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E-Government Development and Organizational Structures
A Critical Review of Technical Rational and Socially Embedded Perspectives

Adeela Afzal
MSc in Information Systems and Digital Innovation
Department of Management
London School of Economics and Political Science

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ABSTRACT

As organizations continue to apply IT in order to provide more accessible and convenient digital services, citizens expect the same level of accessibility from government services. As a result, governments are increasingly participating in the “e-government movement”. However, there is a debate regarding how to successfully implement this concept and authors present different theoretical perspectives regarding how governments can move towards a “fully functional electronic government”. This critical review presents and compares these perspectives. Technical rational perspectives provide stepwise guidelines for how governments can develop their structures to better accommodate e-government and alter their organizational forms accordingly. In contrast, socially and politically embedded perspectives emphasise gradual change, take contextual aspects into consideration and see IT as a means to enforce and sustain political and social values. This review seeks to outline the core assumptions within these perspectives and evaluate the supporting arguments and empirical evidence to assess their strength and suitability.

Introduction

The significance of information technology and digital innovation within organizations has accelerated rapidly in the last few decades. This trend results in higher expectations towards the availability of electronic services provided through the internet and web-based technology (Margetts and Dunleavy, 2012). Digital services are perceived as more convenient (Layne and Lee, 2001) as opposed to traditional paper-based procedures or face-to-face interactions. As people have access to digital services through private firms, they expect public services to offer digital alternatives as well. It is therefore difficult for governments not to take part in the “e-government movement” (Layne and Lee, 2001).

Despite recent initiatives, Layne and Lee (2001) suggest that most governments have not successfully implemented a fully functional electronic government. Moreover, research shows that 85% of e-government project fail (Cordella, 2007). As a result, there is an ongoing academic debate regarding the causes and possible solutions for this. Scholars present different perspectives regarding e-government development: technical rational theories, that believe government practices need to be altered to favour e-government and accordingly provide guidelines; and socially and politically embedded perspectives, that consider the institutional context and see the use of IT as a means to enforce and sustain political values. This review looks at literature within these perspectives in order to evaluate strengths and weaknesses in the core assumptions and supporting arguments.

To better evaluate the literature, we need to clarify how to define the term “e-government”. Layne and Lee define e-government as the use of technology to enhance service delivery and information assimilation. Other authors further enrich this description by acknowledging the strategic value (Andersen and Henriksen, 2006), organizational setting (Cordella and Tempini, 2015) and the institutional forces (Luna-Reyes and Gil-Garcia, 2014; Cordella and Iannacci, 2010) involved in the introduction of ICT to the public sector. Taking these views into consideration, this paper defines e-government as the use of ICT to increase both efficiency and effectiveness in public sector organisations.

The paper is organised as follows: The next section provides a brief description of e-government. This is followed by a review of the assumptions and arguments within the technical rational perspective, including the guidelines and organizational forms that this perspective suggests for moving towards e-government. In this context the focus is on the managerial rationality. Moving further, the next section introduces the politically and socially embedded perspective and evaluates the theoretical assumptions and evidences in a similar manner. Because of the nature of the topic, this section mainly focuses on the political aspects within this
1. Technical Rational Perspective

A series of authors present theoretical models that describe development stages to help realize the “ideal” state of full planned action and predefined guidelines (Kleivink and Janssen, 2009; Andersen and Henriksen, 2006; Layne and Lee, 2001). Some authors present alternative organizational structures to better accommodate this IT-enabled organizational change, and realize the full potential of e-government (Kleivink and Janssen, 2009; Andersen and Henriksen, 2006; Reddick, 2004; Layne and Lee, 2001). This section discusses these technical rational models in order to evaluate their underlying assumptions.

1.1 Development – Maturity Models

The literature describes best practices and models to provide guidelines for evolving towards e-government. These are termed as “maturity models”, where the level of maturity relates to the institution’s ability to engage in e-government (Andersen and Henriksen, 2006). Despite proposing a variety of models, they share the common aim of a step-by-step reorganization (Kleivink and Janssen, 2009; Andersen and Henriksen, 2006; Layne and Lee, 2001). Some widely recognized models are Layne and Lee’s four stage model (2006) and the Public Sector Process Rebuilding Model (PPR) (Andersen and Henriksen, 2006).

Layne and Lee’s model consists of four “Stages of Growth” (2001). The various stages are: cataloguing, taking information available online, transaction, moving towards two-way interactions; vertical integration, across different government levels; and horizontal integration, across different functions. The PPR model differs from this in that it claims to consider customers (citizens) and organizational activities to a larger extent (Andersen and Henriksen, 2006).

An underlying assumption in regard to these models is that the development of e-government requires strategic planning and will result in major changes, to the extent that the government service itself will be redefined (Andersen and Henriksen, 2006; Layne and Lee, 2001). This assumption is reasoned by comparing the development with the only way e-commerce has altered the private sector (Layne and Lee, 2001). Accordingly, the assumption seems to be based on the belief that technological change in the public sector will unfold similarly to that of the private sector. However, the literature does not make it evident whether this approach is suitable for e-government. A valid point made by Cordella (2007) in this regard is that this cannot be taken for granted as public and private sector organizations (integrate different parameters). Specifically, the reference to citizens as widely criticized as is not discussed for the distinct relation between citizens and the government, as opposed to the relation between a consumer and a private supplier.

Another core assumption made in these models is that e-government is an evolutionary phenomenon that requires stepwise development (Kleivink and Janssen, 2009; Layne and Lee, 2001). For instance, Layne and Lee (2001) present linear stages that describe the notion of “generations.” Reddick (2004) highlights the vertical and horizontal integration of government services. This aspect highlights two assumptions: firstly, that governments may only be classified within the defined stages prior to adapting to the sector dependent on the completion of its predecessor.

In this regard, some authors attempt to justify this stage-wise classification of e-government development, providing the possibilities of these stages. Reddick (2004) presents findings from e-government practices in New Zealand, that show that most governments initially aim for an online presence. Simpler research from practices in the US and Spain reveal the availability of one-way information as most common. Accordingly, this can be assumed as the first step. Moreover, findings from the US show modest movements towards two-way interaction with citizens, which indicates that this could be the next step of government movements. However, most governments are still in these early stages (Andersen and Henriksen, 2006; Reddick, 2004). Layne and Lee (2001) note that there is a lack of evidence to validate the subsequent steps. Additionally, the current state of governments, as presented in empirical evidences, does not give specific indications about future movements and how feasible a vertical and horizontal integration is.

Based on these findings, it seems that although maturity models provide useful guidance, empirical evidence suggests considerable room for improvement. As a result, which makes the descriptions of future stages more predictive, normative models with a lack of evidence.

Furthermore, these models characterise the main factor for success and the ideal situation as the availability of efficient digital and horizontally integrated government services (Andersen and Henriksen, 2006; Layne and Lee, 2001). A valid point made in this regard is that citizen acceptance will grow as users will have a single point of contact (Kleivink and Janssen, 2009; Andersen and Henriksen, 2006; Layne and Lee, 2001). However, this suggests that the success of e-government initiatives is only measured in terms of efficiency and effectiveness. If one expects the second wave of DEG to introduce disruptive changes, then reorganization is that citizens without access and could overlooks the private companies. DEG's concept of digitalization is that concepts from the private sector can be evidenced in the suggested final stage of the maturity models (Dunleavy, 2005). This reintegration and holism concepts also complement the idea of vertical and horizontal integration suggested by the maturity models (Dunleavy, 2005; Andersen and Henriksen, 2006). Additionally, DEG emphasises digital change moving around IT, and it is argued that this will increase efficiency and improve the service level (Margetts and Dunleavy, 2012). In response, Dunleavy (2005) proposes digital-era governance (DEG) as the successor of NPM.

The main concepts of DEG include reintegration, holism and decentralization (Dunleavy, 2005). Through decentralization, it reintegration it propels to rollback parts of the decentralization of NPM (Dunleavy, 2005). The reintegration and holism concepts also complement the idea of vertical and horizontal integration suggested by the maturity models (Dunleavy, 2005; Andersen and Henriksen, 2006). Additionally, DEG emphasises digital change moving around IT, and it is argued that this will increase efficiency and improve the service level (Margetts and Dunleavy, 2012). In response, Dunleavy (2005) proposes digital-era governance (DEG) as the successor of NPM.

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Evident strengths and weaknesses of the two sets of concepts are identified as more critical for public services. For instance, the possibility of citizens without access and could overlooks the private companies. DEG's concept of digitalization is that concepts from the private sector can be evidenced in the suggested final stage of the maturity models (Dunleavy, 2005). This reintegration and holism concepts also complement the idea of vertical and horizontal integration suggested by the maturity models (Dunleavy, 2005; Andersen and Henriksen, 2006). Additionally, DEG emphasises digital change moving around IT, and it is argued that this will increase efficiency and improve the service level (Margetts and Dunleavy, 2012). In response, Dunleavy (2005) proposes digital-era governance (DEG) as the successor of NPM.

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2.1 Development – Institutional and Social Factors

In contrast to technical rational perspectives, socio-technical theories do not provide specific guidelines and models for development. Instead they present the development of e-government as a continuous and incremental process (Luna-Reyes and Gil-Garcia, 2014; Norris and Reddik, 2013; Cordella and Iannacci, 2010; Bretschneider, 2003), taking into consideration the wider social context. However, it is also acknowledged that this gradual change towards e-government adoption can eventually result in radical changes (Norris and Reddik, 2013).

The primary assumption within this perspective is that e-government projects cannot be planned according to technical rational stage models due to complex interactions between institutional factors, political and administrative institutions, and the technology involved (Luna-Reyes and Gil-Garcia, 2014; Cordella and Iannacci, 2010; Cordella, 2007; Bretschneider, 2003). Cordella and Iannacci (2010) argue that there is a need to focus on this intrinsic complexity, instead of following generic best practices.

Some authors further argue that this complex and dynamic nature of e-government can result in unanticipated changes, which is why an incremental process that allows improvements is more suitable (Luna-Reyes and Gil-Garcia, 2014; Cordella and Iannacci, 2010). It is explained that this will also allow continuous evaluation and thereby assist in further development (Luna-Reyes and Gil-Garcia, 2014). Norris and Reddik (2013) sustain this assumption with empirical evidence from US governments, who indicate that the predicted stage-wise development was not observed, having instead been adopted an incremental type of development model (Luna-Reyes and Gil-Garcia, 2014) which illustrates how continuous change and improvement in a project for development of a government portal resulted in a positive outcome.

This empirical evidence partially validates aspects of the socially enabling perspective. This approach, however, is also criticised for its abstract nature. Moreover, it has been stated that the outcome depends on contextual factors (Luna-Reyes and Gil-Garcia, 2014; Cordella and Iannacci, 2010), the success of one or two of these projects might not be a proper indicator of the validity of this approach.

Another assumption within this perspective is that the development process involves a two-way interaction and mutual shaping between technology and institutional and organizational settings (Luna-Reyes and Gil-Garcia, 2014; Cordella and Iannacci, 2010). It has been argued that this two-way interaction affects the implementation and perception of IT and the outcome of e-government development projects (Luna-Reyes and Gil-Garcia, 2014; Cordella and Iannacci, 2010). Cordella and Iannacci (2010) sustain this assumption and illustrate this reciprocal shaping through a case study of an e-government project in England and Wales, where the system was affected by the environment and vice-versa.

The examples and case studies in the literature describe validation of the presented theories. Moreover, the literature illustrates a broader view by introducing institutional aspects. However, this view also does not focus much on citizens' role in the development process.

2.2 Organizational Forms – Reflecting Political Values

The literature within this perspective also discusses organisational structures for e-government. It is primarily emphasised that alterations in organisational forms need to consider the underlying values of the established structures (Navarra and Cornford, 2012; Cordella, 2007). Moreover, some authors highlight the importance of taking into consideration institutional aspects, as the value of technology depends on how it is put into practice (Cordella and Tempini, 2015). In this regard IT is described as a means to enforce political values. One such example is Cordella’s proposed e-bureaucratic form which, he argues, enforces democratic values (2007).

The e-bureaucratic form is described as the use of technology to deliver services to achieve the main objectives of public institutions, such as enforcing democratic values of equality and fairness (Cordella, 2007). It is argued that although bureaucratic organisations have been criticised, they have succeeded in enforcing these values (Cordella and Tempini, 2015; Cordella, 2007). In this manner, the emphasis is not on bureaucracy as an organisational form, but on how IT can convey the Cordella (2007) further states that any perceived inefficiencies in bureaucratic organizations are not due to the hierarchy of the organisation, but on the increased complexity from information overload.

Navarra and Cornford similarly present alternatives to the NPM managerial model. They introduce: “consultative models”, which emphasise transparency and user involvement and “participative models”, using IT to increase citizen involvement and democratic representation; and “disciplinary models”, using IT to enforce administrative standards. However, it is important to be aware of the weaknesses of these perspectives. As the paper highlights, the technical rationalist perspectives generalise and attempts to predict future development, which can compromise its legitimacy, while concepts within the socially embedded reasoning describe abstract notions that often require contextual interpretation.

The focus of this review was mainly directed towards managerial and political aspects. Accordingly, perspectives related to user acceptance and the role of management in the development of e-government was not explored in detail, and may be subject to further research.

References


Klijn, B. and Janssen, M. 2009. Realising joined-up government – Dynamic capabilities, institutional forms and democratic representation; and “disciplinary models”, using IT to enforce administrative standards. However, it is important to be aware of the weaknesses of these perspectives. As the paper highlights, the technical rationalist perspectives generalise and attempts to predict future development, which can compromise its legitimacy, while concepts within the socially embedded reasoning describe abstract notions that often require contextual interpretation.

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