Recommend Stages Model to Implement E-Government Application Strategies

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Abstract

This paper aims to build e-government strategy in terms of concepts, benefits, activities, the characteristics of e-government and how to implement this strategy in developing countries. (The Republic of Sudan as study case).

In the context of the use of conventional computing in all the Sudanese government organizations, we find that these organizations are using computer systems according to the requirements of its digital and data available on their systems, but it is difficult for different groups of users and workers in these organizations access to electronic documents the way you achieve the maximum benefit of these systems .At present, all government organizations facing an increase in operating costs, with the increase in the rate of inflation in the economy, increased government spending, which compels us to find ways and means, which lead to reduced spending, and to maximize the interest through the application of e-government strategies.

Index Terms: *E-Governance, E-Government Application, E-Government Strategy, G2G, G2B, G2C, G2E.*

I. Introduction

Sudan is a country, which has a population of 37,96 million [3], which consists of 18 provinces, 133 regencies [4]. With diversity and levels of human resources and infrastructure resources that have in each area.The idea of E-government in Sudan started in 1992; through the electronic network, visualization that was introduced through an initial paper presented at the National Information Network Conference in July 1992 was published in the Journal of Strategic Studies.But in the process of implementation is not a little problem faced by the government, both at central and regional levels, it caused a lack of competent human resources to implement e-government activities until the obstacles in the field of infrastructure, which resulted in the failure of most of the implementation of e-government in Sudan.We have started the majority of the countries of the world in the development of its policies, commensurate with the requirements of the age, to perform its functions with the highest efficiency, especially in the government sector, which has always been characterized by bureaucracy.

With the age of information, revolution has become imperative for States to the restructuring of public enterprises, commensurate with the requirements of the digital revolution, to integrate in the world economy, and to move toward e-government, in order to change traditional methods to methods of using modern techniques, to provide government service as soon as possible and lowest cost.

Information andcommunication technology (ICT) is the current era feature and playing a vital role for the advancement of our global society for getting timely information and making communication faster. E-Governance has been established as a revolution not only in developed countries but also in developing nations.

II. E-Government

E-governance is no longer an option, but it is a reality and a necessary of governance. E-Government can transform citizen service, provide access to information to empower citizens, enable their participation in government and enhance citizen economic and social opportunities, so that they can make better lives, for themselves and for the next generation. According to the World Bank Website (2005), E-Governance provides an automation of all government functionalities and enhances organizational efficiency and citizen participation. [1]. The use of ICT in order to improve efficiency and effectiveness, transparency and comparability of financial and information exchanges within the government, between the government and its subordinate organizations, between government and citizens, and between government and the private sector, is called "E-government"[2]. E-Government is the use of information and communication

technologies (ICTs) to improve the activities of public sector organizations. [5]. E-government (short for electronic government, also known as e-government, Internet government, digital government, online government, or connected government) consists of the digital interactions between a citizen and their government (C2G), between governments and government agencies (G2G), between government and citizens (G2C), between government and employees (G2E), and between government and businesses/commerce (G2B). [6][7]. Observed in the United Nations E-Government Survey 2014 high-income countries enjoy top rankings in the evolution of e-government index as shown in Table 1

Table1. The world and Regional E-Government Leaders

World e-government leaders	Regional e-government leaders	
Republic of Korea	AFRICA	Tunisia Mauritius
Australia	AMERICAS	USA Canada
Singapore	ASIA	Republic of Korea Singapore
France	EUROPE	France Netherlands
Netherlands	OCEANIA	Australia New Zealand

Sudan ranked 154 in the E-Government Development Index. There are seven main indicators used to rank the E-Government development of countries in the world. These indicators are Network Preparedness, Required Interface functioning applications, Management Optimization, National portal, CIO in Government, e-Government Promotion, and e-Participation (Digital Inclusion). [8]

III. Delivery Models and Activities of E-Government

E-Government provides a means for improving the work of the government, makes the exchange of information with citizens conducted in a manner easily.

E-government is divided into four types, which is shown in Figure 1[10]:

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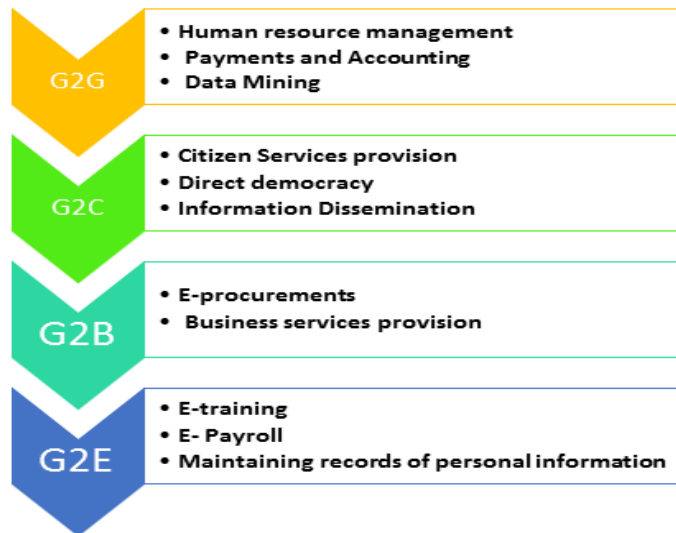**Volume 2, Issue 3, June 2015**

Figure 1: Delivery Models and Activities of E-Government

Government-to-Government (G2G): Is the electronic exchange of data / information systems between government agencies, departments or institutions, the goals of G2G is to support e-government initiatives through better communication, data access, and data exchange. Enable governments and associated organizations operate more easily and serve the citizens better.

Government to Citizens (G2C):it is focused on the interactions between government and citizens to support transactions such as payment processing, access to driving licenses. The goals of G2C is to provide online access to information and services to citizens quickly, and easily.

Government to Business (G2B): It is focused on the interactions between the government and various organizations, including corporate and non-profit organizations, to support transactions such as contract bids and grants.G2B provides benefits in reducing costs and increasing efficiency in the procurement process and sell surplus stuff.

The goals of G2B is to reduce the burdens on business, providing access to information and enable digital communications using e-commerce language.

Government-to-employees: It is focused on the interactions between the government and government officials to support transactions such as salaries, training, and access to information. The goals G2E's is to be able to improve the effectiveness and efficiency, and improving employee satisfaction and retention. In addition, achieve internal efficiency and effectiveness, and the adoption of best practices in government operations in different areas.

IV.   Planning The E-Government Strategies To Organizations

E-government strategies that allows government   organizations integration of public services, which enable them to benefit from the following factors:

- Ensure participation in the international information network so as to save the state of marginalization from the process of globalization
- Transparency and Participation: Make better use of e-government tools as a means to increase citizens' awareness and create transparency in dealings, with the support of citizens and public official's activities.
- Seamless Integration of Data: Meet the needs of business cases through the use of information technology, interdependence and integration of information to create a benefit to the citizens and the government.
- Enabling Citizen Choice and Improving Public Services: Facilitate the choice of citizen service, offers a new incentive to improve public services mechanism
- Clear and Simple Rules for Public Servants
- Inclusive Access to Information
- Authoritative Sources
- Interoperability and Data Portability

Thinking, planning and working to implement E-Government requires government organizations to overcome the environmental challenges involved, privacy issues and legislation, the face of the risks, not the target performance, interoperability, network capacity, architectural, human resources available. The architecture also includes overcoming the constraints, especially those related to political issues, regulatory, and new services. The Architectural application and the strategies vary depending on the target activities of the organizations.

V.   Stages Model To Implement E-Government Application Strategies

In this part of the study, we will show strategies for building e-government organizers as it contributes to the application of these strategies and make use of applications and technologies and other experiences, to building a strong e-Government of the Republic of Sudan.

1. Regulatory requirements

Governmental institutions need a clear regulation about the shift to the concept of e-government, the existence of a clear regulatory structure is the most important success factors. Figure 2 illustrates the proposed organizational structure to manage the transition to electronic government.
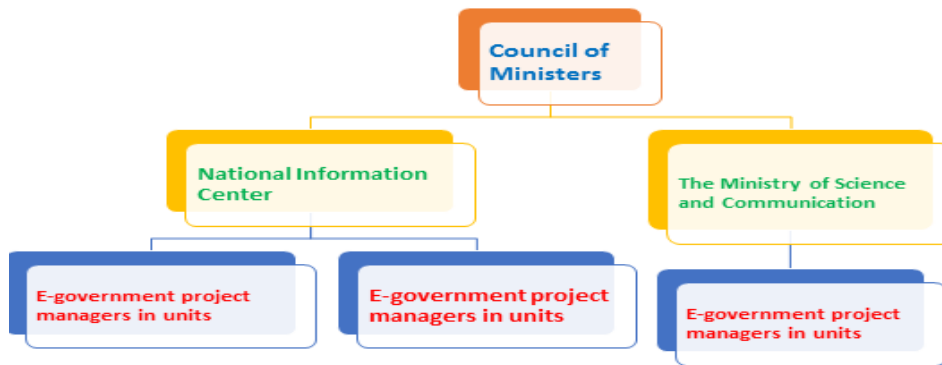
Figure 2: The Organizational Structure Planning to Manage the Phases of E-Government

The first phase to oversee the entire process and vision, the second phase to decision-making and problem-solving and the third phase to project management and implementation of projects

2. <u>Vision</u>

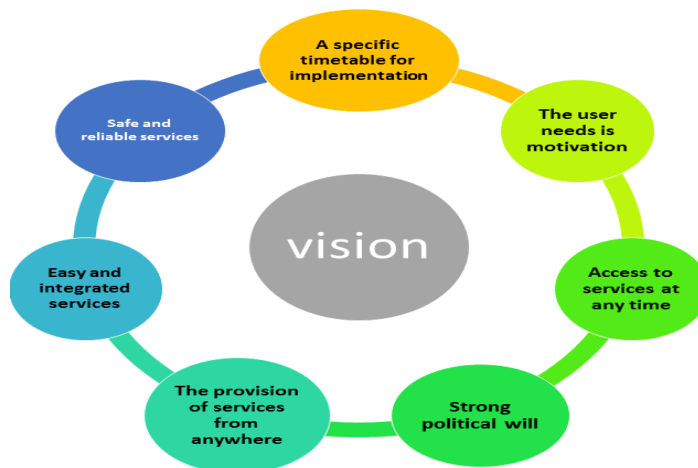Figure 3 explains the vision of the E-government implementation project.

Figure 3: Vision of the E-government Implementation

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The model must include the following services and applications:

- Collaborative Applications: Collaborative applications such as e-mail, chat, e-conferences, and participation in the data files. These applications and aims to achieve a low-cost exchange of information operations
- Web Services: Owning a web server is one of the most important priorities because it leads to improving the speed of access to information, as well as facilitate the process of sharing data, and to ensure continuity of service.
- Technical support: Develop a plan to protect resources in the face of natural disasters and information technology incidents.
- Business applications: Is any program or set of programs that are used by business users to do various work tasks. These applications are used to increase productivity, to measure the productivity and performance of business functions accurately.
- Personal productivity applications: It is dedicated to the production of information software, such as documents, presentations, worksheets, databases, charts and graphs, digital paintings, digital video

3. <u>Preliminary model for the implementation of e-government</u>

The shift to electronic government needs a specific strategy, and that these strategies be part of the organization's information technology.

Organizations must provide the necessary infrastructure for the implementation of the plan without any service-oriented architecture. The transitions of business management to e-government do not make sense from a financial point of view because it leads to high costs without achieving the goals set. To ensure the success of the transition to e-government, the strategy must be consistent with the goals.

Through the theoretical framework, the research associated with the shift towards e-government, institutions and experience in the use of information technology, we can propose the following introductory form as shown in figure 4.
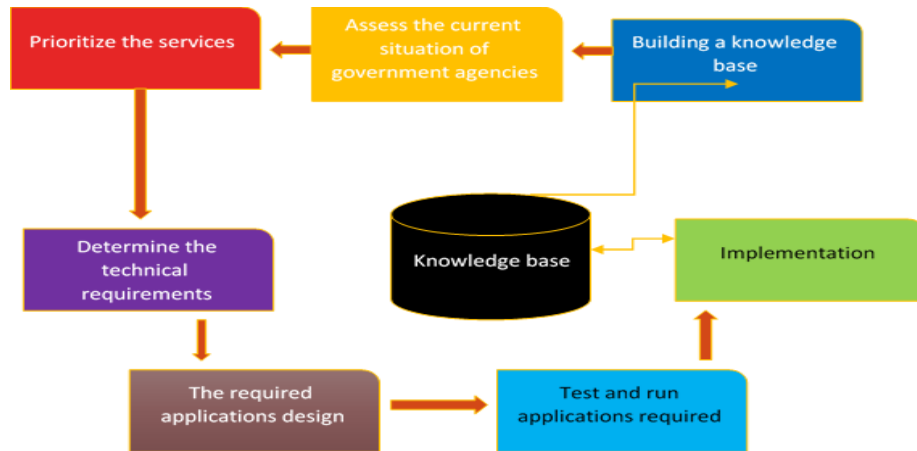
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Figure 4: Stages of Building E-Government Model

There are seven phases we can be explained as follows:

- **The development of the knowledge base on e-government** : The first step in this phase involve the development of knowledge base about the e-government such as studies, conferences, seminars, research issue from universities, research centers, the experiences of other countries, as well as discussions, news in this area.
  The success of this phase depends on the allocation of adequate resources to research, understand how to use e-government in achieving the goals of the state, to recognize the benefits, risks, limitations, and policies.

- **Assess the current situation of government agencies**: This stage includes the understanding of the information technology infrastructure in government institution, the use of service-oriented architecture as a basis for understanding the data, services, processes and applications.

- **Service prioritization** is according to a set of criteria are: Readiness - influences - environmental factors, that's shown in Table 2.

Table 2: service prioritization factors

Readiness	Influences	environmental factors
The desire to shift to e-government	Number of users	Telecommunications and Internet sector
IT infrastructure information	Repeated use	Experiences of other countries
Legal restrictions	Economic Value	he results of the exploratory Services
Technical complexities	Provide (time - and cost) for (the citizen - the government)	
Readiness for change		

- **Determine the technical requirements**: The process of identifying the technical requirements is the step depends mainly on determining the priorities of the service, when you figure out services, can determine the technical requirements for the implementation of the service, which is the responsibility of the technical team.
- **The required applications design**: Implement this stage in three steps are: documenting current processes - Analysis – Design.

Table 3: The required applications design

- documenting current processes			Analysis			Design
The study of the current system by			Analysis of the performance criteria			A pilot scheme for implementation
Questionnaires	Interviews	Performance monitoring	Time	Number of Employees	Number of usage times	
Documenting procedures			Measurement and performance evaluation			
Legal Environment			Determine how to improve performance			

- **Test and run applications required** : The first step of this stage, to identify the goals of development, application test environment, storing data out, the next step includes daily internal processing operations, at the same time confirm the security policies and protection while maintaining low costs of test operations.
- **Implementation**: by using new services application and change management planning that's show in Table 4

Table 4: Implementation Process

Change Management Plan	The application of new services operations
The positive model	Censorship
tools for promoting change	
Provide possibilities	Reports

VI.   Conclusion

The preliminary proposed model offers many benefits to government organizations. This work provides an initial attempt to clarify that e-government can be used in the least developed

countries such as The Republic of Sudan, which is bring many benefits including access to services quickly, reduce operating costs, provide databases contribute to the building of strategies planning and reliable information.

The main objective of the model recommend is how to manage organizations information technology resources requirements effectively and efficiently. Particularly how to use of modern information technology is better than the traditional information currently used technology in government institutions.

The eventually we have designed a strategy to building E-Government project management using The Organizational Structure Planning to Manage the Transition Phases of E-Government, then the entire process and vision to decision-making and problem-solving including the project management and implementation of projects solutions

Reference

[1] Marawar, T, Kale, S, Araspure, K., E-Governance, IEEE Software, p183-186, Feb. 2010.

[2] Safari, H and KhoshSima, Gh, Mohammadian, A, Tamizi, AR, Haki, k, Farazmand, E, Moslehi, A (2002). Iran's Ministry of Commerce E-Government Maturity Model, Quarterly Journal of Knowledge Management, 63, 53-78.

[3] World Bank http://data.worldbank.org/data-catalog/world-development-indicators?cid=GPD_WDI.

[4] http://www.sudan.gov.sd/index.php/ar/pages/details/74/%D9%88%D9%84%D8%A7%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D8%B3%D9%88%D8%AF%D8%A7%D9%86#.VVtZgflViko.

[5] http://www.egov4dev.org/success/definitions.shtml.

[6] AwadAlhaj Ali, E-government concept, AL- Neelain University, Khartoum, Sudan

[7] Jeong Chun Hai @Ibrahim. (2007). Fundamental of Development Administration. Selangor: Scholar Press. ISBN 978-967-5-04508-0

[8] WasedaUniversity International e-Government Ranking2013, http://www.waseda.jp/eng/news12/130326_egov.html [Accessed:August 2013].

[9] Kuldeep Vats, Shravan Sharma, Amit Rathee (2012). A REVIEW OF CLOUD COMPUTING AND E-GOVERNANCE, International Journal of Advanced Research in Computer Science and Software Engineering, 2(2).

[10] Awad Haj Ali Ahmed, Implications and requirements the E-Government and the experiences of some countries, AL Neelain University, Khartoum, Sudan.