STATUS OF e-GOVERNMENT IMPLEMENTATION In Ethiopia

By Abiyot Bayou

Government Info. System Expansion and Service co-ordination Project Manger
Ethiopia ICT Development Agency (EICTDA)

Electronic/Mobile Government in Africa: Progress Made and Challenges Ahead
Addis Ababa, Ethiopia, 17-19 February, 2009
AGENDA

- Introduction
  - The Country
  - ICT Infrastructure
- E-Government related Initiatives
  - Completed Projects
  - Ongoing projects
  - Planned projects
- Institutional Arrangements for e-gov Implementations
- Implementation Challenges and Solutions
Ethiopia

**ETHIOPIA**

**Government:**
- Federal System
- 9 National regional States, divided into zones, and zones divided to woredas
  - 66 Zones
  - 600 woredas (districts with an average population of 100,000)

**Land Area:** 1.14mil Sq.kms

**Population:**
- Total: 74 million
- Rural: 84.87%
- Urban: 15.13%
Key strategy of FDRE: to Pursue Agriculture led Industrial Development strategy

The Government Recognize the role of ICT for socio economic transformation, and focus on
- Developing the national ICT infrastructure
- Enhancement of ICT skills and human capital
- Development of the necessary policy and legal frame work
- Encouraging the private sector to participate in the ICT sector
- Adoption of ICT tools in the public sector

The e-gov program aims at the use of ICT in achieving the public sector reform objectives of the government
Objective of the e-government program

- The Objectives of the Civil Service reform includes:
  - Customer Centric Public Service delivery
  - Ease of accessibility of Public Services
  - Cost effectiveness in public services
  - Enhanced Public Participation
  - Transparency and accountability
  - Easy Access to information
  - Easy and cost effective communication with in government
  - Enhanced efficiency and effectiveness
Objective of the e-government program

- The broad Objectives of the e-government program
  - improvement in federal and regional government administrative efficiency, effectiveness and productivity as well as information provision and service delivery to the public
  - reduction in administrative, operational and transaction costs of the federal and regional government
  - Increase in the ability of federal and regional government to serve citizens and business better
  - Transformation of the government systems into a citizen-centered government as well as facilitate the process of bringing the government closer to the people
  - Provision of access to information and government services by the public and enhancing good governance and strengthening democratic process
## Infrastructure/Telecom Data

### Ethiopian Telecom Data (As of Feb. 2009)

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Total Number of Telephone Subscribers (fixed + mobile)</td>
<td>2737009</td>
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<tr>
<td>Fixed Line Subscribers</td>
<td>920,063</td>
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<tr>
<td>Mobile System Subscribers</td>
<td>1,816,946</td>
</tr>
<tr>
<td>Internet Subscribers</td>
<td>31,400</td>
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<tr>
<td>Total Number of Subscriber (per 100 inhabitants)</td>
<td>3.7</td>
</tr>
<tr>
<td>Tele-density</td>
<td>1.2</td>
</tr>
<tr>
<td>Residential Main Lines (per 1000 inhabitants)</td>
<td>6</td>
</tr>
<tr>
<td>Public Telephones (per 100 inhabitants)</td>
<td>0.067</td>
</tr>
</tbody>
</table>

Source: Ethiopian Telecommunication Corporation.
The 2007-2010 plan pledges the following targets:

- Increase mobile subscription from the current 1.63 million subscribers to 10 million subscribers
- Rollout 10,000 km fiber
- Install 50,000 public pay phones
- Build NGN core network with 2.4 million capacity
- Build access network with a capacity of 1.2 million to support fixed and wireless users
- Providing universal access to communications to 40% of the population within a distance of 5 Kms
- Increasing the number of Internet subscribers to 150,000 by 2010
- Provide access to 15,000 rural villages
Infrastructure development

- Laying of 10,000 kilometers optical fiber network throughout the country to link up this with the submarine cables.
  - Over 4,000 kilometers has already been completed
- Universal access
  - Access to telecom facilities at a walk of five kilometers.
  - Over 15,000 rural villages
  - The Rural Connectivity Program (RCP).
  - So far >7,000 rural centers have been connected
E-gov projects-Completed

- Completed Projects
  - Infrastructure
    - WoredaNet
    - SchoolNet
    - ETHERNEt
    - Establishing Community centers
  - Application
    - TAX System
    - E-Litigation
    - IBEX
    - Other applications developed by regional governments and federal organizations
E-gov projects- Completed...

- Standards and other Infrastructures
  - Localization of ICT Terminologies
  - Keyboard standard
  - Network Master Plan
WoredaNet

- A government network connecting 611 Woredas and regional and federal government offices across the country.
- Use both terrestrial and VSAT connections.
- Primary objective is to provide ICT services such as video conferencing, directory, messaging, and voice and Internet connectivity at the federal, regional and lowest level of government throughout the country.
Objective of woredaNet

- Setup nationally integrated, sectorally and regionally distributed information system
- Improve communication between the federal, and regional Governments and woredas Administration
- Accelerate the decision making process at all levels of administration with special emphasis to woredas
- Increase flexibility and encourage inter Woreda-region communication
- Initiate distance education and training programs
- Reduce expenses and barriers associated to the cause of distance
- To set up computerized government service delivery
Typical Regional and Federal Data Center

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Typical Woreda Setup
WoredaNet

Organizational Structure Of The WoredaNet

National Data Center (Under EICTDA)
- Centrally Manage the WoredaNet
- monitoring and supporting the woredaNet infrastructure
- co-ordinate the activities of the regional and woreda data-centers.
- provides maintenance and training supports
- Also responsible to device rules and regulation on how to use the WoredaNet Infrastructure.

Regional Data Centers (under ICT Dept. of Regional Government CBBs)
- coordinating the WoredaNet in their respective regions.
- support the woreda centers by providing training & materials.

Woreda Centers (found at each woreda)
- provide Video conferencing and other WoredaNet services.
- provide various ICT services to sector organization in their respective woredas.
Services Provided using WoredaNet
- Conferences and meeting among government bodies
- Training
- Court Services
- Internet
- messaging
Government Conferences and meetings
- (between federal and region, region to woredas, woredas to zone etc..)
- helped to make effective and frequent communication
- Increase collaboration between government institutions,
  Improved use of executive time
- speed up decision making,
- Provision of timely information to the lowest government institution,
- Reduced travel and administrative costs for sharing information.
Court Services

- Ethiopia Courts are arranged hierarchically from the lower structure, woredas to the federal government. Based on the types of the issue these courts give services to citizens.
- Providing Court services using VC has helped citizens by avoiding travel from woredas to zonal and regional centers and Addis Ababa, and get faster responses.
- In 1999 EC, 1404 Court cases were seen using the VC.
WoredaNet
Training and distance education

- Training for woreda administrators, judges and prosecutors
- Upgrading more than 2000 legal professionals in 7 central woredas all over the country
- Training of 10000 administrators
- By giving the training in central places reduce transportation to Addis without transporting the instructors out of Addis Ababa, sharing common experiences
SchoolNet

- An education network which provides more than 500 secondary educational institutions with access to general ICT, email, and the Internet; and allow each school to receive streamed Internet- and broadcast TV-based educational content from media agencies—creating a foundation for e-learning

- Objective
  - to transform the life of the people through the use of ICT in education.
  - to help in integrating ICTs into Ethiopia’s educational system
  - tool to provide quality education for all the Ethiopian school including Universities.
  - to Support the teaching and learning process, using satellite, internet, etc as an educational development and delivery platform
  - High Schools /574+/, Preparatory Schools /191+/
SchoolNet (cont.)

- Around 200 preparatory schools have also been provided with close to 3000 computers and internet services
- more than 180 schools have Local Area Network & computer Lab, internet access;
- Content developed centrally by Ministry of Education
- over 2987 programs in 8 subject.
EthERNet is the Ethiopian Educational & Research Network is interconnecting all public Universities to facilitate the tele-education project (e-learning & e-library)

- Facilitate e-collaboration among the students and the instructors in different Universities.
- Starting from simple file sharing, forums, research groups, knowledge base, chat rooms etc
- Common SW applications can be run among the universities' communities.
- A “one campus” atmosphere in all public Universities.
Current status

- 9 Universities already conducted
- 13 new Universities to be connected soon
- Video conferencing as the main tool for tele-education
- Postgraduate MSc and PhD distance education programs with Indian, South African and UK Universities to be conducted using EthErNet
- Prof. in one University can teach also in more Universities
- E-Library is under development
Technical Facts

- **Standard Data Center**
  - Air Conditioning System, Ceil and Wall Cladding, UPS
- **Layered Network Architecture**
  - Core Switches, Server Aggregation Switches
- **Redundant System** (to increase quality of service)
- **Storage Area Network**
- **High Security**
  - Firewall, IDS/IPS, Anti-X, Access Control
- **Video Conferencing System**
  - MCU, Video Manager, Streaming
- **E-Learning and E-Library Systems**
One of the new University
Network Master Plan Implementation

- Design and implement organization wide corporate Network for each of the federal ministries and regional government
  - Objective: To develop a nation wide e-government delivery communication infrastructure
  - Improving the level of ICT deployment, penetration and access within Government organizations
- Current status
  - Design and development of ICT master plan is completed
  - Implementation of the master plan to implement within 13 federal ministries is on the process
  - Implementation of LAN and WAN within regional government organizations
Applications

To use ICT to modernize the Public service to enhance the operational and functional efficiency and effectiveness of government administration and service delivery

- **TAX System**
  - Improve the TAX System In the country

- **E-Litigation**
  - Online system to facilitate court related services

- **IBEX**
  - Improving the government financial management

- **Other applications developed by regional and federal organizations**
- Standards and other Infrastructures
  - Localization of ICT Terminologies in to three local language
  - Keyboard standard to support Ethipic scripts
  - NetworkMaster Plan
Ongoing Projects

- Infrastructure
  - Implementation of NetworkMaster Plan
  - WoredaNet upgrading and Network Operation Center
  - ETHERNET II

- Application
  - E-revenue
  - IFMIS
  - E-environment
  - Government Portal
  - National Archives and document management
  - National digital Library for Higher education

Justice System
- Standards and other Infrastructures
  - Interoperability standard
  - Security Policy and standard
  - Disaster recovery standard
  - Digitization Standard
Planned Projects

- Infrastructure
  - Expansion of Networkes
  - Expansion of the woredaNet to Kebeles
  - PKI

- Application
  - Various LOB applications
  - E-procurement

- Standards and other Infrastructures
  - PKI
  - Cyber law
Existing Institutional arrangements for e-gov implementation

- Existing Institutions
  - Ministry Of Capacity Building
  - Ethiopian ICT Development Agency
  - Regional Government ICT Development Departments
  - ICT Departments under each ministry
  - National Working Group: Infrastructure
  - Ethiopian Information Network Security Agency
  - Ethiopian Broadcasting Agency
  - Ethiopian Telecommunication Agency
  - Ethiopian Transport and Communication Ministry
  - Ethiopian Telecommunication Corporation
E-Government Implementation challenges and solutions used

III. Challenges

- Human resource
- Finance
- Lack of Local Skill and companies
- Poor infrastructure
E-Government Implementation challenges and solutions used

- Lack of e-government enabler Institutions
  - Strengthening of EICTDA and other relevant organization and establishing a National coordinating bodies
  - Developing organizational structures for ICT departments with in government institutions
- The Need for Institutional and organizational System reform
  - Coordinating Application development with the ongoing BPR and organizational reforms within the government institutions
- Requisite human resource problem
  - Revision of the ICT curriculum at all levels, Short term trainings for ICT staff with in institutions
  - Using external staff
- Lack of competent local firms to implement large systems as expected
  - Using international companies in partner with local companies
- Lack of coordination
  - Centralized resources including finance, Rules and guidelines
E-Gov Implementation challenges ...

- Lack of e-government enabler laws and legislative provisions
  - Identifying and developing the necessary rules and regulation
- Limited ICT and communication infrastructure and Low level of ICT deployment, penetration and access within the public sector
  - Improving Development, deployment and rollout of requisite e-gov delivery physical and communication infrastructure, systems and platform
    - Improving the government ICT infrastructure
  - Deployment of public access channels systems and infrastructure
    - Deployment of Community centers
Thank You!