Electronic/Mobile Government in Africa:
Progress Made and Challenges Ahead

http://www.unpan.org/empbr_africa

Addis Ababa, Ethiopia
17-19 February 2009

Presentation by Prof. Meoli Kashorda, USIU/KENET
• Local context
  – ICT regulatory regime
  – Penetration of Mobile and fixed services in Kenya
  – Penetration of Internet in Kenya
• Mobile e-commerce status in Kenya
  – ECA country study 2008
• Progress in Implementation of e-government strategy 2004-2008
  – Citizen perception of e-government services
  – E-government milestones (includes infrastructure)
• Progress and challenges in fixed mobile e-government services in Kenya and way forward
Happiness Index of Governments

\[ H = \frac{A}{E} \]

Are our leaders unhappy about ICT in Govt?
\[ \Delta = D \times V \times P \]

Dissatisfaction
Vision for future
Practical next steps

*(See Kotter’s article on the Heart of Change)*
• Webometrics ranking of universities gets the attention of Minister and PS in charge of universities
• University VCs now pay attention to Websites (see http://www.webometrics.info)
• Other external readiness index (NRI, IOI, UN etc.)
  – No evidence that they care!
• But Government internal e-readiness assessment results matter
  – presented to Cabinet – Directorate of E-government
• KENET University readiness indicators now part of M & E in universities (local ranking)
<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>South Africa</th>
<th>Mauritius</th>
<th>Kenya</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004 (out of 102 countries)</td>
<td>4</td>
<td>34</td>
<td>47</td>
<td>75</td>
</tr>
<tr>
<td>2005 (out of 115 countries)</td>
<td>1</td>
<td>37</td>
<td>45</td>
<td>91</td>
</tr>
<tr>
<td>2006-2007 (out of 120 countries)</td>
<td>7</td>
<td>47</td>
<td>51</td>
<td>95</td>
</tr>
</tbody>
</table>
What is NRI measure?

NRI

Environment
- Market environment
- Pol. & Regulatory env
- Infrastructure env.

Readiness
- Individual readiness
- Business readiness
- Govt. readiness

Usage
- Individual usage
- Business usage
- Govt. usage

Source: GIT report 2003-2004
Adopted from Laudon & Laudon 2006
- Kenya Transparency and Communications Infrastructure Project ($114 million World Bank IDA loan through Ministry of Information and Communications)
  - E-government applications starting with E-procurement and Land Information Systems
  - Creating e-government services access points called digital villages
  - Bandwidth expansion and broadband network support for Universities and Colleges through KENET
  - Support for Business Process Outsourcing (ICT sector)
  - Newly created Kenya ICT board to oversee project
- 5,000 KM national optical fiber backbone funded by Govt
- The East African Marine Optical Fiber – TEAMS (Fujaira to MSA) 2009?? And SEACOM (June 2009)
• Kenya Communications Act 1998
  – No duopoly in fixed or mobile services
  – Unified Licensing Framework (ULF)
  – Communications → ICT Act limitations
• Kenya Communications Regulations 2001
  – Dominant operator has not yet been announced
  – Safaricom has over 80% market share – problem?
• Kenya ICT (Amendment) Act 2008
  – Assented on December 30, 2009
  – Recognition of e-transactions – important for e-government
  – Introduces broadcasting & content regulation
<table>
<thead>
<tr>
<th>Year</th>
<th>Fixed subscribers/connections</th>
<th>Fixed wireless subscribers</th>
<th>Mobile subscribers</th>
<th>Combined Teledensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/05</td>
<td>299,252</td>
<td>0</td>
<td>4,611,970</td>
<td>14%</td>
</tr>
<tr>
<td>2007/08</td>
<td>252,615</td>
<td><strong>284,513</strong></td>
<td>12,933,653</td>
<td>37%</td>
</tr>
</tbody>
</table>
- No demand-side statistics available!
  - Who is ready to fund such a study
- 80% leased lines in Nairobi and Mombasa
  - Fibers are empty!
  - Fiber Optical National Network (FONN)
  - TEAMS, SEACOM, EAASy landing soon!
- In 2007, Internet Market study estimated 2.7 million users from a supply side
- Safaricom has 3G in Nairobi and Mombasa
- GPRS available countrywide from all the operators!
  - Internet users have increased
<table>
<thead>
<tr>
<th>Sector</th>
<th>Case study name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial sector (Banking)</td>
<td>Equity Bank and Commercial Bank of Africa cases</td>
</tr>
<tr>
<td>Financial sector (microfinance)</td>
<td>Jamii Bora</td>
</tr>
<tr>
<td>Mobile sector (alternative)</td>
<td>M-PESA money transfer</td>
</tr>
<tr>
<td>Retail</td>
<td>Nakumatt supermarket</td>
</tr>
<tr>
<td>Information and News Media</td>
<td>Nation Media group SMS-based news services</td>
</tr>
</tbody>
</table>
Jamii Bora Customers

Number of customers

Years

0 20000 40000 60000 80000 100000 120000 140000 160000 180000

2001 2002 2003 2004 2005 2006 2007

customers
• Launched by two main mobile operators
  – Zain (17%) and Safaricom (80%)

• Safaricom M-Pesa money transfer
  – It is a business proposition – Increase the data ARPU!
  – P2P transactions – Ksh 20 billion in September from about Ksh 1 billion in September 2007
  – 4.14 million registered users (September 2008) and 4,230 agents

• Zain launched ZAP on 16/02/2009
  – Sokotele service introduced before M-PESA failed
<table>
<thead>
<tr>
<th>Point</th>
<th>Details</th>
</tr>
</thead>
</table>
| Cyber cafes and institutional access to Internet?                    | Limited penetration  
|                                                                    | Limited to urban areas  |
| Mobile SMS and Internet access                                      | Most convenient  
|                                                                    | SMS popular  |
| Digital villages? – under construction                              | Kenya ICT Board & Ministry of Information and Communications  
|                                                                    | Funded through the Kenya Transparency and Communications Project and PPP |
Survey tool administered 395 Respondents

- Knowledge of E-Government services
- Access to E-Government Services
- Use of mobile phones
- Frequency of access
- Responses to communication

Source: Network Information Systems with permission
Do you know what e-government is?

42.5% Yes
57.5% No

Source: Network Information Systems with permission
Citizen email interactions with government

Have ever sent an email to government office on official matter

- Yes: 22.9%
- No: 77.1%
Review of 26 Ministry Websites and 14 government agencies/parastatals

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected</td>
<td>0</td>
</tr>
<tr>
<td>Transactional</td>
<td>0</td>
</tr>
<tr>
<td>Interactive</td>
<td>4</td>
</tr>
<tr>
<td>Enhanced</td>
<td>30</td>
</tr>
<tr>
<td>Emerging</td>
<td>39</td>
</tr>
</tbody>
</table>

Source: Network Information Systems with permission
Access to government websites

Have you ever accessed the government website

- Yes: 47.7%
- No: 52.3%
Government Services accessed through mobile phones

- KNEC results: 30.4%
- E-Bills: 18.3%
- Voter registration: 26.9%
- Loan status: 2.6%
- Garification on policy issues: 4.2%
- Water bills: 1.0%
- Ebanking: 1.9%

Source: Network Information Systems with permission
Readiness of e-government infrastructure?

Situational analysis in five key areas

- Network infrastructure
  - Access network
  - Backbone network
- Backend applications
- Human capacity and organizational structure
• **Access Network infrastructure**
  - Increased access to PCs in all ministries
  - Local area network at Ministry headquarters in Nairobi and in some provinces

• **Backbone network infrastructure**
  - Optical fiber-based Government Common Core Network (GCCN) interconnecting all HQ building under implementation
  - Large Data Center under construction
  - National Fiber Network to all district HQs in Kenya under construction
• Procurement
  – Bureaucratic and slow
  – End-user software and hardware not centralized (lack of economies of scale)

• Quality of network infrastructure
  – Low Internet speeds
  – Limited network management
  – Lack of redundancy

• Inadequate availability and support
  – E.g., Many officers prefer yahoo or Gmail accounts?
• HR system (IPPD) being used to process payroll for all ministries, Kenya police, TSC and many government agencies
• Financial system (IFMIS) has been implemented in most of the ministries
• Kenya Ports Authority ERP and Waterfront system
• Immigration Department ERP – Mobile tracking of passport applications
• Kenya Revenue Authority System – online filing of tax returns mandatory
• Higher Education Loans Board ERP – graduates can track loan repayments
- Slow implementation, especially for parent ministries
  - Only 27% of projects implemented on schedule
- Only 40% implemented within budget
- Technical support for applications only at HQs, limited at the provinces
  - No end-user support at the provinces
- Inadequate change management strategies in place
- ICT secretary position and a Directorate of E-government in the Office of the President
- ICT officers in each ministry and government department
- New scheme of service for ICT professional staff administered by DEG
- Improved user support
- PS and ICT officers champions in each ministry
• Retention problems
  – Remuneration
  – Salary not matched to qualifications and training
• Limited managerial experience among ICT officers
  – Techies or entry-level staff
• Limited Technical Experience of ICT professionals
  – Limited capacity to solve complex network or applications problems
  – Inadequate number of ICT professionals
Emerging fixed/mobile e-government services

- Ministry of Education
  - Kenya National Examination Services
  - Education MIS
- Kenya Revenue Authority & Kenya Ports Authority
- Immigration department
  - Passport control
  - Mobile checking of passport
- Ministry of Finance
  - Financial system
- How about other key ministries - Agriculture, Tourism, etc??
• **Vision 2030 aim**
  – *A globally competitive and prosperous nation with a high quality of life by 2030*

• **Vision 2030 ICT sector MTP Vision**
  – *Kenya becomes an information and knowledge based society*
• National ICT policy vision
  – A prosperous ICT-driven Kenyan society
• E-Government vision
  – To be an efficient, results-oriented and citizen-
    centred public sector and one of the top rated
    e-governments in Africa and globally
• Draft E-government strategy 2008 – 2012
  – To follow from 2004-2007
• Internal e-government infrastructure and backend applications are the real challenge
  – PCs and LANs are the easiest to do!
  – IFMIS and IPPD took 10 years to develop
• Public-Private Partnerships in developing applications is not smooth yet
  – Do we need to hire all those techies and specialized ICT skills?
  – How do we deal the culture of secrecy in government
• E-leadership capacity limited – change management