

# **Is web-based interaction reshaping the organizational dynamics of public administration?: A comparative empirical study on eGovernment**

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## **Introduction**

EGovernment is often broadly defined as encompassing all uses of ICT within public administrations and government agencies and units. Some of these uses have more recently been considered triggers of important transformations in the way governments carry on their activities: particularly those uses involving the Internet and the so-called web 2.0 resources. These can be seen as providing new windows of interaction that foster communication and exchange of data with other social agents (citizens, firms, other institutions, etc.) and, within a single administration, among its different units, departments, or agencies. Since eGovernment has also been linked, at least in the prospective literature, to important changes in the inner workings and organisation of governments - in fact since the middle of the 90s it has been repeatedly seen as an ideal vehicle to overcome some of the long-standing traditional problems of public bureaucracies (Bhatnagar 2003; Hague and Loader 1999), we want to explore the relationship between these new governmental uses of the web for improving interaction and some of its traditional organisational features. Since we want to avoid some of the pitfalls of present approaches, we begin our paper by discussing some problematic features of current research on eGovernment - which might also be useful for other areas of Web Science.

Current research on eGovernment is considerably heterogeneous and shows very variable standards of methodological rigour, empirical foundations and analytical orientation (Heeks and Bailur 2006). Some general trends can be identified though. Interdisciplinarity is rare and most works take a single disciplinary approach, whether in public administration, political science, organisation theory, computer science - when dealing with interoperability issues -, or management. There is also a clear tendency towards speculating about potential benefits, and taking thus a quasi futuristic stand, implicitly avoiding critical examination of present achievements through empirical studies. At most, some analyses focus on 'best practices' (Accenture 2006; Capgemini 2006) but tend to disregard contextual variables, making generalisation or comparisons very difficult.

In fact, most empirical studies have mainly dealt with on-line features of governmental sites - taking some simple indicators, such as the number and interaction level of available on-line services as proxies for eGovernment progression (Accenture 2006; Capgemini 2006; UNPAN 2008; West 2008). Few of them take into account the more important issue of the relationship between on-line and off-line features; web pages are mostly taken as perfect mirrors of their home institutions (Fountain 2006). The focus on on-line elements has also contributed to an overemphasis on the supply side of eGovernment; the analysis of demand, actual uses or users has only recently been undertaken by some studies (Margetts et al 2006).

There is a surprising lack of theoretical basis in many works. Although eGovernment deals with government, many studies do not make any use of political theory in order to better understand the political context in which eGovernment takes place. For instance, the question whether some of the alleged potential benefits of eGovernment (in terms of cost efficiency, effectiveness, accountability, availability, responsiveness, participation...) will restore citizens' trust in government needs to be addressed using some theoretical tools that actually go beyond current eGovernment approaches.

Finally, most analyses take a very simplistic view of the relationship between technological innovation and social or organisational change, falling into the old trap of technological determinism. Organizational change is thus considered a mere consequence of the use of technology, following a quasi mechanistic and linear causal model.

Therefore, we have embarked on empirical research that seeks to understand the above mentioned relationship: the links between the new windows of interaction between governments and citizens that have emerged with the intensive use of ICTs (such as email, online forms, forums, chats, call centres, etc) and the organisational structure and dynamics of public administrations, and how this in turn is reflected into the delivery of public services.

Our research will specifically focus on the destiny of the increasingly vast amount of aggregate information, produced by these interactions, about citizens' preferences and behaviour regarding public services - in other words, the citizens' explicit voicing about services, such as opinions, complaints and suggestions, as well as their implicit "messages" which can be observed through the "tracks" left by them while using online or telephone services, such as web logs, key word searches, the portal's presence online, etc. Consequently it becomes extremely relevant in this context to ask whether this class of information is being used by governments with the intention to better serve their constituency, whether it is pressuring them to be more open, horizontal and collaborative, and whether it is shaping and transforming the delivery and quality of public

services, through simultaneously reorganising the administration and re-constructing the user. The citizen may in that way be becoming, besides the "final user", the engine of the transformation process, through his or her patterns of online service use and demands (Chadwick 2006; Dunleavy and Margetts 2000)

Our work is essentially an empirical effort to answer those questions, but also draws on the literature on e-government and information government, theories on ICTs and organisational change, and the research body on network society and network administration, to aid the analyses of information flows between governments and citizens, and within the administrations, in order to understand the nature of present transformations.

It takes as case studies the Citizens' Attention Service and Education departments of the regional governments of Catalonia, Quebec, and Sao Paulo. We believe that a comparative study approach, with semi-structured interviews, documental analysis, questionnaires, and statistical analysis, may address the questions raised in this paper in an effective and significant way. The choice of case studies were based on their similar levels of political and financial autonomy and on their similar offer of services; furthermore, they represent three different styles or models of political administration, public sector culture, and economic and e-government development, which will enrich the comparison and analysis.

### **Analytical Framework**

The focus of analysis are the information flows, their changes, and effects on services as result of increasing web-based and telephone interactions between government and citizens. We understand that the way information is structured reflects how public administrations work day-to-day. Fountain (2007) builds an analytical framework that proposes three levels of analysis to understand how information flows are structured, their across-levels connections, and, in each level, what factors facilitate changes in flows and which offer resistance to them. First, the level where individuals share and make sense of information in small groups through ongoing social relations within and across organisations; second, at the organisational and inter-organisational level, actors design and use processes and systems to codify and structure information in order to routinise actions, behaviours and communication; and third, at the institutional level, property rights, laws, budget and regulation contracts and other formal rules highly codify and regularise information flows. Interactions among these three levels suggest that when information flows change at one level, the other two levels typically are affected to some extent. By taking organizations as "information processing units", if we illuminate the structures and channels organizational actors develop to regularize information collection, storage, use, and flows we will also on the path to understanding and analysing organizational changes (Fountain 2007).

Thus, by "organizational change" facilitated by new ICTs in this particular research we mean changes in the routines and processes of information flows, i.e. the second level of analysis proposed by Fountain. We seek to answer whether these dynamics, with the emergence of new interaction channels, function in a way that is still similar to the information structuring defined by the vertical bureaucratic system or they show signs of moving towards more intense cross-agency sharing and collaboration. Ultimately, we also want to know whether service delivery is improving as consequence of those possible changes.

According to the hierarchical bureaucratic system, departments and agencies must be vertically accountable for their operations and services, regularly presenting objective data about service delivered, performance, expenditures, efficacy and efficiency indicators, etc. With the intensification of information and services being offered on-line, the question of transparency and public accountability have emerged in the governance debate. Citizens can more easily and rapidly pick up the phone or send an email through the "contact us" form and complain about a certain doctor's appointment. Moreover, it is now possible to use webmetrics tools to understand citizens' preferences and behaviour on-line and on the telephone, allowing public managers to know whether the regular mom enrolls her child in school and takes the opportunity to pay her taxes on-line at one go.

The ability to manage the data on preferences and behaviour of citizens can give the government enormous predictive and management powers, therefore our first empirical questions is to know who owns the data, how it is used, and how this affects the organization of information flows and the processes and routines of administrations.

In the following paragraphs we give some examples drawn from preliminary field research about the destiny of citizens' explicit voicing about services (opinions, complaints and suggestions) and/ or their implicit "messages" through the "tracks" left by them while using online or telephone services.

### **São Paulo: "The Ombudsman"**

With the intensification of public services being offered electronically, web-based "one-stop-shops" organized by life events have been implemented by governments to facilitate the life of the citizens; in several administrations, inter-organizational

agencies/departments were created to organize a single shared service centre (front office). São Paulo does not escape this pattern, but unlike other regions, São Paulo has more than a couple shared service centres, most often not integrated, which are the result of both its country-size and inherent structural complexity, but also of the often chaotic organizational management.

Until 1997, services were offered in person and some electronically by the different departments and agencies, with no integration model. In 1997 the Poupatempo ("SaveTime") was created by the São Paulo Government Data Processing Company (PRODESP) and the Secretariat for Government and Strategic Management, a physical location where the citizen could find services gathered from various State departments. Today it has 13 units and each works as condominium, that is, each department or agency has its own "kiosk" on the site; what unites them, despite the differences in agency culture and types of services that these government agencies provide, are the uniform standards, the trainings, deadlines, etc towards better service quality.

In general, the Poupatempo system is responsible for organizing and facilitating the provision of more than 400 "register" services, such as the issuing of the national identity card, driver's license, labour card; in other words, it does not offer services that require specialized staff such as in education and health.

Part of the same structure is the "Disque-Poupatempo", which answers the questions of citizens regarding the documents, deadlines and fees required for the services offered. São Paulo does not have a unique telephone number for all its services, and even though Poupatempo's call center does not give information about all government's services, it is indeed the main call center of the State, with an average of 278,921 calls per month (2008).

Within a scenario of growth of decentralized and not standardized electronic government services, PRODESP and the Department of Communication launched in 2004 the Cidadão.SP, a single portal with information on more than 2,000 of the State service. As of 2008, it has had a timid average of 3,644,397 visits/year, if we put it into context of a 40 million population (it should be noted that these are only the numbers for the "services" portal, and not the whole galaxy of São Paulo's governmental portals).

The Poupatempo and Cidadão.SP interdepartmental agencies aim at meeting two of the three basic rights of São Paulo citizens, in a centralized manner: the "right to information" and the "right to quality" of services. But in São Paulo the "right to auditing" the activities of government, through manifestations and complaints, are dealt by the Ombudsmen of each body responsible for the service. In other words, the service delivery is somewhat centralised, but complaints, suggestions and compliments are dealt with by each department separately.

Poupatempo's Ombudsman, for example, knows personally all the lead managers of Poupatempo's units. In addition to complying with his institutional roles - responding to the citizen, contacting partner agencies and requiring a solution, submitting a biannual report about the complaints and suggestions (categorised by departments, themes, and services) to the Government's Secretariat as well as to the bodies in charge of the provision of the services - he has direct contact with the operational managers of the Poupatempo units, who receive the aggregate data about complaints and suggestions and use them to pressure the departments/agencies present in Poupatempo - on a daily basis if necessary - to improve the provision of services.

During the 2000-2007 period, the Ombudsman received 295.083 messages - 90% of which arrive via email nowadays - of which 17% are suggestions, 42% compliments, 22% complaints, and 19% requests. According to the manager of the busiest unit, the complaints that come in by phone and email (and by paper) to the ombudsman are an essential political instrument for maintaining the quality and reliability of services.

In this particular case, we see that ongoing social relations between the Poupatempo units managers and the Ombudsman, pressured by the large amount of emails and phone calls received, bypasses the more time consuming vertical accountability (e.g: biannual reports), and forces the improvement of service quality through more horizontal and cross-agency information flows on a daily basis.

### **Catalonia: "Auditing Agency"**

Gencat.cat is a project carried out under the basis of facilitating rather than imposing a shared service portal approach. Led by the Citizen Attention Directorate (CAD), under the President's department, 289 almost-autonomous departmental websites have joined in. Similarly to Québec, and contrary to the decentralized system of São Paulo, the Citizen Attention Directorate is in charge of the Gencat.cat portal, the "Gencat serveis i tràmits" online services portal, and the 012 call centre, which means that all the main electronic channels of communication with the citizen were thought of in an integrated way

from the start. The Gencat “universe” (289 government portals) has an extremely high access rate – 81 millions/ 2007– if taken into consideration the size of Catalonia’s population of slightly over 7 million people.

The CAD management team, powered by the underlying necessity of speed, quality and costless of service delivery, has built a knowledge management system that, although not fully operative, indicates that Catalonia’s government is much more concerned and objective with efficiency indicators in order to improve public services than its counterparts. The emails that arrive through the Gencat.cat “contact us” form and the telephone calls (2,246,475 in 2007) received are both systematized in categories that indicate the nature of the manifestation (information request, complaint, suggestion, compliment, etc), the type of service (eg.: housing, social security, city’s cultural agenda, etc) , and the department in charge. Nowadays, in the specific case of complaints, suggestions and compliments, the operators who answer emails and calls forward the manifestation to the civil servants responsible for the services; soon to be implemented is a dispatcher system that will do that automatically.

The metadata about emails and calls – their nature and their content – are transformed into a monthly report that is sent to the Government Secretariat, which is then used as a top-down “auditing” tool of the services being offered by each department. The departments receive the information concerning their services when they request it, but routine horizontal sharing of information about citizens’ use of services and complaints between CAD and the departments is not present, because, as the director of the multi-communication channels operation explained, departments do not yet see these data as an opportunity of getting to know their public better – they see it as a form of auditing from higher levels of government, therefore they offer resistance to it.

Alongside the systematisation of emails and calls, the CAD has also implemented a web measurement system – through the Webtrends platform – that covers the whole universe of institutional websites and independent web services. It allows CAD to get an instant and automatic analysis of citizens’ behaviour and use of the on-line services, their demographics, how they arrive at the portal, etc; however, as of now, although some of the metrics have provided valuable information the re-organisation of the services in the portal, they are not yet fully supporting the dynamic decision-making they wish to achieve in the near future.

As one of the managers has told us, the primary goals of CAD was to standardised the offer of electronic services and facilitate the life of the citizen; nonetheless, with the power of the information about citizens’ use of services, electronic behaviour, and explicit manifestations about the services, the agency has now also become an “auditor” of the public administration itself, and, although not yet facilitating the re-organisation of the information flows towards a more horizontal format, in certain senses it is breaking away with the tradition vertical accountability of public administrations.

### **Québec: “Numbers as a Biding Cement”**

Services Québec, launched in 2004, is the youngest of the three initiatives of a single, multiservice window for simplified access to public services. It is under the responsibility of the Minister of Finance, the Minister of Government Services and the Minister of Government Administration. It provides information about the 3000 programs and services of the Government of Québec via web (Québec Portal), telephone (Centre de Relations Avec la Clientèle) and in person.

The Québec Portal, maintained by Services Québec, have the information about programs and services grouped under the main events of everyday life; in 2007 it received 7,151,639 unique accesses, almost double the amount of São Paulo’s Cidadão.SP. The Centre de Relations Avec la Clientèle is a call centre that offers general information – specifics are left to the departments in charge – about services, documents, fees, etc, besides performing a few services on-line, such as the change of address (in 2007, it received 714,621 calls).

Sérvices Québec, although responsible for giving general information about all governments’ services, works more closely with 6 departments, through a formal partnership agreement. Sérvices Québec is able to forward directly the calls and emails to these 6 departments when the information requested is too specific. The agency focus not only on being an organised repository of services information, but also aims at integrating services when viable, such as in the change of address case.

Because formal partnerships are not obligatory, the agency is constantly trying to attract partner departments. Services Québec has recently given the managerial power over the Directeur de l’état civil (DEC), the only public officer authorized to issue genuine documents relating to civil status events, namely certificates and copies of acts of birth, marriage, civil union, or death. The interesting aspect of this political and organizational move for our research is the fact that DEC had already in place an email and calls categorisation system, which receives and categorises messages according to their nature and service type, and then transforms them into aggregate information, which is sent to the management staff so they can

see where the bottlenecks of service delivery are. Currently, Services Québec has a manual system of categorisation of emails and calls (it will soon implement the DEC's more efficient system), but only related to their own services; in other words, the categories are about the provision of information – such as “simplicity”, “accessibility”, “clarity”, “appearance”, “respect”, “justice”, “politeness”, “reliability”, etc – and not about the content of the services themselves. When manifestations which are not “informational” arrive via emails and calls, they are not categorised and transformed into metadata, but are only sent directly to the departments in charge.

Although complaints, suggestions, and compliments about the services are not yet aggregately used by Services Québec to continuously improve other departments' service delivery, they do use the metadata about use of on-line and telephone services for a different inter-organizational purpose: to convince non-partner departments that there is a need to centralise the offer of services.

By showing departments the number of calls, emails, and web access to information about certain services, they have an argument to convince them that a formal partnership is optimal for the citizen and for the administration. Behind this behaviour, there is a rationale from government's top managers (Minister of Finances and Minister of Government Services) that, besides the citizen-centric approach benefits for citizen, rationalisation, efficiency and modernization can be achieved through horizontal integration. The institutional level, in Québec's case, seems to play a more important role in how information flows and processes and routines are being changed with the new ICT-based interaction channels.

## **Final Considerations**

As the web and telephone-based interactions between citizens and government in the three cases end up being centralized in a few “integrating” agencies, the aggregate data about citizens' preferences and behaviour regarding public services are expected to be concentrated in the hands of these few, who would work both as a CRM and a “services auditing” agency. In the case of Catalonia, this is very clear: CAD aggregates all portals activities and monitors the on-line and telephone behaviour of citizens, besides receiving and dealing with their emails and calls about complaints, suggestions, requests and compliments. The information and knowledge produced by these interactions have only started to be used for improving the portal's usability and as a quality control tool for the Government Secretariat. In that sense, processes and routines have been changing by the emergence of new interaction channels and information flows, and vertical accountability has been challenged with the increasing political power of CAD.

In São Paulo, service delivery has not been integrated by one single front office agency; on one hand, information about telephone and on-line uses of services are left for integrating entities (Poupatempo and Cidadão.SP) and on the other hand, explicit manifestations are dealt with in a decentralised way across departments (Ouvidorias). The pressure felt by the large amounts of complaining/suggesting emails and calls received makes the Ouvidor bypass the traditional vertical accountability and inform right away the people in charge of the problematic services. In this case, as the Ouvidor is not an “agency” accountable to higher levels of government, but yet to the people, he or she, with the information in hands, ends up using his or her personal network connections to improve services delivery in a more horizontal and cross-agency way.

In Québec actions are more top-down: the most important thing about Services Québec, besides easing the use of services for citizens, is the rationalization and modernization of government resources through front office and backoffice horizontal integration. Although we do not observe significant changes in information flows and routines and processes as a result of the new web and telephone-based interactions between citizens and government, as the aggregate data is mainly used to improve Services Québec own services (basically “information”), service delivery as a whole might improve in the medium term if Services Québec's continued use of the metadata about citizens use of their services become successful in convincing other departments to work more horizontally with them.

In all three cases, at different levels of development, we see indications that these new ICT-based interaction channels may be changing information flows and therefore processes and routines in public administrations. Finally, further research and analysis are also being carried out on the regions' Education Departments to see the interactions between them and the respective Citizens' Attention Service and the effects on the delivery of educational services.

## **References**

- Accenture: Leadership in Customer Service: Building the Trust (2006)
- Aibar, E., Urgell, F., Welp, Y.: E-Governança i Atenció Ciutadana: La Generalitat de Catalunya en el Context Internacional. (2007)
- Bhatnagar, S.: Access to Information: E-Government. In: Hodess, Inowlocki, Wolfe (eds.) Global Corruption Report. Profile Books Ltd. London (2003)
- Capgemini: Online Availability of Public Services: How is Europe Progressing? Report Commissioned by the European Commission (2006)
- Chadwick, A.: Internet politics: States, citizens, and new communication technologies. Oxford University Press, New York;

Oxford (2006)

Dunleavy, P., Margetts, H., Bastow, S. and Tinkler, J.: Digital Era Governance: IT Corporations, the State and eGovernment. Oxford University Press. Oxford (2006)

Dunleavy, P., Margetts, H.: The Advent of Digital Government: Public Bureaucracies and the State in the Internet Age. Paper for the Annual Conference of American Political Science Association. Washington D.C. (2000)

Fountain, J.: Central Issues in the Political Development of the Virtual State. In: Castells, M., Cardoso, G. (eds.): The Network Society: From Knowledge to Policy. Brookings Institution Press. Washington D.C. (2006)

Fountain, J.: Challenges to Organizational Change: Multi-level Integrated Information Structures (MIIS). In: Lazer, D., Mayer-Schoenberg, V. (eds.): Governance and Information Technology: From Electronic Government to Information Government. MIT Press. Cambridge, MA (2007)

Hague, B., Loader, B.D.: Digital Democracy: Discourse and Decision Making in the Information Age. Routledge. London (1999)

Heeks, R., Bailur, S.: Analysing eGovernment Research: Perspectives, Philosophies, Theories, Methods and Practice. iGovernment Working Paper Series, N. 16. Development Informatics Group. University of Manchester (2006)

Heeks, R.: Benchmarking eGovernment: Improving the National and International Measurement, Evaluation and Comparison of eGovernment. iGovernment Working Paper Series, N. 18. Development Informatics Group. University of Manchester (2006)

Margetts et al.: Governing from the Centre? Comparing the Nodality of Digital Governments. Paper for the Annual Meeting of the American Political Science Association, August 31 - September 4. Philadelphia, PA (2006)

UNPAN: Government Survey 2008: From e-Government to e- Governance (2008)

West, D.: Improving Technology Utilization in Electronic Government Around the World. Brookings Institution. Washington, D.C. (2008)