of these interaction channels are changing the organizational dynamics of public administrations,* I carried out a detailed analysis of the processual, technological and structural consequences of e-Government enactment. Finally, by integrating the together, I attempt to answer the thesis question as to whether the intensification of ICT-based interaction between governments and leads to organizational transformations toward more networks forms in the Carioca public administration.

   ▪ **Interpretive, Technological and Institutional Conditions**

The City of Rio de Janeiro, unlike other Brazilian and world capitals, began its foray into Electronic Government belatedly, after the concept was already consolidated in the public sector and academia. Inspired by the *New York City 311* model, which focus on monitoring and control of citizen attention and service delivery quality, the *1746 Attention Center*, composed of a Call Centre and Mobile Application, has been created in order to better serve the citizen-customer. It is important to note that in addition to the top-down Mayor encouragement of Mayor, market-oriented ideas greatly influenced shared ideas and directives in conceptualizing e-Government solutions in Rio. The consultancy firm

Accenture, responsible for developing and implementing the 311 in New York, invited Mayor Eduardo Paes to get acquainted with the solution *in loquo,* and almost half of the Under-Secretaries and senior advisors had previously worked for Accenture, McKinsey and Ambev[53]. From the beginning*, 1746* Service Level Agreements for service delivery were tied with the City Hall Target-Driven Program.

Both the Mayor and the Chief of Staff Secretary, enthusiasts of new technologies, had a strong conviction that the Call Centre was essential for the citizen attention solution, but also believed that people would gradually migrate to the mobile application. However, no less than a year after the creation of *1746,* the technical staff realized through the questions that came through the institutional page of *1746*, that there was a great demand for web services and, as a result, created the *1746 web application*. In the back office, the emphasis on monitoring and controlling the quality of services was not reflected in the development of the system that gave support to the interaction channels, the *SGRC (Citizen Relationship Management System)*. The system was meant to be a Citizen Relationship Manager, but in practice, it was only as a workflow system of service requests without management reports modules, neither geo-referenced data to allow public managers to *feel the pulse* of the city.

The 1746, from the beginning, was inserted into an organizational structure that gave legitimate powers to the management team to monitor and control the services delivered by Departments. The decree that created the 1746 determined that the relationship of the 1746 managing team with other Departments was to be in a matrix form. Since its creation, the *1746* managing team, under the Chief of Staff Secretary, had as its responsibility, besides the maintenance of the electronic interaction channels, oversee and control all other Departments' service delivery speed and quality, whereas Departments worked hierarchically, as before, to ensure service delivery according to the SLAs.

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[53] Ambev, or "America's Beer Company", the largest company in Latin America, is the Brazilian subsidiary of InBev, the world largest brewing conglomerate. It is know in Brazil for its pioneer implementation of target-oriented management.

- **Processual, Technological and Structural Consequences**

Rio's municipal government did not have, until 2011, initiatives of joined up government, not even face-to-face one-stop-shops. The mere implementation of a Call Centre, which centralized in a single channel more than 700 services with standardized procedures and SLAs, changed the way citizens began to relate to City Hall. By centralizing and standardizing services requests, citizens began to receive deadlines for resolution and access to a registration number to monitor and follow-up requests. Furthermore, the new mobile application allows citizens to "join in" in the city management, who can quickly report anything, anytime from anywhere. Citizens can check on the map the most recent complaints to see if the situation they thought of reporting is already reported and information about the complaint and the status of the resolution process is presented.

Departments, many for the first time, self-accessed their own services and working routines in order to inform citizens what to expect in terms of procedures and deadlines. However, although there were deep improvements in services speed, as well as clearer information and transparency of services procedures, the implementation of ICT-mediated interaction channels in Rio did not mean immediate improvements in service quality, nor did they lead to more interdepartmental collaboration. These transformations began to happen only with the intensification of the collection and use of citizen voice and service use data.

With the intensification of interaction between citizens and the *Carioca* municipal administration through electronic channels – numbers are impressive: from 2013 until 2015 the number of electronic interactions almost doubled, from 140,000 to 280,000 –, the *1746* team went on to have a lot of data that could give a georeferenced view of the main problems and demands of the city. Taking advantage of this opportunity, the *1746* the team concentrated in their hands all the data collection and the production of numerous reports and dashboards about service requests and feedback from citizens. The technological shortcomings of SGRC, which does not automatically generate business intelligence reports,

indeed helped elevate the status of the *1746* team, which held the data and the prerogative to build management reports. Despite the established relationship in a matrix form, we observed a growing influencing power of the *1746* in the entire public service delivery process, based on citizen data. The *1746* staff, in addition to guiding the establishment of service level agreements and monitoring and controlling the provision of services, also assumed the role of *auditor* of Departments' service delivery procedures and performances.

Generally speaking, the relationship between the team responsible for the *1746* electronic channels and the departments has established itself as a *one-to-one* collaboration – *1746* channels mediate the relationship of Departments with citizens, and both jointly determine SLAs. Nevertheless, the Chief of Staff Secretary, with all the information about the managerial and operational performance of Departments, has achieved a superior hierarchical status with regards the other Department Heads.

Although most of the relationships between the *1746* and Departments technical staff are one-to-one, including in joint efforts to restructure service delivery with aggregated citizen data (e.g. Public Squares Maintenance, Dengue Fever Outbreaks and Inspection of Irregular Occupancy on Sidewalks), a few one-to-many interdepartmental collaboration began to appear. As an example, the diagnosis and planning of noise pollution inspection based on citizens voice data, led by the 1746 team with the collaboration of two Departments.

In other words, the use of the citizen feedback is helping improve public services through a very intensive departmental coordination led by the *1746* team. The municipality began to have a broader view of the problems of the city, with trustworthy statistics, such as a ranking of most requests services in each neighbourhood, the profile of citizens who make requests, the seasonality of services throughout the year, month, day and time, and which Departments and Agencies do not deliver services on time. In most cases, services improvements come from the individual action of Departments, led by the *1746* team – i.e. technology-in-practice is enhancing service procedures and delivery. In other cases, the *1746* team is triggering joint action between Departments to improve services, moving toward more collaborative interdepartmental work, previously non-existent – i.e., in those

incipient cases, technology-in-practice is transforming the status quo and changing the way services are delivered in Rio. It must noted that although in those cases there is a movement toward more networked interdepartmental work to improve service delivery, we cannot affirm that all claimed benefits of networked government are in place; for instance in the cases of tables and chairs in sidewalks and noise pollution inspections, the changes in routines and collaborative work between departments may mean, at first, an increase in human and financial resources, instead of a cut in costs.

Although it helps service delivery improvement, on the other hand, the centralization of coordination of all interactions with citizens may inhibit innovation and more horizontal and informal relationship between the municipal administration, Departments and society. Nowadays, the relationship between these actors has been electronically mediated by the *1746* set of channels. For instance, common social media platforms, such as *Facebook* and *Twitter,* are not being used for services-related matters; the very fact the *Carioca Digital,* the most advanced initiative of services customization, emerged outside the *1746* structure is perhaps an indication that this might be happening. Finally, we should highlight that the increasing role of the *1746* management team in policy making and budgetary allocation decisions is mostly based on aggregated citizen data from individual citizen-administration interactions, interpreted by a small technical team – this has been clearly helping Departments improve their services, in some cases, work in collaboration with others, as well as becoming more transparent and accountable –, but which may not necessarily result in the most politically legitimate options or, in fact, represent citizens' needs.

CHAPTER 7 – CONCLUSIONS

This thesis investigated, in general terms, whether some of the promises of e-Government actually occur, using an analytical model based on the Technology-in-Practice Framework (W. J. Orlikowski 2000) and informed by the Technology Enactment Framework (Jane E. Fountain 2001). Specifically, I investigated in São Paulo and Rio de Janeiro municipal governments whether the intensification of ICT-based interaction between governments and citizens related to public services, which generate voluminous quantities of data and information, were resulting in changes in the work practices and organizational dynamics of public administrations – is citizen electronic feedback the driver of government transformation? In order to answer this question, for each case I divided the study into two blocks to answer two sub-questions. First, I analysed how e-Government initiatives were enacted in each case study, by understanding the institutional and socio-technical conditions that gave birth to them. Second, I investigated whether information flows regarding the use of these interaction channels and of citizen active feedback about services were changing the organizational dynamics of Sao Paulo and Rio de Janeiro public administrations toward more networked forms.

The beginning of e-Government initiatives in both cities occurred a decade apart. In São Paulo, in 2001, the first managers who introduced the concept of e-Government shared common ideas and visions related to its potential, such as democratization of access to information and devolution and local empowerment; however, not long after, in 2005, with the party who implemented some of New Public Management concepts in the federal government during the 1994-2001 period in office, e-Government began to be seen as a way to increase efficiency and effectiveness in providing public services, as well as better serve the citizen-customer. These ideas are reflected in the Electronic Government Policy in 2006, which designed a structure for the implementation of the policy in practice, and offered e-Government paths to be followed, such as redesigning the services based on

citizens' preferences and greater centralization of IT systems in order to optimize service delivery.

In Rio, e-Government enterprise began in 2011, already under a managerial perspective of monitoring and controlling the quality of public service delivery. Senior political leadership, including mayors, were in both cases strong from their start – in São Paulo, the first e-Government Coordination Unit was directly linked to the Mayor Marta Suplicy Cabinet; in Rio de Janeiro, the 1746 managing team was at the core of the Chief of Staff Department. Technologies, in the beginning of each project, were also similar – they started with large call centres, web and mobile applications, and a workflow system that dispatched and received requests to and from Departments and Agencies. Could we affirm, therefore, that both municipal administrations followed common e-Government trajectories?

Our analysis showed that the institutional conditions where e-Government was enacted were very different in the two administrations, particularly in relation to their legislation, structures and organizational dynamics. In Rio de Janeiro, the 1746 team had from the beginning, besides the Mayor's political support, specific legislation on the subject that assigned them the responsibility of coordinating all electronic interaction channels regarding the provision of information and services, as well as of establishing service level agreements with Departments in charge of service delivery. By having this responsibility, the team was held accountable by the Mayor, the media and society regarding the quality and speed of service delivery, which only reinforced the importance of this oversight body. In Sao Paulo, on the contrary, the creation of all electronic interaction channels – SAC (Citizen Attention System), SAC Online and 156 Call Centre – did not result in an oversight body with responsibility for coordinating service channels and checking upon service delivery speed and quality. The Electronic Government Policy of 2006 was an attempt to give guidelines for the organization and development of e-Government in São Paulo without, however, delegating specifically to a single body the oversight of electronic channels and service delivery performance. From those given institutional conditions, the processual, technological and, particularly the structural consequences of e-Government-in-practice, followed somewhat different routes in both cities.

In its beginning, *1746* was a solution that simply facilitated the relationship between citizens and Departments, much like the solution presented in São Paulo. Nevertheless, in just over a year, even if facing the same technological obstacles as in São Paulo – i.e. a workflow system that lacked georeferenced data, precluding a regional vision of the city's demands, and that also lacked management and performance reports, as well as presented difficulties of integration with web, mobile and social media applications – the 1746 managing team worked around them, by creating a partially integrated web application to the workflow system, as well as by building management and operational reports at various levels of detail. This was only possible because the 1746 team had a combination of political support, human resources and, above all, the prerogative of monitoring and controlling the provision of public services requested through 1746 channels. In São Paulo, the e-Government Coordination Unit faced similar technological problems; however, the Unit team was not as successful in working around the system, for it did not have the same level of organizational and legal support the 1746 team had. For instance, following an Electronic Government Policy recommendation, they twice tried to implement a Services Portal based on life events, but were unsuccessful to integrate it with SAC. Also, the existing management reports were focused on the work logic of Subprefectures, according to the decentralization and devolvement context in which SAC was created, and did not offer a comprehensive view of services requested and delivered by all City Government Departments; instead of creating a parallel business intelligence system, even if based on Excel and PowerPoint, as it was done in Rio, the e-Government Coordination Unit caved in and adopted simple performance reports – which had a superficial and macro view of service delivery – and did, at most, follow up with Departments that had pending services requests.

We saw that, despite the similarities in shared views and ideas about e-Government and the characteristics of the available technologies, the institutional conditions played out somewhat differently in Rio de Janeiro and São Paulo, affecting how e-Government initiatives were enacted in each city government. The question, then, was whether those initiatives, with their similarities and differences, triggered changes in the organizational dynamics of those municipal public administrations. The simple introduction of electronic

channels that centralize interactions with citizens has the effect, at least, of changing the way Departments and Agencies see the provision of their own services and of forcing a certain level of self-awareness about their services procedures and average delivery times, as they now have to explain them to citizens. However, joined up government in services portals or virtual Agencies do not necessarily lead to organizational changes in public administrations *per se* – sometimes they only produce "mirages" that do not actually modify what happens in the back office. These channels may only be a new gateway for services requests and outgoing responses, with a clear improvement for citizens, but not really transformational for the administration, with, for instance, systems and interdepartmental processes integration.

Thus, answering the thesis main question, the cases studied indicate that the implementation of e-Government initiatives indeed gives incentives to more collaborative and relational forms of organizations, but this movement is not a set destination. Both cases indicate that improvements in service delivery and, in some cases, more interdepartmental collaboration, are not the result of the mere implementation of ICT-based interaction channels, but of the active use of data of citizens' voice and patterns of services use, mediated by these technologies.

The São Paulo case is emblematic. For nearly ten years, São Paulo electronic interaction channels facilitated the lives of citizens, by centralizing information and establishing one-to-one flows with Departments, yet with no integration of back office procedures and interdepartmental systems. That is, during this decade, besides the Departments initial effort to understand their own services in order to better inform citizens about their procedures, little has changed in the way service was delivered, much less in the organizational dynamics of and between Departments. In Rio de Janeiro, as in São Paulo a decade earlier, the centralization of the provision of information and services requests did not only cause self-awareness, but many Departments went through a rapid activity of processes mapping so that they could better inform citizens about their services. Nevertheless, what actually caused improvements and, in some cases, changes in service delivery and transformations in their organizational dynamic, was the use of data about

citizen feedback and their patterns of services use. In Rio, this becomes quite apparent when we see the increasing use of data to i) monitor and control the quality of all Departments services that take part of 1746, ii) support Departments to improve their services – for example, by using data about which units underperform in street paving, and iii) support, also by using citizens' feedback data, the transformation of services provision, sometimes with Departmental joint action – for example, the transformation in the way noise pollution inspection is done, which, after in depth data analysis and planning, resulted in two Departments jointly acting more effectively.

In the case of Sao Paulo, these changes also began to happen with greater objectivity after a more intense and focused collection and analysis of citizen feedback data, with the creation of CACISP (Citizen Attention and Service Innovation Unit) in 2013-2014. In some cases, there is an improvement of public services – for example, a comprehensive understanding of which types of and where in the city medication is lacking through the analysis of complaints made through the 156 Call Centre and SAC Online; in others, we have begun to see some organizational and logical transformation of services provision, with interdepartmental collaboration, as well as with external partners – for instance, the diagnosis of the regions with most falling trees and the collaborative planning of tree pruning among Subprefectures, the Transit Department and the State Public Lighting Department.

Empirically verifying what we learnt in the STS literature, technological innovations have no direct or straightforward impact on organizations – 10 years of São Paulo inertia are our best example; what seems clear is that in both cases, when there was an active interest in using the information arising from citizens' complaints and suggestions, changes began to occur within the administration. The difference between the two cases lies in the way e-Government was thought of, its objectives and conditions. In Rio de Janeiro, services and organizational changes are prepared centrally by the 1746 team. That is, Agencies and Departments use data to improve their performance, but relational and organizational changes, for example how noise pollution inspection should be carried out, was built jointly with the Departments involved with the leadership of the 1746 team. This reflects the

interpretive and institutional conditions in which e-Government was enacted in Rio: centralized coordination of guidelines, control mechanisms and service improvement proposals by the 1746 oversight body, even when these involve more collaborative ways of working between the Departments.

In São Paulo, organizational changes are driven by other reasons and fall in a different interpretive, technological, and institutional context. Despite numerous attempts, São Paulo does not have a strong oversight body that monitors, controls and coordinates all electronic service channels. CACISP took on a role of facilitating problem solving and improvements in public services: it collects data from different sources, it makes improvement proposals based on this data, it plans service enhancement or transformation, including Departmental collaborative action, as we have seen in the tree-pruning example. However, unlike Rio, these pockets of transformation are led by the Mayor, the Deputy Mayor, Department holders, etc., that call upon CACISP to design innovative solutions with Departments. Changes and transformations are carried out by projects with fixed duration, with specific objectives; CACISP has flexible working routines, permeating government Departments, working together to offer solutions and bringing Departments to work together, with citizens' input (for instance, *Tree Pruning Planning*). It mainly works as a solutions incubator based on citizens' feedback and other Departmental data. Afterwards, those involved in service delivery carry on their transformed projects and activities, without any oversight from CACISP or any other body.

It is worth highlighting that, in the cases studied, interpretive, technological and institutional conditions that give prominence to a centralizing body that coordinates and mandates directives regarding ICT interaction channels and service delivery, such as in Rio, facilitates more guided and coordinated networked forms of government and transformations of the administration, with the integration of back office routines and the constant use of citizen data. Furthermore, this type of technology enactment may translate e-Government into a permanent state policy. On the other hand, decentralized and uncoordinated conditions, such as those observed in São Paulo, may promote pockets of networks in government that, through more flexible organizational arrangements, may

facilitate innovations and some transformations – for instance the *Where's My Bus* experience, that involved a municipal Department, citizens and a start-up – although not grouped under a broader and permanent state policy. These types of e-Government-in-practice seem to be complementary – a more coordinated and managerialist strategy for e-Government focused on performance and clusters of decentralized and unrestrained interactions where innovative network forms and transformations in public service may have more freedom to arise.

In the same way as the relationship between e-Government and network forms of organization is not direct, taking up some of the issues raised on the literature review, I also conclude that, in the cases studied, other two e-Government promises – better services with lower costs and citizen involvement – did not take place automatically as a direct consequence of the implementation of ICT-mediated interaction channels. Joint up government initiatives greatly facilitate access to services but not necessarily improve them; in Rio and São Paulo, improvements took place when Departments began to have a broader view of citizens' needs and greater awareness about their weaknesses in the provision of services. When we look at the costs involved in citizen attention, the fact that they are online or available through mobile apps lessens the direct costs of citizen attention with regards to face-to-face care; on the other hand, Call Centres are costly as they basically depend on human resources, and citizens, as the numbers indicate, still prefer to talk on the phone with a human being, although there are indications that this is slowly changing.

Furthermore, once governments decide to place services joined up in a few centralized channels, they have to be more accountable regarding procedures and service level agreements, requiring some level of coordination; however, it may be expensive to have an oversight body to coordinated citizen attention and service delivery in order to assure more efficient and effective service delivery, as in the case of Rio. This trade-off may be necessary for the good functioning of coordinated electronic interaction channels, but not necessarily more cost-effective. Last but not least, when we look at the back office, in some cases the improvement of services may require an increase in human resources – for instance, the inspection of chairs and tables on sidewalks, whereby to become more effective, either

there is an increase in fines or an increase in the number of inspections; in other cases, it may implicate the rationalization of human resources – for instance, what we observed in the redesign of tree pruning in São Paulo, where by reorganizing the work of engineers and Departments, service delivery became more efficient. Thus, the relationship between e-Government and more cost-effectiveness action is not straightforward.

It is clear that by centralizing services requests, São Paulo and Rio de Janeiro Municipal governments became more dynamically accountable to citizens regarding their individual requests. However, more interaction and individual citizens' voices do not automatically result in more citizen involvement in public sector decision making. Our cases show that this happens only when there is an active decision to use feedback and service use data and transform them into meaningful information for diagnosis, service enhancement and policymaking. São Paulo, for instance, had all this data available since 2001, but until 2013 it never used them aggregately to improve or transform services.

This type of participation based on big data about services requests, complaints, suggestions and use may be different on intention and content from direct participation processes. When a citizen contacts a service attention centre the message is usually one of complaint – "I cannot make an appointment with the doctor in the health centre" – while when she participates in defining priorities in, for instance, a participative budget process, the message more often takes the form of a suggestion – "the municipal government needs to hire more doctors in my neighbourhood". However when large sets of data of both requests, complaints, suggestions and patterns of use are aggregated and interpreted, the results for policy making and/or service improvement might be the same – "more investment in human resources in the health sector in region X". Nonetheless, it is important to note that when governments decide to use citizen feedback to guide their service delivery and, as in the case of Rio, incentivize public servants in achieving performance targets for specific services, one must reflect on the role of this technology-mediated participation. Are citizens aware that their individual requests, complaints and suggestions about services are, aggregately starting to be used to restructure public services but also redirect public policies and investments? By placing efforts in improving electronic

channels to expand participation regarding public services, public managers may be moving towards a model of participation that favours higher volumes of unmediated suggestions, since citizens may communicate directly with governments, instead of through organized social movements, not for profits, etc. or voice their opinion only during elections; the relationship to government may become individualized and then depolitized. Therefore, the role of interpreting citizens' needs and priorities becomes more relevant and that responsibility might shift from civil society organizations and politicians to government technical staff. The *1746*, for instance, is already guiding the city planning and investment processes when associating Departmental performance to the Municipality Target-Driven Plan, showing that this participation system may be going beyond a simplistic service attention centre. It seems inevitable that this type of participation system, with the aid of electronic means, requires the definition of protocols and standardization of categories for the participation process in order to transform the potential vast number of suggestions into input for policy-making. By doing so, it also becomes easier to be constantly transparent and continuously accountable about the inputs received and the actions taken upon them, closing the feedback loop.

Clearly, expanding electronic participation and feedback systems can foster service enhancement, interdepartmental collaboration, as well as technical decision-making and continuous accountability, less attached to the formal processes of elections. Nevertheless, more investigation needs to be carried out about whether citizens feel rightly interpreted and politically represented on this model of unmediated participation based on vast amounts of data. What needs to be further investigated is whether electronic feedback models may improve some of the acknowledged deficits of present representative democracy, such as political legitimacy, or may on the contrary worsen them.

In sum, I highlight the two main ideas in this chapter, derived from the analysis of the cases studied. First, albeit having similar interpretive and technological conditions, the institutional conditions of both cases are different and, therefore, can affect differently the interest governments have in the treatment and using of data provided by citizens. It is precisely the particular use of this information that explains, in each case, the degree of

transformation of organizational dynamics and administrative structures. Last but not least, participation of citizens via ICTs – the unmediated form of participation – requesting services, raising complaints, and proposing improvements, generates data – *big data* – that are being treated as a technical matter by technical staff, nevertheless should also be looked from a *political and democratic representation* perspective in implementing public policies.

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