TOWARDS THE IMPLEMENTATION OF EGOVERNMENT: MODELS

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Abstract

Governments world-wide are now moving away from a paper manual based way of handling their processes and offering of services to their citizens in a traditional systematic way. They are offering their services to the people online. This endeavour is what is termed as eGovernment. Governments are transforming their operational ways and putting services online through government websites where citizens can have access to them. Based on document analysis and literature review, this paper discusses the models which could be useful in guiding the implementation of eGovernment. The models have been created and designed by various researchers. The significance of this paper is to give insight to those who will be interested in knowing which models could be useful, applicable and suitable for the implementation of eGovernment endeavour. The paper could also be used by various governments and stakeholders dealing with eGovernment issues. It can also be helpful to scholars who wish to learn and understand the models used for the implementation of eGovernment.

Keywords: eGovernment, models, frameworks, implementation

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1. Introduction

eGovernment has been given so many definitions by different various researchers. They define it as the use of Information and communication technologies (ICTs) for the delivery of government information, programs and services to citizens (Matthes & Kreutz 2007; Nkomo, 2012), making it more accessible, effective and accountable (Matavire et. el., 2010). eGovernment allows government departments to network and integrate their services using Information and communication technologies (ICTs) in order to improve service delivery and enhance the relationship between the government and the public (Ngulube, 2007; Heeks, 2002).

eGovernment encompasses a wide range of dimensions. These include government-to-citizens (G to C), government to business (G to B) and government-to-government (G to G). Government to citizen (G to C) facilitates citizen interaction with government, which is a primary goal of eGovernment. This attempts to make transactions, such as payment of taxes, renewing licenses and applying for certain benefits, less time consuming and easy to carry out. Government to Business (G to B) sector includes both the procurement of goods and services by the government as well as the sale of surplus government goods to the public online. In many respects, the government to government (G to G) sector represents the backbone of eGovernment (Jain & Sharma, 2002).

The following diagram shows the different dimensions of eGovernment initiative and the interaction to each sector:
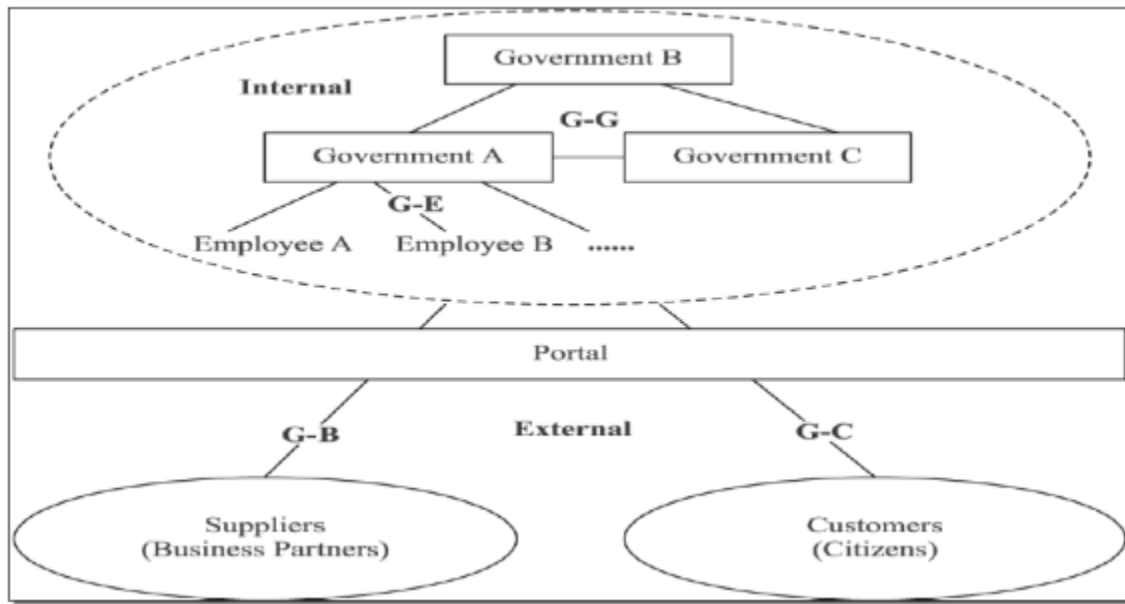
Figure 1: E-government Interaction Dimensions (Adapted: Siau & Long, 2005, p 4)

2. Objective

The aim of this paper is to discuss the models which are commonly used in implementation of eGovernment which have been suggested and designed by various researchers

3. Methodology

The information used to compile this paper was mainly obtained from several literatures. These include journal articles, seminar papers, empirical studies, books, Internet websites and blogs and United Nations reports.

4. Findings and Discussions

Many researchers have tried to understand the eGovernment phenomenon from an evolutionary point of view by dividing the eGovernment development process into many stages (e.g. Deloitte and Touche, 2001; Layne and Lee, 2001). These and several other researchers exemplify that to develop and implement a vigorous eGovernment infrastructure requires a staged approach, where the development focus moves from the 'immature' to the 'mature' phase. These terms are often

used to characterise the state of a given level in a continuous process (Anderson and Henriksen, 2006).

Several researchers have developed and proposed eGovernment implementation stage models. Examples of such models are mentioned by Nabafu and Maiga (2012) and are: Howard's Three-Stage Model (2001); Chandler and Emanuels' Four-Stage Model (2002); Layne and Lee's Four-Stage Model (2001), Murphy's Four-Stage Model (2005), Gartner's Four-Stage Model; UN's Five-Stage(2001), Hiller and Bélanger Five-Stage Model (2001); Siau and Long Five-Stage Model (2001); Deloitte's Six-Stage Model (2001), and Zarei et al. (2008) 's Nine-Stage Model (Nabafu & Maiga, 2012). These models are explained in more details in the following sections of this paper.

The 3 Staged model for E-Government implementation

Table 1 shows Howard (2001)'s 3 stage model used for E-government implementation. Stage 1 is the publishing phase. At this stage normally information about the government activities and service are made available online for the citizen and business to have access to. Stage 2 is interaction phase. At this stage citizens are able to interact with their government through e-mail or chat rooms. The third and final stage in Howard's model is transaction phase. At this level, the citizens are able to carry out transactions online over the internet such as applying for programmes and services, paying taxes and bills etc. (see table 1 below).

Table 1: 3 staged model for E-Government Implementation adapted from Al-shafi (2009).

3 Stage Model	Perception	Reference
Stage 1: Publish Stage 2: Interact Stage 3: Transact	• Information about activities of government available online. • Enables citizens to have simple interactions with their governments such as sending e-mail or 'chat rooms'. • Provides citizens with full benefits from transactions over the internet, such as applying for programmes and services, purchasing licenses and permits, etc.	Howard, (2001).

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The 4 staged E-Government implementation models

Table 2 shows some of the four staged models usually used in the implementation of E-Government. These are Chandler and Emanuels, (2002); Layne and Lee, (2001) and Baum and DiMaio, (2002).The first stages of these model differ with the name but have something similar in common: they all have indicate at stage 1,governements creates websites and avail information and services online to the citizen. For Stage 2, Emanuels (2002) and Baum and DiMaio (2002) call it an interaction phase while Layne and Lee (2001) call it the transaction stage. Similarly like, Howard (2001)'s 3 stage model, at the transaction stages of these models, these models indicate that users can actually interact and have contact with the government. The users can be able download the forms and are able to contact agencies through the websites. The final stage 4 of these models also differs with the name but the processes taking place around this phase in all the models are common and similar. At this stage, governments transform the current operational processes to integrate its services across its agencies and departments for effective and efficient service delivery to the citizens (see table 2 below).

Table 2: 4 stage models for E-Government Implementation adapted from Al-shafi (2009).

4 Stage Model	Perception	Reference
Stage 1: Information Stage 2: Interaction Stage 3: Transaction Stage 4: Integration	• Delivery of government services online. One-way communication between government and citizens. • Simple interaction between citizens and governments. • Services that enable transactions of value between citizens and government. • Integration of services across the agencies and departments of government.	Chandler and Emanuels, (2002).
Stage 1: Cataloguing Stage 2: Transaction Stage 3: Vertical Integration Stage 4: Horizontal Integration	• Creating websites and making government information and services available online. • Enables citizens to interact with their governments electronically. • Focuses on integrating, disparate at different levels. • Focuses on integration of government services for different functions horizontally.	Layne and Lee, (2001).
Stage 1: Web Presence Stage 2: Interaction Stage 3: Transaction Stage 4: Transformation	• Agencies provide website to post basic information to public. • Users are able to contact agencies through websites, e.g. e-mail, or self-service, e.g. download document. • Users can complete entire transactions e.g. license application and procurement, online. • Governments transform the current operational processes to provide an efficient, integrated, and personalized service.	Baum and Di Maio, (2000).

The 5 Stage models for E-Government implementation

Tables 3 and 4 show the UN(2001) , Hiller and Belanger(2001) and Siau and Long(2001) 5 stage models for E-Government implementation respectively. The stage 1 of both models differ with the names but similarly like the aforementioned models, the first stage is mainly about creation of websites and dissemination of information online .stage 2 of UN model show that the activity which takes place is information updating whilst the stage two of Hiller and Belanger is the facilitation of the citizen and government interaction. Stage 3 allows citizens to interact with the government and stage for u allows the citizen to do transactional activities online (e.g. making transactions online such as bill payment, obtaining visa, licences and passports. The fifth stage of UN model allows provides services across administrative and departmental lines with the highest level of integration While for Hiller and Belanger ,their stage 5 is about the promotion of political participation through services such as online voting and surveys. Stage 5 model of Siau and Long (2001) is similar to Hiller and Belanger. It is about e-democracy, enabling citizen and political representative to interact online and make decisions (see table 3 and 4 below).

Table 3: 5 staged model for e-government implementation adapted from Al-shafi (2009).

5- Stage Models For E-government Implementation		
5 Stage Model	**Perception**	**Reference**
Stage 1: Emerging Stage 2: Enhanced Stage 3: Interactive Stage 4: Transactional Stage 5: Seamless or Fully Integrated	• Creating a government website with limited information. • Updating information regularly. • Provides users with reasonable levels of interaction enabling them to download forms and paying parking tickets. • Enables users to complete online transactions, e.g. obtaining visas, licences, passports. • Provides services across administrative and departmental lines with the highest level of integration.	UN, (2001).
Stage 1: Simple Information Age Stage 2: Request and Response Stage 3: Service and Financial Stage 4: Integration Stage 5: Political Participation	• Representing a basic form of e-government uses e.g. disseminating information by posting it on the web sites. • Facilitation of citizen and government interaction. • Transactions occur both between governments and individuals (e.g. obtaining visa), and between governments and businesses (i.e. ordering office facilities). • This is similar to the last two stages in the Layne and Lee (2001) four-stage model. This stage refers to integrating separate systems at different levels (vertical) and from different departments (horizontal). • Promotion of political participation through services such as online voting and surveys.	Hiller and Bélanger, (2001).

Table 4: A 5 staged model for E-Governement implementation

Stage 1: web presence	• Posting and delivery of information to the public online	Siau and Long(2001)
Stage 2: Interaction	• Users(Citizen) interaction with government	
Stage 3: Transaction	• Enables users to interact with government electronically	
Stage4: Transformation	• Transforming of the current operational process to provide an efficient, integrated and personalised service	
Stage 5: E-Democracy	• Enabling citizen and government(political representation) to interact and make decisions together online	

The 6 Staged model used for E-Government Implemenation

The Deloitte and Touche (2001) 6 stage model does not differ that much with the rest of the aforementioned models. Its first stage is about publishing or desermination of information to the citizen by the governments.Stage 2 is the offcial two way transactional phase where agencies provide intercation between governements and users by usinng ICTs such as digital signatures and security keys. At stage 3, governemnt utilise a single portal to provide universal services across mutliple departments. Stage four enables users to customise the portals according to their own desires. Stage 5 is of clustering of common services, here the government enhances collaboration and reduce intermediaries (between opeartional process) inorder to provide a unified and seamless services.The 6th and final stage of this model is fulling integration or enterprise transcation.This is an ideal vison where the governemnt provide sophiscated, unified and personalised services to every customer according to their need and preferances(see table 5 below).

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Table 5: 6 staged model for E-Governemnt implemenation adapted from Al-shafi (2009).

The 9 stage model for E-Governemnt Implementation

Zarie et.al.,(2008) model has got 8 stages: stage 1 being stragtegy development where governement s come up with strategies; stage two is building of infrastructure,here that's where governementconstruct the appropiate IT technologies.Stage 3 is building trust bettwen the citizen and the governement.Stage 4 is making physical and electronic portals,here the governement makes portals which the citizens can get the srvices online.stage 5 is the initial interaction and simulaton where by the citizen are able to interact woth the government.Stage 6 is the prototyping phase whre by noe the initial start up of the development of the IT systems and propsals takes place.Stage 7 is the enrichment and multi dimensional develeopment which invloves the innovation and improvement of develepments.The 8th stage is of integration where now the givernmwnt put together all its services and sysytems for easy service delivery.the final stage is developmemnt of ICT industry where now the ICTS are develped and also improved.

Table 6: The 9 stage model for E-govenement implementation

9- stage model for E-government Implementation		
9 Stage Model	**Perception**	**Reference**
Stage 1:Strategy development Stage 2:Building Infrastructure Stage 3:Building trust Stage 4:Making physical & electronic portals Stage 5:Initial interactions & Simulation Stage 6:Prototyping Stage 7:Enrichment & multi-dimensional development Stage 8:Intergration Stage 9:Development of ICT industry	• Enables the government to come up with strategies • Enables the construction of the appropriate IT technology • Building trust between citizen & the government • Allowing service delivery to citizens by government online • Interaction of citizen with government online e,g form downloads • Initial start-up of development of IT systems & proposals • Innovation and improvement of developments • Putting together of services and systems across agencies and governmental departments • Developing and improving the ICT industries	Zarei et. al. (2008)

5. Conclusion and Summary

In summarising the aforementioned E-Government implementation stage models, It can be noted that there is no mutual conformity among the different scholars and academicians on the number of stages that e-government should pass through during its life-cycle and the requirements for moving from one to another. Also, there is no uniformity in some of the stages even though they are characterised by simillar activites.

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