Public Ends by Digital Means:
some thoughts on e-government and the creation of public value

Abstract

This paper is about the importance of understanding and managing context in digital government. It presents a working definition for electronic government –public ends by digital means– that focuses the analysis in terms of the purpose of e-government projects, and their possibilities for creating public value. In the context of the five questions for the workshop, this paper highlights different subjects worth of consideration for better understanding and managing the evolution of digital government.

“Public Ends by Digital Means”: a working definition for electronic government

Should a public agency get involved in e-government projects? Why? What is electronic government? These questions seem to have no place in a world where every public project attached to an “e” appears to be not only modern, but also necessary. Since the beginning of the information revolution, more companies and public agencies have adopted “e-business” strategies in order to take advantage of the new opportunities brought by the new information and communication technologies (ICTs), as response to tendencies in the respective industries or markets and, every so often, as result of some decision maker’s wishful thinking.

The success of e-business projects, however, relies on numerous factors not necessarily related with the superiority of an original idea, business model or technological solution, but with the different managerial, cultural, organizational, and institutional issues and realities of networked environments. The importance of these subjects, which have been perceived in the business sector after the death of the “dotcom” bubble during the mid-2000, have passed almost unnoticeable for the public sector, where the need for being digital had overshadow the real possibilities for creating public value.

A possible reason for this may be found in a failure to define electronic government in a way that somehow considers the creation of public value as the major goal to achieve, instead of getting digital. As stated by Fountain (2001), there is a new type of system dynamic among technology, organization and institution. The endogenous nature of this dynamic, the fact that ICT are general purpose technologies (GPT), and differences between public and private organizations in Fountain’s Virtual State open the door to question their scope of action, and the way in which they can work.

Thus, it is not enough to analyze the organizational and institutional context of an e-government project, but also the way in which it is oriented to reach a public end (Whether it needs to be related or not to its mandate, or mission, may be arguably). Furthermore, the analysis goes deeper in questioning the continuing role for a public agency when the public end it is achieved by digital means, changing the incentives structure to an extent to which it can be provided by a private organization.

This is relevant because, besides the working definition itself, it provides a dimension of significance for e-government projects, helping the analysis of context. By defining e-government, or digital government, as the
actions taken towards achieving public ends by digital means, we are able to differentiate between those projects that are not necessarily oriented to create public value from those that are, and helping understand when there is scope and depth of action for public and private organizations. Some of this complexity is presented by the alignment of readiness factors for e-government in Figure 1.

**Figure 1: Alignment of Readiness Factors for Digital Government**

Source: Osorio (2002)

### About the impact of Information and Communication Technologies

With the previous working definition in mind, this section analyzes the effect of ICT on structure and processes on government organization. ICT have generated major changes in service delivering, transparency, and accountability and the future may look promising. Things, however, may be different if we take a closer look to what have happened in back-office operations, and in terms of major organizational or operational changes.

*From the "dotcom" to the "dotgov" bubble: some issues of the networked digital environment*

The Internet Project solved the major technical problem of sub-network compatibility and interconnection by designing standard protocols. From a non-technical perspective, it allows multiple types of
communications making possible new forms of social and organizational networks \textsuperscript{ii}. In this scenario, globalization has also helped to create networked enterprises, and networks of companies, that are not more constrained by region or geography, but by purpose, interests and functions. This new order is increasingly making possible global labor, allowing the creation of intra-firm global networks, and transforming the dimensions of work and employment. Thus, the Internet is giving life to the networked enterprise, generating conditions that make possible the coexistence of shared know-how, greater speed of communications and trust\textsuperscript{iii}.

The public sector is almost all about hierarchies, jurisdictions and rules, which are important characteristics to consider in digitally networked environments where activities greatly benefit from formal group effort, trust, and collaborative production. Hierarchies and networks are rival, however, which happen in organizations with nebulous boundaries or lines of authorities, as pointed out by Powell and Smith-Doerr (1994), and to a greater extent among public organizations.

Fountain (2001) suggests that increasing collaborative work in environments with strong institutional barriers, such as the public sector, requires increasing levels of institutional and operational change, as well as increase complexity and difficulty of implementation. This is critical for analyzing projects that, according to conventional wisdom, would have greater impact when carried out among several agencies, and when boundaries become transparent to the users\textsuperscript{iv}.

This reality, greatly underestimated by policymakers, contrast with the potential of network effects, economies of scale and scope, low marginal cost, generating the promise for unleashing the power of information from the Weberian bureaucracy to the citizens. This scenario have created a “dotgov” bubble, that, under the proposed definition, generates new requirements for e-government, some of which public agencies may not be willing, or capable, to meet.

In the private sector, the effects of successful e-business ventures generate profits, cost cuts and possibilities for growth. In public organizations, however, the effects are potential -as suggested by Fountain (2001)- loss of jurisdiction, budget or staff, as result of pressures for healthy fiscal policy, and less expensive government. Furthermore, in most of the world public agencies do not go bankrupt and, besides cases of administration turnovers, government programs and project that does not work and are rarely terminated, which creates additional incentive problems towards failure. In this “dotgov” bubble the “public venture” capitalist do not stop funding the start-ups, or become aware of the high risks involved in each project\textsuperscript{v}.

Digital means in general, and the Internet in particular, create technical feasibility for unique and undistinguishable frontline for delivering services, where rules, hierarchies, and jurisdiction may be embedded in code, but requires structure to follow. Thus, the totally integrated Government Portal needs to deal with all this complexity, plus institutional and organizational context, and compatibility issues, among other problems.

Additionally, there are important problems of incentives affecting agencies’ potential performance in e-government initiatives, which added to structural, institutional and political embeddedness helps creating x-inefficiency and diminishing the likelihood of success\textsuperscript{vi}. The tension between organizational and institutional goals with general guidelines of fiscal policy is, maybe, the most important in terms of not creating the incentives for efficiency generation. For instance, an analysis of the operation of the Chilean Online Government Procurement System, in Figure 2, shows an average number of 1679 operations per month during its second year of operation. A more detailed analysis shows an average of 1395 operations during the first nine months, and 2531 during the last three months of the fiscal year. What does explain this difference of 1136 operations? There are no specific needs during the end of the year that would require such increase in procurement operations, but to the fact that all resources not spent during the one fiscal year will be taken out of the budget in the next one.
From a game theoretical perspective, this can be modeled as a non-simultaneous game. The agent (public agency) responds spending as much as it can from its budget, every time it knows the principal (Budget Office, or equivalent) decides to reduce any saving from next fiscal year’s budget.

Besides these issues, there are some subjects that have shown to be greatly important in the last year. The relevance of privacy and security enhancing technologies for digital environments, their impact on the “Big Brother” problem related to e-government, and the need for balancing the needs for privacy and security between the individuals and the society. Also related to this issue are the unsolved questions between privacy, efficient voting, and the possibilities for assuring anonymity in digital voting.

**What would be next?**

The future, however, can bring major changes to the way in which we understand and perceive electronic government.

The possibilities for creating and delivering public value are generally defined by public agencies’ abilities to identify people’s expectations and needs, their capacity to deliver, and possibilities for mobilizing the minimum support required in doing so. In this context, great part of the justification and legitimacy of public sector’s role comes from the existence of market failures, issues in equity or justice, or problems of incentives for private action. The digital environment, however, comes to redefine parts of this relationship in different ways.
First, it allows service delivering at nearly zero marginal costs, affecting the structure incentive and creating new attractive businesses for the private sector in traditionally public areas. Second, digital means came to reinvent how people interact, especially with the public sector, introducing the complexities of duality between real and virtual, synchronous and asynchronous, and online and offline interaction, while making indistinguishable a “private” and a “public” byte, and increasing expectations in terms of what is an “acceptable” delay to respond.

Third, access, affordability and user sophistication problems generate a more complicated issue that is expressed by online constituencies that has nothing or few to do with the agencies’ traditional “frequent customers”, those citizens that for social or economic reasons needs more from the Government. Thus, a good staring question is to assess the characteristics of online constituencies, considering their income, educational, cultural and social characteristics, and perform a first reality check about the justification of e-government projects. The BBC headlined “Britons do not want e-government” as a major concern about increasing criticisms that UK’s e-government strategy has focused in objectives different from what citizens want.

In this context, we might see increasing participation of private companies in delivering of public service, major future changes in public-private interaction, and presence of public one-stop-shops in areas of massive public presence, such as supermarkets, and local governments. There will be less need for federal and state public offices, some of which will be merged into “the” public office at the local level, while private firms will perform the function of others. These types of collaborative work will, however, require major legal changes that, in some cases, would tension people’s privacy.

Additionally, as ICT evolve, mobility, nanotechnology and wearable computing might make mobile public agent a reality in distant and no-so-distant places. Some handled prototypes already allow various types of mobile interaction between a public servant and a citizen.

**Analytical frameworks for digital government**

From the perspective of the interaction of technology, management and policy, there are some theories, and frameworks that are especially useful for analyzing and understanding digital government. Among them, models of network diffusion and network analysis are relevant to better understand how citizens and organizations behave and evolve in a Networked World. Additional interesting questions are in the studying of how new information diffuses into existing networks by digital means.

**Organizational theory** has responded many questions, and undoubtedly needs to look for more answers and new questions. As technology and organizations evolve, the interaction between them becomes critical for understanding the dynamics between them. In this context, game theory can provide interesting approaches to better understand and explain the performance problem of digital government projects, and suggest paths for policy solutions.

Building on the benefits of the previous approaches, system dynamics and engineering systems may also play a role in understanding the evolution of technological solutions when adopted under different organizational and institutional settings, and to design new and better enabling processes for successful implementation of digital government. Public management and operations management provide a general framework for analyzing the effects and possibilities of ICT, respectively.

In this context, interdisciplinary research and diffusion of findings across disciplines are critical and the National Science Foundation Digital Government Program (NSF-DGP) can play a crucial role in fostering interdisciplinary collaboration and generating the new playfield. The impact of NSF-DGP would be enhanced by generating knowledge about the cross-discipline effects of different projects funded (maybe as a new
requisite for grants in the area), and by generating incentives to share findings or insights that may have effect in related disciplines.

References


i Here, creating public value is understood in the sense defined by Moore (1998), and considers efficiency, effectiveness, legitimacy, comprising its legal, political, economic and social justification.
ii Castells (2000).
iii Powell (1990).
iv In this definition, operations such as Internal Revenue Service’s income or VAT tax filling and payments are the exception to the rule in terms of their effectiveness in reducing cost of compliance, and increasing efficiency. For a detailed analysis see Fountain and Osorio (2001).
v It is not so unreal talking about a public venture capitalist given the high rates of failure, and risk involved in digital government projects..
vii See Granovetter (1985) and Uzzi (1997) for discussion of embeddedness.