THE ADOPTION OF WEB-BASED TECHNOLOGIES TO ENHANCE DELIBERATIVE DECISION PROCESS: THE DE.CI.DI. PROJECT

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Abstract

For decades, attempts have been made to use Information and Communication Technologies (ICTs) to improve citizen participation in governance and public policy. This paper focuses on the real experiences of citizens and of the services provided by web sites to make Internet a more effective democratic tool for the interaction between Public Administrations and citizens. We argue that adequate public decision will often require the active participation of the citizens in the decision making process. This article focuses on the case study of the web sites of the Italian regional governments who have agreed to take part in the DE.CI.DI. project which aims put into practice e-democracy in provincial Public Administration. The project aims to promote and increase the participation of citizens in public decisions. We have assessed the level of e-democracy developments based on four different dimensions: transparency, interactivity, usability and web site maturity. We conclude that the spreading use of Internet has raised expectations that it may be used to encourage a more direct citizen engagement and modify the ways in which public decisions are taken, however those expectations have not been fully met yet.

Keywords: E-democracy, deliberative decision process, e-partecipation, public decision.

1. Introduction

In recent years, there has been growing interest in research, in both theoretical and applied fields, in the influence of technology and in the way public

organizations relate to the citizens. It is now widely accepted that the emerging and strategic use of information communication technology (ICT) regularly plays a role in internal as well as external communications and operations (Grönlund, 2002). Moreover, the adoption of web-based technologies in order to deliver government services has become a global trend in public administrations (Traunmüller, Wimmer, 2003; United Nations 2003; OECD 2004) as well as an essential element in promoting new forms of government-citizen relationships. One aim of this adoption is to deploy information technology to improve the effectiveness and efficiency of democracy (Rheingold, 1993; Barber, 1998; Gross, 2002).

According to this view, this paper will contribute to previous research by focusing on the true experiences of citizens and of the services provided by web sites so as to make Internet a more effective democratic tool for the interaction between Public Administrations and citizens. We argue that adequate public decision will often require the active participation of the citizens in the decision making process. Making a decision is a complex process which must be based upon a method which is able to establish the optimum criteria in choosing an alternative, in evaluating the main effects of implementing the decision which was taken and in estimating the risks involved. Given the special nature of public choice and the special problems that arise in Public Administration, adequate decision requires that public organizations and citizens create a particular model of shared decision making – one that we refer to as inclusive decision making. Specifically, the paper considers Internet the most viable electronic channel through which a more direct citizen engagement is encouraged and also enables new ways in which public decisions are taken, the so called e-democracy (Grönlund, 2002; Macintosh, 2004; Andersen, 2004; Bellamy, Taylor, 1996; Merz, Davenport, Horton, 2004).

The paper is structured as follows. First, we will discuss the theoretical framework concerning the fields of inclusive decision making process, e-democracy and our research objectives. An exploratory research design has been adopted, and we will then present the findings of our single case study. The cross case analysis is followed by a discussion in which we relate our findings to theories of inclusive decision making process and e-democracy evolution.

2. Literature review

The origin of theoretical standings which are at the basis of public participation in the decision making processes of Public Administrations can be traced back to the period falling between the Sixties and Seventies. In that decade, there was a tendency to improve the democratization and legitimacy of public policy (Arnstein, 1969) through participation, particularly for the decisions regarding the local policies involving all stakeholders. These stakeholders may be defined as «organizations and individuals whose interests are affected by the policy under discussion» (Bongers, 2000). The definition, in other terms, also includes common citizens, that is to say, those «not holding office or administrative positions in government» (Roberts, 2004).

In the last decade, a growing number of contributions (Manin, 1987; Majone, 1989; Elster, 1998) have repurposed the theoretical debate concerning the participation of stakeholders in public decisions introducing the concept of deliberative democracy. The term refers to the decision-making process which is characterized by two peculiar aspects: the deliberative aspect and democratic aspect (or inclusive one)

The aspect of deliberation refers to the fact that the decision-making process is founded on impartial judgments based on common welfare. In other terms, in the above mentioned context, "deliberation" recalls the argumentative process through which decisions are taken, rather than the final outcome through which the decision becomes a formal act.

On the other hand, the democratic aspect of the process, is given by the fact that there is a form of participation, at a level of equality, of the representatives of all the parties involved in the consequences of that same decision (Elster, 1998).

The condition that makes the deliberation a democratic one, involves the participation of all the parties concerned in the outcome of the deliberation itself. The question is then how to include the opinion of ordinary citizens and support the local policy decision making process.

Technology brings a new element into this conceptual field. Developments in Information and Communication Technologies (ICTs), and particularly the increasing spreading of Internet, suggest that ICTs could be used to widen the spectrum of participants in policy making process (Holden, 2003). Holden describes the evolution of integrated networks as a series of three stages. Public managers first began utilizing information technologies in the 1960s with the

Management of Information System (MIS), which focused on automation and efficiency. In the 1970s, the Information Resource Management (IRM) became the first technology, typified by accessibility and integration. Since the 1990s, information and communication technologies (ICTs) contribute to the emergence of a different type of democratic governance, i.e. democratic e-Governance (Hoff, Horrocks, Tops, 2000; Dutton,1999; Anttiroiko, 2007). The concept of democratic e-Governance can be used as an umbrella concept that combines three different perspectives about the utilization of ICTs in government's policies:

- the first point of view is named e-Government. It is about all political-administrative operations of governments in which ICTs are utilized;
- the second point of view is named e-Governance. It is about managing and routing multi-sectoral stakeholder relations with the help of ICTs. The purpose is that of taking care of policy, service and development functions of government;
- the last is named e-Democracy. The concept refers to democratic structures and processes in which ICTs are utilized (Anttiroiko, 2007).

By combining these three perspectives we can say that one important factor, which characterizes democratic e-Governance, is the participation of the citizens in *digital democracy initiatives*. This is accomplished by engaging in online discussion forums and participating in inclusive decision process in order to share a basis of understanding as common ground from which to mediate consensus (McCullagh, 2003).

Within e-democracy initiatives, it is common to distinguish between two areas: one addressing e-voting and the other addressing e-engagement or e-participation (Lourenço, Costa, 2006). In the second part of this paper, we will be focusing our attention on e-participation, a term used to refer to the use of ICTs in supporting the information, consultation and participation of citizens.

3. Methodology

We decided that in keeping with the focus of our research, an exploratory approach would be the most appropriate method of collecting data within the Public Administration to provide insights to our research question. As the case study approach refers to an in-depth study or investigation of a contemporary phenomenon within a real-life context, we set up a single case study

design using a theoretical replication logic (Yin, 1994). In order to do this multiple sources of evidence was utilized.

The research sample is made up of the web sites of the Italian regional governments who have agreed to take part in the DE.CI.DI. project which aims to try e-democracy in provincial Public Administration. The project aims to promote and increase the participation of citizens in public decisions.

We have assessed the level of e-democracy developments based on four different dimensions: transparency, interactivity, usability and web site maturity.

In order to evaluate the features related to transparency and interactivity, we have adopted the Web Site Attribute Evaluation System (WAES) methodology developed by the Cyberspace Policy Research Group (Demchak et.al 2000). In order to evaluate the features related to usability and web site we have adopted the same methodology but the items checked in this dimension are introduced by Pina, Torres and Royo (2007).

Transparency on web sites refers to the extent to which an organization makes information about internal works, decision processes and procedures available.

Interactivity is a measure of the level of convenience, degree of immediate feedback and development of interactive e-services.

Usability refers to the ease with which users can access information and navigate the web portal (Gant and Gant, 2002). The features included in this section are multiple language access for visitors unable to speak or read the language of the host country; glossaries of technical or difficult term; a 'what's new' section, a sitemap, an A to Z index, a FAQs section, search engines, specialized databases and a uniform layout.

Web site maturity embraces those aspects that indicate a high degree of web site sophistication: no broken links, the provision of audio or video files, content arranged according to life events/business episodes, credit card payments, use of digital signatures for transactions, live broadcast of important speeches or events, and the use of the web site for some kind of citizen consultation (Pina, Torres, Royo, 2007).

The indicators of transparency may be grouped into five categories: 1) ownership (level of commitment shown by the government, through its agencies, in management and internet site-building capabilities: the government can hand over web-site management tasks to internal or external agencies and, in that, it is reducing transparency; 2) contacts and reachibility (the level of reachibility of the government); 3) organizational information (the quantity and selection of

information concerning the organization and the structure of government which is available to the website owner; 4) issue information (the presence of information concerning the campaigns conducted by the government within the website); 5) citizen consequences and responses (if and to what extent, a citizen is required to provide indications and responses or undertake actions; what can be done with the information provided by the website).

The indicators of interactivity may also be grouped into five categories: 1) security and privacy (the more the website is accessible, the less the visiting citizen is compelled to provide personal information in order to download data from the website or to upload it); 2) contact and reachibility (to what extent does the organization and structure of the website explicitly allow a specific person to write, for example its own representatives; 3) organizational information (the possibility to directly contact those found in government structure and organization); 4) issue information (the possibility for the citizen who is visiting the website to attain information on how government is handling the policies regarding the context; it may be a personalized response that the citizen can receive from the site; 5) citizen consequences and responses (how easy is it for the citizen, visiting the website, to track the efforts of the organization through the use of technical support that available).

The interaction between these two dimensions, transparency and interactivity, reflect the institution's degree of openness (Demchack, 2000).

The scores shown in Tab. 1 and in Tab. 2, show the value zero when the item analyzed doesn't appear on the web site and the value 1 when the items analyzed appear on the web site. The global scores in transparency, interactivity, usability and web site maturity have been obtained by adding up the individual scores for every relevant item in each dimension.

4. Case description: the De.Ci.Di. project

The case being presented is the De.Ci.Di. Project (acronym for Democrazia per la Cittadinanza Digitale – Democracy for Digital Citizenship), which aims at testing e-democracy at a Provincial administration level for those provinces which have agreed to take part in the project. The project, coordinated by the Province of Genoa, groups seven other provinces (Alessandria, Ascoli-Piceno, La Spezia, Lecce, Pesaro-Urbino, Piacenza e Savona) governing a total population of 3.5 million citizens. The project was initiated

in 2006 as an answer to a national call promoted by CNIPA (The National Centre for Information Technology applied to Public Administration – Centro Nazionale per l'Informatica nella Pubblica Amministrazione) in the context of the development of the second Phase of e-government in Regions and Local Bodies, the intent being to promote the participation of citizens in the decision-making process of Public Administrations, through the use of Information and Communication Technologies (ICT).

In the development phase, De.Ci.Di. lay down a number of strategic objectives. Firstly, the implementation of a tool capable of promoting social integration, the analysis of the decision making process and the collecting of information regarding the use of services provided by the Province. Secondly, the development of a flexible system capable of questioning the public and its choices in order to stimulate active participation via internet to public life, with an emphasis on the expression of indications and suggestions concerning public expenditure.

The tool chosen for the investigation was the "informed research", that allows the direct participation of the citizen through the expression of a double view point or opinion of the target groups, chosen on the basis of statistical criteria. At first, the participants expressed their view point on a specific matter without receiving any additional and precise information about the topic under enquiry; at a latter phase, the same target group of citizens was again required to express their opinion on the same matter after having received detailed information concerning other groups who had a completely different view point concerning the matter under enquiry/discussion.

The information provided to the citizens is not managed exclusively by an institutional body, or the administration that is meant to take the decision, but also by other subjects who have a different position or interest in the matter. Since October 2006, in order to take part in the decision making process, the citizens of the provinces which agreed to take part in the project could subscribe at the website dedicated to the project (www.decidi.it) by indicating their personal data and their personal ID number. The subscription allowed citizens to access the website environment pages, which were subdivided as follows: a detailed questionnaire (generally made up of multiple choice questions), which asked citizens about a specific matter; informative material and the position of participating associations holding different opinions and interests; a forum, where users interacted and made comments about the documentation which had been made available. A wide variety of topics were taken

into consideration and each province had the opportunity to choose its own depending on ongoing activities or strategies that had already been implemented. Normally, the choice fell on topics which had a direct impact on citizenship: the environment, employment and security measures: culture and integration; tourism; youth and schools etc.

A second phase of the De.Ci.Di. project, began in 2008, still receives the important contribution of two partners who guarantee a functional and scientific validity to the participation process as a whole. The role Microsoft Italia is that of providing complete support for the planning and development of the architectural structure of the technology used which is necessary in order to guarantee an effective and valuable participation of citizens.

The Department of Mathematics of the University of Genoa has had, on the other hand, the task of defining the methodology for the statistical findings and the accreditation of opinions so as to provide to the project, the truthfulness and full legitimacy of citizen viewpoints which are to be the expression of a true representation and share of the population of those local governmental bodies participating in the project.

5. Case analysis and discussion

The case of De.Ci.Di. demonstrates how a Public Administration unleashes the capabilities of Internet to craft a robust e-democracy architecture that acts as a common denominator between the public administrator and the citizens.

An analysis of the websites, through the methodology of Website Evaluation System, of the eight provinces that agreed to participate in the De.Ci.Di. project allows to obtain key information about the transparency and interactivity of the provinces under enquiry and thus the true opportunities offered to the citizens participating in public decision making. From a first examination of sites the level maturity of websites is immediately noticeable. The website of province of Genoa is the only one reporting a quantity of information which allows for its evaluation in terms of transparency and interactivity. The websites of the provinces of Alessandria, Ascoli-Piceno, Lecce and Savona contain a list of topics that will be subject to voting by citizens, but are lacking, at least at this phase, of informative documentation about the topics dealt with. Furthermore, in the provinces of Lecce, Alessandria and Piacenza, no

contact person is mentioned within the website to whom the citizen can refer to in order to obtain information about the project. The situation is slightly different in the websites of provinces of Pesaro-Urbino. In these websites, besides the listing of the topics subject to public opinion, (Choices for the future, youths and Europe; participation and communication; Taking action for the young), detailed informative material relating to the themes is available and accessible. E-mail and telephone numbers are also on hand for those wanting any further information about the De.Ci.Di. project.

Tab. 1 - The Transparency and Interactivity: Web site scores by Genoa

Items	Transparency	Score	Interactivity	Score
Ownership /Security and Privacy (Interactivity)	T1a Agency involvement with site	1	I1a Does NOT require personal information (beyond return e-mail address) to communicate with agency	1
	T1b webmaster appears to be different from the one running the main government page, if one exists	1		
	T1c Provides obvious tailoring indicating agency itself has ownership of site content	0	I1b Security access method, such as password or secure server use, is associated with transaction with agency or access to personal information	1
	T1d provides published date	0		
Contacts	T2a Provides central agency non-email addresses	0	I2a Provides e-mail link to webmaster	0
	T2b Provides phone numbers or postal addresses for employees within agency beyond most senior officials	1	I2b Provides e-mail link to senior agency official	1
	T2c Provides e-mail address to person responsible for both content of the site and technical support for the site	0	I2c Provides e-mail link to a number of agency employees	1
	T2d Provides e-mail address to someone solely responsible for technical support for the site	0	I2d Provides an online issue-related forum for outsider participation such as chat lines, and listserves	1

Organiza-tional infor-mation	T3a Provides details on senior official's experiences or vision of future for institute	0	I3a Provides link to listed sub-elements within agency	0
	T3b Provides mission statement and various activities of agency	1	I3b Provides automatic update announcement or newsletter via sub-scription	0
	T3c Provides organizational structure in graphic form	0		
Issue infor-mation	T4a Provides issue-related ad-dresses for other government agencies	1	I4a provides link to outside issue-related govern-ment addresses	1
	T4b Provides non-issue-related addresses for other government agencies	1	I4b provides link to outside non-issue-related govern-ment addresses	1
	T4c Provides issue-related ad-dresses for other NON-government information sources	1	I4c provides link to outside issue-related non-government infor-mation sources	1
	T4d Provides a searchable index for archived newsletters, laws, regulations, and requirements	0		
	T4e provides link to or text of public information law or regula-tion	0		
Responses/ Citizen con-sequences (Interactivity)	T5a Provides in depth explana-tions of requirements imposed on citizens resulting from agency activities	1	I5a Provides link to regulation in-formation	1
	T5b Provides instructions for ap-peal process for decisions or ad-dress of an ombudsman inside agency	1	I5b Provides online form com-pletion and sub-mission	1
			I5c Provides link to appeal process for decisions and/or an om-budsman	0
			I5d Provides other language access to site for visitors unable to speak or read the language of the host country	1
			I5e Provides iconographic ac-cess to site for visitors	1
Total scores	Transparency	9	Interactivity	12

As highlighted by the synoptic table above (Tab. 1) the items which showed the best results in both dimensions (transparency and interactivity) are those referring to Ownership and Security as well as Privacy; Issue Information, Responses e Citizen consequences. The dimension that showed the worst results is that referring, once again, the two dimensions, of "organization and information". As for transparency, the lowest score may be assigned to the eleventh item "contacts". From the overall analysis of the table it is clear that the De.Ci.Di. project is to be considered a good example of e-democracy, even though wide areas of improvement still exist, particularly in reference to transparency.

Tab. 2 - Usability and web site maturity: web site scores by Genoa

Items	Usability	Score	Web site maturity	Score
	U1 - Languages	0	W1 - No broken links	1
	U2 - Glossary	0	W2 - Audio/video files	
	U3 - What's new section	1	W3 - Life events or business episodes	1
	U4 - Sitemap	1		
	U5 - A-Z index	0	W4 - Digital signatures	1
	U6 - FAQ	1	W5 - Live broadcast of speeches/ events	
	U7 - Search Engine	1		
	U8 - Databases	0	W6 - Citizen consultation	0
	U9 - Homogeneity of different subpages	1		
				1
	U10 - Text only or accessible version	0		
	U11 - Audio access for visually impaired	0		1
Total scores		5		5

As can seen from Tab. 2, above, similar results can be found in the usability and web maturity dimensions. Usability shows a good degree of development in technical items such as search engine and homogeneity of sub-pages, but a worst development in those items which are able to enhance the accessibility of web sites and to bring about social inclusion, such as audio access for the visually impaired; different languages or compliance with international accessibility standards; glossary of technical or difficult terms; A-Z index. Likewise, the group of "web maturity", which contains items related to inno-

vation, such as the digital signature and live broadcast of speeches or events, shows the value zero.

6. Limitations and conclusion

This article has sought to clarify the means of e-democracy and to explain why it is important the use of an inclusive decision process for the adequate treatment of public problem. As we have characterized it, inclusive decision processes imposes the identification of critical stakeholders and for this reason it may not be an appropriate model for all kinds of problems. Additionally, this paper highlights the importance of citizen participation (e-participation) to inform such initiatives and to measure citizen perspectives on the development and deployment of e-democracy.

However, as we have explained, there are several important distinguishing types of problems that strongly suggest that public administrators and citizens in this context should strive to realize this model of inclusive decision making.

In emphasizing e-democracy, we have not meant to deny the importance of other efforts to respond to the problem of inadequate participation of citizens to the public decisions.

E-democracy has enormous potential to encourage a more direct citizen engagement and to change in the area of public decision making but those expectations have not been fully met yet. In order to increase the contributions of web sites in order to raise the number of inclusive decision processes, governments and policy-makers would do well to reinforce the transparency, the interactivity, the usability and the web site maturity of their web sites.

The findings and the proposed framework in this study may also bear important managerial implications. In fact, it can be gathered that e-participation is an essential step in changing the often rigid and uncompetitive nature of bureaucratic Public Administrations by revolutionizing the relationships between the organization and its citizens. Moreover, the competitive boundary to be obtained from any e-participation strategy is intricately tied to the degree of connectivity between the organization and its citizens. Additionally, Public Administrations can use the Web Site Attribute Evaluation System (WAES) methodology to review the completeness of their Web Site and determine which functionalities need to be added to their site to enhance e-democracy and e-partecipation.

The findings of our research suffer from the usual limitations of interpretive case studies, in terms of generalization. As with any empirical investigation, weakness in the methodology and data will be present, and this study is no different. Two limitations, in particular, should be mentioned.

Firstly, the data used in this study were collected exclusively from web site of Public Administration operating in Italy. Secondly, the sample of case study doesn't provide a complete and extensive survey on the Italian enhancement toward e-democracy but focuses on seven provinces in Italy. Nevertheless, as clarified by Yin (1994), the generalizing properties of a case differ from quantitative studies because survey research relies on statistical generalization, whereas case study rely on analytical generalization. In analytical generalization, the investigator is «striving to generalize a particular set of results to some broader theory» (Yin, 1994:36). Taken in this light, our analysis could provide a vocabulary that researchers and practitioners could employ in the identification of similar components in other Public Administrations, so that future project to the enhancement of e-democracy can be compared and benchmarked.

For future studies on the subject, we identify one specific areas of research that may effectively enhance our comprehension of e-participation projects. Studies of a similar nature, as recommended by Yin (1994), should be replicated to affirm the findings and validate our proposed theory. Finally, it is important for subsequent studies to understand that municipal governments are not the only actors that can facilitate civic engagement through web site services. As we investigate the role of local governments in facilitating deliberation and participation in local public issues, it is important to monitor and debate the complementary functions that these and other actors may play in the process.

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