

The Limitations of eGovernment Evaluation: A Critical Review

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In the academic realm, the widely accepted definition of Electronic Government (eGovernment) is the delivery of government services through electronic means, namely the internet. As a result, most of the literature which deals with eGovernment evaluation consists of assessing local government agency websites which offer services to a specific community. More recently, researchers have begun to question the limitations of this definition. Most people visit government websites to obtain information on services which they require once every few years, such as driving licenses, passports, or birth certificates. This clearly outlines the limitations of the eGovernment concept. Given the different social contexts of the world, it is possible that many people do not see these services as a high priority and therefore the widely accepted definition of eGovernment might not be universally applicable. The purpose of this literature review is to demonstrate how eGovernment evaluation studies are limited by a lack of clearly defined objectives, and how this has led for calls to broaden the concept of eGovernment to the use of information and communication technologies (ICTs) to transform government by rendering it more effective and participatory.

Introduction

EGovernment is still a nascent field, and most of the research literature concerned with its evaluation has been written in the last seven years. The evaluation studies do not follow a particular chronological trend. Instead, there is a tendency to measure “what is measurable” based on the background, knowledge, and preferences of the researchers who carry out the studies (Jansen, 2005). Most researchers evaluate eGovernment by describing the technical aspects of a website and the services which are offered online. Others advocate the evaluation of eGovernment programs on economic grounds through analysing technology investments and the savings associated with putting a government service online. Another way to evaluate government websites is the citizen-centric approach, in which researchers interview users and ask them to report the experiences they have had with obtaining services on a government website. Other frameworks put forth in the literature employ a combination of the economic, technical, and citizen-centric approaches to analyse eGovernment programs.

The vast majority of research literature on eGovernment evaluation studies is based on the definition of eGovernment as services offered online, usually those which would be sought in a geographically localised context. The contrasting school of thought follows a more generalist view, which is more in line with the definition of eGovernment put forth by the Organisation for Economic Co-operation and Development (OECD, 2003) as “the use of information and communication technologies, and particularly the Internet, as a tool to achieve better government”. Proponents of this school of thought believe that the aim of eGovernment should be to improve the well-being of citizens and render public services more accessible. These programs should be assessed based on how they lead to greater transparency and trust in government institutions.

Supply-Side Evaluation

The term coined by Janssen et al. (2004) to refer to the evaluation of eGovernment programs through the assessment of the services offered on websites is *supply-side evaluation*. Here,

the focus is on website usability and offering suggestions on how to modify websites to make it easier for citizens to find desired information (Wang et al., 2005). Evaluation is carried out through the use of standard website diagnostic tools which check for broken links, colour schemes, and how long it takes for the pages to download (Choudrie et al., 2004). Others focus on the attributes of the technology such as accessibility (Abanumy et al., 2005), the extent of services offered, the number of website visitors (Kaylor et al., 2001), and the presence of a security or privacy policy (Middleton, 2007). The majority of this research is descriptive as it is concerned with little beyond the website itself.

Pina et al. (2007) state that governments are using websites as billboards, and that there are very few mechanisms in place that encourage participatory citizen action. Yildiz (2007) argues against evaluating eGovernment programs from a technological perspective, stating that the rapidly developing pace of ICTs hinders researchers from determining the effectiveness of these initiatives. More resources should be devoted to evaluating the issues that eGovernment programs are meant to address (Yildiz, 2007). The internet provides the technical operability to offer services in more effective ways, but institutional and organisational support is essential in making these programs work (Montagna, 2005). When eGovernment consists of putting up a website, citizen participation is still minimal and government effectiveness does not change (West, 2004). Measuring progress by assessing government websites may provide fast, cheap, and clear results, but it does not offer insight into which issues these programs are meant to address (Kunstelj & Vintar, 2004).

Economic Evaluation

Wang et al. (2005) believe that it is necessary to evaluate eGovernment programs based on the resources saved by citizens who use the online service in lieu of travelling to obtain it. Picci (2006) proposes a purely quantitative methodology to analyse the cost-benefit analysis of eGovernment programs, specifically programs used by businesses to facilitate their dealings with municipal service providers. Mathematical variables are employed to represent elements such as technology investment, usage, and regional output. The variables are

used in complex equations which determine how the use of ICTs affect economic output in the Italian region of Tuscany (Picci, 2006). In these studies, the way in which the results are presented may vary slightly, but the main purpose is to investigate what was done, how much was spent, and what was actually achieved (Brown, 2007).

Grimsley and Meehan (2007) criticise the evaluation of eGovernment programs based on economic terms. While it is important to justify ICT investments, it does not support the social and political goals that an eGovernment program might have (Grimsley & Meehan, 2007). Irani et al. (2005) are also critical of the evaluation of eGovernment programs from an economic perspective. Evaluating ICT investments based on financial benefits is appropriate for the private sector, where investments can be assessed against sales or other financial measures [e.g. cost savings]. However, the concept of economic value has less significance in the public sector, where the intended benefits might be intangible, and therefore more difficult to measure (Irani et al., 2005). Government is not subject to market forces and does not need to compete with other agencies to offer services to customers, therefore, evaluating it from a financial perspective will not help the researcher gain insight into the issues the initiative was meant to address (Montagna, 2005).

Demand-Side Evaluation: The Citizen-Centric Approach

A shift in focus to the user experience led to the development of the citizen-centric approach. In these studies, researchers employ qualitative methods such as interviews, focus groups, and questionnaires to assess people's experiences in dealing with government websites. Janssen et al. (2004) refer to this as *demand-side evaluation*. Numeric values are assigned to certain qualities in order to score the programs based on levels of satisfaction, trust, and efficiency. In some cases, the results are compared with similar initiatives in other locations to determine who is "ahead in the game". Some researchers develop their own frameworks while others build on existing ones, usually those developed to assess private sector websites. In the latter case, the researcher's contribution consists of a new element which adapts it to an eGovernment context.

Horan and Abhichandani (2006) propose an eGovernment satisfaction model (EGOVSTAT) to measure user satisfaction in using the websites of the public transport systems of two major US cities. The model is based on asking users to rate factors such as reliability, efficiency, and flexibility. The results are then combined with an "emotional dimension" in order to measure the extent to which the users are satisfied with the services (Horan & Abhichandani, 2006). Carter and Belanger (2005) propose a model for assessing eGovernment adoption based on the technology acceptance model (TAM) (Davis, 1989) and diffusion of innovation model (Rogers, 1995). The added element is the inclusion of "government trustworthiness" as one of the variables to be assessed (Carter & Belanger, 2005).

Other studies aim to assess several areas of an eGovernment program. Data is collected by reviewing websites, appraising ICT investments, and interviewing users. As in most other evaluative studies, numeric values are assigned to each response and the program is given a score and compared to other initiatives. Pina et al. (2007) have conducted a study in which they rated eGovernment programs in terms of the amount of money being spent on a program, whether there is

an interactive element on the website, and the sophistication of the technology employed. Wang and Liao (2007) propose a model based on the DeLone and McLean (2003) ten-year update of the model of information systems success. Variables such as system quality, user satisfaction, and individual and organisational impact are assessed. De Jong and Lentz (2006) propose an expert scenario evaluation framework, in which experts familiar with the technology are asked to perform specific operations on government websites and rate their experiences. It is concluded that expert evaluation could help correct basic structural problems, but the real indicator of success will depend on whether the citizens adopt the technology (de Jong & Lentz, 2006).

Redefining eGovernment

People who require frequent transactions with the government, such as those who receive social benefits, are not likely to use the internet to obtain them. Seen in this light, the widely accepted definition of eGovernment is not such a breakthrough concept, and efforts should be focused on making information more accessible to those who need it (Bannister, 2007). This represents a shift in focus from eGovernment as an array of services offered online to a way of making government more participatory, improving economic conditions, and increasing democracy. Current evaluation studies place too much emphasis on the visible front-end applications of eGovernment programs, namely websites. This implies that there are many aspects of eGovernment that cannot be seen, and therefore they are treated as if they do not exist (Bannister, 2007).

The Current State of eGovernment Evaluation Research

Researchers have a tendency to define eGovernment success based on a few variables, and in subsequent studies they set out to measure these variables (Janssen et al., 2004). The limited definition of eGovernment does not consider the more complex issues involved with transforming government, nor does it fully acknowledge the role of ICTs in this process (Jansen, 2005). Most evaluation occurs by assessing what is visible, while almost no attention is given to the back-office. Jansen (2005) compares this to the dot-com era, when companies would employ websites without changing their organisational infrastructure. Political and social issues have a major impact on institutional life, therefore, the context in which the ICTs are implemented play an important role on the evaluation methods (Irani et al., 2005). Studies which focus on the outcomes and outputs of the eGovernment tend to be descriptive and promotional, whereas it is necessary to understand the political process behind eGovernment before it can be properly evaluated.

Researchers are increasingly critical regarding the assumption that evaluative eGovernment studies which do not go beyond assessing the attributes and impacts of website have universal applicability. Peters et al. (2004) argue that these evaluations are too simplistic, and that results gathered from a particular study might not produce consistent results when applied to other social and cultural contexts. Jansen (2005) makes a similar argument in stating that, in not allowing for specific national contexts and priorities, evaluation using standardised frameworks is inherently flawed, and that research should focus on relating these programs to national goals. The term eGovernment should vary depending on cultural factors and national priorities (Yildiz, 2007) and studies must consider

the cultural and political context in which the program is enacted (Jansen, 2005).

Esteves and Joseph (2007) claim that the assessment of eGovernment programs is an area that remains largely unexplored and that most of the current research focuses on describing the features of local government websites. Irani et al. (2005) attribute shortcomings to the fact that human and organisational factors are often not considered when carrying out evaluative studies. The success of an eGovernment program relies on well-informed, knowledgeable, and critical citizens, and it is very difficult to use a standardised measure to gauge such attributes (Jansen, 2005). There is a belief that soft measures such as improved decision making, societal impact, and employee performance are often ignored when evaluating the success of eGovernment programs (Gupta & Jana, 2003). The evaluation process is often too simplified, and researchers often do not take into account the various political, social, and institutional aspects (Yildiz, 2007). Montagna (2005) states that researchers work with what is available to them when rating and comparing eGovernment initiatives, but concedes that these studies should not qualify as universal analyses, as organisational structures, beliefs, and values vary greatly among cultures.

Heeks and Bailur (2007) take a harsher line by arguing that the current research in eGovernment evaluation suffers from a “naive optimism”, in that it ignores negative aspects and fails to consider other studies which point out the costs of IT failure in the public sector. They attribute this to the fact that a lot of eGovernment evaluation literature is written in an optimistic tone by IT vendors seeking to sell their services to the public sector. As a result, it tends to be positivist in that it treats key factors as real and measurable (Heeks & Bailur, 2007). In their literature review, they lament that theories and frameworks are often not applied in on eGovernment evaluation studies. They also claim that it seems most researchers do not leave their offices to carry out the studies. They conclude that many shortcomings within evaluative research results from the fact that eGovernment is not properly recognised as an academic discipline (Heeks & Bailur, 2007).

The Social Perspective

Those who argue that eGovernment programs should be evaluated from a social perspective believe that more emphasis should be placed on developing research models which help us understand eGovernment implementations based on national priorities (Jansen, 2005). Value in eGovernment should include the ability to deliver social services effectively and the development of new ways for citizens to play a more active role in governing themselves (Esteves & Joseph, 2007). They recommend a socio-technical framework called the eGovernment assessment model (EAM) which states that the relationship between the social and technological factors must be considered when evaluating eGovernment programs (Esteves & Joseph, 2007). Irani et al. (2005) introduce social and organisational parameters into their framework for evaluating eGovernment, and apply it to a study in which the satisfaction of UK public housing seekers is assessed. Grimsley and Meehan (2007) devise a framework based on Moore's (1995) concept of public value, meaning how citizens view government efforts to provide services which reduce homelessness, enable universal access to healthcare, and increase trust. Grimsley and Meehan (2007) seek to analyse the role of

ICTs in achieving these objectives. Gupta and Jana (2003) rate the eGovernment program of a municipality in India based on economic factors combined with employee and user perception of programs carried out by the New Delhi Municipality.

As the definition of eGovernment transforms from “online public services” to “the use of ICTs to improve government”, the frameworks for future evaluation studies will consist of more holistic, socio-technical approaches (Grimsley & Meehan, 2007; Esteves & Joseph, 2007) in which the emphasis is on the citizens, employees, and national and social contexts (Gupta & Jana, 2003). Yildiz (2007) supports eGovernment as an academic field within public administration studies, and calls for analysis of the political processes behind eGovernment programs in order to improve decision-making in future initiatives. Heeks and Bailur (2007) believe that the “poor state” of eGovernment evaluation can be improved through the use of broader research methods to gain a better perspective of the complexities involved when technology is enlisted to benefit public administration.

Conclusion

Most eGovernment evaluation studies to date have occurred in very limited contexts. Usually, a small cross-section of a city's inhabitants is asked to rate the experience of obtaining a service through a local government website. The e-government service is of interest only to the people interviewed in the study. Whether or not it is used by the majority of whom it is available to is usually never considered. Nevertheless, such studies are included under the universal heading of eGovernment, but what really takes place is a simple transaction between the city and its inhabitant. Can a website where citizens are able to obtain information about a public transport system be considered eGovernment? Future research literature will likely distinguish between eGovernment as online public services and eGovernment as the use of ICTs to improve the citizen-government relationship. The former definition of eGovernment has been given a distinct priority since the beginning, and but its limited scope has led researchers to question it. This has left the field in a confused state, attracting a broad range of researchers from several academic disciplines such as information systems, computer science, public administration, and political science. Perhaps this is indicative that eGovernment is not a field in itself, but a broad range of sub disciplines that are dependent on a broader context.

This literature review provides an overview of the current trends of eGovernment evaluation and how these studies are limited by accepted definition of eGovernment. Given the complexity of the world, it is clear that the dominant and privileged view of eGovernment as a service to technically able citizens in developed countries limits its applicability. These efforts are nonetheless useful in providing a basis for furthering the development of the eGovernment concept. The emerging research literature indicates an effort to expand the definition of eGovernment so that it can be applied to different and broader contexts, by universalising it in a way that is applicable to different political circumstances. The way in which eGovernment programs evolve will determine future evaluation efforts, and future evaluation studies are likely to take a more comprehensive view in assessing the success of these initiatives.

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Originally from New York, USA, Brendan Monaghan obtained his undergraduate degree in Economics from New York University. Since then he has held various positions in the information technology sector; including network administrator at an internet start-up and project manager at a financial consulting firm. Prior to the beginning of his MSc, he lived in Rome, Italy, where he managed IT operations at a university and founded a small IT consulting firm.