

ICT for democracy: a comparative analysis of the strategies of the municipal administrations of Rio de Janeiro and São Paulo (2013-2016)

Author: Bernardo Calil Pacheco, Federal University of Rio de Janeiro
(e-mail: bernardo.pacheco@pped.ie.ufrj.br)

Abstract

Information and communication technologies (ICT) modify state-market-society relations in multiple ways, and create challenges and opportunities for institutions of direct public administration, especially of local governments, which are closer to citizens. This paper analyzes the experience of the administrations of Rio de Janeiro and São Paulo, the two largest cities in Brazil, during the last term of mayors (2013-2016), regarding the use of ICT tools for transparency, social participation, public services and privacy of citizens and the use of data. The hypothesis is that the Rio de Janeiro City Hall took advantage of the Olympic Games period, with a wide availability of resources, to bet on the line of action commonly known as Smart City, symbolized by Rio Operations Center. At the same time, the City of São Paulo made efforts to align its actions with the guidelines of the open government project, with radical policies for opening data and creating mechanisms for social participation.

Keywords: smart city, open government, democracy, local governments, ict

1. Introduction

Innovations and the expansion of information and communication technologies (ICT) in the public and private spaces of cities in the 21st century bring new opportunities and challenges, but also dilemmas and risks for local governments and citizens in different senses. If, by 2017, it is no longer possible to imagine the public administration of large urban conglomerates such as São Paulo and Rio de Janeiro, the focus of this research, without the intensive use of new technologies, in a gradual evolution for the digitalization of data and processes, the model of development of this radical transformation is in permanent dispute.

While the internet, via computers, smartphones or other non-presence connection tools in a digital and networked public space, enables more effective formats for transparency and accountability of government actors, formal or informal social participation, and the provision of public services, expanding the range of opportunities for deepening democracy, ICT is also potentially a powerful means of controlling individuals by governments and corporations.

The loss of privacy and the use of citizen data for political or unwanted private purposes, without regulations that effectively protect the rights of individuals and the population as a whole, and democratic values as a consequence, are inherent risks of breadth and capillarity achieved by ICT. In the specific case of municipal administrations in Brazil, the proximity to the public and the constitutional duty to provide services in sensitive areas such as health, education, public security and urban mobility, among others, generate complex responsibilities in the management of the vast amount of collected data.

Between 2013 and 2016, the administrations of Mayors Fernando Haddad in São Paulo and Eduardo Paes in Rio de Janeiro bet on more or less structured narratives that, if they are not exhausted in the use of ICT, are frankly based on the use of these technologies. In both cases, it is possible to detect priorities in resources investments and different perspectives on the opportunities and risks of these tools of non-presence interaction. In São Paulo, the discourse of open government. In Rio de Janeiro, the discourse of smart city.

The open government narrative is based on the promotion of initiatives that essentially encourage greater transparency in public administration and broad social participation throughout the cycle of government interventions. From the city's Master Plan, through the strategic planning of the performance of a Mayor's mandate, to the complex process of each public policy, from agenda setting to evaluation, the objective is significant incidence of the population as a whole, or groups of interests, in the construction of priorities and processes. The governmental actor is more like a mediator of voices and interests and less like an exclusive holder of the power.

The narrative of smart city has the efficiency in the provision of public services and consequently in the operation of the city, in the sense of attending the immediate demands of citizens and market, its central pillar. In this model, the intensive use of ICT in the most diverse areas and services generates data that, compiled and worked by machine, must develop faster and less bureaucratic responses by the public administration. For practical purposes, and in search of dynamism, algorithms, which are the set of operating rules of a software, eventually replace human beings in decision-making automation processes.

The two narratives are not exclusive and both present dilemmas, contradictions and risks. Beyond criticism in the field of concepts, implementing projects based on these narratives demands resources and political costs that are not irrelevant. In this work, they are the starting point for the search for a better understanding of the real use of ICT in different government projects. However, we are faced with peculiarities of public management and similar administrative bottlenecks. Models, ideas and the challenges to its implementation, after all, reflect the disputes over the cities themselves, in the digital public space or face-to-face.

2. Methodology

This work is part of ongoing research on the uses of information and communication technologies (ICT) by public authorities in general and by the Executive Branch of the municipalities of Rio de Janeiro and São Paulo between 2013 and 2016, in particular. The objective is to make notes on the initial findings, to problematize the strategies of the governments and to propose questions that may be useful for other future researches on the subject.

In the literature review, four categories of analysis of the uses of ICT in governments are presented: transparency and accountability; social participation; provision of public services; and privacy and citizen data usage, in an adaptation of the model proposed by Cunha and Miranda (2013). In addition to the authors, it is also presented the respective legislation related to each category, from the Federal Constitution of Brazil to the legal framework of municipalities.

In Findings and Analysis, the main initiatives of local governments related to the aforementioned categories and the use of ICT are pointed out. Information provided in transcribed interview of public administration actors are used. Data were collected from the official sites of the two prefectures and from others official materials. From this set, it is possible to delimit a hypothesis of analysis of the action and strategy of the governments.

Finally, in Discussions and conclusions, similarities and differences are discussed between the lines of action of the two local governments and the context in which they worked. Also pointed out are the dilemmas and contradictions of the two models, and problems related to the legal framework in the country. At the conclusion, possible solutions and opportunities for the deepening of democracy and greater efficiency in the provision of public services, both at the same levels of prioritization.

3. Literature review

3.1 Transparency and accountability

The definition of government transparency and the formats adopted are focus of analysis of several authors, especially in the last two decades. There is no uniform pattern and the dynamics are complex, given the high quantity and turnover of government actors involved, legislations with distinct characteristics, and information and communication technologies in constant evolution.

For Meijer (2013), transparency is "the extent to which external actors are allowed to access information about how public organizations operate." The nongovernmental organization Transparency International defines the term as "the characteristic of governments [...] to be open, with clear disclosure of information, rules, plans, processes and actions. As a principle, public servants and managers [...] have a duty to act visibly, predictably and understandably to promote participation and accountability, and to enable third parties to easily realize what actions are being taken" (glossary consulted on the official website).

For the United Nations Development Program (UNDP, 1997), transparency is "sharing information and acting openly". More specifically, "allowing stakeholders to gather information that can be critical to discovering abuses and defending their interests. Transparent systems have clear procedures for public decision-making and open channels of communication between stakeholders and public servants, and they maintain a wide range of information available."

In addition to the availability of information, Cucciniello, Porumbescu, and Grimmelikhuijsen (2017) highlight the flow of information as an important category of analysis. Which stakeholders have access to which government information?

In its article 5, item XXXIII, the Federal Constitution of Brazil of 1988 establishes that "everyone has the right to receive from public agencies information of their particular interest, or of collective or general interest, which shall be provided within the term of the law, under pain of responsibility, except those whose secrecy is essential to the security of society and the State." In article 37, paragraph 3, item II, "the law will discipline the forms of user participation in direct and indirect public administration, especially regulating users' access to administrative records and information on acts of government." Also in article 216, paragraph 2, it is stated that "it is incumbent upon the public administration, in accordance with the law, to manage the governmental documentation and the measures to pass its consultation to those who need it".

The three determinations were regulated by Law 12,527 / 2011, known as the Access to Information Law. It guarantees to any person the right to request and receive from the public bodies and entities public information produced or guarded by them. Advertising becomes the rule, and secrecy is the exception. By information, it means any data, processed or not, that can be used for production and transmission of knowledge, registered in any medium or format.

Each municipality, subsequently, established by decree the procedures and other measures of application of the Access to Information Law within the Executive Branch. The Access to Information Act establishes rules both for active transparency (the State takes the initiative to publicize information) and for passive transparency (citizen demands information from the State).

In addition to this framework, the Fiscal Responsibility Law, Federal Supplementary Law 101, of May 4, 2000, established instruments for the transparency of the fiscal management of the various state entities. In articles 48 and 49, it is stated that "even in electronic means of public access", will be widely disseminated to the plans, budgets and laws of budgetary directives; the provision of accounts and their prior opinion; the Summary Report on Budget Execution and the Fiscal Management Report; and simplified versions of these documents.

On May 27, 2009, complementary law 131, known as the Capiberibe Law for having been presented by Senator João Capiberibe, is sanctioned and changes the Fiscal Responsibility Law. It determines that federal entities provide, in real time, in electronic means, information about their budgetary and financial execution. All revenues and expenditures of federal entities, including municipalities, must be available on the internet as soon as they are executed.

In recent years, federal agencies such as the Office of the Comptroller General (CGU) and the Federal Public Ministry (MPF) have created rankings to measure the degree of implementation of the legal framework of transparency in Brazilian municipalities. "Escala Brasil Transparente", or Brazil Transparency Scale, by CGU, analyzes compliance with the Access to Information Law. The MPF's National Transparency Ranking examines government portals.

In relation to accountability, the literature poses a central question: what ensures that public officials or elected officials will use their power and authority in an appropriate and responsible manner? For Brinkerhoff (2001), the answer lies in the systems, procedures, and mechanisms that are able to impose constraints on this power and authority, and creates incentives for appropriate behaviors and actions.

According to the author, governance is in fact democratic when there is transparency and when public actors are held accountable to other actors inside and outside the public administration. The essence of accountability, therefore, lies in the obligation to answer questions about government decisions and actions, for information and for justifications (responsiveness or answerability). In this sense, enforcement, or the ability to coerce or

impose sanctions on those who do not fulfill this obligation, is a fundamental mechanism.

Brinkerhoff (2001) proposes three dimensions of accountability with regard to accountability: political-democratic accountability, financial accountability, and performance accountability. In the first, he argues that elections are fragile mechanisms of accountability. The approval of the elected ones changes over time, the decision of the vote may be based on several reasons and it is impossible to know if it is an approval of what has already been done or what is proposed for the future. But political-democratic accountability is also due to the reputation and relationship between the elected government and the bureaucracy.

Financial accountability deals with laws, rules and regulations related to operations with public resources. In addition to reporting on the legality of operations, obtaining good results is also the target of public scrutiny. Performance accountability is focused on the results of agencies and public policies, and on the efficiency of governments vis-à-vis the structure it has and the resources it demands.

3.2 Social participation

If the Athenian agora, a sort of square where public debates on the polis' everyday life were held, served as the basis and model for democracy in Ancient Greece, the twenty-first century brought the challenge of the emergence of a non-presence public sphere that completely modifies the understanding of citizenship and State-society relationship. From the technological tools of information and communication, connected on a global scale and locally capillarity, taking part in the public debate, formally or informally, has become radically simpler, faster and cheaper.

In this work, the focus is on formal social participation, that is, direct incidence on the extensive and complex bureaucratic apparatus of public power, its decision makers and the entire cycle of public policies derived from it. For this, channels and methodologies, or "participatory institutions", in the expression coined by Avritzer (2008), more or less consolidated and effective, permeate the relation State-society in Brazil, especially, from the Federal Constitution of 1988.

After 21 years of dictatorial military rule, electing representation with "free mandate in trust" (free to make decisions from one's own conscience, unlike delegates, for example) in the various entities and powers of the republic was not enough. The full exercise of democracy would require the permanent participation of individuals, whether organized or not, and the administration of their interests, needs and opinions. In the new century, with the viability and expansion of ICT, this participation is not even necessarily face-to-face.

Avritzer (2008) identifies in the literature three different institutional designs for participatory institutions. The bottom-up institutional design is "an open form of free entry and participation of social actors, capable of generating mechanisms to represent participation". An example of the bottom-up design is the Participative Budget, a methodology used by the Porto Alegre City Hall since the 1980s, and its Regional Plenaries. There, every citizen has the right to vote on priorities in meeting the needs in the territory and for the choice of delegates to the Participatory Budget Council of the city.

In the institutional design of power sharing, the institution, constituted by the State itself, has mixed representation of civil society actors and state actors. An example of this design is policy advice (see below). Unlike the bottom-up design, the design of power sharing does not incorporate a large number of social actors. In general, it is determined by law and imposes sanctions if the participatory process is not instituted.

Finally, in the institutional design of ratification, the social actors do not participate in the beginning of the process of political deliberation, but are invited to refer it. Avritzer cites the Municipal Director Plan, required in cities with more than 20 thousand inhabitants in Brazil because of the City Statute (2001) and approved in public hearings (see below), as an example of implementation of the ratification design. There are, however, significant differences between experiences in Brazilian municipalities. Nor are homogeneous experiences in the same municipality over time, led by different governments.

In this sense, the author argues that institutional design, by itself, is not a guarantee of success and effectiveness of a participatory process. The degree of organization and political action of civil society and the interest of government actors, or the political will to invest in a particular participatory institution, are equally fundamental.

Article 14 of the Federal Constitution, which deals with political rights, makes explicit three participatory institutions by which "popular sovereignty shall be exercised by universal suffrage and by direct and secret voting, with equal value for all": the referendum, people consultation after a legislative or administrative act, and all citizens have to ratify it or not; the plebiscite, prior consultation to a legislative or administrative act; and the popular initiative bill. The organic laws of the municipalities of Rio de Janeiro and São Paulo, kind of Municipal Constitutions, mirror these institutions, with some peculiarities.

In addition to the referendum, plebiscite and popular initiative bill, a number of other participatory institutions were guaranteed by the Federal Constitution, by its regulations and infra-constitutional laws, and detailed in the municipal scope. Public policy management boards, for example, are jointly composed of representatives of government and members of civil society. They are the sectoral policy councils (Health, Education, among others), rights councils (for women, blacks, among others) or councils of public funds.

In addition to them, conferences, which are large events with broad participation of civil society, dedicated to specific topics; the public hearings (punctual forums for listening by the public authorities) and a myriad of ombudsman initiatives, whether in person or not, such as public consultations, are fundamental elements of the resumption of the democratic period, which consolidate the achievements of decades of debates and pressures by the civil society.

The City Statute, a law of 2001 that regulates articles 182 and 183 of the Federal Constitution and establishes general guidelines for urban policy, guarantees broad participation of organized civil society and citizens in general in the "formulation, execution and monitoring of plans, programs and urban development projects" (Article 2, subsection II). In its article 43, it explains the instruments of the collegiate organs of

urban politics, at the national, state and municipal levels; debates, hearings and public consultations; conferences on subjects of urban interest at the national, state and municipal levels; and the popular bill initiative and urban development plans, programs and projects.

Article 44 deals with participatory budget management, with debates, hearings and public consultations on the proposals of the multi-annual plan, the budget guidelines law and the annual budget, as a condition for approval by the City Council. The matter also appears in the Fiscal Responsibility Law of 2000, Articles 48 and 49. The City Statute still guarantees, in its Article 40, public hearings and debates with the participation of the population and representative associations of the various segments of the community in the process of preparing the Master Plan and overseeing its implementation.

In 2015, the advent of the Metropolis Statute changes and adds some points in the City Statute. Its article 7, item V, deals with the interfederative governance of metropolitan regions, which will observe the "participation of representatives of civil society in the planning and decision-making processes, in the monitoring of service provision and in the performance of works affected by the public functions of common interest". In addition, Article 12, paragraph 2, ensures, for the Metropolitan Region Integrated Urban Development Plan (PDUI), the promotion of public hearings and debates in all member municipalities, publicity regarding the documents and information produced and the monitoring by the Public Prosecutor's Office, a key element in guaranteeing all the mentioned social participation rights.

3.3 Public services

According to Diniz (2005), the process of computerization of public administration and the applications of information and communication technologies (ICT) can be divided into three major phases. From 1970 to 1992, ICTs are only tools used for internal management. Between 1993 and 1998, for service and information to the citizen. From 1999 onwards, they became the means of delivering services through the internet. Reinhard and Dias (2005 apud Diniz *et al*, 2009) classify four major periods: pioneering

(from the 1950s to the mid-1960s); centralization (from the mid-1960s to the late 1970s); outsourcing (1980s); and electronic government proper (from the 1990s).

The concept of e-government, or e-governance (Unesco, 2005 apud Cunha and Miranda, 2013), exercise of political, economic and administrative authority in the affairs of a country, state or municipality via ICT, has broadened its meaning in recent years. Originally, parallel to "electronic commerce" in the private sector, it focused on the provision of public services through digital means. In other words, the advent of new technologies has increased efficiency in the provision of services that were already provided by other means.

With the evolution and expansion of ICT, the digital inclusion of larger portions of the population and the generalization of the insertion in the companies, the State administrative reforms in Brazil and the modernization of public management, innovations emerge in the area of public services. New processes, or even new services, reach viability.

In addition to services related to collection, withdrawal of documents, consultations with companies, bidding, among others, in the second decade of the 21st century, ICT applications have emerged and make it possible to expand and democratize access to public services in end-activities of government. In local governments' case, these are the activities in the areas of education, health, transportation, housing, environment, public safety, work, among others.

The means by which public services are provided have also evolved. Government portals on the internet are a service hub. SMS messages and applications for smartphones, in addition to call centers, are widespread in large urban centers like Rio de Janeiro and São Paulo. The use of digital TV as a tool remains under study and is not yet available to the public in Brazil. The dispersion of services and information in the means made available by governments has become an issue for managers, in search of greater effectiveness and efficiency.

If the technical aspects of the implementation of ICT advance at an accelerated pace, while demanding resources, political and institutional aspects are permanent challenges.

From the design of e-government policies, through project design and implementation, operation and maintenance to evaluation and control, the top government and technical staff are key actors in processes with high degrees of complexity (Diniz et al., 2009).

In this sense, authors such as Cordella (2015) argue against the view that ICT in the public sector are solutions designed to reduce the scope of public bureaucracy. ICT can offer alternative solutions to organizational issues, which contributes to improving efficiency and effectiveness by helping to coordinate bureaucracy.

3.4 Privacy and citizen data

In informational or post-industrial societies of the twenty-first century, databases, information and generated knowledge are the great assets of economies, and intangible goods, that is, goods that can be exchanged for digital networks, replace the material goods as the main axis of value creation (SILVEIRA, 2017). This transformation has profound impacts on human relations and the approach to opportunities and risks of information and communication technologies (ICT), which go beyond the economic question.

If the State, through political decisions, has the role of establishing borders in this field, it is within the State itself that many of the risks of concentrating power appear more markedly. After all, he is the largest possessor of information and, at the same time, the monopolist of the use of legitimate violence. In democratic regimes, it is also within their organizations that interest groups are in constant dispute. Sensitivity to private interests, from within and outside the bureaucracy, is a significant risk.

For Silveira (2017), "personal data and those that allow to identify a person should be considered part of the personal identity. Its use requires authorization, its economic treatment requires negotiation." Privacy, in this sense, is the guarantee of the right to the private, to which it concerns only itself. It is the right to own identity, in the case of individuals. The control of one's personal data, in the last analysis, is control over oneself, a fundamental condition for freedom (Solove, 2006).

The idea of loss of privacy, therefore, no longer refers only to the imagery of surveillance, the omnipresent cameras in a “big brother” who sees everything, derived from the work of the secret police. It also refers to the capture model, where human activities, bodies, material and immaterial goods are tracked in real time by a variety of tools, which systematically reorganize life in society (Agre, 1994).

Solove (2006) highlights the problem of public records, controlled by the State, and digital files, that is, the wide range of information of the individual available in the network. For the author, it is necessary to regulate the access and use of public registries, as well as the access of the State to personal data maintained by private companies, that is, the flow of information between State and market.

The dangers, according to Solove, are divided into two large groups. The Orwellian or big brother dangers are totalitarianism, loss of self-determination and risk to democracy, loss of freedom of association, the right to anonymity and anonymity expression - for example, the right to denounce. The kafkian dangers are related to the novel *The Process*, by Franz Kafka, in which an individual is subject to long and incomprehensible court proceedings for a crime never specified.

Individuals are not informed about how their personal data circulates through the state bureaucracy or how decisions are made based on these data. The existence of these registries can lead to the change of uses and ends, leaks and vulnerability, blackmail and exaggerated reactions in times of crisis. It can also result in automated investigations, stigmatizations and discrimination of all kinds.

The algorithms, that is, the set of instructions and rules for running a software, are the laws that govern the numerous information systems of a government. The lack of openness to public scrutiny on these systems provokes a "secret judgment of the software" in the most distinct scenarios (Pasquale, 2015). For Barocas *et al* (2013), it is not only that the algorithms potentially cause loss of autonomy. By knowing and predicting more and more of our interests, the algorithms may eventually begin to modify them.

For Lyon (2005), surveillance and data capture are not only threats to individual freedoms, but a powerful way of creating and reinforcing long-term social differences. It is a sort of social classification, a way of verifying identities, but also of assessing risks and assigning value. At the same time that it is of interest to market players, it jeopardizes the impartiality of public service provision, justice, civil liberties and human rights.

The argument of governments and public agents, on the other hand, is that surveillance and collection and use of personal data may be unique methods to increase efficiency in the provision of public services, which includes security. For this, some degree of secrecy in the State's deal with the data needs to be guaranteed. Similarly, large corporations in the market claim more secrecy with their intellectual property and data collected based on the argument of competition.

In Brazil, although organizations and civil society movements have a relevant role in the discussion, there is no general law on personal data protection that regulates and guarantees legal certainty on the subject. Internationally praised, the Internet Civil Code (Law 12.965/2014), which establishes principles, guarantees, rights and duties for the use of the Internet in the country, has only broad guidelines, without the proper instruments of enforcement.

4. Findings and analysis

The case of Rio de Janeiro

The achievement of Rio de Janeiro to host the 2016 Olympic and Paralympic Games, held seven years earlier, has given the municipality in general and City Hall in particular the attraction of unparalleled amount of resources and investment in the city's recent history. In addition to major infrastructure works, Mayor Eduardo Paes (2009-2016) could make feasible the implementation of equipment such as the Rio Operations Center (COR), inaugurated in December 2010, symbolic of the strategy of information and communication technologies usage in the period.

COR, which operates in its own downtown building, is a hub of City Hall agencies and other government partners whose primary objective is to integrate and enhance decision-making efficiency in urban operations, including urban mobility, garbage collect, civil defense, among others. In the control room, which has 80 monitors and a 65-square-meter screen, 500 operators take turns 24 hours a day, seven days a week, and use more than 1,200 cameras spread throughout the city, as well as various types of sensors strategically positioned and analytical software. In large part, the systems used in COR are produced by large multinational private companies.

All information generated, which assists the work of the agencies in real time, are then grouped into large databases under the control of the Pensa – Sala de Ideias (Think - Ideas Room). Coordinated until the end of 2016 by the lawyer, data scientist and professor Pablo Cerdeira, with a team of six people, Pensa has the task of analyzing and proposing solutions to urban problems based on the use of this data, concerning the most important areas. One example is the partnership with the Waze transit application, which belongs to a private company, with which the City Council shares urban mobility data generated inside COR. The counterpart is a better service for traffic tips generated by the application.

Interviewed in December 2016, the last month of Mayor Eduardo Paes' term, Pablo Cerdeira stated that he would not continue working in COR for the next term. Asked about the allocation of aggregate databases during his years in charge of Pensa, he said: "There is not a right destination yet, but it is possible that I will take it to academic work to my university next year." Brazil still does not have a protection of personal data general legislation.

Although there is no mention of the expression Smart City or similar in the City's Master Plan, nor in the Strategic Plan, both plans that guide the policies of the City Hall, Rio de Janeiro has signed up and was awarded prizes such as the World Smart City 2013, with wide dissemination through its media (<http://bit.ly/2eqRhEV>).

In addition to COR, another initiative implemented in this sense was the 1746 Central. Launched in 2011, it is a communication channel between citizens and government, through the telephone number 1746, or via website or application for smartphone or

tablet. It is a request central for public services, such as street cleaning, repair of public lighting or defective traffic signs, among others. The citizen makes the request and can follow his process to the solution.

Internally, the municipal administration has the SIURB, Municipal System of Urban Information, which grouped 32 departments and organs of the City at the end of 2016. The system has the objective of incrementally standardizing data formats and facilitating the exchange of information between the different entities of the bureaucracy. Depending on each body, the information is available or not to the public. So far, small amount of information is open. The system is coordinated by the Pereira Passos Institute, an autarchy of the City Hall, which is the research and information management institute for the city.

With regard to formal social participation through information and communication technologies, in response to the major street demonstrations in June 2013, the Municipality created a "participation laboratory", named Lab.Rio. With less than ten people on the team and a young profile, under the age of 30, Lab.Rio led initiatives such as Agora Rio, a social network for citizens to propose and discuss public policies with municipal secretariats and agencies; the Mapeando (Mapping), an interactive demand map that collects individual suggestions related to the territory and neighborhood; and the Youth Council, a methodology that involved young people of all profiles in research and propositions for the most diverse areas of government.

None of the initiatives, however, had a deliberative force. They were merely advisory. Still, the Lab.Rio coordinator, Luti Guedes, worked in a room next to the Mayor's office, and responded directly to him. According to the coordinator, "the task was to instill in the mentality of the officials of the secretariats and the Mayor a culture of transparency and participation, which generated some clashes within the administration. But it was for a good reason."

In the field of transparency, there are two national assessments in Brazil. The first one, called Escala Brasil Transparente (Brazil Transparency Scale), is carried out by the Comptroller General of the Union (CGU) and produces a ranking of compliance with the Access to Information Law by subnational governments. The scale focuses on

passive transparency, that is, on which the State is required to provide information. In the most recent edition of the ranking, from November 2015, from 0 to 10, the municipality of Rio de Janeiro received a score of 8.61, ranking 12th among the 27 capitals of Brazilian states.

In the National Transparency Ranking, produced by the Federal Public Ministry, which analyzes the degree of compliance with legal requirements and good practices of transparency in Internet portals, the municipality of Rio de Janeiro received a score of 8.2 on a scale of 0 to 10 , and ranked 16th among the 27 state capitals in the last edition produced in October 2015.

The case of São Paulo

The largest city in Brazil in population and GDP, São Paulo reached seventh place among the capitals of the 27 Brazilian states in the National Transparency Ranking of October 2015. The grade was 9.5. In the Brazil Transparency Scale, the municipality won the grade 10 in November 2015. The mandate of Mayor Fernando Haddad (2013-2016) implemented several initiatives to ICT usage grouped in an open government plan called São Paulo Aberta (Open São Paulo), whose guidelines were to promote decentralized, participatory and transparent management.

One of the main initiatives was GeoSampa, an open and public platform that gathers georeferenced information from more than 150 governmental databases. At the launch of the platform, at the beginning of 2016, the location and data of more than 12,000 public facilities were gathered. In an action unprecedented in Brazil, the City Hall made available via GeoSampa the cadastre data of all the properties of the municipality. The names of the owners or persons responsible for the Property Tax and Urban Territorial Tax (IPTU) were exposed and the metadata was open to crosses, which allows the visualization of the concentration of property in the territory.

In addition to the Transparency Portal, which provides contracts and monitoring accounts of the City Hall, among other information, and is an obligation by the Access to Information Law, the City of São Paulo also launched Habisp.plus, an information monitoring system on popular housing programs; the PlanejaSampa, the platform for

monitoring the Program of Goals; and the Open São Paulo Portal, a platform for public consultations about the plan.

More than ten public service applications for smartphones and tablets have also been made available, offering information and problem solving in the areas of finance, urban mobility, health, culture, among others. As an example, the CAT-e, of the Worker Assistance Center, is an app for the dissemination of jobs in the city. Take Vista mediates the City Hall and the user who has problems with public street lighting. The "Where the bus" searches for schedules and itineraries of bus lines, in addition to location via GPS.

Regarding urban mobility, the City also created MobiLab, a laboratory for new technologies that will help in the transparency and efficiency of the use of raw data from the Department of Transport, Traffic Engineering Company and SPTrans, a municipal authority that manages transportation by bus. The laboratory has a collective work space and promotes incentives for innovation startups in the area.

Still in the field of technological innovation, LabProdam was created. Prodram is the municipal information technology company. With about one thousand employees, it is responsible, by law, for most of the systems used by the Municipality. With plastered structure and management positions occupied by political indications, however, it receives overwhelming criticism due to the lack of efficiency in deliveries and the high cost of the systems.

The LabProdram, then, was created as a separate structure from Prodram, despite the name. The objective was to develop tools aimed at improving citizen's life and agility in the public service. Examples of projects of the LabProdram are the Cycle Counter, which quantifies the users of the city's cycle paths in search of improvement in the implementation of these circulation spaces; the LabDiário, which is the digital Official Gazette (publication that officializes acts of public administration); and games to encourage healthy living, use of cultural equipment, among others.

Finally, two of the most significant achievements of the City of São Paulo in the period 2013-2016 were the creation of the Municipal Comptroller's Office, which led various

projects and processes of technological innovation, transparency and social participation, and the fight against corruption within the administration; and the participatory review of the Strategic Master Plan, a new law enacted in 2014 that defines urban planning instruments for the next 16 years.

The one-and-a-half year process and 114 face-to-face meetings also included online contributions. A collaborative map was created on the Urban Management website to indicate potentialities and conflicts in the city districts. In total, more than 10,000 contributions were added, with the participation of 25,000 people. A bill was consolidated and, after a long legislative process, sanctioned by Mayor Fernando Haddad in July 2014.

5. Discussions and conclusions

In June 2013, a wave of cathartic protests of great magnitude took the streets of hundreds of cities in Brazil, including millions of people marching on the avenues of Rio de Janeiro and São Paulo. The guidelines ranged from demands for better quality public services to the condemnation of systemic corruption in the country, to criticism of deep socioeconomic inequality in Brazil, to the editorial choices of large media outlets, and to the decision of public investment in football stadiums for the 2014 World Cup, to the detriment of more urgent social and infrastructure investments, among others. Although no specific ruler has been the target of the protests, everyone from all levels of government has been impacted.

At the municipal level, Eduardo Paes entered the first year of his second term in Rio de Janeiro, shortly after being reelected with a large majority, without the need for a second round. Fernando Haddad had not yet completed his first six months as Mayor of São Paulo. As is often the case at the beginning of mandates, both enjoyed high popularity before the demonstrations began. Like most Brazilian rulers, both saw their popularity plummet after June 2013. Short-term responses were needed, although the popular demands were related to the structural challenges of Brazilian society. The strategies of the information and communication technologies usage adopted in both cases can provide some contributions to the understanding of what these answers were.

In Rio de Janeiro, which included a cycle of large public and private investments for mega-sports events, the 2014 World Cup and the 2016 Olympic and Paralympic Games, Mayor Eduardo Paes, in a more centralized style, implemented initiatives whose motto was efficiency in the provision of public services. The largest symbol of these initiatives is the Rio Operations Center (COR). Intensive in state-of-the-art information technology, COR uses tools purchased from large multinationals. The data generated is closed, used only by the City Hall or by private partners.

In São Paulo, which, despite being the largest city in the country, did not count on the volume of resources available to Rio at the time, Fernando Haddad had as a priority the opening and decentralization of management. Symbolically, the application of information and communication technologies has focused on initiatives such as GeoSampa, tool for opening government databases, and incentives for creating solutions by citizens themselves, such as smartphone applications related to public services. Another example was the participatory process of updating the Master Plan, which included non-presence phases. Ancient demands by civil society for the deepening of democracy have taken place in the efforts of the mandate.

Despite marked differences in priorities, the two cities have similarities with regard to the structural problems of city hall bureaucracy. In both cases, public information technology companies, Prodam in São Paulo and Iplan-Rio in Rio de Janeiro, are responsible – according to the law - by systems operated internally by governments, and are criticized for their low efficiency. They have little or no incentive to innovate. The same problem is perceived in human resources. Public servants in both cities still lack preparation for the challenges related to the new information and communication technologies of the 21st century.

One of the instruments of transformation of the culture and the capacities of the servants is the Access to Information Law. Incrementally, it instills in practices and routines the culture of transparency. The obligation to provide public data means that the internal structure of the administration is reorganized for this purpose. The Access to Information Law is an achievement of Brazilian society, but it has only been achieving results thanks to the strengthening of the control bodies, such as the Federal Public Ministry and the Federal Comptroller's Office. They are responsible for enforcement

and have been achieving good results with their analyzes and rankings, in addition to punitive tools.

In terms of legislation, the country still lacks regulation for the use of personal data, both by governments and market players. A series of bills in this direction have been going through the National Congress for years, without concrete results. Therefore, in Brazil, the destination of personal data collected by cameras and sensors, spread by thousands of cities, are still the sole responsibility of technology managers. This needed regulation is the step forward after the Internet Civil Code (Federal Law 12.965/2014), a law that establishes principles, guarantees, rights and duties for the use of the Internet in Brazil, and which has become a reference for several other countries around the world.

Finally, realizing the enormous potential of the use of networks and information and communication technologies for the deepening of democracy is still taking its first steps in Brazil, since the technical process is necessarily dependent on the political process. Democratic culture is still incipient in the country. In its history of just over 500 years, it is the first time there has been more than 30 years of continuous electoral democracy. Until 1985, Brazil was a military dictatorship.

Local governments' decisions and priorities accelerate or slow this process down. In Rio de Janeiro and São Paulo, between 2013 and 2016, mayors opted for different lines of action, with dilemmas, contradictions and challenges, but also with advances. Self-described or not, they are marked by the narratives of smart city and open government. Possibly, the ideal is in a hybrid model, an "open smart city", where efficiency in service delivery and the deepening of transparency and social participation are on the same levels of priority.

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