E-government Implementation Factors: A Conceptual Framework

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This paper provides an insight into the concept of e-government and its implementation factors. Attempts have been made to review and analyse existing literatures and theories of e-government and to develop a conceptual framework for evaluating factors influencing e-government implementing in both developing and developed countries. This is necessary to build trust amongst stakeholders, to encourage collaborative working, and to ensure that transparent and generally acceptable systems are in place. It is expected that the proposed conceptual model would be validated by researchers and academicians in future, since it would be relevant for analysing those wider social and economic factors that have an impact on e-government and other information and communication technologies (ICTs).

Keywords: e-government, implementation factors, conceptual framework

Introduction

E-government has played a significant role in the way government and other policy and law makers now response to governance. This paradigm shifts from the use of paper filing system to online (paperless) workflow and documentation, in addition to other e-government applications are enabling tools for increasing efficiency and enhancing transparency. The emergence of e-government was as a result of shift from technology to management and the development of scope performance and policy intentions. This was due to the government seeing internet as more than a “bolt-on” to corporate processes.

The concept of e-government appears to be fairly new. However, it is a bi-polar phenomenon, which combines the key characteristics of technological department and public administration. Thus, it concentrates on customer service (front office) and organisational structure (back office). E-government is based on the integration of information technology (IT) capacity, primarily websites, intranets, and databases, to allow self-service through an IT medium (Budd & Harris, 2004).

Academicians and researchers have undertaken a number of empirical studies in different countries to study adoption and implementation of e-government. However, there is no structured methodology to the development of an e-government environment despite numerous theories, principles, and frameworks developed over time.

This is because in many developing countries in Asia and Africa, there are other conditions such as legal and institutional that are not available for us to introduce e-government in these countries.

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It has been generally observed that for e-government to be effective, there is the need to tackle issues of bribery and corruption to allow for transparency. The level of literacy of the citizens in these developing countries appears to be low compared to the industrialised countries with advanced technology, and if this literacy level is not alleviated, it would act as a barrier to implementing e-government services.

**Aim and Objectives of the Study**

Whilst the principal aim of this paper is to evaluate the main factors that guide successful e-government implementation in both developing and developed countries, the main objectives are as follows:

1. To review existing literature and identify factors influencing e-government implementation in the context of developing countries;
2. To attempt to develop a conceptual model based on a review of literature that would allow us to analyse e-government implementation factors. This would be vital in drawing trajectory conclusions on notion and application of e-government system in any environment, in both developing and developed countries.

**Literature Background**

**E-government and Context**

Budd and Harris (2004) observed that e-government in the UK often represents a change in status for government technology. Unlike the USA, the initial burst of reform focused on technology as opposed to business culture of Whitehall. The Office of the e-Envoy (OeE) acted as a coordinator for standards rather than as a change agent.

Van Der Molen and Wubbe (2007) described e-government as “the use of information and communication techniques to improve the activities of public sector organisations, of course impacts on the strategy and operations of our agency” (p. 1). They believed that e-government has become an issue in all fields of public administration. In his own view, Otubu (2009) defined e-government as the process whereby the use of information and communication technology (ICT) and services is deployed and employed by the government in the delivery of services to members of the public and the use of same in the internal running and linkages among different governmental agencies.

Table 1 explains a review of e-government literature by different academicians and researchers from different dimensions.

<table>
<thead>
<tr>
<th>No.</th>
<th>Dimension</th>
<th>E-government: Literature review</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Historical perspective</td>
<td>Emergence was as a result of shift from technology to management and the development of scope performance and policy intentions. E-government in the UK often represented a change in status for government technology. The formation of a FirstGov-inspired portal (ukonline) was to provide information and links to further, more in-depth sites, which assumes the role of search engine.</td>
<td>Budd and Harris (2004); O. R. Ashaye (2010)</td>
</tr>
<tr>
<td>2</td>
<td>Definition</td>
<td>There is no standard definition of e-government. It is a form of e-business in governance. E-government is the use of information and communication techniques to improve the activities of public sector organisations, of course impacts on the strategy and operations of our agency.</td>
<td>Backus (2001); Van Der Molen and Wubbe (2007)</td>
</tr>
<tr>
<td>3</td>
<td>Concept</td>
<td>E-government concept appears to be fairly new. It is a bi-polar phenomenon that combines the key characteristics of technological department and public administration. It concentrates on customer service (front office) and organisational structure (back office).</td>
<td>R. T. Ashaye (2010); Budd and Harris (2004); Backus (2001)</td>
</tr>
</tbody>
</table>
E-GOVERNMENT IMPLEMENTATION FACTORS: A CONCEPTUAL FRAMEWORK

Table 1 continued

<table>
<thead>
<tr>
<th>No.</th>
<th>Dimension</th>
<th>E-government: Literature review</th>
<th>Reference</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Competitive.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhance marketing.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Characteristics</td>
<td>E-government is narrow, specific, and simplified. Its efficiency is decisively connected with the presence or absence of public accountability.</td>
<td>Otubu (2009); Bhatnagar (2004)</td>
</tr>
<tr>
<td>6</td>
<td>Beneficiaries</td>
<td>Citizens.</td>
<td>Backus (2001)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Businesses.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Partners.</td>
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</tbody>
</table>

Holistic Factors of E-government Project Implementation

Table 2 also illustrates a review of literature to support holistic factors influencing e-government implementation from the system users’ perspective.

Table 2
Examining Internal Challenges to E-government Implementation From System Users’ Perspective

<table>
<thead>
<tr>
<th>No.</th>
<th>Internal factor</th>
<th>Comment</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Trust</td>
<td>Lack of trust between end users and government, and from agency to another.</td>
<td>Sang, J. D. Lee, and J. Lee (2009)</td>
</tr>
<tr>
<td>3</td>
<td>Political desire</td>
<td>Lack of political desire can lead to slow and failure of e-project.</td>
<td>Hossan et al. (2006)</td>
</tr>
<tr>
<td>4</td>
<td>Cooperation/collaboration</td>
<td>Stakeholders and government agencies’ positive contribution is important to a successful e-project implementation.</td>
<td>Altameem, Zairi, and Alshawi (2006)</td>
</tr>
<tr>
<td>5</td>
<td>Training</td>
<td>Training on stakeholders leads to successful implementation.</td>
<td>Sang et al. (2009); Altameem et al. (2006); Goings, Young, and Hendry (2003)</td>
</tr>
<tr>
<td>6</td>
<td>Scope</td>
<td>Start to end workflow and process on web-portal and e-service is crucial.</td>
<td>Layne and Lee (2001)</td>
</tr>
<tr>
<td>7</td>
<td>Resistance to change</td>
<td>Employee resisting change can lead to e-project failure.</td>
<td>Lam (2005)</td>
</tr>
<tr>
<td>8</td>
<td>Privacy/security</td>
<td>Data and information protection must be safe from the unauthorised.</td>
<td>Lam (2005); Altameem et al. (2006); Goings et al. (2003)</td>
</tr>
<tr>
<td>9</td>
<td>Technical skills</td>
<td>Right technical skill is important to develop/use e-project.</td>
<td>Lam (2005); Sang et al. (2009)</td>
</tr>
<tr>
<td>10</td>
<td>Vision/strategy</td>
<td>Top management vision and strategy is important.</td>
<td>Hossan et al. (2006); Sang et al. (2009); Altameem et al. (2006)</td>
</tr>
<tr>
<td>11</td>
<td>Willingness/ability to use e-project</td>
<td>Stakeholders’ willingness and ability to use e-project are important and lead to successfulness.</td>
<td>Goings et al. (2003)</td>
</tr>
</tbody>
</table>


Theoretical Models and Context

As observed during the literature review, most government agencies from all over the world are in different phases of development to drift their conventional methods architectures to more horizontally and vertically integrated architectures.

Stage of growth model. The growth model introduced by Janssen and van Veenstra (2005) may assist public managers in formulating an appropriate strategy to pursue their organisations’ objectives. It is also used by public decision-makers as a guidance and direction for architectural development. More so, the growth model could be applied to reduce complexity of progression of e-government initiatives. Compared to other
models, the growth model can be viewed as a learning model where stage adoption is influenced by the environment and the adaptation to the environment.

In terms of organisational change strategies, this model can be used to plan for change to establish goals and determine progress towards accomplishing these goals. These models are built on the assumption that development of information technology systems evolves through a number of stages of growth. And as an organisation becomes more familiar with the use of technology, it advances to a higher stage.

The model, which is categorised into “no integration”, one-to-one messaging, warehouse, broker, and orchestrated broker architecture, was adopted to communicate change to the rest of the organisation and to provide milestones to evaluate and control cost of architectural development.

The stages of e-government growth and type of government relationship are highlighted in tabular form, as in Table 3.

Table 3

<table>
<thead>
<tr>
<th>Stages of E-government Growth and Type of Government Relationship</th>
</tr>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Government to citizen (G2C)</td>
</tr>
<tr>
<td>Government to government (G2G)</td>
</tr>
<tr>
<td>Government to business (G2B)</td>
</tr>
</tbody>
</table>


**Stakeholder theory.** Zimmermann and Finger (2005) initiated the idea of stakeholder theory. Although it was primarily a theory of the private sector firm, it is also applicable to public sector in the context of managerial decisions regarding e-government initiatives. It enables the measurement of the change in power between the local administrators and the stakeholders.

The key stage is the identification of all involved actors. This is followed by determining the general impact of ICTs on organisations (in form of efficiency, quality, and transparency) and on public administrations (legal, structural/organizational, financial, and relational domains). The model also considers the theoretical impact of ICTs on power relationships (in terms of cost and time efficiency, quality of decision-making, dependency on third parties, vulnerability to external influence, ability of surveillance, and organizational transparency).

**Government key business processes (G-KBP).** G-KBP is based on process modelling technologies and modern public administration concepts. It can be used to build a framework to e-government initiatives in a way that leads to a complete integration of the delivered services.

G-KBP has two simplifications in comparison to private organisation’s KBP, because it does not include the payment, and the result delivered to the customer is always a service.

Some of the benefits of publicising this model, as observed by Budd and Harris (2004), are that it allows
the individual customer to identify the services applicable to him/her promptly and that complete services delivered by the G-KBP are more effective than the current fragmented ones.

**Conceptual Framework**

This paper proposes a research framework, as in Figure 1, which identifies the critical factors that influence the implementation of e-government in any chosen ICT services. This proposed framework draws from the insights offered by four streams of literature: external factors, internal factors, perceived benefits, and perceived barriers. Each of these factors is grounded either in these bodies of literatures or in some empirical evidence influencing e-government, and these factors have been classified into external and internal factors.

The conceptual framework identifies key factors, knowing that some factors could be more important than others as they vary from countries to countries. The external factors to be considered include political, leadership (in terms of motivation, role, importance, and support), cultural, organisational, societal, and other environmental impacts. The internal factors relate to impacts of the following on successful implementation of a one-stop government: business processes, trust in government, social norm (resistance to change), citizen, rational decision-making, network infrastructure, employ knowledge, computer availability, network accessibility, ICT industry, security law, and private law.

![Figure 1. A conceptual framework for determining factors influencing one-stop government.](image-url)
Discussions and Conclusions

This paper conducts a comprehensive review of the empirical studies and defines critical issues for e-government implementation factors. It is possible to combine some of the e-government processes and models, depending on the cost benefit analysis and the vision of the country wishing to implement the services. The attitude of the citizens and their level of civilization will determine which stage of development and level of involvement to implement e-government. It is generally observed that most of the e-government strategies and implementation plans in developing countries have been based on theories and experiences of the developed countries. This supports Bhatnagar’s (2004) suggestion that even though it is imperative to get the technology right, the process re-engineering and change management demand for greater attention. He further stressed that technology, people, and processes remain the enablers of e-government.

As a result of the differences between developed and developing countries, it is believed that the developing countries cannot directly adopt e-government strategies and implementation plans used in developed countries. Thus, the current study attempts to carry out some initial work to bridge the gap by proposing a conceptual framework that encompasses both holistic factors, both external and internal, which influence e-government implementation in a chosen environment.

Future studies are suggested in the following areas:

1. Adopting case study approach to analyse different e-government strategies and implementation factors in both conurbations, choosing from developing and developed countries;

2. Collecting national data for the chosen countries (say each from developing and developed countries), to empirically and statistically verify the proposed framework.

It is expected that with the guidance and careful application of the proposed framework, e-government strategies and implementation can be more effective and efficient, particularly in developing countries. The further research would also enable the proposed conceptual model to be validated.

Unlike e-business and other concepts, there is very little literature on e-government, even now, no overriding theory of the phenomenon. Regardless, attempts have been made to review and analyse existing literatures, theories, and models which led to the development of the conceptual framework for evaluating e-government implementation factors. This could be explored further in future research studies.

E-government is still seen as a new concept that is gradually gaining ground, however, it is yet to be generally acceptable across the world; nevertheless, it has come to stay. Academicians and researchers could draw experience from the developed (and some developing) countries where e-government has already been implemented and where it is at transformational stage. The proposed conceptual framework would enable the developing countries with limited IT knowledge to benefit from adopting and implementing e-government services from the industrialised nations like USA, UK, and the Netherlands. This is necessary for socio-economic development and transparency (Alsuwaidi, 2009; Ebrahim & Irani, 2005).

The proposed conceptual framework identifies two main factors: external factors (political, leadership, cultural, organizational, societal, and environmental) and internal factors (business processes, trust in government, social norm/culture, resistance to change, rational decision-making, network infrastructure, employ knowledge, computer availability, and network accessibility).

The analysis of these factors should enable academicians and researchers to determine the perceived benefits and perceived risks, and would vary from country to country (Ebrahim & Irani, 2005; Hamed, 2009).
However, the major obstacles, as reviewed in literature, are the attitude of the citizens and their level of civilization, which usually determine the stage of development and level of involvement in implementing e-government services. Since e-government forces the need for retooling and retraining, it is recommended that priority actions should be defined and targets be set for provision of IT training for the citizens. The proposed framework would allow the researcher to identify new factors, if any, in addition to the external and internal factors discussed earlier, which would be ideal for successful e-government implementation.

References


