13th Meeting of the Intergovernmental Committee of Experts (ICE)
Mahe, Seychelles, 27-29 April 2009

Theme: “Tracking Progress on Implementing ICTs for Development in Eastern Africa”

THE TRAINING COURSE ON THE IMPLEMENTATION OF ICT ON E-GOVERNMENT AND/OR E-TRADE
TABLE OF CONTENTS

1. Introduction .................................................................................................................................... 3
2. Definition of E-Government .......................................................................................................... 4
3. Why e-Government? ...................................................................................................................... 4
   4.1. Improving Government Processes: eAdministration .............................................................. 5
   4.2. Connecting Citizens: eCitizens and eServices ........................................................................ 6
   4.3. Building External Interactions: eSociety ................................................................................ 6
5. What are the objectives of e-Government? ................................................................................... 7
6. What are the benefits of e-Government? ...................................................................................... 8
   6.1 What are the benefits of e-Government to citizens? ............................................................... 8
   6.2. What are the benefits of e-Government to the businesses? ................................................... 8
   6.3 What are the benefits of e-Government to Government bodies? .......................................... 8
7. Development of an E-Government Strategy .................................................................................. 8
   7.1 E-government Strategy Elements .......................................................................................... 9
   7.2 Participant in E-government .................................................................................................. 10
   7.3 E-Government Implementation Plan ..................................................................................... 10
   7.4 Phases of E-Government Development ............................................................................... 12
   7.5 E-government: Outcomes ................................................................................................... 12
8. E-government Success Factors .................................................................................................... 13
9. E-government Technical Aspects ................................................................................................ 14
10. Conclusion ................................................................................................................................... 16
1. Introduction

The Internet has changed the way business is transacted the world over, and is now changing the way government interacts with citizens and businesses. While businesses were the first to adopt and use information technologies, from personal computers to complicated electronic data interchanges, consumers have followed quickly, especially in the adoption and use of the Internet. Information and communication technology and especially the Internet is a great tool to make governments more open and transparent. It empowers citizens. The Internet can be used by citizens to watch their governments, rather than by governments to watch their citizens. ICT can make governments more relevant to citizens by increasing participation and involvement in decision-making. It can help to restore ownership: the government is of the people. EGovernment is also the way to increase accountability. ICT makes it possible to follow all administrative steps. To see where decisions are prepared and made.

Information and communications technology provides governments with new and powerful tools, which enable better and faster communications with the citizens. Recently, many governments are undertaking large and complex endeavors of developing e-Government services. However, the use of e-Government by the citizens is still voluntary. Thus, readiness of citizens to participate in e-Government becomes a crucial factor in the process. Usage of e-Government services depends on various factors such as ease of use, proficiency, accessibility and civic engagement. In most countries there are several disadvantaged groups that are less likely to use services.

Electronic government, or e-Government, is the birth of a new market and the advent of a new form of government, a form of government that is a powerful force in the Internet economy, bringing together citizens and businesses in a network of information, knowledge and commerce (Shutter & Graffenreid,
E-Government promises to close the gap between citizen and business expectations of government and e-Commerce. Today, citizens and businesses expect service delivery in Internet time. The presence of e-Government is expected to grow as online activities become more widespread. A number of indicators were piloted to understand the attitudes of Internet users toward e-Government.

2. Definition of E-Government

The combination of the use of advanced ICTs, especially the Internet, and the support of new ways of thinking and working in public administration, together with the enhanced provision of information and interactive services accessible over different channels, is the foundation of eGovernment.

“E-Government” refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government.

These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

Traditionally, the interaction between a citizen or business and a government agency took place in a government office. With emerging information and communication technologies it is possible to locate service centers closer to the clients. Such centers may consist of an unattended kiosk in the government agency, a service kiosk located close to the client, or the use of a personal computer in the home or office.

Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-government aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent, and inexpensive.

3. Why e-Government?

E-Government is a fundamental element in the modernization of Government. It provides a common framework and direction across the public sector and enhances collaboration within and among public sector organizations and institutions, between Government and the business community, and between Government and the citizens that it serves in the implementation of Government Policies. It also identifies ways of developing the skills needed by public servants to realize the new opportunities offered by ICT advancement such as the internet.

E-Government: Contribution to Poverty Reduction

- Improving citizen-to-gov (C2G) transactions.
- Serving the common man
- Improving education, health, social services.
- Facilitating partnerships, making connections, grassroots innovation sharing.
• Empowering communities, field agents.
• Access to voice, justice, accountability
• Improving business-to-government (B2G); procurement, tax, permits, information.
• Facilitating public sector reform; G2G; KM: transparency, efficiency, client-focus.
• Information to farmers, SMEs, coops, NGOs.
• Competitiveness: improve investment climate. Global competition among cities.

4. What Does eGovernment Cover?

There are three main domains of e-government, illustrated in Figure 1 (adapted from: Ntiro, S. (2000) eGovernment in Eastern Africa, KPMG, Dar-es-Salaam):

- Improving government processes: eAdministration
- Connecting citizens: eCitizens and eServices
- Building external interactions: eSociety

Respectively, these particularly address the problems that government is too costly, too inefficient and too ineffective (e-administration); too self-serving and too inconvenient (e-citizens and e-services); and too insular (e-society).

![Figure 2: Focal Domains for e-Government Initiatives](image)

In a little more detail, the domains of e-government are as follows.

4.1. Improving Government Processes: eAdministration

eGovernment initiatives within this domain deal particularly with improving the internal workings of the public sector. They include:
• **Cutting process costs**: improving the input:output ratio by cutting financial costs and/or time costs.
• **Managing process performance**: planning, monitoring and controlling the performance of process resources (human, financial and other).
• **Making strategic connections in government**: connecting arms, agencies, levels and data stores of government to strengthen capacity to investigate, develop and implement the strategy and policy that guides government processes.
• **Creating empowerment**: transferring power, authority and resources for processes from their existing locus to new locations.

### 4.2. Connecting Citizens: eCitizens and eServices

Such initiatives deal particularly with the relationship between government and citizens: either as voters/stakeholders from whom the public sector should derive its legitimacy, or as customers who consume public services. These initiatives may well incorporate the process improvements identified in section B1. However, they also include a broader remit:

• **Talking to citizens**: providing citizens with details of public sector activities. This mainly relates to certain types of accountability: making public servants more accountable for their decisions and actions.
• **Listening to citizens**: increasing the input of citizens into public sector decisions and actions. This could be flagged as either democratisation or participation.
• **Improving public services**: improving the services delivered to members of the public along dimensions such as quality, convenience and cost.

### 4.3. Building External Interactions: eSociety

Such initiatives deal particularly with the relationship between public agencies and other institutions - other public agencies, private sector companies, non-profit and community organisations. As with citizen connections, these initiatives may well incorporate the process improvements identified in section B1. However, they also include a broader remit:

• **Working better with business**: improving the interaction between government and business. This includes digitising regulation of, procurement from, and services to, business to improve quality, convenience and cost.
• **Developing communities**: building the social and economic capacities and capital of local communities.
• **Building partnerships**: creating organisational groupings to achieve economic and social objectives. The public sector is almost always one of the partners, though occasionally it acts only as a facilitator for others.
5. What are the objectives of e-Government?

The overall goal of e-Government is to make the Government more result oriented, efficient and citizen centered. E-Government should enable citizens to access Government Services and Information as efficiently and as effectively as possible through the use of internet and other channels of communication. The specific objectives of e-Government are to:

- Improve collaboration between government agencies through reduction in the duplication of efforts, and enhance efficiency and effectiveness of resource utilization;
- Better service - more convenient, lower cost, more reliable
- provide round-the-clock online Government information and services through a single window;
- give the users the choice to decide when, from where and how they want to interact with the Government;
- eliminate administrative bottlenecks, thus reducing the turn-around time in the provision of most Government services;
- bring the people closer to the Government by keeping them abreast of the latest developments in the public sector, thus encouraging them to play a proactive role in the decision-making process of the Government;
- provide a simple, secure and trustworthy interface for accessing Government services and conducting online transactions;
- modernize the public sector;
- Customers will have access to e-Government services at times and locations of their choosing, taking into account special needs and social, economic and ethnic considerations.
- Greater participation - by citizens in government and
- create a digital community.
6. What are the benefits of e-Government?

6.1 What are the benefits of e-Government to citizens?

E-Government offers citizens with significant benefits by:

- providing round-the-clock online Government information and services through a single window;
- allowing for greater flexibility and convenience while dealing with Government departments and agencies, through online access of services;
- reducing the turn-around time in the provision of Government services;
- keeping citizens abreast of the latest developments in the public sector; and
- encouraging citizens to play a proactive role in the decision-making process of the Government.

6.2 What are the benefits of e-Government to the businesses?

E-Government will benefit businesses by:

- providing a gateway for the development of mutually beneficial interactions between the Government and businesses;
- eliminating the administrative procedures when dealing with the Government, thus resulting in considerable time and costs savings for the businesses; and
- providing a secure and trustworthy environment for conducting online transactions with the Government.

6.3 What are the benefits of e-Government to Government bodies?

E-Government helps to improve the flow of information and enhances communication between the different Government departments. This gives rise to significant improvements in the coordination of public sector resources, better analytical tools to solve the increasingly complex problems faced by Government and decision support tools to enhance the effectiveness and efficiency of public policy.

7. Development of an E-Government Strategy

Once e-government is defined, local government can move into the next stage, development of an e-government strategy. This strategy is fundamental to navigating through the exploding e-government market place, re-engineering processes and procedures to support e-government, and implementing e-government initiatives. Government is quickly realizing that this strategy must be enterprise-wide to most effectively and efficiently serve the digital society. This strategy should include:
The organization’s definition of e-government that includes key areas to be addressed and identification of all customers:

- A vision that is easily understood and succinctly expresses the organization’s concept of and plans for e-government;
- Specific goals and objectives that can be monitored and measured;
- Identification of policies necessary to support e-government;
- A methodology for determining organizational readiness;
- A process for identifying and prioritizing e-government initiatives; and
- A business model to sustain e-government initiatives.

### 7.1 E-government Strategy Elements

The overall goal of the E-government Strategy is for each country will be a world leader in using information and technology to realize its economic, social, environmental, and cultural goals, to the benefit of all its people.

- **Strategies**: Strategies are essential to e-government formulation because they provide objectives for state agencies and governments.

- **Outsourcing**: The process of outsourcing, or contracting with an outside firm to develop IT projects, is often contentious. The decision to outsource may depend on the complexity of a new program. Programs that are simple to develop can be administered in-house, or within the public agency.

- **Funding**: Funding is an important e-government issue because IT projects are costly and their success is uncertain. Legislatures must choose between multiple programs during the budget process and, in many cases, e-government competes with other needs for funding.

- **State Culture and Politics**: State politics and culture can impede or support e-government development. Public agencies are often averse to IT changes because they can alter employee and agency functions. However, IT enhancements do not typically cause agencies to be eliminated.

- **Leadership**: Strong leadership can support e-government programs and drive IT improvements by encouraging and promoting new projects among civil servants and citizens.

- **Centralized/Decentralized Technology Management**: The degree of centralization or decentralization is a key component in e-government management because it determines the level of interaction between administrative agencies involved in IT projects. Web portal centralization is a common trend among many states, and it is often separate from agency organization and decision making.
**Performance Measures:** E-government performance measures are essential in evaluating the success of programs, identifying challenges, and addressing specific formulation and implementation challenges.

### 7.2 Participant in E-government

The State Services Commission provides leadership and support, develops strategy and policy, facilitates, fosters collaboration, and coordinates and assesses progress towards e-government goals. It also develops and operates some of the all-of-government infrastructure needed for e-government.

Agencies deliver e-government, using ICT to help achieve outcomes, and building on the foundations they have created with the SSC and other agencies. Agencies can use this Strategy to help shape their individual or sector work programmes to move government towards the goals.

<table>
<thead>
<tr>
<th>Player</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All users of government services including:</strong></td>
<td></td>
</tr>
<tr>
<td>citizens</td>
<td>Consumers of government information and services, whether as customers or subjects of the State.</td>
</tr>
<tr>
<td>Businesses</td>
<td></td>
</tr>
<tr>
<td>Communities</td>
<td>Participants in policy and decision-making and other democratic exercises.</td>
</tr>
<tr>
<td>Visitors</td>
<td></td>
</tr>
<tr>
<td>Overseas residents and businesses</td>
<td>Taxpayers and ratepayers.</td>
</tr>
<tr>
<td><strong>Government including:</strong></td>
<td></td>
</tr>
<tr>
<td>Departments</td>
<td>Providers and users of government information and services.</td>
</tr>
<tr>
<td>Crown entities</td>
<td>Advisors on developing and implementing policies.</td>
</tr>
<tr>
<td>Other government agencies and bodies</td>
<td></td>
</tr>
<tr>
<td>Local government</td>
<td>ICT professionals.</td>
</tr>
<tr>
<td><strong>Intermediaries:</strong></td>
<td></td>
</tr>
<tr>
<td>Non-governmental organisations (NGOs)</td>
<td>Go-betweens for government information and services.</td>
</tr>
<tr>
<td>Commercial providers</td>
<td>Partners in delivering outcomes</td>
</tr>
<tr>
<td><strong>ICT providers:</strong></td>
<td>Providers, designers and builders of technology tools and applications for e-government.</td>
</tr>
</tbody>
</table>

**Table 1: Role of Participants in E-government Process**

### 7.3 E-Government Implementation Plan

A key issue faced by government officials is how to approach e-government. Should e-government come as the culmination of public sectors reforms, preceded by other efforts to rationalize government activity and strengthen key institution, or can e-government applications serve as a catalyst for such change? Reform of the public sector is typically painful, slow and meets resistance. The appeal of e-governance in developing countries can sometimes overcomes
resistance to change. In a number of case e-government applications have been the catalyst for change and have enabled public sectors reform initiatives can be a question of tactics, but for e-government to be effective, it must be implemented in wider context of basic reforms.

Some consulting organizations have developed tools kits to assess e-readiness of countries. However, there are very few kits available for assessing e-government readiness. Broadly e-government readiness would cover the following factors:

1. the extent to which computerization of back-end process has been conducted as well hardware, software and networking infrastructure required to provide access points to clients at the front end;
2. strong intent to reform governance backed up by demonstrated political will and leadership;
3. capacity to design and implement e-government systems as demonstrated by existence of institution, which can assist in systems analysis, design process re-engineering and software development;
4. availability of funds to support the e-government effort;
5. existence of an enabling legal framework encompassing privacy and security of data, legal sanction of new forms of storage and archiving, and laws that accept paperless transaction. and
6. finally, the most important factor is the attitude of the civil servants. Civil servants need to have a customer orientation, willingness to change, adequate ICT literacy, and a modicum of honesty and integrity.

The assessment of e-government readiness has to be based on a mix of quantitative measure and qualitative assessment, which can best be done by appropriately trained consultants through fields visit to different departments.

Figure 4 : E-government Evolution
7.4 Phases of E-Government Development.

The evolution of e-government programs can be conceptualized in a number of ways. Given a state’s political and economic circumstances, programs can develop and change quickly, sometimes “skipping” a developmental phase.

<table>
<thead>
<tr>
<th>Stages of E-Government Development</th>
<th>Service Delivery Modes</th>
<th>Examples of E-Government Services-Internet or Intranet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence</td>
<td>Information access and delivery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Document access and download</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Online Mapping/GIS Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Providing names and phone numbers of government officials. Allow access to government documents</td>
<td></td>
</tr>
<tr>
<td>Interaction and Communication</td>
<td>- Communication with officials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Multimedia-Streaming and Playback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Interactive discussions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Email forms to allow citizens to send requests for services to government officials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multimedia presentations</td>
<td></td>
</tr>
<tr>
<td>Transaction</td>
<td>- Online databases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Online forms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- E-Commerce Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-commerce transactions such as the purchase and renewal of licenses, and the purchase of government data or documents</td>
<td></td>
</tr>
<tr>
<td>Transformation</td>
<td>- Online Mapping/GIS Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- E-Permitting/Wireless Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smart permitting involving online request submissions, GIS, document management, 3D modeling of proposed projects, wireless applications</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Delivery of E-Services: Technologies and Examples by Stages of E-Government Developments


7.5 E-government: Outcomes

- Increased participation of citizens in government decisions and actions.
- Improved accountability of politicians and civil servants.
- Assured competitive environment for private businesses
8. E-government Success Factors

The e-Government realization depends on two complementary aspects. First, the vision of e-Government dictates the types of services that must be available online and the level of sophistication they must achieve. Second, the adoption of e-Government by its intended users requires careful preparation, although this is not always possible, as the development of e-Government may seem to just happen at times. Ideally, development is based on a thorough understanding of how users perceive e-Government, how well they can complete expected transactions, and what barriers stand in the way of successful adoption. Thus, we will present some factors leading to the successful implementation of e-Government.

The broad characteristics marking out successful e-government are:

- **Convenience and satisfaction:** People have a choice of channels to government information and services that are convenient, consistent, easy to use, and deliver what they want in a way that suits their needs.

- **Integration and efficiency:** Information and services are integrated, packaged, and presented to minimize cost to government and users, and improve results for people, businesses, and communities.

- **Trust and participation:** Government information is authoritative, reliable, and secure, and people and government are willing to share it across organizational and sector boundaries; people are better informed and better able to partner with government in delivering outcomes.

- **Process of application:** The first advantage of the new technologies is that they allow integrating diverse, complex and little centralized structures. Therefore, an approach e-Government can be realized step by step, according to more and more advanced objectives. This peculiarity should favour the interest of the administration co-workers and the citizens. The new technologies allow easily to get organized either according to the administration structure, but according to the needs of the administered and the various actors, by offering a means of the interactions personalization. The pursuit of the various projects, the on-line taxes or the electronic voting for example, must be however coordinated with an application.
Organizational Readiness

1. Robust, reliable infrastructure to support e-government initiatives.
2. Integration of autonomous systems and between new systems and legacy applications.
3. Process review and re-engineering that ensures technology is applied to good, streamlined processes.
4. Adequate resources for long-term support of e-government initiatives both in the IT department and within other departments.

Governing Policies and Practices

5. An enterprise approach that is followed by all facets of the organization including a single portal organized around services, which provides a consistent look and feel.
6. A marketing and communications plan.
7. A business model and plan for sustainable funding.
8. Identification of risks and methods to minimize them especially in the areas of privacy and security.
9. A plan for access by all facets of society including access for people with disabilities, addressing the digital divide, and multi-lingual access.
10. A process for identifying e-government initiatives and establishing priorities.

Table 3 – Critical Success Factors for E-Government

9. E-government Technical Aspects

The global IT revolution is growing rapidly. Governments and businesses have to be ready to meet the increased demand of effective and secure online services. Providing secure online services in e-Government requires, however, careful deliberation on different levels and for the distinct domains of e-Government. The first issues on security coming in mind regard of course technical aspects. Here, many concepts and tools have been developed to provide secure transactions, to protect against non-allowed access to information and data, to protect against hacker attacks etc. Yet, security aspects not only regard technical issues. Instead, these need careful investigation from a non-technical viewpoint as well. In this contribution, we suggest a holistic concept that integrates security aspects from the strategic level down to the data and information level in order to address different security aspects in a comprehensive way.
Identification | Who are you?
---|---
Authentication | How do I know you are who you claim to be?
Authorization | Are you allowed to perform this transaction?
Integrity | Is the data you sent the same as what I received?
Confidentiality | Are we sure no one else read the data you sent?
Auditing | Record of transactions to assist in looking for security problems?
Non-repudiation | Can you prove the sender sent it, and the receiver received the identical?

Table 4 – Technical Aspects for E-Government

Overview of Government Public Key Infrastructure

Figure 5: E-gove Public Key Infrastructure
10. Conclusion

E-Government is a big challenge. The Government have a lot to learn from the private sector in how to maximise the benefits of ICT, but it also has its own very specific challenges and opportunities which it must meet and exploit on its own terms and differentially in relation to a large variety of cultural, institutional and functional requirements. E-Government must move simultaneously along a number of fronts: maximizing productivity, improving service quality, tackling exclusion and enhancing accountability and democracy.

The challenges are great and change is inevitable. This must become the main vision and long-term strategy.