eTransform Africa: Modernising Government through ICTs

Transformation-Ready: The strategic application of ICTs in Africa

Date: 1 March 2012
# eTransform Africa: Modernising Government through ICTs

## Table of Contents

### Executive Summary

### Acronyms and Abbreviations

1. **Introduction** ................................................................. 8
   1.1. Objectives of the study ................................................. 8
   1.2. Coverage of the studies .............................................. 8
   1.3. The importance of public service delivery ...................... 9
   1.4. Commitment to excellence in public service delivery ........ 11
   1.5. Accountability, transparency, citizen collaboration and interaction ........................................ 11
   1.6. ICTs and social democracy ............................................ 12
       Participatory forums for citizens ................................... 12
       Social media .................................................................. 13
       Internet and its consequences ...................................... 13
   1.7. Convenience and efficiency in service delivery .............. 14
       e-Government .................................................................. 14
       Beyond workflows .......................................................... 14
       Stakeholder segmentation and multi-channel service delivery ................................... 15
   1.8. Reform and re-engineering of government ...................... 15
       Re-engineering organisations and processes .................. 15
       Legal foundations for public services delivery .............. 16
   1.9. Exploiting technological advancements to meet service delivery objectives ....................... 17
       Cloud computing ......................................................... 17
       Mobile devices ............................................................ 18
       Biometrics ................................................................ 22
       Locating the trends within the Gartner hype-cycle .......... 22
   1.10. Modernising government by embracing new ICTs .......... 24
   1.11. A comprehensive public service delivery framework .... 26
   1.12. Examples covered in the chapters that follow ............. 28
2. **Landscape Analysis** .......................................................... 31
   2.1. Commitment to excellence in public service delivery .... 31
       Policies and plans for e-Government ............................... 31
   2.2. Accountability, transparency, citizen collaboration and interaction .................................. 33
       Transparency portals and open data .................................. 33
       Legislation ................................................................ 34
       Public service monitoring and evaluation ...................... 35
       Possibilities of scaling up the ventures ......................... 36
   2.3. ICTs as a means of extending social democracy ............ 37
       e-Participation and social media .................................... 37
   2.4. Convenience and efficiency in service delivery ........... 38
       Multi-channel service delivery ...................................... 38

---

List of Tables and List of Figures
2.5. Reform and re-engineering of government .......................................................... 41
Institutional frameworks for e-Government ............................................................. 41
BPR for service delivery ......................................................................................... 43
2.6. Exploiting technological advancements to meet service delivery objectives .......... 43
Cloud computing ................................................................................................... 43
Mobile Applications .............................................................................................. 43
Multiple platforms and channels ......................................................................... 44
Biometrics .............................................................................................................. 44
2.7. Conclusion .......................................................................................................... 45
3. Africa Scan ............................................................................................................ 46
3.1. Introduction ........................................................................................................ 46
3.2. Commitment to excellence in public service delivery ........................................ 46
Regional approach to implementing e-Government ................................................ 46
3.3. Accountability, transparency, citizen collaboration and interaction ...................... 50
3.4. ICTs as a means of extending social democracy ................................................ 53
e-Participation ........................................................................................................ 53
Social Media .......................................................................................................... 55
3.5. Convenience and efficiency in service delivery ................................................... 57
Governments’ online presence .............................................................................. 57
Multi-channel service delivery .............................................................................. 59
National identity systems ...................................................................................... 59
3.6. Reform and re-engineering of government .......................................................... 63
ICT to create and support to support collaborative networks .................................. 64
3.7. Exploiting technological advancements to meet service delivery objectives ...... 69
3.8. Summary of Africa Scan cases .......................................................................... 70
3.9. Conclusion .......................................................................................................... 72
4. Case Studies ......................................................................................................... 73
4.1. Chapter overview ............................................................................................... 73
4.2. Where do these examples fit in regarding the classification of ICT-enabled public service delivery systems? ................................................................. 74
4.3. Methodology ...................................................................................................... 74
4.4. Reform and re-engineering of government ........................................................ 75
Case study: Malawi’s integrated financial Management Information System (IFMIS) .... 75
4.5. Convenience and efficiency in service delivery ................................................... 85
Case study: South Africa’s eFiling system ............................................................... 85
4.6. Conclusion .......................................................................................................... 98
5. Recommendations ............................................................................................... 99
5.1. Opportunities and challenges related to ICT-based public sector transformation in Africa .... 99
5.2. Purpose of the recommendations .................................................................... 100
5.3. Recommendations to policy-makers and regulators ......................................... 100
5.4. Recommendations to the donor community ..................................................... 107
5.5. Conclusion ........................................................................................................ 110
6. Bibliography ........................................................................................................ 111
List of Tables

Table 1: Benefits from Cloud Computing
Table 2: Mobile Technologies, their Advantages and Limitations
Table 3: Requirements of Citizens and Administration for ICT-enabled Public Service Delivery
Table 4: ICT-Enabled Public Service Delivery Framework
Table 5: Examples that will be Discussed in the Chapters that follow
Table 6: Common SMS-based applications in the Philippines
Table 7: Institutional Models for e-Government
Table 8: Themes, Aspects and Examples
Table 9: An Analysis of Key Africa Scan Cases
Table 10: Malawi’s IFMIS and the Modernising Government Trends
Table 11: Incentives to File Electronically
Table 12: Africa’s eFiling and the Modernising Government Trends

List of Figures

Figure 1: The Negative Vicious Cycle of Ineffective Service Delivery
Figure 2: The eParticipation Continuum
Figure 3: Offerings from Cloud Computing
Figure 4: Hype Cycle for Government Transformation 2011
Figure 5: The Timor-Leste Transparency Portal
Figure 6: Learnings from a Readiness Assessment Exercise conducted
Figure 7: International Connectivity Links Supporting Malawi
Figure 8: Modernisation Approach of SARS
Figure 9: Screenshot of the SARS eFiling System
Executive summary

Public sector reform is considered core to the potential for sustained economic development in Africa. In this report specific opportunities and challenges in the public services sector in Africa have been studied that have potential to be addressed through an increased or more efficient use of ICT. This study contains a review of trends illustrated by examples from all parts of the world, a collection of many examples of ICT applications in the public services sector in Africa, followed by a more detailed study of Malawi’s Integrated Financial Management Information System (IFMIS) and South Africa’s e-Filing System. Recommendations follow.

ICT-enabled service delivery trends can be grouped into five main categories, although there is some overlap between them.

A. Political and executive commitment to service delivery
There is now a much greater commitment from political and executive levels to improving service delivery with both groups seeing a stake in it. Two points contribute to this; (a) Emphasis on service delivery in public administration - public administration now focuses efficiency, effectiveness and the satisfaction of clients as a business corporation would and, therefore, uses business-like techniques (b) Political stake in success of service delivery - political leaders now assume that improved service delivery will be attributed to their efforts.

B. Unprecedented emphasis on citizen convenience in service delivery
As societies become more democratic and awareness levels among citizens increase, public service delivery agencies now emphasize citizen-centric service delivery. This is achieved by amending processes and workflows. As a result bureaucratic structures are being replaced by a more flexible consumer-oriented organization that require citizens only to know the service they are seeking and not the processes they must follow.

The communication and information sharing features of ICT means that the functional and geographic boundaries of units and organizations become open. Data-coupling and data-mining techniques enable policy-makers to acquire a better insight into citizens’ situations, which, in turn, facilitate better targeting of policy programmes and tailor-made services.

C. Revamping organisational and legal support structures
Government agencies are re-orienting their internal operations and structures to support service delivery and are strengthening the legal foundations to achieve this goal.

D. Exploiting technological advancements to meet service delivery objectives
As advancements in ICT unfold, it is becoming clear that they can assist service providers and service seekers to meet service delivery objectives. New technologies often have unexpected consequences and this means that groups who did not originally see reasons to adopt that ICT subsequently find that it is important that they meet the new challenges. Web 2.0 technologies, including social media, have created a challenge that public service providers need to counter.
Falling costs of mobile devices, rapidly increasing coverage of mobile networks, pre-paid tariffs, text-based communication options and the ever-increasing number of mobile applications have meant that those who were earlier on the wrong side of digital divide can now cross over. In fact, mobile penetration rates have risen very rapidly in Africa compared to Internet or PC penetration rates. This offers important new opportunities to improve communication between government and the individual and the public service sector must capitalise on it.

E. Using collaborative arrangements and citizen participation to meet service delivery objectives

New technologies facilitate collaboration between people that are not necessarily near to one another in terms of distance. This includes collaboration between public service agencies, within those agencies and with individuals. Interaction between service delivery stakeholders now often creates synergy and service seekers, service providers and service facilitators can all benefit. The Internet can be used as a platform to rally public opinion and generate advocacy of issues. Public agencies, including electoral contestants, are making use of ICT, especially the Internet, to enlist participation from their constituencies.

Examples of existing initiatives illustrating the five trends are given in Chapters 3 and 4. Cloud computing and mobile devices are identified as new and evolving technologies that are likely to particularly change the face of public service delivery. In Chapter 4, three applications were highlighted as having particular importance, namely national identity systems, ICT to create and support collaborative networks and examples of governments’ online presence.

An ICT-Enabled Public Service Delivery Framework is presented consisting of three tiers which are mutually dependent. All three tiers need to be up to standard if final service levels are to achieve the required quality. The tiers are:

- Foundational tier: performance monitoring, legal and quasi-legal, institutional structure
- Enabling tier: organizational capability, procedures and processes, systems and technologies
- Delivery Tier: service delivery, external communication, front office or citizen interface

This framework highlights the pressing need in Africa for a holistic approach to the use of technology for service delivery, as the foundational tier (legal, institutional, monitoring and evaluation) and the enabling tier (largely related to human capital, processes and structures in addition to ICT) are still not addressed in an integrated manner as part of ICT-enabled public sector reform processes. The two cases studied in detail in chapter 5 emphasise this point. The IFMIS system from Malawi illustrates the need for reliable, effective and efficient underlying (back office) systems, which are primarily at the enabling tier level. This system is not overtly citizen-centric, but was chosen to highlight the importance of traditional transaction processing systems as well as the challenges that the development of these systems still poses to the public serves sector in Africa. Transparent and accountable public service delivery cannot be achieved without reliable back office systems and the largest part of ICT resources are still invested in this component of technology. The second case, eFiling in South Africa is an example of a system that has a
cutting-edge Internet delivery tier (front office) that is citizen-centric, but is integrated with a very reliable back office system.

The report recommends the following principles to be applied in the pursuit of ICT-enabled public sector reform: (1) Citizen-centric approaches imply a collaborative approach between government and citizens as equal partners; (2) Public sector transformation initiatives involving ICT should always be approached holistically, i.e. with adequate consideration for institutional, legal, process, structural and human dimensions in addition to ICT.

Specific recommendations for regulators and policymakers include (1) New organisational and legal support structures; (2) National identification systems; (3) Address socio-economic divides and digital divides; (4) Recognise the power of social media; (5) Economies of scale need to be exploited

Specific recommendations for donor agencies include: ((1) Expand support for citizen-centric initiatives using Web 2.0 and social media technologies; (2) Pilot cloud computing for support of independent election monitoring organisations; (3) Support development of technology platforms for completely anonymous whistle-blowing for exposing corruption in the public sector; (4) Create collaborative incubation spaces for development of innovative technical solutions for application in the public service sector; (5) Capacity building programmes for Open Data projects; (6) Empower public sector workers in rural areas through promotion of adoption and use of mobile resources.

Acknowledgements

Deloitte Consulting has been selected by eTransform Africa, a partnership between the World Bank (WB) and the African Development Bank (ADB), with the support of the African Union (AU) to participate in the production of a new flagship report on how information and communication technologies (ICTs), have the potential to change fundamental business models in the key African sectors.

Deloitte was selected to conduct a study that relates to the strategic application of ICTs in Africa in the delivery of public services.

eTransform Africa intends to raise awareness and stimulate action among various stakeholders including African Governments, development practitioners and private sector participants on how the use of certain ICTs can generate new opportunities in certain sectors with concomitant development of realistic implementation frames and sustainability measures.

A project initiation meeting was held with project representatives of Deloitte Consulting, the WB, the ADB and the AU in February 2011 in Nairobi, Kenya. Subsequently a peer review meeting was held with various stakeholders in Johannesburg, South Africa in June 2011.
# Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>African Development Bank</td>
</tr>
<tr>
<td>AFIS</td>
<td>Automatic Fingerprint Identification System</td>
</tr>
<tr>
<td>ATMs</td>
<td>Automatic Teller Machines</td>
</tr>
<tr>
<td>AU</td>
<td>African Union</td>
</tr>
<tr>
<td>Be Strong</td>
<td>Botswana’s e-Government Service Transformation, Reform, Organisational and Network Governance</td>
</tr>
<tr>
<td>BPR</td>
<td>Business Process Re-engineering or Redesign</td>
</tr>
<tr>
<td>CAC</td>
<td>Community Access Centre</td>
</tr>
<tr>
<td>CIDA</td>
<td>Canadian International Development Agency</td>
</tr>
<tr>
<td>CIO</td>
<td>Chief Information Officer</td>
</tr>
<tr>
<td>CME</td>
<td>Continuing Medical Education</td>
</tr>
<tr>
<td>CMT</td>
<td>Common Measurements Tool</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
</tr>
<tr>
<td>EICTDA</td>
<td>Ethiopian ICT Development Agency</td>
</tr>
<tr>
<td>EMIS</td>
<td>Education Management Information System</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FMIS</td>
<td>Financial Management Information System</td>
</tr>
<tr>
<td>FOSS</td>
<td>Free and open-source software</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GNI</td>
<td>Gross national income</td>
</tr>
<tr>
<td>GSM</td>
<td>Global System for Mobile Communications, originally <em>Groupe Spécial Mobile</em></td>
</tr>
<tr>
<td>ICCS</td>
<td>Institute for Citizen-Centred Service</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>ICT4D</td>
<td>ICT for Development</td>
</tr>
<tr>
<td>ICT4RD</td>
<td>ICT for Rural Development</td>
</tr>
<tr>
<td>IFMIS</td>
<td>Integrated Financial Management Information System</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>IPMS</td>
<td>Integrated Patient Management System</td>
</tr>
<tr>
<td>ISP</td>
<td>Internet Service Provider</td>
</tr>
<tr>
<td>Kpbs</td>
<td>Kilo Bits Per Second</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>Mbps</td>
<td>Mega Bits Per Second</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
</tr>
<tr>
<td>MIC</td>
<td>Government of Japan’s Ministry of Internal Affairs and Communication</td>
</tr>
<tr>
<td>National ID system</td>
<td>National Identification system</td>
</tr>
<tr>
<td>NDP</td>
<td>National Development Plan</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Government Organisation</td>
</tr>
<tr>
<td>NICTSP</td>
<td>National ICT Strategic Plan</td>
</tr>
<tr>
<td>NPO</td>
<td>Non-Profit Organisation</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OMA</td>
<td>Offices, Ministries and Agencies</td>
</tr>
<tr>
<td>PAYE</td>
<td>Pay As You Earn</td>
</tr>
<tr>
<td>PC</td>
<td>Personal computer</td>
</tr>
<tr>
<td>PEFA</td>
<td>Public Expenditure and Financial Accountability</td>
</tr>
<tr>
<td>PFM</td>
<td>Public Financial Management</td>
</tr>
<tr>
<td>PIAP</td>
<td>Public Internet Access Points</td>
</tr>
<tr>
<td>PIT</td>
<td>Personal Income Tax</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnerships</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SARS</td>
<td>South African Revenue Service</td>
</tr>
<tr>
<td>SIM (card)</td>
<td>Subscriber Identity Module or Subscriber Identification Module</td>
</tr>
<tr>
<td>SMS</td>
<td>Short Message Service</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>VC</td>
<td>Video Conferencing</td>
</tr>
<tr>
<td>VOIP</td>
<td>Voice Over Internet Protocol</td>
</tr>
<tr>
<td>VPN</td>
<td>virtual private network</td>
</tr>
<tr>
<td>VSAT</td>
<td>very-small-aperture terminal</td>
</tr>
<tr>
<td>WAMZ</td>
<td>West African Monetary Zone</td>
</tr>
<tr>
<td>WAN</td>
<td>Wide Area Network</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WCO</td>
<td>World Customs Organisation</td>
</tr>
<tr>
<td>WOUGNET</td>
<td>Women of Uganda Network</td>
</tr>
</tbody>
</table>
1. Introduction

1.1. Objectives of the study

The main objective of the study is to take stock of emerging uses of ICT across sectors and of good practices in Africa and in other countries, including how ICTs are changing business models in the strategic public service sector. This study will look at the contribution of ICTs to this information sensitive sector. The public service sector impacts significantly on the well-being of the people of Africa and indirectly on the stability of the African economy and individual national governments and technology that can improve its functioning is, therefore, worthy of attention.

Associated objectives of the study are to:

- Identify key ICT applications that have had significant impact in Africa or elsewhere.
- Identify constraints that have a negative impact on ICT adoption and scaling-up of potentially effective models.
- Develop a common framework for providing support in ICT for development to countries that brings together the operations of the two bank groups and their respective departments in relation to the findings of the in-country studies.

1.2. Coverage of the studies

The study aims to cover the following:

Identify specific opportunities and challenges in Africa that can be addressed with an increased or better use of ICT. Constraints that are hindering ICT uptake and scale-up will be examined within the context of the public service sector, including human capacity in IT skills and sustainable business models such as public private partnerships (PPP).

- Undertake a quick scan of ICT applications in the sectors and identify applications with significant impact in Africa or elsewhere and that have the potential of being scaled up.
- Analyse and understand the barriers to the greater adoption and mainstreaming of ICTs.
- Analyse and understand the enabling factors of success, including political, economic, policy, institutional, human, financial and operational factors.
1.3. The importance of public service delivery

Public service may be defined as all activities delivered by the government to fulfill those needs that society requires to go through life.

Since the 1980s when public administration had an overwhelmingly protective role, there has generally been a progressive disengagement of the state from various sectors of activity with focus now concentrated on key sectors like health, social security, employment and justice. It is widely felt today that public administration must not only deliver fewer services, but must also do so efficiently (1).

The following trends (2) are evident and will be used as broad categories in the discussions that follow:

A. Commitment to excellence in public service delivery
B. Accountability, transparency, citizen collaboration and interaction
C. ICTs as a means of extending social democracy
D. Convenience and efficiency in service delivery
E. Reform and re-engineering of government
F. Exploiting technological advancements to meet service delivery objectives

Figure 1: The Negative Vicious Cycle of Ineffective Service Delivery
ICTs and the cycle of public services delivery

ICT-enabled public service delivery, if implemented effectively, can improve access to public services, increase efficiency, transparency and accountability of government and political processes and empower citizens by enabling them to participate in the decision-making processes of governments.

Telecommunications and ICT play a vital role as catalysts for sustainable economic development and growth. A World Bank study has shown that every 10% increase in broadband penetration boosts GDP by an average of 1.3% and every 10% increase in mobile teledensity results in a 0.7% increase in the Gross Domestic Product (GDP) of a nation (70).

Ineffective service delivery

Problems that hamper efficient service delivery commonly include inadequate targeting of the poor, supply-driven planning, elitist selection of programmes, an inadequate voice for the poor and their inability to reach the government and service providers. Figure 1 represents the typical vicious cycle in which service delivery is often trapped, particularly in developing countries (68).

Infrastructural investments provide a very clear entry point through which to break this vicious cycle. ICTs represent an integral part of this investment and, when operational, will transform this vicious cycle into a virtuous one, bringing increased accountability and transparency and clear benefits to citizens through efficient service delivery. When citizens see the benefits, demand will also pick up and employees will be motivated as government revenue increases, prompting more such investments in the future.

Necessary but insufficient tool

ICTs, however, cannot miraculously turn bad governance into good, although they can be used as tools under the right conditions and circumstances to effectively reach out to communities as part of the reform process (68).

ICTs are therefore necessary but insufficient as a solution. Associated factors, like pro-poor policies, decentralized decision-making reform, education, basic infrastructure and political will, are all prerequisites for effective service delivery. Insufficient fulfilment of these conditions will likely lead to inadequate outcomes.
1.4. Commitment to excellence in public service delivery

There is now a much greater commitment from political and executive levels to improving service delivery with both of them seeing a stake in it. Public administration is now being conceptualized and managed as a business corporation with focus on service delivery. New public managers think public administration must be managed with business-like techniques. Even policing is taken to be a public service. Administration must, therefore, be assessed by the criteria of quality, efficiency and the satisfaction of clients.

Political leaders assume that improved service delivery would be attributed to their efforts. Therefore, since a possible trust deficit exists regarding politics and political leaders and this could be bridged by improving service delivery, political leaders believe they could benefit from an improvement of service delivery.

1.5. Accountability, transparency, citizen collaboration and interaction

Accountability and Transparency

“Transparency is one of the central pillars of effective regulation, supporting accountability, sustaining confidence in the legal environment, making regulations more secure and accessible, less influenced by special interests, and therefore more open to competition, trade and investment. It involves a range of actions including standardised procedures for making and changing regulations, consultation with stakeholders, effective communication and publication of regulations and plain language drafting, codification, controls on administrative discretion, and effective appeals processes. The contribution of e-Government to improve transparency, consultation and communication is of growing importance.” (3)

Bilateral communication is necessary between governments, citizens and other stakeholders such as donors. However, this cycle needs to start with governments providing timely, comprehensive information on their activities, expenditures and policies, so that informed debate between all the parties can ensue (4). In order to provide credible information, governments need to have demonstrably well-functioning information systems, and in particular financial management information systems that accurately reflect these activities, expenditures and policies and can be used with confidence in evaluating public service performance.

As Richard Heeks points out, “Transparency is a necessary part of accountability but … it is not the same as accountability. To hold a public servant accountable, you must first find out information about that public servant's decisions and actions (transparency), but you then must go further if you are actually to hold them to account for their decisions and actions. That further step - accountability - involves more than just information. It may need action by the courts, by the media, by civil society organisations, or others with the power to hold public servants accountable. Transparency, then, is a first component of accountability.” (5)
At the heart of transforming public services is the need to engage more effectively with citizens and to ensure that they have both choice and voice. ICT can provide useful tools to improve public services and enable better user engagement. 

1.6. ICTs and social democracy

Service delivery stakeholders now often create synergy. Service seekers, service providers and service facilitators collaborate with one another in win-win-win arrangements.

![Figure 2 The e-Participation Continuum](image)

**Participatory forums for citizens**

Public agencies, even electoral contestants, are making use of ICT, especially the Internet, to enlist participation from their constituencies. This is not only so as to understand their requirements and to get feedback on services rendered but to also to eventually use the Internet as a platform to rally public opinion and generate advocacy of issues.

eParticipation has degrees of citizen involvement as shown in Figure 2. At the lowest level the citizen has access to information, which is not necessarily complete, and has no means of interacting with government. At the level of greatest citizen empowerment, government agents and actions can be effectively monitored and are held accountable and legal or other action may be taken by members of society to remedy any poor service.

- **Information** – One-way relationship in which citizens receive information from governments, civil society organisations and the like. Citizens, though informed, are viewed as users.
- **Consultation** – Two-way interaction such as forums, surveys, and polls which includes formulating opinions on issues already set out by government and active engagement in defining policy content.
- **Representation** – Presence of citizens within institutions where decision-making takes place which implies settings where citizens can set up the agenda and define the policy contents therein.
- **Volunteering** – includes settings wherein citizens could volunteer to be in policy making circles (for affirmative action, the most excluded and vulnerable can be called upon to participate).
- **Monitoring** – includes giving citizens the watchdog role where they monitor public policies and can evaluate public services.

For the 2008 municipal election in Cape Verde most contestants had websites to promote and share their ideas in order to garner voter support. Mobilising messages were sent regularly by Short Message...
Service (SMS) and email. Voters were even registered with the help of ICTs. Today, most government websites in Cape Verde allow citizens to interact with the government electronically. Tarrafal de S. Nicolau municipal authorities, for example, allow citizens to interact through a chat application.

Social media

There is a broad recognition that government information belongs to the people and technology is enabling a new wave of sharing this information. Some practical uses have already been identified and implemented in government, at state as well as local level. For example, with a tweet or text — potholes, broken street lights and other issues are being reported and fixed. The 311-Twitter service in San Francisco, has answered over 7 million calls and thousands of more requests online.

Politics and political discourses today are no longer limited to known, centralized locations the way they were previously. Governments face enormous challenges in monitoring people’s political opinion and stemming any sudden negative tides that emerge. Online networking and the exchange of information through social media encourage opinion building in ways over which governments have little control. No clear ways have emerged to handle this. While on the one hand policing social media would be seen to be undemocratic, giving it too much of leeway can threaten to upset the political and social order.

Internet and its consequences

Not only can the Internet be used to distribute government information, it can also be exploited for bidirectional communication. Anybody who can uniquely identify himself can participate in the debate. Web 2.0 technologies, including social media, have facilitated the emergence of virtual policy organizations. Connection between systems and infrastructures, facilitated by network technology, has led to a democratisation in cyberspace that can be observed in digital discussions on the Internet.

Public agencies should acknowledge the existence of social media and use it to their advantage. Some features that could be positively exploited by governments include:

- Social media as a platform of transparency;
- Social media as a platform for exchange of ideas and request for comments on government policies;
- Social media to handle crises; and
- Social media to build political opinion.

---

1 SMS is a text messaging service component of phone, web, or mobile communication systems.
1.7. Convenience and efficiency in service delivery

e-Government

As societies become more democratic and awareness levels among citizens increase, public service delivery agencies now place an unprecedented emphasis on citizen-centric service delivery. e-Government is one of the strategies that are being used to achieve these goals.

The East African Community (EAC) has defined e-Government as follows: “a situation in which administrative, legislative and judicial agencies (including both central and local governments) digitize their internal and external operations and utilize networked systems efficiently to realize better quality in the provision of public services” (Global Business Dialogue on Electronic Commerce).

Beyond workflows

Citizens demand that services are provided quickly and efficiently and they are not interested in the processes involved or where or by whom the service is delivered. Workflow, earlier adopted as a starting point for the organization of public service delivery, is no longer considered efficient from a citizen’s perspective. Citizens have in the past been confronted with complex organisations, comprising different departments and different civil servants in order to access a single service, often with slow and compartmentalized service delivery. Bureaucratic structures are now being replaced by a more flexible consumer-oriented organization that require citizens only to know the service they are seeking and not the processes they must follow. Hence one-stop shops are being created and organisational boundaries are being blurred. This means that public service systems need to be integrated, sharing data and authority so that, ideally, just one person can help the citizen. The communication and information sharing features of ICT means that the functional and geographic boundaries of units and

Public agencies are realising the additional value that collaborative delivery of public services would bring about, with collaboration taking place both within the boundaries of the broader public sector and beyond it. In particular, the following trends are evident:

- Collaboration between different agencies within the public sector
- Governments now realise that there are substantial economies of scale that can be realised by means of collaboration. From the erstwhile single-stage, single-service delivery regime governments are now moving towards multi-stage, multi-service delivery. One stop shops, unified portals, unified data centres and networks are increasingly becoming the norm.
- Collaboration with private organisations
- To increase efficiency in public services delivery while still retaining public sector sensitivities, governments are collaborating with private sector agencies and working out Public Private Partnership models that share risks, rewards and responsibilities between them.
- Collaboration with communities

---

Governments are also collaborating with citizens by eliciting their opinions regarding their requirements and requesting their feedback on services delivered. Crowd sourcing platforms are being used to elicit public opinion on how services must be delivered.

Reverse collaboration from governments to stakeholders
Reverse collaboration from governments to stakeholders outside the government is also a trend. Open data platforms are mushrooming all across the world including in Africa.

**Stakeholder segmentation and multi-channel service delivery**

Data-coupling and data-mining techniques enable policy-makers to acquire a better insight into citizens’ situations, which, in turn, facilitate better targeting of policy programmes and tailor-made services. Information collected for different purposes (tax, social security, population registration and so on) is combined and integrated. The starting point for service delivery thus becomes the citizens’ needs and preferences, instead of the requirements of a bureaucratic organization. This recognition of different groups of stakeholders also enables public agencies to deliver services to citizens over channels and devices that are most appropriate for them. Portals, information kiosks, call centres, mobile devices, conventional telephone and personal visits are common options available with citizens today.

**1.8. Reform and re-engineering of government**

**Re-engineering organisations and processes**

It is becoming clear that the key points of improved service delivery lie within the organisation; therefore, government agencies are re-orienting their internal operations and structures to support service delivery.

Government agencies have to reorganize their structures and processes in order to achieve quality, efficiency and the satisfaction of clients. As part of the re-orientation and re-organization of public administration to acquire a citizen focus and meet their needs and preferences, agencies are undertaking comprehensive Business Process Re-engineering and Organisation Re-design.

In addition, shared data centres are common in order to house the ever increasing volumes of data from several different government departments or ministries in secure facilities (the whole-of-government approach as used in Western Australia and announced in 2010) iii. This is a way of reducing both initial and operating cost as there are economies of scale while at the same time ensuring that all data is protected with standard access, backup and recovery procedures in place. Backup electricity suppliers are also needed for facilities of this sort as conventional data centres consume very large quantities of energy. Of course, excellent connectivity is required to make the data accessible to all users at all times

---


---

ETransform Africa: Modernising Government through ICTs

Page 15
in order to make service reliable. Further benefits include easy expansion and upgrade and optimal use of scarce skills\textsuperscript{iv}.

These data centres do not necessarily mean that the data is integrated into a single database with minimised redundancy that is referred to in “Beyond Workflows” above. This has a further set of requirements that require careful redesign. The separate sets of data usually have different formats, attributes are known by different names, may have different codes assigned, et cetera.

**Legal foundations for public services delivery**

Governments are taking legal measures to empower service delivery. Such legal pronouncements publically inform citizens which services are to be delivered electronically, when they will be available, the manner of delivery of such services and the grievance redress mechanism provided through an electronic route to any unsatisfied citizen. For example, the Electronic Service Delivery Bill, 2011, of India addresses electronic delivery of public services by the Government to enhance transparency, efficiency, accountability, accessibility and reliability and includes, among other things, setting up a comprehensive institutional apparatus to implement provisions of the statute \textsuperscript{(8)}.

\textsuperscript{iv} http://nitc.gov.np/index.php/ne/services.html
1.9. Exploiting technological advancements to meet service delivery objectives

As advancements in ICT unfold, it is becoming clear that they can assist service providers and service seekers to meet service delivery objectives. This section covers some new technologies and ways in which public sector agencies gain from them.

**Cloud computing**

Cloud computing is a broad term for methods that deliver infrastructure, services and software via a network, on demand and on a large scale. Cloud computing can change the way governments access and use ICT products and services. Instead of owning and managing ICT products and services, organizations employing cloud computing services can meet their ICT requirements using a flexible, on-demand and rapidly scalable model requiring neither full ownership on their part, nor provision of dedicated resources by the cloud services provider\(^9\). Figure 3 describes some of the cloud offerings available in the marketplace today.

**Benefits from cloud computing**

The advantages of cloud computing (Table 1) may be even more pronounced in developing countries that have not yet achieved high levels of public sector computerization, lack people with adequate ICT skills, or do not have firm legal or cultural requirements regarding data security and privacy. Cloud computing may enable them to leapfrog a whole generation of government computing, bypassing many costly challenges.

![Figure 3 Offerings from Cloud Computing](image-url)
Table 1: Benefits from Cloud Computing

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings in cost</td>
<td>Reduce ICT capital and on-going operating expenditures by paying only for services.</td>
</tr>
<tr>
<td>Implementation</td>
<td>No buying of hardware, software or implementation services; deploy cloud rapidly.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Flexibility in matching ICT resources to business; increase staff mobility by enabling access to business applications from a range of locations and or devices.</td>
</tr>
<tr>
<td>Scalability</td>
<td>Can add and subtract capacity as the network load requires.</td>
</tr>
<tr>
<td>Access to best of breed</td>
<td>Can allow access to higher-calibre hardware, software and ICT staff than the organisation can normally attract and or afford.</td>
</tr>
<tr>
<td>Redeploy staff</td>
<td>Can focus ICT staff on higher-value tasks.</td>
</tr>
<tr>
<td>Core competencies</td>
<td>Easier to reduce non-core functions, allowing the organisation to concentrate on the development of policy and the design and delivery of public services.</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Cloud service providers consume far less energy and other resources than traditional data centre operators.</td>
</tr>
</tbody>
</table>

**Challenges of cloud computing for government agencies**

Principal challenges include perceived threats to security, doubts regarding performance and availability, perceived issues on integration with in-house ICT, an impression that on-demand will cost more, regulatory requirements that are considered to prohibit cloud computing, an inadequate number of major suppliers, the lack of a ready ability to customize, the difficulty of bringing in-house staff back to an organisation, cost factors and creation of vendor lock-ins.

**Mobile devices**

ICTs present a great opportunity for the developing world to provide basic services (health, education, business and government) to rural communities and under-privileged populations. The recent explosion of mobile telephony in the developing world enhances this opportunity.

Recent technological advances are making it possible for more and more services to be delivered using mobile devices. A large part of what was earlier possible only using personal computers connected to the Internet can now take place on mobile devices. Falling costs of these devices, rapidly increasing coverage of mobile networks, pre-paid tariffs, text-based communication options and the ever-increasing number of mobile applications have meant that those who were earlier on the wrong side of digital divide can now cross over. In fact, mobile penetration rates have risen very rapidly in Africa compared to Internet or PC penetration rates.
Clear advantages of mobile phones for developing countries

Providing electronic services through mobile devices to citizens is an emerging trend and a new frontier in public service delivery offering the following advantages:\(^{(10)}\):

- **Reach** – there is high mobile phone penetration covering a large percentage of the population, including rural populations and the mobile network is steadily expanding. In Africa, mobile cellular penetration rates are estimated to have been 41% at the end of 2010\(^{(11)}\) with an Internet penetration of 9.6%. Mobile phones represent more than 90% of all telephone lines in Africa\(^{(12)}\).

- **Convenient accessibility and availability** – Citizens can use services not only “anytime” but anywhere that a network service is available.

- **Affordability** – With prepaid services having brought about a steady decline in tariffs and cheaper mobile handsets, it is relatively easy for the poor to afford mobile services. About half of Africa’s close to one billion people can now afford a mobile phone.

- **Easy to use** - Elderly and blue-collar workers who have no training or experience with computers and the Internet find mobile devices easier to learn to use than most other technologies.

- **Multiple functionality** – The convergence of data, voice and video and convergence of networks are making mobile devices adaptable to a range of needs of and services to citizens.

- **Applications** – there has been a rapid increase in the development and roll-out of mobile applications relevant to the needs of the citizens, often building on one of the simplest functionalities of mobile phones, SMS.

- **Gender neutral** – use of the mobile phone is gender neutral and women in Africa, who are often excluded, are getting benefits from mobile-based applications for public services.

- **Better precision and personalization in targeting users and delivering content** - Mobile devices are designed to be used by a single user. This means that more personalized information can reach the appropriate user, at any time, through that one specific device. However, in Africa there is a high incidence of shared use of mobile phones.

Limitations

The business model of mobile government has not yet been developed in a way that benefits all the stakeholders. Telecom operators can expect to gain very little by providing the low-cost connectivity and data required by the ordinary citizens if they are to use mobile technologies to access services and information provided by government. For example, simple SMS-enabled services do not generate much revenue for the mobile operators unless it is used in extremely high volumes. However, if these operators extend their enterprise business by co-developing applications and designing solutions they could benefit from mobile government\(^{(13)}\).
<table>
<thead>
<tr>
<th>SMS application</th>
<th>USSD</th>
<th>Voice applications</th>
<th>Mobile web</th>
<th>Mobile Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Most common way to provide eServices</td>
<td>• Real-time connection that remains open, allowing a two-way exchange of a sequence of data</td>
<td>• Easy to use for illiterate people</td>
<td>• Advantages</td>
<td>• Customisable, interactive and contains good graphics</td>
</tr>
<tr>
<td>• Need only to know the phone number associated with a service</td>
<td>• Faster than SMS</td>
<td>• Easy input mechanism</td>
<td>• Discoverabilities of services</td>
<td>• Opportunities exist for mobile apps to be developed by software developers in Africa and for this to become a new source of income</td>
</tr>
<tr>
<td>• Broadcast services are possible</td>
<td>• More reliable than SMS</td>
<td>• Low and predictable cost</td>
<td>• Operator independence</td>
<td>• In the “developed” countries, mobile apps have become very popular, very quickly, particularly for making secure mobile payments y.</td>
</tr>
<tr>
<td></td>
<td>• More secure than SMS</td>
<td>• Low network requirements</td>
<td>• Easy development of services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Menu based: easier and faster for end users than SMS</td>
<td>• Operator independence</td>
<td>• Easy hosting and deployment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Standardized application development</td>
<td>• Good user interface</td>
<td></td>
</tr>
<tr>
<td><strong>Limitations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Services not easy to discover</td>
<td>• Business model not well established for charging end users</td>
<td>• Services not easy to discover</td>
<td>• High cost of data access</td>
<td>• Difficult for those without credit cards to buy mobile applications.</td>
</tr>
<tr>
<td>• Application development not standardised</td>
<td>• Not as flexible as SMS</td>
<td>• High cost of application hosting</td>
<td>• Low availability of high-capacity networks and high-end handsets</td>
<td></td>
</tr>
<tr>
<td>• Large infrastructure needed to host or deploy services</td>
<td>• Information cannot be stored or shared</td>
<td>• Limited availabilities of languages</td>
<td>• Lack of appropriate content</td>
<td></td>
</tr>
<tr>
<td>• Limited user interaction</td>
<td></td>
<td></td>
<td>• User group specificities</td>
<td></td>
</tr>
</tbody>
</table>
### Uses in Africa

<table>
<thead>
<tr>
<th>Uses in Africa</th>
<th>Query the available balance on a prepaid cell phone; pay for additional air time; M-Pesa in Tanzania (but not in Kenya); Uganda M-Sente allows users to deposit, transfer and withdraw funds; CERCO, Benin Côte d’Ivoire, Mali and France has a website and a voice server to provide information in several languages. The voice server was set up to cater for illiterate parents of students.</th>
<th>CERCO, Benin Côte d’Ivoire, Mali and France has a website and a voice server to provide information in several languages. The voice server was set up to cater for illiterate parents of students.</th>
<th>African’s with Smart phones and who can afford the cost of data have the same access as others worldwide</th>
<th>Although the following mobile applications are not specific to the public service domain they could promote e-Participation and access to information.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>OperaMini is a web browser designed primarily for mobile phones. It reduces data costs by up to 90% and is offered free of charge.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MXit is a IM and social networking application with minimal cost.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>African centres for writing mobile apps: Ericsson Innovation centres in Kenya, Nigeria and South Africa; AppLab, Uganda; Nokia Research, Kenya</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community mapping apps (Ushahidi and Swift River)</td>
<td></td>
</tr>
</tbody>
</table>

| Table 2: Mobile Technologies, their Advantages and Limitations |

SMS applications, voice applications and Mobile web are used most frequently. Table 2 illustrates the main mobile technologies, their advantages and limitations from an Africa perspective.
Biometrics

Biometrics is the science of measuring, storing, comparing and matching biological data. In information technology, biometrics refers to technologies that can represent and record human body characteristics, such as DNA, fingerprints, eye retinas and irises, voice patterns, facial patterns and hand measurements, in large databases so that these can subsequently be used to identify people. Biometrics, in the form of recording and matching fingerprints, has been used by governments for more than 100 years (generally for police work) but the fact that no two humans have identical fingerprints has been known since at least 14th century.

In the last three decades biometrics has developed quickly assisted by advances in computing technology in terms of the faster processing and cheaper more compact storage that these very large databases / data warehouses require. Biometrics are now frequently used for in-house security (such as access to buildings) and commercial purposes.

Aadhaar in India

“By March 2012, the Unique Identification Authority of India is scheduled to possess the world's largest fingerprint (multi-modal biometric) system, with over 200 million fingerprint, face and iris biometric records. UIAI plans to collect as many as 600 million multi-modal record by the end of 2014. India's Unique Identification project is also known as Aadhaar, a word meaning "the foundation" in several Indian languages. Aadhaar is a voluntary program, with the ambitious goal of eventually providing reliable national ID documents for most of India's 1.2 billion residents.

With a database many times larger than any other in the world, Aadhaar's ability to leverage automated fingerprint and iris modalities (and potentially automated face recognition) enables rapid and reliable automated searching and identification impossible to accomplish with fingerprint technology alone, especially when searching children and elderly residents' fingerprints.”

From http://onin.com/fp/fphistory.html

Locating the trends within the Gartner hype-cycle

Only those trends that are specifically linked to technology can be linked to the Gartner 2011 hype cycle. As can be seen in Figure 4, Gartner locates various aspects of Cloud computing as still being between two and five years before mainstream adoption but are at the peak of the hype cycle. Open access to government data is also only predicted to become common in the next five years. Even consumer social networks in government are not expected to be widespread in the immediate future but are also at the peak of the cycle. All of these are close to, or just descending from “the peak of inflated expectations” which indicates that present expectations are unlikely to be realised in full.

Government shared services and government data interoperability are sliding into the trough but are still not part of mainstream government computing.
Figure 4 Hype Cycle for Government Transformation 2011

Source: Gartner (July 2011)
1.10. Modernising government by embracing new ICTs

Political leaders and public managers see the potential of ICTs in the following ways:

- **Services can be delivered more rapidly**: The possibility of processing and retrieving more information in less time with ICT allows increased quality and efficiency of service delivery. The speed of service also increases when the civil servant has real-time access to databases located in other units or organizations.

- **ICTs can be used to improve public access to service agencies**: Information kiosks and other access infrastructure facilitate a better access to public services. Citizens are able to apply electronically for permits or benefits without leaving their homes using convenient ICT channels. This improved access can stimulate the responsiveness of government and, in turn, governments will encourage and assist citizens to enhance their competences and skills.

- **New technologies are able to facilitate remote communication and transactions**: Using ICTs, distance is no longer a barrier for communicating with government agencies. New ways of communication and transaction between government and other stakeholders have already been developed using these new ICTs.

Basic elements of successful public service delivery include:

- **Friendly interface with service seekers** Create an interface that is convenient and gives the citizen a pleasant experience that he would like to come back to.

- **Sustain communication** Understand the citizen’s requirements and to allow him to evaluate public service delivery.

- **Set expectations** Minimise expectation mismatch, citizens must know what services parameters and principles are to be expected.

- **Process and organisation re-engineering** Undertake comprehensive BPR and organisation re-design efforts failing which public service delivery will at best be window-dressing.

- **Build staff capability to deliver services** Enhance staff capability to familiarize them with BPR, technology and customer service ethos.

- **ICT as a key enabler** Use ICT, as this is the only possible way to process and retrieve more information in less time and thereby increase the quality and efficiency of service delivery.

- **The legal foundational structure** Change the legal structure since improving service delivery by organisation and process reengineering must have the force of law behind it.

- **Dedicated institutional structures** A key requirement is creating dedicated institutional structures tasked with managing a sustained implementation of public services delivery.

- **Continued monitoring and evaluation** Monitoring and evaluation from both within and beyond public agencies are equally important.
Typically, two main stakeholders, the service providers (or the administration) and the service seekers\(^{\text{vii}}\) (citizens or communities), have requirements of public service delivery as elaborated in Table 3\(^{(6)}\).

<table>
<thead>
<tr>
<th>Service Seeker Requirements</th>
<th>Service Provider Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple access channels</td>
<td>Interoperability</td>
</tr>
<tr>
<td>Different means of accessing a service, so service seekers can use the most appropriate one. Enabled by separation of presentation layer from application layer.</td>
<td>Interoperability allows co-operation between heterogeneous, systems-independent platforms.</td>
</tr>
<tr>
<td>On-line information and services</td>
<td>Data restriction</td>
</tr>
<tr>
<td>Benefit from on-line eServices, any place any time. A few citizens may wish to get information manually.</td>
<td>The government agencies need to be able to give access to the data that citizens require.</td>
</tr>
<tr>
<td>Authenticity of e-Government application</td>
<td>Citizen authentication</td>
</tr>
<tr>
<td>Remain connected to e-Government application belonging to the administration in question.</td>
<td>The government administration must be able to authenticate a citizen asking for a service.</td>
</tr>
<tr>
<td>Privacy constraint</td>
<td>Administration authentication</td>
</tr>
<tr>
<td>The way the citizen provides information will be used (identity card number, salary, social security number) to restrict who will have access to it.</td>
<td>An administration should be able to authenticate another administration, which requires a service and to authenticate itself to others.</td>
</tr>
<tr>
<td>Data confidentiality</td>
<td>Requests integrity</td>
</tr>
<tr>
<td>Information sent by citizen must remain confidential. Data sent to the presentation layer must be encrypted.</td>
<td>The administration will have to be sure of the integrity of received requests, i.e. it checks that the integrity has not deteriorated.</td>
</tr>
<tr>
<td>Authentication</td>
<td>Filtered services access</td>
</tr>
<tr>
<td>Post the service electronically, the citizen must be able to prove the validity of digital documents through, for example, a digitally signed document.</td>
<td>Some administrations may have the right to invoke a service while others may not.</td>
</tr>
<tr>
<td>No wrong door</td>
<td>Data confidentiality</td>
</tr>
<tr>
<td>The service seekers should not be required to know which government agency is responsible for the service. Citizens must have a one-stop-shop.</td>
<td>The data contained in the application's data layer and in the exchange between the different administrations must remain confidential.</td>
</tr>
</tbody>
</table>

\(^{\text{vii}}\) Service Seeker is used to describe those who are seeking services including (a) private citizens who are seeking services in their individual capacities as citizens, (b) businesses who represent organisations privately owned and operated, (c) employees: staff and officials in their role as service seekers, for example when drawing their salaries.
### Service Seeker Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Service Provider Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear timelines</td>
<td>Focus on core competencies</td>
</tr>
<tr>
<td>Time lines in obtaining services from government agencies should be clear.</td>
<td>BPR exercise must be performed and lead to officials concentrating on core competencies. Activities better performed by private agencies must be performed by them.</td>
</tr>
<tr>
<td>Complaint resolution</td>
<td>Cost-effective service provision</td>
</tr>
<tr>
<td>Should the service delivery parameters that were promised be breached, citizen must know what recourse, legal or otherwise, is available and within what time frame complaints can be addressed.</td>
<td>Service provision must be cost-effective when compared with the manual provision. Break-even point for ICT investments must be known.</td>
</tr>
<tr>
<td>Reduced cost of availing services</td>
<td>Commensurate skill base</td>
</tr>
<tr>
<td>ICT-enabled means of obtaining services should offer value for money. Must lead to a reduced cost of service, besides added convenience.</td>
<td>Related up-skilling or re-skilling exercises so that officials have the competencies required that they would be held accountable for.</td>
</tr>
</tbody>
</table>

Table 3: Requirements of Citizens and Administration for ICT-enabled Public Service Delivery

### 1.11. A comprehensive public service delivery framework

Following the description of the essential elements provided in 1.10 above, Table 4 (below) describes a comprehensive framework for service delivery in three distinct tiers:

- **Service Delivery Tier** as the tier that is in direct contact with the service-seeker
- **Enabling Tier** as the tier that enables efficient and effective delivery of services
- **Foundational Tier** as the tier that constitutes the core foundations for service delivery.

The service delivery framework presented in Table 4 reflects different components of service delivery that public sector agencies must take into account when they endeavour to extend and design public services. However, this does not mean that any single project must necessarily include all these components. Successful public service delivery by governments often takes place through a suite of interventions each of which gives primacy to different components but, taken together, they make up the entire framework.

For example, a particular project or intervention could focus on setting up the institutional framework that would take ownership of service delivery while another initiative could focus on the process and organisation re-engineering and subsequent technology enablement and a third could concentrate on setting up the citizen-facing service delivery infrastructure.
<table>
<thead>
<tr>
<th>Foundational Tier</th>
<th>Performance Monitoring</th>
<th>Legal and Quasi-legal</th>
<th>Institutional Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Well-defined service objectives</td>
<td>• Codified laws and rules in conformity with processes</td>
<td>• Dedicated institutional structure for service delivery</td>
</tr>
<tr>
<td></td>
<td>• Monitoring and evaluation indicators</td>
<td>• Flexibility to enact rules for enhancing service delivery</td>
<td>• Appropriately skilled and empowered</td>
</tr>
<tr>
<td></td>
<td>• Monitoring mechanism</td>
<td></td>
<td>• Clear responsibilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enabling Tier</th>
<th>Organizational Capability</th>
<th>Procedures and Processes</th>
<th>Systems and Technologies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Organizational staff strength</td>
<td>• Re-engineered and standardized processes</td>
<td>• Integrated data structures</td>
</tr>
<tr>
<td></td>
<td>• Staff capability-rules, process and technology</td>
<td>• Clearly defined role allocations</td>
<td>• Standardized applications</td>
</tr>
<tr>
<td></td>
<td>• Capability-customer service</td>
<td>• Well-defined timelines and platforms</td>
<td>• Omnipresent networks</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tier</th>
<th>Service Delivery</th>
<th>External Communication</th>
<th>Front Office or Citizen Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Service delivery principles</td>
<td>• Regular awareness sessions</td>
<td>• Front office, ambience or infrastructure</td>
</tr>
<tr>
<td></td>
<td>• Service delivery parameters</td>
<td>• Institutionalized customer feedback</td>
<td>• Service delivery channels</td>
</tr>
<tr>
<td></td>
<td>• Redress or escalation mechanisms</td>
<td>• Consultative mechanisms</td>
<td>• Helpdesk features</td>
</tr>
</tbody>
</table>

Table 4: ICT-Enabled Public Service Delivery Framework.
1.12. Examples covered in the chapters that follow

<table>
<thead>
<tr>
<th>A. Commitment to excellence in public service delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Africa</strong></td>
</tr>
<tr>
<td>Examples</td>
</tr>
<tr>
<td>The National ICT Strategic Plan for Mauritius</td>
</tr>
<tr>
<td>e-Government readiness for Namibia</td>
</tr>
<tr>
<td>Government-on-line, Botswana</td>
</tr>
<tr>
<td>e-Government strategic plan Tunisia</td>
</tr>
<tr>
<td><strong>Rest of the World</strong></td>
</tr>
<tr>
<td>e-Government in Singapore</td>
</tr>
<tr>
<td>Common Measurements Tool-Government of Canada.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Accountability, transparency, citizen collaboration and interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Africa</strong></td>
</tr>
<tr>
<td>Nigerian elections</td>
</tr>
<tr>
<td>Kenyan Open Data initiative</td>
</tr>
<tr>
<td>AngoNet</td>
</tr>
<tr>
<td><strong>Rest of the World</strong></td>
</tr>
<tr>
<td>• Right to Information Act, 2005 (India)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. ICTs as a means of extending social democracy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Africa</strong></td>
</tr>
<tr>
<td>Burkina Faso - The Aden Project</td>
</tr>
<tr>
<td>Burkina Faso - Portal of Central Directorate for Public Contracts</td>
</tr>
<tr>
<td>Cape Verde - Maison du Citoyen(Citizens’ Centre) and Associated Services</td>
</tr>
<tr>
<td><a href="http://www.Abidjan.net">www.Abidjan.net</a> launched by Ivoirian Diaspora</td>
</tr>
<tr>
<td>The South African government; I-Network, Uganda</td>
</tr>
</tbody>
</table>

eTransform Africa: Modernising Government through ICTs
Moroccan youth movements; ICTs and the Arab Spring. | Social media to build opinion among masses

Ushahidi, Kenya | Social media to handle crises

Rest of the World

Challenge.gov in U.S.; The Israeli Consulate in New York City; The President of Rwanda, Paul Kagame, | Social media as a platform for exchange of ideas and request for comments on government policies

The US and UK embassies in Tripoli; Israel about the situation in Gaza (7); The Canadian Government Connect2Canada (7). | Social media to handle crises

Philippines | Social media for "word of mouth" information

### D. Convenience and efficiency in service delivery

<table>
<thead>
<tr>
<th>Examples</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Africa</strong></td>
<td></td>
</tr>
<tr>
<td>Government Portal Project, Angola; Government-on-line, Botswana; Rwanda Development Gateway Group</td>
<td>One-stop-shop</td>
</tr>
<tr>
<td>The Women of Uganda Network; The Chipata District Women’s Development Association Zambia</td>
<td>Promotes ICT use and shares information on family and the wellbeing of women</td>
</tr>
<tr>
<td>ICT4RD, Tanzania</td>
<td>Stimulation of entrepreneurship</td>
</tr>
<tr>
<td>Nteletsa Botswana; Kitsong centres, Botswana; Knowledge sharing initiatives, Egypt; Marwan Project, Morocco; Community Multimedia centres, Mozambique; eBrain, Zambia</td>
<td>Community centres, telecommunications services to remote communities; knowledge sharing</td>
</tr>
<tr>
<td>eFiling, South Africa</td>
<td>Filing of tax returns via the Internet</td>
</tr>
<tr>
<td><strong>Rest of the World</strong></td>
<td></td>
</tr>
<tr>
<td>SMS-based service in the Philippines</td>
<td>Citizen Feedback, Information Dissemination, Service Delivery</td>
</tr>
<tr>
<td>Jalgaon District in e-lokshahi project</td>
<td>Provides an opportunity for people to interact with the authorities regardless of where they are.</td>
</tr>
</tbody>
</table>
### E. Reform and re-engineering of government

<table>
<thead>
<tr>
<th>Africa</th>
<th>Examples</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Capacity Building, Government of Ethiopia; Government of Namibia</td>
<td>Tailor BPR exercises for public sector ICT enablement vital for success of BPR Instil trust in employees and remove insecurity of BPR BPR are different for different organisations</td>
<td></td>
</tr>
<tr>
<td>In the Ethiopia’s WoredaNet; GCNet in Ghana; iNetwork in Uganda</td>
<td>Systems intended to facilitate collaboration</td>
<td></td>
</tr>
<tr>
<td>Malawi: IFMIS</td>
<td>Sound financial systems are a prerequisite for transparency and accountability</td>
<td></td>
</tr>
</tbody>
</table>

### F. Exploiting technological advancements to meet service delivery objectives

<table>
<thead>
<tr>
<th>Africa</th>
<th>Prominent examples of mobiles for service delivery in Africa.</th>
<th>SMS-based service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana; Somalia; Moroccan eFez programme</td>
<td>National ID systems and recording life events using biometrics</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rest of the World</th>
<th>Philippines</th>
<th>SMS-based service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia, the NSW Department of Education and Training; Canada, Ontario Centres of Excellence; Washington D.C., all city government and the U.S. General Services Administration; The Government of Japan’s Ministry of Internal Affairs and Communications (MIC)</td>
<td>Cloud computing</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Examples that will be discussed in the chapters that follow

The examples from Africa in Table 5 are described in the Africa Scan and Deep Dive case studies and (and where indicated by * in more detail in the Annexure). The Rest of the World examples are described in Chapter 2.
2. Landscape Analysis

In this chapter, case studies selected for their global application and potential for replication in the African context have been grouped according to the overall trend to which they belong from among the six trends highlighted earlier. The aspects (subsections within the themes used in Chapter 1) will also be used again to emphasise aspects.

2.1. Commitment to excellence in public service delivery

Policies and plans for e-Government

The Open Government Partnership (OGP) was launched in September, 2011 with Brazil, Mexico, Indonesia, Norway, the Philippines, South Africa, the United Kingdom and the United States as founding members. These eight nations made specific and measurable commitments to open government supported by individual national plans. A further 41 countries have undertaken to develop their own national plans by May 2012. The plans published by the first eight nations include specific action that the briefing categorises under: publishing information regarding government expenditures and budgets, improving access to information laws, harnessing information technology, improving means by which the public can participate in government, improve corporate accountability outside the public sector.

Integrated, national e-Government plans founded on policies have been followed by many countries across the world. Not only do such plans convey to the stakeholders an unmistakable commitment from the country’s topmost leadership levels, they also require buy-in by internal and external stakeholders whose involvement would be required during their implementation. National plans are also often instrumental in making the implementation relatively immune to a change in leadership.

Case study example: evolution of e-Government in Singapore

Singapore has come a long way in its e-Government efforts and sees ICT as a means to reinvent the government and to serve citizens in the best possible way. The overall vision for e-Government is to delight customers and connect citizens through ICT.

Singapore sees ICT as a means to reinvent the government and to serve citizens in the best possible way. The overall vision for e-Government is to delight customers and connect citizens through ICT.

Singapore’s e-Government journey

Singapore is the country with the most advanced e-Government initiatives. The Government’s ICT journey started in the early 80’s with the aim of transforming the Singapore Government into a world-class user of information technology through the Civil Service Computerisation Programme which streamlined and automated business processes and reduced paperwork and significantly improved internal operational efficiencies. The late 90’s transformed the concept of service delivery and paved the way for the e-Government Action Plan (2000 – 2003) and the e-Government Action Plan II (2003 – 2006).
key objective of the first plan was to roll out as many public services online as possible, while the emphasis of the second plan was to further enhance the service experience of customers. Building on the success of the earlier e-Government plans, iGov2010, a new five-year master plan was launched in 2006. The Singapore Government aims to be an Integrated Government (iGov) that brings its service delivery and operations to a new level by 2010 (15).

Possibilities of scaling up the ventures

- **Efficacy**: The efficacy of an overarching national plan is important because:
  - An e-Government planning exercise takes a holistic view and creates an integrated plan ensuring that links between different components are in place;
  - All stakeholders’ views are considered; this encourages them to take ownership of downstream interventions and conveys the national scope of the plan. Component plans for individual departments are then seen as a part of an overall national effort.
  - The national plan necessarily has commitment from topmost political and executive levels.
- **Weak implementation**: Though there are many cases of national e-Government plans being drawn up it is common for their implementation to be weak. Two observed features are partial and delayed implementations. In particular, partial implementation exercises often omit links built into the plan. As will be seen in the Africa Scan, the failure to undertake the full institutional review exercise in the case of the Mauritius effort has resulted in the plan being less successful than it could have been.
- **Circumventing turf issues**: In a national e-Government effort all government agencies are involved. High-powered inter-ministerial committees entrusted with steering e-Government efforts ensure that issues of turf do not arise.
- **Internal stakeholders**: It is important that internal stakeholders buy into initiatives; without their sustained support efforts are less likely to be successful. Transition from the early stages of “resistance” to “complete internalization”, when stakeholders see positive benefits, is necessary.
- **A holistic prioritization**: Not all interventions recommended can be taken up at the same time, not only because of resource constraints but also because lessons learned at the early stages need to be applied during the later stages. A clear and objective prioritization scheme can convince stakeholders that hard scientific analysis rather than subjective opinions and preferences are behind the prioritization of interventions.
- **Collaboration with agencies outside the government**: National plans involve entities outside the government, including the private sector and the academia. Public Private Partnerships, to bring together public sector sensitivities and private sector efficiency are a good alternative in e-Government.
- **Change of people at the helm**: The implementation of national plans can be at substantial risk if top political and executive levels involved in their making are transferred or they leave office. There are many cases where the initial zeal observed during the planning stages is lost during the implementation because of a change at the helm.
- **Evolution of plans**: The Singapore experience establishes the “Think Big, Start Small and Scale Fast” approach. To this we must also add “Evolve”. The success of plans is partly due to sustained momentum from the government’s side in order to produce back-to-back plans with each one starting where the preceding one finished. e-Government is increasingly being used as a lever to achieve
development objectives. One of the thrust areas of iGov2010 is “Enhancing National Competitive Advantage”\(^{(15)}\).

Figure 5: The Timor-Leste Transparency Portal

2.2. Accountability, transparency, citizen collaboration and interaction

Transparency portals and open data

During the late 1980s and the 1990s a number of countries in South America were encouraged by multilateral development banks and bi-lateral agencies to develop sound, centralised financial management systems. Once they had achieved this they went on to address the further objective of increasing transparency. Peru, Guatemala, Bolivia, Colombia and Chile all created transparency portals in the late 1990s to promote public sector accountability\(^{(16)}\). Similarly, the Cristal website of Argentina was specifically created in 2000 to fulfill the mandate established under Article 8 of the Fiscal Responsibility
Law (No. 25.152), promulgated in September 1999. That law requires that the state make available information related to the administration of public funds\(^{vi}\). Subsequent reports show that these initiatives have been expanded and enhanced in the last ten years. Mexico, Brazil, and other South American countries now have similar portals that are seen as ways of fighting corruption and enhancing citizen participation. East Timor has recently (March 2011) opened a portal to give citizens access to financial information related with the national budget execution (Figure 5). The objectives of the Timor-Leste Transparency Portal are: Promoting a culture of transparency; better participation by the citizens; reducing the risk of corruption; free access to relevant and credible information regarding government decisions; access to information on state expenditures and transactions on budget, aid, procurement, and government results \(^{x}\).

Open data is a rather different concept, it is the embodiment of the ideal that data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other control mechanisms. Open data sites make data sets collected by governments, such as census data, available to everyone. This permits researchers and others to analyse and interpret the data independently.

### Legislation

#### Case study example: Right to Information Act, 2005 (India)

In order to bring about transparency in public life, India has enacted the Right to Information Act 2005 (RTI). Any citizen may request information from a "public authority" (a body of Government or "instrumentality of State") which is required to reply expeditiously. The Act also requires every public authority to computerize their records for wide dissemination and to pro-actively publish certain categories of information so that the citizens do not often need to request information formally \(^{18}\).

---


\(^{ix}\)http://eaves.ca/2010/08/25/creating-effective-open-government-portals/

The Central Information Commission has been constituted to exercise the powers conferred on, and to perform the functions assigned to, it under the Act. The Chief Information Commissioner and Information Commissioners are to be appointed by the President on the recommendation of a committee consisting of the Prime Minister, the Leader of Opposition and a Union Cabinet Minister nominated by the Prime Minister \(^{(19)}\). These officials are constitutionally protected as they can be removed from office only by order of the President on the ground of proved misbehaviour or incapacity after the Supreme Court recommends their removal \(^{(19)}\).

**Public service monitoring and evaluation**

Regular measurement regarding stakeholders’ satisfaction with government service provision is still an ad hoc, add-on or non-existent process in many public sector environments; public sector measurements tend to put more emphasis on outputs than outcomes. However, recognition of the need for citizen-centric services has increased in recent times.

For this to become a reality, both outputs and outcomes must be measured and the needs of citizens should form the core of planning for delivery of front-line services. However, it would be both idealistic and simplistic to overlook the fact that measuring customer satisfaction related to government services can be complicated because it depends on concepts of public value and social outcomes, which are hard to measure.

**Case study example: Common Measurements Tool - Government of Canada**

The Common Measurements Tool (CMT) is an easy-to-use computer-based client-satisfaction survey instrument to facilitate benchmarking across jurisdictions that ensures that public-sector managers are able to understand client expectations, assess satisfaction, and identify priorities for improvement. Jurisdictions can also compare their results against peer organizations, identifying best practices and sharing lessons learned. The CMT is designed to be a flexible tool, leaving organizations free to add customized questions that will help improve the quality of service \(^{(20)}\).

The CMT assists the client satisfaction process by identifying a set of “core” questions that measure the key drivers of satisfaction - those elements or attributes of the service experience which, when present, ensure high levels of satisfaction. In Canada this was a part of a larger initiative, Citizens First, a national survey of Canadians, which identified the drivers of satisfaction, namely timeliness, knowledge/competence, fairness, courtesy/comfort, and outcome.

**The Institute for Citizen-Centred Service**

The CMT was developed by the Institute for Citizen-Centred Service (ICCS) that set out to deliver a single, integrated, multi-channel client survey instrument that is easy to use, enables benchmarking, and...
produces effective results for policy and program managers alike. Significant enhancements to the original CMT include questions on satisfaction with electronic and telephone service delivery, specific drivers of satisfaction for each service delivery channel, adoption of an "agreement" scale (in place of a "satisfaction" scale) to enhance usability, consistency in both French and English, and a new user manual written for public-sector managers\(^{(20)}\).

The ICCS serves as the custodian of the CMT, and maintains a CMT benchmarking database that enables organizations to compare anonymously their results with those of peer organizations. The CMT survey questionnaire has sections on Service/Product Delivery, Access & Facilities, Communication, Cost, General Questions, Information about You (For External Clients), Information about You and Your Organization (For Internal Clients) and a section on comments from the citizens\(^{(21)}\). A set of “core” questions which the CMT asks of citizen respondents can be found at Information Victoria\(^{(22)}\).

**Adoption by other agencies outside Canada**

The CMT has been adopted by the Victorian Government Departments and agencies, including Local Government\(^{(23)}\). The State Service Commission in New Zealand has also adopted the CMT and urges State Services agencies to take up the CMT, free of charge, by signing a Memorandum of Understanding with the SSC\(^{(24)}\).

The following points highlight why this tool is suitable for use in the African context:

- **Logical course of action**: With citizen-centricity of service gaining strong support, it is imperative to measure and assess information and services. CMT is an approach that can be adopted to assess (a) service delivery among different agencies of the same government and (b) service delivery for the same agency over time.

- **Evolving nature**: CMT represents a tool that has continually been adapted to changing requirements; this makes its adoption in the African context even more appealing.

- **Customizability**: Easy customisability makes the CMT suitable to the context in which it is deployed. However, since ICT-enabled service delivery is still not a high priority it may be advisable for services and customers accessing them to grow in number before the CMT is put to use.

- **Sound research**: Following on the Canadian model, it may be advisable that, if CMT is deployed in any African country, a research or an educational body be made responsible for modifying the tool and acting as its custodian.

- **Government-wide approach**: Rolling out the CMT needs to be initiated by a powerful ministry with high level support so that it can be deployed in all line ministries without opposition.

- **Multiple channels**: The tool itself must have a multi-channel interface for its access and use.

**Possibilities of scaling up the ventures**

The initiatives mentioned above are replicable in the Africa context where information availability leaves much room for improvement.

- Governments should make data available of their own accord in order to achieve good public service with the necessary checks and balances and to ensure that data sharing, protection and privacy norms are respected; this will allow citizens convenient access to data.
• Certain classes of data may be exempt; a prerequisite for exemption would be the category of data, with objective criteria being agreed on by means of which it would be possible to determine whether exemption is necessary in order to maintain public order or safeguard larger national interests.
• An enactment similar to the Right to Information may also assist governments in creating good transparency laws for their countries in order to make data available formally and expeditiously.
• Given that access to technology is a serious problem in much of Africa, multi-channel delivery of services is important. Governments must recognise this need and provide the various channels themselves or contract outside agencies to do this. However, in all cases a Government portal would be the minimum for ICT-enabled information provision.

2.3. ICTs as a means of extending social democracy

e-Participation and social media

Effective citizen participation involving ICTs - eParticipation – brings about contact between people with their elected officials (8). It includes citizens’ use of ICT to access public information, participate in public decision-making and monitor how government programmes are being run. Social media and mobile devices are facilitating e-Participation to a great extent.

Case study example: social media as a platform for exchange of ideas and request for comments on government services and policies

• A site called Challenge.gov in U.S. gives citizens cash prizes for solving government problems (7).
• The Israeli Consulate in New York City has more than 11,000 Twitter followers and a Klout score (social influence) of a respectable 57 (7).
• Community mapping applications have been proliferating and rely on the crowd sourcing concept and interactive mapping to allow a more transparent management of services and resources, national assets and infrastructure. Examples are SeeClickFix®, based on OpenStreetMaps. Developers write applications built on top of open source maps to tag the map based on the data observed in a specific location. Although SeeClickFix has its most active groups in the USA (New Haven and Philadelphia) there are more than 30,000 communities throughout the world using it. Potholes, fire hydrant, public restroom, water sources and much more can be identified and then associated problems can be reported to local authorities, as can be seen in FixMyStreetxii, or in FixMyTransport (launched August 2011) in the UK.

Case study examples: social media to handle crises

In times of crises, social media may often be the only lifeline available to connect with people.
• The US and UK embassies in Tripoli used Facebook to organize evacuations during revolutions and civil disturbances, connecting its citizens with ferries so that they can get out of danger (7).

---

x SeeClickFix.com
xii www.mysociety.org/projects/fixmystreet/
Israel recently held a Twitter press conference about the situation in Gaza (7).
The Canadian Government has set up its own private social network called Connect2Canada to keep aware of citizen needs around the world (7).
After the devastating earthquake in Haiti, CrisisCamp provided support for other volunteer technology communities who were supporting the Haiti response efforts, such as, OpenStreetMap, Sahana Foundation (Free and Open Source Disaster Management System) and Ushahidi. Many CrisisCamps hosted mapping sessions to contribute to the first post-earthquake basemap of Port au Prince. Many volunteers had not contributed to a mapping project before, so tools like “I Map Haiti” were created to help them to quickly learn how to map crisis data for the OpenStreetMap community.
The Internet and social networking was used effectively for disaster emergency response and public health management during typhoon Morakot disaster in Taiwan (25).
When the government and print media were unable to provide citizens in Thailand with emergency information when they needed it during the flooding from July to September 2011, they turned to social media. Twitter, Facebook, Youtube and Google were used to record and upload flood information. By aggregating information from various sources, the Google Crisis Project was used to set up an interactive “Response Map” which utilized satellite imagery to provide a bird’s eye view of flood affected areas, locations with parking and health care services and other such features (26).

One of the conclusions of the report on Social Networking for Emergency Management and Public Safety, prepared the USA Interagency Biological Restoration Demonstration Program a program jointly funded by the Department of Defence, Defence Threat Reduction Agency and the Department of Homeland Security, Science & Technology Directorate is that, “Agencies have to trust the public on some level to manage emergencies. All emergencies are local, and public." (27)

Case study example: social media to build opinion among masses

The Government of the Philippines has launched a new campaign to attract more tourists. Using Facebook and Twitter, the campaign is asking social media users to use the “It’s More Fun in the Philippines” tagline to describe what visiting the Philippines is truly about. 27 million Facebook users and almost four million Twitter users have participated. With this campaign, the government expects to increase its number of tourists who visit the country in 2012 to 4.2 million, up from the 3.7 million that visited the country in 2011 (28).

2.4. Convenience and efficiency in service delivery

Multi-channel service delivery

A key aspect of citizen-centric service delivery is a variety of options regarding how it is delivered, including personal computers at home, public internet access points (or telecentres), physical visits to government offices and mobile devices (including mobile phones). Anywhere, anytime and anyhow (multiple channels) service delivery gives users maximum choice and convenience.

With an explosive growth of mobile telephony, as is evident from rapidly climbing mobile penetration rates, mobile phones are often the primary form of telecommunication in developing countries. They play
the same role that fixed-line networks had in facilitating growth in Europe in the 20th century\(^{(29)}\). Research shows that raising wireless penetration by 10% can lead to an increase in gross domestic product of about 0.5%\(^{(30)}\). 

<table>
<thead>
<tr>
<th>Category</th>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citizen Feedback</td>
<td>TXTGMA</td>
<td>The service allows Filipinos to bring concerns to the attention of the President, such as drug proliferation, delays in government projects, and requests for assistance. About 5,000 requests are made monthly(^{(29)}).</td>
</tr>
<tr>
<td></td>
<td>TXTCSC</td>
<td>People interacting with any government agency have a means to instantaneously (anytime, anywhere) report to the Commission and get information about government agencies, programs and services. The service minimizes, discourtesy, arrogance and inefficiency(^{(29)}).</td>
</tr>
<tr>
<td>Information Dissemination</td>
<td>GiveMe-Unlimited</td>
<td>The users can send bulk SMS/text messages to mobile users via computers and the internet. Typical uses this has been put to include the Department of Education’s “DE Text 2622” service that provides the general public with announcements on test schedules, press releases, holidays, and cancellation of classes during storms and floods(^{(29)}).</td>
</tr>
<tr>
<td>Service Delivery</td>
<td>Various</td>
<td>Prominent services include:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Accessing flight schedules via SMS.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Members of government pension fund (GSIS) send and receive text messages on their loan queries. Messages can also be sent to members for advisories and updates.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The Community Health Information Tracking System enables staff in health centres to send SMS messages via computer system templates to patients for follow-up and medical intake reminders.</td>
</tr>
</tbody>
</table>

Table 6: Common SMS-based applications in the Philippines
Case study example: SMS-based service in the Philippines

The Philippines is the world’s 12th most populous country (with a substantial number of citizens living overseas) and an adult literacy of over 95%. Though fixed line teledensity is at 4.5%, mobile penetration is astoundingly high at about 81%; a generation of people has grown up without computers but use mobile phones for communications, information and, more recently, access to a range of value-added services on mobile devices.

Texting capital of the world

Considered the ‘texting’ capital of the world and known for deposing a president using SMS, Philippines is ranked as the most SMS-intensive country in the world. SMS and prepaid plans have made using mobiles more affordable to lower income households, making mobile penetration rates far overtake those of fixed line. This widespread growth has enabled applications in three main areas for common mobile-based services: citizen feedback mechanisms; information dissemination; and service delivery.

Possibilities of scaling up the ventures

Conditions comparable to those in the Philippines are found in many parts of Africa although there may be differences in (a) the mobile penetration rates and (b) literacy. Hence, variations may be needed, such as voice-based messages, community radio, video or even assisted community access centres. The following lessons can be learned from this case:

- **Appropriate policies**: Appropriate regulatory policies are required that allow for competition in telecom, coupled with market practices that make using mobile phones more affordable and the process of getting one less restrictive. These issues are being addressed in many countries in Africa, as is evident from the dramatic increases in mobile coverage and density.

- **Small retail shops**: A well-established retail network of small convenience shops in villages, through which telecom companies distribute prepaid cards and later set-up their network of credit load centres, are often the catalysts for adoption of mobile technologies. Small retail shops exist throughout Africa and the mobile explosion is fuelled by prepaid sales by retailers.

- **An SMS habit**: The key to M-Commerce is to first develop familiarity with and a wide acceptance of the SMS process. Although of Africa has an oral communication culture and this is a potential barrier to SMS, SMS use is often driven by economics. Studies show that in many places in Africa there is a similar SMS to voice calling ratio (for example, in East Africa) to that of the Philippines, namely, 6.5 text messages per one minute of voice communication.

- **Prevalence of pre-payment**: Consumers learned how to use prepaid vouchers, call contact numbers and enter codes in order to purchase credits. Similar conditions exist in Africa where prepayment is, by far, the dominant mode of mobile phone subscription.

---

xii Jalgaon District in India is changing the way people communicate and interact with the district administration through the e-lokshahi project which provides an opportunity for people to interact with the authorities regardless of where they are. Queries and complaints can be made through a phone call whence the callers are given a token number using which they can check the status of their request later by dialing into the IVR (interactive voice recording) system. The officer concerned needs to address the issue within a time frame, failing which it gets escalated to the next higher level. The services offered number over 90, including queries over government fee or frequently asked questions.
• **Critical mass**: Much of the potential for replication depends on whether a sufficient number of users can be attracted. The belief that an expanded network coverage will drive service delivery is arguably behind the rapid spread of mobile telephony in Africa.

• **Banking facilities**: Given the lack of financial institutions in rural areas, the advantage m-Banking has over traditional banking applies in Africa. ATMs are predominantly in urban areas and access to internet banking is restricted by limited access to the internet and by a lack of bank accounts on the part of the poor.

### 2.5. Reform and re-engineering of government

**Institutional frameworks for e-Government**

Although there is no single institutional framework or model, there are common trends seen across many countries that make e-Government a powerful tool for development:

• **Trend 1**: There is a shift towards a direct and institutionalized engagement of the president, prime minister, a powerful coordinating ministry like finance or economy, or a mix of ministries (including ICT) that lend authority.

• **Trend 2**: Countries are moving from temporary relationships to institutionalized structures to respond to the challenges of the knowledge economy and ICT-enabled development.

• **Trend 3**: Institutional leadership for e-Government has been shifting from Ministries of ICT to other ministries, such as Finance and Interior, reflecting a shift in focus from technology management to institutional change.

• **Trend 4**: Many countries are opting for a strong national ICT agency that focuses on policy development, governance mechanisms like 'whole of government', enterprise architecture and strategic investments that cut across many agencies. They often operate under a special act that allows them to provide competitive compensation and attractive career structures and to operate in a business-like manner while enjoying the legitimacy and authority of top political leadership.

• **Trend 5**: Central agencies have changed from implementing top-down solutions to playing roles as catalysts and leading scale-up programmes. They aim to institutionalize innovation and process reengineering, promote collaboration, engage more stakeholders and disseminate best practices.
Table 7 describes common institutional models, their characteristics and countries where they are found. (33)

<table>
<thead>
<tr>
<th>Model</th>
<th>Countries</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model I: Shared Responsibilities</td>
<td>Finland, Sweden, Germany, France</td>
<td>e-Government policy making and policy implementation functions are distributed amongst existing ministries. Each ministry is responsible for a part of the strategy that falls within its field of expertise. Coordination mechanisms are set up within the various ministries to synchronize activities.</td>
</tr>
<tr>
<td>Model 2 (Policy Coordination Model Under Head of State)</td>
<td>US, UK, Italy, Japan</td>
<td>e-Government agenda is coordinated under the Head of State office, while actual implementation is undertaken by each ministry. This model advances centralization of policy and strategy but leaves implementation as in Model 1.</td>
</tr>
<tr>
<td>Model 3: Lead Ministries</td>
<td>MoF- Canada, Israel MoEP- Russia, China, Brazil MoICT/ MoPS: South Africa, Egypt and Mexico, India, MoICT: Australia, Romania, Thailand, Slovenia</td>
<td>The full e-Government agenda is run out of a single government ministry or thematically divided among a couple of powerful ministries: usually the Ministry of Finance, Ministry of Economy or Planning, the Ministry of State or Public Service, the Ministry of Trade or Industry, or the Ministry of ICT.</td>
</tr>
<tr>
<td>Model 4: Executive ICT Agency</td>
<td>South Institution Korea, Ireland, Singapore, Bulgaria, Estonia and Rwanda</td>
<td>A dedicated executive ICT agency is created within the civil service, which is responsible for formulation and implementation of the national e-Government policy and its corresponding action plans. All stakeholders are encouraged to become involved and exchange information, experience and best practices. The agency coordinates and monitors implementation through a committee.</td>
</tr>
<tr>
<td>Model 5: ICT Agency as a PPP Model</td>
<td>Sri Lanka Also, several countries under Model 4 have incorporated Model 5 features.</td>
<td>The ICT agency exists under civil service regulations and operates as a public-private partnership and is ultimately responsible to the country’s political leadership. Its responsibilities cover the whole range of the e-Government strategy formulation, implementation, monitoring and evaluating. The national CIO may be an executive of such an ICT agency, although not eliminating a need for CIOs within ministries.</td>
</tr>
</tbody>
</table>

Table 7: Common Institutional Models
BPR for service delivery

Business Process Re-engineering (BPR) is defined as “the fundamental rethinking and radical design of business processes to achieve dramatic improvement in critical measures of performance such as cost, quality service and speed”\(^{(34)}\). ICT in Business Process Re-engineering can be at one of the following levels:

- Automation (local exploitation): The use of ICT to improve efficiency of employees in offices.
- Horizontal integration: The process of streamlining standard operational procedures and eliminating bottlenecks so that computerisation can make operating procedures more efficient. Functional boundaries are eliminated by integrating horizontal activities.
- Business Process Redesign (or reengineering): This implies a complete renovation of the business process before the application of ICT to avoid automating inefficiencies.
- Business Network Redesign: This ranges from linking the organization to its customers and suppliers through EDI (Electronic Data Interchange) to creating opportunities for unstructured tasks, for strategic alliance and for knowledge control.

Redefining the scope of the organization: This involves rethinking the mission of the organization, the business it is in and the relationships it has with strategic partners and allies to bring about a paradigm shift in business activity.

2.6. Exploiting technological advancements to meet service delivery objectives

Cloud computing

Establishment of an automated backend to an open data portal so that data is always up-to-date without requiring a dedicated person to maintain the site or update data manually. Shared data centres and open data repositories can be hosted by cloud service providers.

Mobile Applications

Sophisticated mobile software applications, such as the 2010 Arkansas applications allowing secure payment including the Department of Corrections inmate deposit service, property tax payments\(^{xiv}\). Applications that facilitate the mapping of crowd-sourced data onto interactive maps (community mapping) were discussed in Section 2.3.

Multiple platforms and channels

Interestingly, the German Mobile Citizen Services (MoBüD) project currently undergoing pilot testing, are being investigated for possible replication by the m-Government Services (CIDRE) in Sweden, Estonia and the Netherlands to facilitate taxation, social insurances and health services. However, the mobile devices are used by employees of the state who regularly visit neighbourhood centres and connect with the central databases and applications using mobile equipment, cloud computing and wireless networks and not directly by the service seekers. The citizens, therefore, do not need to skills or equipment to access the e-Government applications or interfaces themselves but benefit from less travel time, cost and queues. This approach also makes citizens more aware of the e-Government services already available. While the CIDRE investigation has highlighted the fact that the German system will not be able to be transferred directly to all other countries, this option has great potential for e-Government in Africa.

Biometrics

The use of mobile technology in modernizing government in Europe may mean that increased use of biometrics will be needed to accurately and securely identify each citizen assist in authenticating access to smart government services. Such identification would ideally be possible remotely (for example when the service seeker is at home) without an official being present. Current biometric technologies that allow rapid verification of identity include Advanced Fingerprint Identification Technology, palm print identification. The original data allowing voice, face and iris recognition will be stored on the embedded chip in an identity card and/or in a central data repository. Whereas advances in this field have been stimulated by the need to identifying criminals and to support national security programmes it will in all likelihood have some impact on new technology versions of identification cards carried by most citizens. The availability of multiple biometric technologies means that one can be used to confirm findings using the other as these technologies are not infallible. For example, the Iris Recognition Immigration System, known as IRIS, used at international airports in the United Kingdom was expected to be capable of processing travellers in as little as 12 seconds, however passengers often spent longer being scanned by the machines than when they went through traditional passport control and one in ten were wrongly rejected by the scanners and these are now being phased out. These travellers then had to be verified by the more traditional method of trained customs official visually comparing photographs. Some sources believe that in future facial recognition technology will be more reliable than other technologies.

---

xv http://www.publicservices.co.uk
xvi http://www.publicservices.co.uk
xvii http://www.fbi.gov/about-us/cjis/fingerprints_biometrics/ngi
xviii http://www.dailymail.co.uk/travel/article-2102489/Iris-recognition-scheme-airports-scrapped-years.html#ixzz1nTvFAEZj
2.7. Conclusion

This chapter looked at each of the six trends and found that there are examples from each in countries outside Africa (Table 8). Some trends have been evident for more than ten years (Transparency portals) but new examples are still arising. Some examples use well-established technology such as SMS while others are embracing cloud computing, smart phones and advanced biometrics. Concerns regarding security, privacy, misuse of personal information and over-regulation of citizens as a result of technology allowing the government to follow their movement and communications are also evident in some quarters. The fact that certain members of society will not have the same access to information and services as more fortunate citizens remains a concern worldwide.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Aspects</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Commitment to excellence in public service delivery</td>
<td>I  Service delivery aspect of public administration</td>
<td>International agreements</td>
</tr>
<tr>
<td></td>
<td>II  Political stake in success of service delivery</td>
<td>Policies and plans for e-Government</td>
</tr>
<tr>
<td>B. Accountability, transparency, citizen collaboration and interaction</td>
<td>III  Accountability and transparency</td>
<td>Transparency portals and open data</td>
</tr>
<tr>
<td></td>
<td>IV  Collaborative delivery of public services</td>
<td>Public service monitoring and evaluation</td>
</tr>
<tr>
<td>C. ICTs as a means of extending social democracy</td>
<td>V  Participatory forums for citizens</td>
<td>e-Participation</td>
</tr>
<tr>
<td></td>
<td>VI  Social media</td>
<td>Use of social media</td>
</tr>
<tr>
<td></td>
<td>VII  Unintended consequences of the Internet</td>
<td>Unintended consequences</td>
</tr>
<tr>
<td>D. Convenience and efficiency in service delivery</td>
<td>VIII  Beyond workflows, One-stop shops and the blurring organizational boundaries</td>
<td>Integration of service, sharing data, networks</td>
</tr>
<tr>
<td></td>
<td>IX  Stakeholder segmentations and multi-channel service delivery</td>
<td>Multi-channel service delivery and Governments’ online presence</td>
</tr>
<tr>
<td>E. Reform and re-engineering of government</td>
<td>X  Re-engineering organisations and processes</td>
<td>Institutional frameworks for e-Government Common institutional models,</td>
</tr>
<tr>
<td></td>
<td>XI  Legal foundations for public service delivery</td>
<td>Legislation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BPR</td>
</tr>
<tr>
<td>F. Exploiting technological advancements to meet service delivery objectives</td>
<td>XII  Cloud and satellite</td>
<td>VSAT</td>
</tr>
<tr>
<td></td>
<td>XIII  Mobile and mobile applications</td>
<td>Mobile phones, crowd sourcing, interactive maps</td>
</tr>
<tr>
<td></td>
<td>XIV  Biometrics</td>
<td>Finger and palm prints, Iris scanning, facial recognition, voice recognition</td>
</tr>
</tbody>
</table>

Table 8: Themes, Aspects and Examples
3. Africa Scan

3.1. Introduction

The Africa Scan looks at examples of implementations from Africa within the six trends previously identified. Short case studies from African countries are given to illustrate the options, opportunities and some constraints. A number of ICT-enabled types of public service that reveal particularly important opportunities for extending the use of ICT in public service in Africa are studied in some detail. The fact that there are existing, successful implementations demonstrates their viability while still acknowledging that Africa is not homogeneous in social, economic or political terms. Although there is no intention to suggest that “one size fits all” or that “best practice” is transferrable to all other contexts, these examples can inform and possibly inspire programmes elsewhere.

Since the same six trend categories are being used in this chapters as were used in chapters 1 and 2, and the same basic reasoning applies to their relevance, there will be minimal introductions to the cases from Africa.

3.2. Commitment to excellence in public service delivery

Regional approach to implementing e-Government

In 2004, the East African Community (EAC) initiated a process of developing a common e-Government framework for the region culminated in the EAC Regional e-Government Framework that was approved in December 2006. Harmonized policies and strategies, a legal and regulatory framework, crosscutting issues (education, infrastructure, poverty reduction and gender), coordination, monitoring and benchmarking were identified as the major critical enabling factors for the effective implementation of the strategy both at the regional and national levels. The framework developed emphasized the need for a strong back-up support of legislations on data security, network security, cyber crime, information systems and electronic transactions\(^{\text{xix}}\). Priority areas for the implementation of e-Government flagship applications were identified, prioritized and agreed upon by the stakeholders at this meeting. The areas identified included; Customs and Immigration Control, e-Parliament, e-Health, e-Banking, e-Procurement, e-Commerce, e-Tourism, and Meteorological and Tidal Information\(^{\text{36}}\).

Following on the EAC effort, a consultant was appointed to develop a Regional e-Government Framework. The COMESA Secretariat is incorporated in a project of the Regional ICT Support Programme (RICTSP) and a corporation partnership exists between: Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the Inter-Governmental Authority for \(^{\text{xix}}\) http://egov.comesa.int/index.php/fr/e-government-resources/14
Development (IGAD) and the Indian Ocean Commission (IOC). The framework developed by the consultant was adopted by Council in December 2008.

Since then Uganda have developed a policy (final draft June 2010) based on the EAC framework (37) and Tanzania “has been moving forward steadily in building policies and frameworks for ICT/ e-Government” (38).

Two cases where national plans have been drawn up in 2010 are discussed in this section.

Case study example: the national ICT strategic plan for Mauritius

Faced with constraints that hindered further growth, precipitated by global economic developments, Government of Mauritius (GoM) saw ICT as a tool for socio-economic development and set out to make ICT the fifth pillar of the economy and transform Mauritius into a regional ICT Hub. The National ICT Strategic Plan (NICTSP) for Mauritius set out a comprehensive strategic plan to realise this vision.

e-Government as one of the domains of concern in the NICTSP

The plan looked at 10 different domains of involvement in the ICT sector including e-Government that had inter-linkages with other domains (for example, ICT policy and laws, ICT infrastructure, ICT for sectoral development and ICT for social development). NICTSP recognised that initiatives had until then been taken up largely on an ad hoc basis and were not an outcome of any collaborative and comprehensive planning.

Five strategic thrust areas

The plan identified five strategic thrust areas, with their associated goals, as follows:

- Support for legal measures, institutional and infrastructural changes, educational empowerment, information security, and monitoring and evaluation mechanisms
- Promote interventions in critical sectors of the economy by means of eBusiness
- Accelerate ICT adoption in society by embracing e-Government and by taking measures towards making ICT widely and equitably available
- Lead by transforming Mauritius into centre of excellence regarding ICT skills and expertise
- Emerge as a global source for offshore services (ITS and ITeS) using the existing advantage of bilingualism.

Strategies and programmes

The plan recommended 15 interdependent strategies to be implemented through 15 different programmes constituted from 124 projects. Of these, there were three strategies pertaining to e-Government:
• Collaborating widely to design and implement e-Government systems to enhance citizen convenience and improve internal efficiencies and effectiveness in the government,
• Undertaking key investments for higher visibility of e-Government, and
• Accelerating the uptake of ICT in society by making it accessible, available, applicable and affordable to everyone (39).

Recommendation for a revamped institutional structure
The NICTSP also recommended the establishment of a National ICT Authority of Mauritius (NICTAM), a unified body representing the ICT sector, with multi-stakeholder representation. This body would undertake policy making, strategic thinking, an advisory role, ICT promotion within the nation and country promotion to the world, and other related functions. Integration would enhance collaboration between disparate units, bring advantages of synergy and reduce duplication of effort.

Recommended e-Government interventions
• Services needed to be transformed from single-service, single-stage delivery to multi-service, multi-stage delivery to make public service efficient, citizen-friendly, and transparent. A successful transition would require interventions relating to the three principal dimensions of people, process and technology in a framework that encourage collaborative working.
• A central plan within which all departments must work needed to be compiled, setting priorities not just between departments but also in terms of services that needed to be launched within the individual departments.
• Setting up of an e-Government task group to plan, monitor, advise and coordinate e-Government initiatives in Mauritius, on the basis of plans collaboratively agreed upon by departments.
• Undertake process reform that associates process components with individuals in their roles and thus facilitates easy tracking of documents in a workflow system. This was to be followed by technology enablement with user-convenience the primary priority, in a multi-channel delivery framework.
• e-Government branding, with both print and electronic media used profitably.

Also recommended were flagship investments to achieve the twin purposes of (a) conveying unequivocally the message that GoM is seriously pursuing e-Government through services that touch the day-to-day lives of citizens directly, and (b) undertaking key investments that would serve as nuclei around which other eServices would grow and build. These investments would get shared across multiple departments for cost-reduction and technology interoperability. Flagship efforts included a smart-card electronic identity system for citizens, an eProcurement system, and document management system in the ministries.

Implementation risks
Risks identified as likely to arise during implementation included lack of consistent and continued political and executive support, non-availability of funds, inadequate planning or plunging headlong into implementation, expecting results too soon, partial implementation, delays in implementation, going too strictly by the book, inadequate collaboration between stakeholders, unexpected change in senior positions and irregular monitoring.
Implementation and review

In 2010 a second NICTSP for the period 2011-2014 was launched that reviewed the implementation progress of the earlier plan and set out a course of action for the following three years. The review exercise observed that the original plan was too ambitious, implementation had only been partial and institutional reviews had not been done, constraining the delivery of several programmes (40).

Case study example: e-Government readiness for Namibia

The Government of the Republic of Namibia (GRN) is finalizing a National e-Government Strategic Action Plan to implement e-Government in offices, ministries and agencies under GRN. In 2010-2011, the GRN conducted an exercise to assess readiness levels for e-Government. In many ways, the conditions prevalent in Namibia, as far as ICT-enabled public service delivery is concerned, are similar to what is found in many African countries.

GRN has adopted "Vision for 2030" that aims at making Namibia into a "a prosperous and industrialized nation, developed by her human resources, enjoying peace, harmony and political stability" and envisions the country as a "knowledge-based economy and a technology driven nation". ICTs are identified as key tools to enable the government in its efforts (41). The GRN has also formulated a National e-Government Policy whose main objectives are (42):

- Provide access to information about political process, government services available to citizens 24 hours a day, 7 days a week
- Enable Namibia to progress from passive information access to active citizen participation
- Fulfil citizen's needs and expectations by simplifying interaction with GRN and providing services based on their choices
- Provide speedy, transparent, accountable, efficient, effective processes for administration activities
- Widen access to rural areas and other marginalized sections while increasing confidence for online service delivery.

The readiness model adopted by GRN focuses on the five main categories of Policy, Content, Access, Capability and Willingness, with each associated with different measures for assessment (43). Figure 6 shows the main findings emerging from the exercise in these categories.
3.3. Accountability, transparency, citizen collaboration and interaction

Mobile applications can provide versatile, adaptable management information systems for crowd sourcing and hence for citizen collaboration. The examples given below, all from projects in Africa, illustrate how these can be used to improve transparency, reinforce accountability and improve service.

As noted in Chapter 2, community mapping applications have been proliferating and rely on the crowd sourcing concept and the use of interactive mapping and the World Bank is behind several of these mapping initiatives. Examples from Africa are: extractive industries locations and data are mapped in Ghana; in Dar Es Salaam community assets, water points, etc., are being mapped through a series of “hackathons”; the World Resource Institute’s Forestry Transparency Initiative is financing a map of DRC’s forests; the World Wildlife Fund is financing the Moabi Platform in Cameroon.
FrontLineSMS is an open source software application using a laptop along with a mobile phone to create a mass messaging system to communicate with different distribution lists. The tool has been used for a variety of projects and the savings reported are huge. It is used as an information service for human rights organizations by the Zimbabwean civil society organization, Kubatana.net. In Egypt, an organization called HarassMap uses FrontlineSMS to collect reports of harassment via SMS, recording them via the crowd-sourced mapping system Ushahidi.

RapidSMS is an open source tool by means of which information is sent by citizens via SMS, goes through a layer of translation from mobile to Internet, and can then be immediately presented on the web. RapidSMS is useful for data collection in geographically remote areas with limited infrastructure. UNICEF pilot programmes in Malawi, Ethiopia, Kenya and Senegal used RapidSMS in 2009.

**Case study example: Kenyan open data initiative**

Kenya, the first country in Africa to launch a national open data initiative, Kenya Open Data Initiative (KODI), makes government data accessible to the people of Kenya (for example, national census data, government expenditure, parliamentary proceedings and public service locations). The data provided improves transparency, unlocking social and economic value, and building Government 2.0 in Kenya.

**Data Sets**

The data sets available online allow users to view different data at national, county and constituency levels. They can compare data sets and create maps and other visualizations from data sets that are categorized into six main categories: Education, Energy, Health, Population, Poverty and Water & Sanitation.

**Open Data for greater accountability**

The Ushahidi team takes census data and overlays healthcare institution data on top of it. A simple SMS query tool has also been developed that allows users sending an SMS to 3018 with the name of his county or constituency to receive an SMS with the demographics and MP of that location. Open data has also been used by the Virtual Kenya team that identifies MPs who refuse to pay taxes.

**Case study example: Burkina Faso- Portal of Central Directorate for Public Contracts**

Under the public contracts sector reform a portal site (www.dcmp.bf), which aims to make calls to tender available to the public and boost transparency, was launched. The portal offers a platform for dialogue between the business world and the government.

Key challenges and issues include the fact the forum is moderated and is apparently not always open and many procedures linked to calls to tender are still carried out using printed material; a high number of agents are still suspicious of digital documents and prefer to use printed material, which they consider more credible.
Case study example: social media as platform for transparency

Just before the Nigerian elections in April 2011 an initiative was launched to monitor the use of social media, identify trends, and to try to determine its impact. The Social Media Tracking Centre used software developed by Georgia Tech called Aggie, the MetaAggregator as the volume of Tweets was too high for the original software to handle (45). This allowed basic statistics to be compiled regarding source, destination and keywords found in Tweets and SMS. Facebook is much more difficult to monitor as it is a closed system. Content was monitored (listened to) by civil society groups and this allowed appropriate authorities to check and respond to reports of post-election violence as well as of election fraud and logistical problemsxx.

Users of social media during the period included individual citizens, representatives of political party including the politicians standing for election, journalists, and civil society organisations. SMS seemed to be used for factual information such as whether a polling was open, whereas Twitter was used to comment on (give opinions regarding) topics. Social media are often believed to be used predominantly by young adults, well-educated members of society and the more well-to-do. It is not easy to collect demographic data from software that monitors SMS and Twitter but observers believe that its use was common in other groups as well although there was little contribution from deeply rural areas. The volume of social media traffic increased for each of the four elections and ultimately more messages were sent via social media during this period that were related to the Nigeria elections than for any other African election (45).

Identified benefits were:

- Citizens not only had a voice but believed that they were heard.
- Incidents of violence and fraud were made known and quickly stopped as ordinary citizens were able to report them quickly, easily and with low cost.
- The high visibility acted as a deterrent to illegal activity such as vote rigging.
- The ability of the man in the street to participate by reporting and commenting on the election and related incidents increased interest and this is believed to have increased the percentage of eligible voters who did in fact vote.
- Traditional media, NGOs, the Independent Electoral Commission, political parties, police and national defense worked together in providing services, information and responding to information.
- The system can be, and was, abused in order to send incorrect information, circulate malicious rumors and incite violence. But because so many people were listening to the reports the majority of these destructive messages could quickly be refuted.

3.4. ICTs as a means of extending social democracy

e-Participation

The typical populations covered in the case studies that will be discussed here are those that are inadequately connected, often illiterate (or at least with low literacy levels), have low incomes and live in scattered settlements in geographically remote areas. In the vast majority of these cases e-Participation is at a fledgling state and could, at best, be at the “Consultation” stage (See Figure 2 in Chapter 1).

Case study example: Burkina Faso- the ADEN project

The ADEN project, set up by the French Ministry of Foreign Affairs to improve access to digital communications in African countries, aims to establish Internet access centres and create local content in areas with low Internet connection rates. The project has the following goals:

- equipping and connecting 60 Public Internet Access Points (PIAPs) located in isolated areas and managed by local players (in Angola, Burkina Faso, Burundi, Cameroon, Central African Rep., Dem. Rep. of the Congo, Ethiopia, Guinea, Mali, Mozambique, Nigeria, Senegal, Tanzania) (46);
- supporting local production of content and IT applications suited to local needs and challenges with installation of host servers and publication of original web contents; and
- organizing training courses in network administration, management and running centres;
- increase African presence on Internet and strengthen development of a digital economy;
- implemented by local players from the participating countries, the ADEN centres provide access to standard office automation functionalities and telecommunication services (including Internet, E-mail, and VoIP where authorized).

In accordance with Burkina Faso’s Internet strategy, the ADEN project contributes alongside the government to creating a vibrant information society (6). Although the 16 Burkina Faso centres are effective in aiding greater social integration, they face several technological, financial and management challenges which threaten their survival.

Case study example: Cape Verde- Maison du Citoyen

Maison du Citoyen (Citizens’ Centre) and associated services is a multidimensional initiative that enables different services to be offered to citizens and businesses electronically. Set up as a dedicated physical centre initially, this is now a portal which groups all information and services typically sought by citizens and businesses under one roof including online certificates (birth, marriage); electronic payment (various administrative services); information system on public sector workers; access to electoral information; and starting up a company in one day (6). Apart from the usual time and cost savings the portal provides convenient and easy access to government services particularly for the Cape Verdean diaspora. Services are provided by this initiative via the initiative’s website, voice servers, SMS, email and also direct meetings. Service requests are confirmed by SMS or email. Where necessary, services are paid for electronically (using a payment card).
Case study example: www.Abidjan.net launched by Ivoirian Diaspora

Diaspora Ivoirians launched the website www.Abidjan.net to enable Ivoirian diaspora to access information on what is happening in Côte d’Ivoire \(^\text{(6)}\). Later, ‘Electronic Petition’, ‘Big Questions’ and ‘Electro Survey’ pages were started.

- Electronic Petition provides with users opportunities to launch petitions and gather signatures from people who support their standpoint.
- Big Questions is a weekly column on Abidjan.net which gives a voice to political, economic and social observers. Though, there is no specific example of decision-making on the basis of summaries from this column, suggestions made remain accessible and available to all.
- Electronic Survey represents surveys suggested by the content management team for the Abidjan.net website and these are linked to current affairs in national politics. The results of the surveys can be accessed online and can be used by everyone.

The momentum generated by these initiatives is remarkable. Although impact on national governance remains unclear, since these initiatives were a part of formal public consultation by a recognised democratic governance stakeholder they may serve as models for organizations working in this field.

Possibilities of scaling up the ventures

The various eParticipation initiatives are potentially replicable, particularly since similar conditions also occur elsewhere. The following aspects are important:

- Willingness: Initiatives studied indicate a willingness to address problems linked to democratic governance and in particular to transform relationships between the government and citizens. Evidence indicates that an improvement in the quality of public service is evident.

- Awareness: there is a low awareness of citizens regarding the services that are on offer from the government.

- Capability: To scale up, capability needs to be enhanced - for citizens, literacy and ICT literacy and for governments, training, orientation and research on how attitudinal transformations can be bought about. Capability building for the latter must encompass ICT competency building and the ethos of service delivery itself, for example, transparency.

- Trust: Since the lack of trust in online transactions often prevents stakeholders from embracing the online route, appropriate awareness of information security must therefore accompany any intervention that aims at spreading awareness of these initiatives among communities.
Access: For the vast majority of African countries, eParticipation can truly be increased by much improved and more appropriate access. Universal access features like PIAPs represent a feasible way to reach out to people. Mobile devices, a more personalised and "always available" option, represent an easy and affordable way of access. Community radio and video as media of service delivery can also help circumvent problems of illiteracy.

**Social Media**

**Case study example: social media as a platform for exchange of ideas and request for comments on government policies**

- The South African government employ social media to "stimulate a constructive Nation Building debate on values and ethics." The debate took place on the Presidency's Facebook page.\(^7\)
- The President of Rwanda, Paul Kagame, is extremely active on Twitter and responds frankly to issues about his country.\(^7\)

**Case study examples: social media to handle crises**

**Preventing violence** A new operation is proposed in Nigeria, based on earlier successful experiences, is planning to use ICT tools in pilot projects to enhance social accountability, prevent violence and upgrade the urban space in Benin City. The World Bank called for expressions of interest in November 2011.

Although developed in Kenya, and with offices in Liberia as well, reports of Ushahidi being used refer more often to cases outside Africa than in Africa. Ushahidi is an interactive map that can be electronically overlaid with information. It allows citizens to crowd source and monitor disasters and social events and this information is then located on the map. Ushahidi was initially developed to report post-election violence in Kenya in 2008 and has been used to report diverse issues from harassment, crimes, free and fair election processes and traffic problems. One recent example is the Sudan VoteMonitor project which used Ushahidi during Sudan’s first multiparty elections in 26 years in April, 2010. Although based in the US, the Sudan Institute for Research and Policy (SIRP) relied on a host of local Sudanese civil society

---

**eTransform Africa: Modernising Government through ICTs**

---

**Social media for social good**

“Chief Francis Kariuki, an African administrative, started his Twitter account in June 2011 to help his Kenyan village maintain peace and order. His tweets have helped to fight crime, organize logistic matters, and locate missing children and farm animals. In one example, Kariuki used Twitter to organize a rescue operation to save a man who fell into a pit. In another, Kariuki was able to stop a bunch of criminals raiding a school teacher’s home through a tweet. Thanks to social media, crime rate in Kariuki’s area has dropped significantly to nearly zero, compared to prior periods where break-ins were reported on a daily basis.”

via PSFK: [http://www.psfk.com/2012/02/african-chief-twitter-fight-crime.html#ixzz1nBmOe6lK](http://www.psfk.com/2012/02/african-chief-twitter-fight-crime.html#ixzz1nBmOe6lK)

“NEW YORK, USA, 6 October 2011 – Goodwill Ambassadors Yuna Kim, Serena Williams, Ishmael Beah and Angélique Kidjo are making an appeal for continued support in the Horn of Africa, utilizing social media to distribute a new series of Public Service Announcements (PSAs) which call on their fans to engage in the ongoing effort to end this devastating crisis.”

groups who they trained to report on the elections. They used Ushahidi as a way of getting the word out about the progress of the elections because, unlike other media, the Web is relatively unrestricted and enables reporting by ordinary people. Nevertheless the site was shut down after the second day. The Ushahidi platform was also deployed during the first round of the presidential elections in Côte d’Ivoire in October 2010.

**Case study example: social media to build opinion among masses**

When several Moroccan youth movements announced on Facebook that they were planning to organize an Egypt-style anti-government protest, King Mohammed VI announced a series of constitutional reforms, to be put to a national referendum. The proposal would empower the Prime Minister to appoint government officials and to dissolve parliament.

The use of social media during the “Arab Spring” is described in greater detail in the text box on the next page.

**Lessons learnt**

- For the new ICTs to have a real impact, Internet access must be available to significant segments of the population - this means that underdeveloped countries with minimal Internet penetration will be less affected.
- It is not possible to correlate mass social protest with the proliferation of net-based networks and social media. States with high levels of internet usage (e.g. Bahrain 88%) and states with some of the lowest levels of Internet exposure (like Yemen and Libya) both experienced mass protests.
- Not all types of ICT and related information and social networks have had the same impact. While the media utilized the term “Twitter revolutions”, identifiable Twitter users in Egypt and Tunisia numbered just a few thousand compared to the use of other ICTs, including cell phones, video clip messaging (such as YouTube), and satellite television.
- A critical constraint on the catalysing effect of these mobilization tools is not the ability of governments to master social media or to limit or block Internet access but rather a country’s particular system of governance, especially in terms of its representativeness and its linkages to the mass public. The new ICT networks are likely to have a critical effect in countries where the governing regime has little or no social base.
- Finally, for ICT political networks to be influential, the most active Internet-users, namely the younger generation, make up not only the bulk of activists, but a sizeable part of the population.

---

ICTs and the Arab Spring

Mass protests sweeping through the Middle East in early 2011 highlighted the distinct role ICT and digital social media tools and networks could play, particularly with respect to organization and communication. Social media networks played an important role in the disintegration of Tunisia and Egypt, while also contributing to socio-political mobilization in Bahrain and Syria.

Although existing conditions in Egypt made a major upheaval predictable, the fact that the crisis occurred sooner rather than later was largely due to the initial mobilizing effects of ICT and social media networks. Kick started by a Facebook campaign run by “April 6 Youth Movement,” generating tens of thousands of positive responses to rally against government policies, social media networks were crucial in organizing the protests and disseminating information about them.\(^{(47)}\)

Government reactions

While the Tunisian government blocked certain routes and specific sites, Egypt’s government’s response was qualitatively harsher. After blocking Twitter and Facebook, Egyptian authorities moved ordered all major telecommunications providers to block Internet access. Only a few telecommunication routes were left undisturbed. The Internet shutdown and cell-phone service disruptions affected Egypt’s economy and debt rating very badly.

Such crackdowns, though able to temporarily stop Internet access countrywide, do not ultimately work in today’s world of abundant ICT networks. In fact, the crackdowns may spur on new technology solutions. It seems that no region, state, or form of government can remain isolated from the impact of new ICT on social and political movements. However, the extent of their impact is not universal or unconditional; it varies from region to region and from one political context to another.

3.5. Convenience and efficiency in service delivery

Governments’ online presence

One-stop shop portals are part of the delivery tier of web and mobile citizen interfaces and are intended to make it easy for citizens to find information and access services. They are ideally backed by integrated procedures and processes and the collaborative delivery of public services at the lower levels of the framework. As can be seen from Table 9 there are many African countries where e-Government portals give citizen’s access to services and these individual cases are described in some detail in Annexure A. However, a government may have several separate access points and ways of delivering information to citizens and other stakeholders. The internet components vary from those that simply display static information to more advanced examples. The examples that follow are representative of the spectrum.
Angola Government Portal Project (August 2010)
The main objective of the government portal in Angola is to bring all governmental public information and services under the same platform and to make them available to citizens via the internet. Angolans can thus find information on government programmes and are given the option to send their views and comments to the government. The system includes 157 public services online and provides information on 31 governmental programmes. The portal contains 28 official government forms and provides for the possibility to make appointments with government officials and to download documents.

Botswana Government-On-Line
The Government of Botswana is undertaking major service delivery reform programmes aimed at improving service quality. Currently a government web portal with information and e-services is being developed. The portal will be customer-focused making the organisational structure of government more transparent to citizens and business. e-Government represents a radically new way for government to interact with its constituents, clients and partners. The portal extends the “reach” of government and provides everyone with access to information and services, from virtually any location and at any time. In addition, all government services that are appropriate for online delivery will be available over the Internet. Already driver’s licences are accessible at all government Road Transport Offices and Depots across the country.

Rwanda Development Gateway
The Rwanda Development Gateway is hosted by the National University, which is establishing a national portal to provide one-stop shopping for information on Rwanda and to be the country’s web interface to the rest of the world.

South African government’s on-line presence
The South African government has two online information portals, www.gov.za and www.infogov.za, providing information about South Africa, government, public documents and government leaders. Most national departments also have their own online presence where information can be found. In addition to their official websites various departments and ministers have a presence on Facebook and Twitter.

For example, the department of Home-Affairs provides both an online and SMS verification of marital status service. The Companies and Intellectual Properties Commission, which forms part of the Department of Trade and Industry, provides an online enterprise name reservation, lodgement and search services for the registration of new enterprises or the amendment of detail of existing enterprises. The South African Revenue Services is the flagship of the government providing online services to a large portion of South African taxpayers and this is described in detail in Chapter 4.

The 2011 Provincial and Local Government elections saw the ANC and DA, the major political parties, changing the country’s political campaigning methods. Both parties ran “town hall” discussions on Twitter to interact with citizens. Although this method of campaigning is not new to the global landscape, it has changed South Africa’s political scene forever.
Multi-channel service delivery

There are many examples of projects to extend telecommunications networks to remote communities in rural areas, to equip community centres with computers, and to facilitate knowledge sharing and build capacity. Amongst those in Africa are Nteletsa Botswana; Kitsong centres, Botswana; Knowledge sharing initiatives, Egypt; Marwan Project, Morocco; Community Multimedia centres, Mozambique; eBrain, Zambia are all described briefly in more detail in the Annexure and in Table 5 in the Annexure.

National identity systems

National identity (ID) systems are often considered a necessary basis for public service delivery and require solid legal and regulatory foundations, secure procedures, processes, systems and technologies supported by organizational capability and good interfaces for use by the public. Hence all three tiers of the ICT-enabled Public Service Delivery Framework (Table 4) need to be in place.

Accurate, effective and efficient national identification systems, incorporating biometric and other advanced technologies that minimise fraud and identity theft, can be of great value in allowing access to public services by those entitled to receive them. Passports and other travel documents are closely allied to the national identity cards used within a country. Countries who are coping with an influx of refugees, including those seeking new homes for economic reasons, have an urgent need to identify their own citizens. In times of natural disasters it is also very useful to be able to identify people. Child support, social pensions and other government grant systems rely heavily on reliable ways of identifying recipients and proper identity documents are also very useful in compiling election registers and hence assist in providing free and fair elections.

On the other hand citizens, there is some strong opposition to the whole idea of national identification systems. They can be misused by citizens, law enforcers and by governments. Basic arguments against them focus on effectiveness, cost and as an infringement of privacy. “too complex, technically unsafe”, overly prescriptive and lack a foundation of public trust and confidence”


“It is the right of every Kenyan attaining 18 years to register and be issued with a National Identity Card (ID). A National Identity Card represents ‘proof’ of Kenyan citizenship without which an individual cannot vote, purchase property, access higher education or even obtain employment; further, those without the document find themselves victims of arrest and extortion by the police on spurious grounds. Needless to say, hindrance to easy access to critical documents like the Identity Card which enhance the enjoyment of rights and freedoms of citizens implies violation of these very rights. For all Kenyans to be guaranteed their full enjoyment of rights and freedoms, it is necessary that the registration of persons be made simple and accessible without impediment by complex procedures”.


---

xxii eTransform Africa: Modernising Government through ICTs
There are two clear cases in Africa where National Identification systems have resulted in disenfranchisement of citizens. The first is Egypt where religious affiliation had to be filled in on applications for identity documents and only three options were given. People who for reasons of religious conviction refused to select any of these options could not apply for documents and, as carrying such documents is compulsory, these people could not travel, apply for jobs, open bank accounts, attend educational institutions etc. This issue was resolved in January 2009 after court cases in 2008. There were also regular complaints regarding the issuing of Identity Cards in Kenya which lead to a 2007 report in which various problems were highlighted including discriminatory practices against some groups, unnecessary delays, demands by issuing authorities for bribes, demands for unnecessary documents to prove citizenship, insufficient resources in the offices of the issuing authority. Kenya sent out an Request for Expression of Interest for developing a smart card national id system in 2009 and a new act of parliament, Identification and Registration of Kenya Citizens Act, 2011.

Several African countries are reviewing their national systems for identifying citizens and others have recently adopted such systems. Examples are: Angola in 2009, Uganda (scheduled for 2010 but has encountered problems mostly to do with cost), Botswana in 1998, Nigeria (2011), Sudan (including a biometric registry started registering citizens in 2011). Related systems involve recording the life events (birth, marriage, death) – the Moroccan eFez system is an example of renewed efforts in this regard.

Whereas in the United States and other western countries there is an on-going debate related to compulsory national identification systems regarding cost, effectiveness, privacy and civil liberties at the time that such systems are proposed, in Africa the debate seems to arise only after development of such systems has been approved and is quite far advanced. It is only then that attention is focussed on the realities of cost, the need to integrate other registration systems in order to maximise benefits, potential harassment and even disenfranchisement of minority groups and the very substantial challenges involved with accurately identifying and registering all bona fide citizens.

Angola, Botswana and Somalia are used as case studies. These systems include ID numbers and cards provided to citizens for use within a country and passport systems. The Moroccan eFez programme is included as recording the life events (birth, marriage, death) as this programme does is important in terms.

---

http://en.wikipedia.org/wiki/Egyptian_identification_card_controversy


http://cickenya.org/sites/default/files/bills/The%20Identification%20and%20Registration%20of%20Citizens%20Bill%20final%20AG_0.pdf


http://allafrica.com/stories/201202060399.html

http://allafrica.com/stories/201105200707.html

http://www.sudantribune.com/Sudan-national-security-number,41598 February, 2012 The registration programme was announced two months before the secession of South Sudan and after the plebiscite was held in January 2011. Mohamed Ahmad Al-Sayyed, the director-general of the civil registry department at the ministry of interior, stated that issuing of identity cards to people from South Sudan would be subject to “political considerations”. http://www.thirdfactor.com/2011/05/18/sudan-launching-national-biometric-registry
of the legal aspects and makes up a significant part of the enabling systems for national ID systems. The eFez programme includes back office/ back end and front office / front-end components illustrating that the different tiers cannot be seen as separate from one another.

A mobile data capture and card issuance unit deployed in Angola’s 17 provinces.

A. The Angola National identity card
Angola held its first democratic elections in sixteen years in 2008 and prior to this the government set out to issue new identity documents to the 16 million citizens. A major challenge was the fact that the majority of the population live in rural areas. In addition, the communications infrastructure does not reach these widely dispersed rural areas. One hundred and sixty fixed and mobile stations were used to reach the citizens and secure satellite connections were used to connect these to centralised database.

The system consists of a robust (durable) smart card with advanced security features on which a colour photograph, two fingerprints, iris images, a birth certificate and other information can be stored. The quality of data collected was carefully controlled. This information can be verified visually without any technology but cannot be altered or updated except using technology.
The multiple levels of security make the card counterfeit-resistant. The biometric information of a new applicant is checked against the database to avoid multiple applications, audit trails and a permanent traceable record of each systems operator’s interactions with the system are maintained as part of the security and the card is only handed over to the applicant after his identity is verified by comparing his fingerprints with those on the system.

The case demonstrates the length of time needed to complete issuing identity cards since in Feb 2011 it was said to still be in “a relatively early stage of issuance”. (50)

B. The Omang Project of Botswana
Botswana has a national ID system. It was the first country in Southern African Development Community (SADC) to develop a national ID system with the Automatic Fingerprint Identification System (AFIS) (51). The card, called “Omang”, has a number of security features including watermarks and serial numbers. The identity information is stored centrally by the National Registration Office, with a variety of checks on the submitted data to verify the card information. Turnaround time ranges from two hours to 24 hours for a card. In the future the system will probably be tied to payment and passport production systems.

C. The Somali ePassport & National ID Card Project
ePassports have a micro-processor chip embedded into the passport book where the bearer’s bio data and biometrics (photo and fingerprints) are stored – these can be verified at any border control with the necessary ePassport readers. The following are the major objectives of the project:

- Centralised repository of all citizen information
- Online, secure web-based application and approval process
- Systems should be able to continue to function locally in the event of a communication link failure
- Ability to track any application online from start to finish
- Ensure all citizens receive their ePassport / ID card within 7–14 days after application
- Utilise an Automated Fingerprint Identification System (AFIS) to prevent multiple enrolments.

The case of Somalia highlights a number of important issues that are evident in other African countries as well. National ID systems are bought from established technology suppliers usually located elsewhere. The ePassports and ID cards were provided to Somalia in four months, but this is the off-the-shelf technology componentxxx supplied to the contracted company. The difficult and expensive process of issuing these ePassports and ID cards will take an estimated five years. This process will be complicated by the political situation in Somalia, now and in the future.

D. E-Fez
In Morocco, local government offices known as Bureaux d’état civil (BEC), keep records of citizens’ life events and are the only institutions legally authorised to provide citizens with certificates authenticating those life events required for a variety of personal, formal and administrative procedures, e.g. enrolling children in school, job seeking, applying for social services, requesting passports and other formal activities. The BEC offices in Morocco (estimated to be 2,400 in total) provide services (i.e. certificate xxx http://www.securitydocumentworld.com/public/news_all.cfm?m1=c_10&m2=c_4&m3=e_0&m4=e_0&subItemID=917
eTransform Africa: Modernising Government through ICTs

Page 62
issuance) both at the front office (i.e. the space that citizens experience and view) and back office (i.e. internal data processing and management closed to the general public). It remains completely manual and paper-based. The archaic functioning of these community-oriented government offices has led to a citizen-unfriendly service delivery characterised by numerous organisational problems such as the expectation of giving monetary tips in order to be served or to speed up service delivery.

In response, the municipality of Fez collaborated with a research team from the ICT4D lab at Al Akhawayn University to address BEC-related organisational problems. The eFez project began in 2004 and was successfully completed by November 2005; it was a pilot e-Government system or platform: an electronic fundamental état-civil system (eFES) funded by the International Development Research Centre (IDRC) through its Acacia Initiative and deployed in the local administration of the city of Fez. Project evaluation has revealed eFES transformative capabilities and influence on BEC organisational misconduct and local good governance conditions in general.

eFez introduced and initiated the use of ICT within Morocco’s pilot local government in Fez. Building an e-Government system was intended to use electronic means to automate the service delivery of one of the most used citizen-centric services: état-civil certificates, issued at the local government office known as Bureau d’état civil (BEC) entrusted with filing official records of citizens’ declared life events such as birth, changes in one’s name, marriage, divorce and death. Specifically, the project automated the BEC back office and electronically enabled the front office via a web portal and a related touch screen kiosk, available for public use and adapted for the illiterate. The ICT4D research team, within a PPP (public-private-partnership) environment, built the eFez platform with two complementary building blocks:

- BEC back-end component, which retools the BEC office via the automation of internal operations and processes to streamline employees’ work
- BEC front-end component, which provides front-line database technologies accessible via staff networked desktops and (self-service) touch screen kiosks to allow citizens convenient, speedy, transparent and easy access (i.e. request or receipt) to necessary documents.

3.6. Reform and re-engineering of government

There are few experiences of BPR in Africa. Two examples are provided.

**Case study example: BPR in the Ministry of Capacity Building, Government of Ethiopia**

The Ethiopian government recognized the importance of improving performance of service delivery and accountability in order to support development efforts in the country. The government adopted a “five pillars of civil service reform” program consisting of a top-management system, civil service ethics, expenditure management, service delivery and human resource management (52).

The Ministry of Capacity Building, established to coordinate these reforms, included among its responsibilities identifying capacity gaps, coordinating implementation of projects and programs, establishing monitoring and evaluation systems that could ensure effectiveness of reform programs,
creating a modern civil service system equipped with high human resource capacity and paying attention to the expansion and utilization of ICT in Ethiopia. Under the general direction of the Ministry, most federal civil service organizations directed their efforts and resources towards implementing BPR. However, only few, for example, the Ministry of Trade and Industry, have improved their efficiencies of service provisions (52).

**Case study example: BPR in the Government of Namibia**

In an exercise taken by the Efficiency and Charter Unit in the Office of the Prime Minister, Government of Namibia findings were largely the same. In the Namibian case the BPR exercise was completely independent of IT-enablement (43).

**Possibilities of scaling up the ventures**

The case studies described above highlight the following issues that must be borne in mind while deploying BPR in the African context.

- It should be recognised that a manager of a civil service organization relies on the rules, procedures and regulations of the central regulatory agencies.
- ICT is crucial in reengineering business processes. African countries have a late-comer advantage since in many cases computerisation has not taken place; therefore BPR can be followed by computerisation.
- Even if most government employees believe in the change induced by BPR, they may resist it if they feel insecure at the prospect of BPR implementation. The government needs to pay attention to this concern during the organizational change and appropriate awareness raising efforts should accompany the BPR effort. As BPR introduces far-reaching changes, often with political ramifications, neutral external consultants should conduct this exercise.
- BPR strategies for different organisations are usually different, principally divided according to the extent to which the organisations are customer-facing.

**ICT to create and support to support collaborative networks**

The cases described in this section all use ICT to create and support networks between different stakeholders and service providers but each case places emphasis on different aspects of the network. In the Ethiopia’s WoredaNet the communications network receives particular attention and there are a wide variety of users, whereas in the case of GCNet in Ghana two systems are linked that have complementary functionality but are both related to import and export. The third type of network, iNetwork in Uganda, was created to share knowledge and information on applying ICTs. However, all of these systems are intended to facilitate collaboration, communication and partnerships and national agencies play some role in each of them.

**A. WoredaNet Initiative in Ethiopia**

The WoredaNet, the e-Government communication backbone was developed by the Ethiopian Telecommunication Corporation and is a major enabler for rapid ICT development in the country. The public sector and the education sector have begun to benefit from this network and the health and
agriculture sectors have been lined up for the next phase. With all this and a corresponding ICT for education policy and implementation plan, Ethiopia is set to become a model ICT user on the continent.

WoredaNet connects more than 611 woredas (local councils), regional and federal government offices across the country. WoredaNet is a terrestrial and satellite-based network designed with the primary objective to provide ICT services such as video conferencing, directory, messaging and voice-over IP and Internet connectivity to the federal, regional and woreda level government entities.

**WoredaNet – Multi-service IP based Network**

The goal of WoredaNet is to establish a multi-service IP-based service using terrestrial broadband and VSAT infrastructure for the delivery of services to government and the citizens. The WoredaNet uses both VSAT and terrestrial links to connect to the Internet and to other WoredaNet sites. Since nearly half of the woredas have no terrestrial connection with Addis Ababa, the primary means of communication is VSAT.

The terrestrial link supports a 1 Mbps upstream data rate, while the VSAT link supports 512 Kbps in order to carry outgoing video, voice and application data simultaneously. The downstream traffic for VSAT supports a total of 32 Mbps which is shared by all the VSAT connections.

The major objectives of the WoredaNet include:

- To bridge the digital divide between urban and rural communities
- To provide knowledge and information to citizens
- To build organisational capacity at all levels of government
- To provide the lowest level of government with accurate and timely information.

The goal of WoredaNet is to establish a multi-service IP-based service using terrestrial broadband and VSAT infrastructure to deliver services to government and the citizens. The goal is to improve federal and regional government administrative efficiency, effectiveness and productivity, as well as information provision and service delivery to the public at large.

The WoredaNet implementation project was part of a broader ICT initiative of the government to promote sustainable development through a massive programme of ICT application aimed at empowering the citizens.

The WoredaNet is under the direct management of the Ethiopian ICT Development Agency. The Agency is responsible for devising rules and regulations on how to use the WoredaNet infrastructure. The WoredaNet consists of the National Data Centre, 11 regional data centres at the regional capital cities of each national states and Addis Ababa and Dire Dewa City Administrations and 611 woreda centres located at the main towns of each woreda. Eight of the regional data centres are connected to the National Data Centre through terrestrial links while three of them are connected through the VSAT network. Most of the woreda centres are connected to the National Data Centre through VSAT.
Description of impact on beneficiaries

Video conferencing, Internet and messaging are the most prominent services provided. The video conferencing service (VC) is one of the most utilised services. The VC service is used for government conferences, court services, training and distance education.

Court services

Ethiopian courts are arranged hierarchically from the lower structure woredas to zone, region and the federal government level. VC is used for court hearings held at all levels. Instead of travelling long distances, the customer can use the VC services of the WoredaNet near/in his/her home town to attend the court conducted at a zonal, regional centre or Addis Ababa. This has helped citizens to avoid inconveniences and unnecessary expenses as well as to get faster responses for their cases.

Training and distance education

Various training and distance education programmes have been conducted using the WoredaNet VC service including training for woreda administrators, public servants, judges and prosecutors. For instance, the Ministry of Justice has used the VC system to upgrade more than 2,000 legal professionals to master level in seven central woredas all over the country; Bahrdar University has used the system to support its undergraduate distance education programme by providing tutorials to its students in seven central woredas.

Using VC, the instructors at the centre provide training in different woreda centres spread across the country. This has reduced the costs associated with moving the trainees to a central place and sending instructors to many places. This has created an opportunity to train many people at one time and has also helped to reduce service shut-downs that may result from moving public servants away from their working area for training. In general the system has helped to improve the services to citizens by providing training to the public servant.

Internet and messaging

Woreda administrative organs use email services to send reports and exchange information with their counterparts at zone and region level. Previously, official reports would take months to reach from woreda to regional capital and then to the federal ministries. The WoredaNet service has also facilitated rapid reporting of incidents such as epidemic diseases, early warning signs of famine, etc., which need urgent action before a crisis develops.

In some places the WoredaNet also serves as a community Internet facility, where the public can get access to the Internet and ICT training. Email service from the WoredaNet has enabled efficient communication between tiers of government, which in turn has contributed to administrative reform and better services to citizens.
Other ICT services

As part of the WoredaNet project more than 2,000 people have been trained in advanced networking skills. These people, in addition to managing the network, provide ICT services to their government offices, including providing advice in procuring ICT equipment and providing basic computer training. The overall infrastructure lays the foundation for implementing e-Government services and has created favourable conditions for utilising ICT for development work at the grassroots level.

B. The Ghana Single Window (GCNet)

A public-private joint venture company was formed in 2000 to manage the deployment of the first live customs declaration. The objectives were to:

- Facilitate trade and clearance of goods through customs in a secure manner
- Enhance the mobilisation of trade-related revenue for government
- Reduce malpractices associated with import/export trade
- Reduce the transaction costs and delays that trade operators encounter in clearing consignments.

The GCNet consist of two complementary systems:

- The Tradenet, an EDI platform for transmission of electronic messages between trade operators and customs on one hand and other regulatory bodies on the other
- The Ghana Customs Management System, an automated system for processing all customs operations

The services provided include many different processes including: issuance and distribution of licences, permits and exemptions by regulatory bodies; electronic valuation of used vehicles; standard and head load declarations; customs release and delivery orders; ship and aircraft movement information over the web portal and access to statistics by various stakeholders using data mining tools. The GCNet system users include customs, port authority, shipping lines, custom house agents, commercial banks, freight terminals, airport freight handling operators, central bank, oil marketing companies, driver and vehicle licensing authority, shippers’ council and ministries, departments and agencies.

The benefits to different stakeholders include:

1. Importer/Exporter
   - Faster clearance times
   - More transparent and predictable processes
   - Less bureaucracy
2. Customs
   - Improved staff working conditions through upgraded infrastructure
   - Substantial increase in customs revenue
   - More professionalism
3. Government
   - Substantial increase in government revenue. In the first year, import revenue grew by almost 50%. In subsequent years there has been an average growth of 23%.
Data Centres in Africa recently built or being built

2011: The Ugandan government has launched a state-of-the-art centralised data centre for secure email, instant messaging, voice and video conferencing. Secure biometric access control. (http://www.newvision.co.ug/D/8/13/760656)

2010: The Rwandan government’s National Data Centre was set to be completed towards the end of 2010. It was said to be the first of its kind in East Africa and includes a commercial area where backup data would be stored for non-governmental organisations. (http://www.balancingact-africa.com/news/en/issue-no-506/computing/rwanda-us-5-million/en)

The National Data Centre of Rwanda was announced as being virtually complete in the first half of 2011 after a delay due to the need to install a backup electricity supply. (http://allafrica.com/stories/201104260086.html)

2011: The first of three Kenyan data centres was expected to be complete by the end of 2011 with a separate disaster recovery centre. Cost and sufficient supply of electricity was also highlighted as a concern here. (http://cio.co.ke/view-all-main-stories/4557-kenyan-government-to-launch-3-data-centres.html)


2011: The feasibility of introducing a government data centre was to be considered as part of Botswana’s National e-Government Strategy, 2011-2016.

2011: Ghana has recently embarked on setting up a national data centre “… which will link all governmental agencies together on one platform.” However it was being housed in a temporary location and the new building was started late in 2011. (http://www.ghana.gov.gh/index.php/news/regional-news/greater-accra/9278-government-to-construct-national-data-centre)

The Government Online Centre (GOC) is a centralized data centre which supports e-Government initiatives. Equipped with state-of-the-art ICT Infrastructure, the GOC hosts the Government Web Portal which is one-stop-shop providing comprehensive information on Government Services and enabling online applications on a 24x7 basis. Mauritius http://www.gov.mu/portal/site/ncbnew

2010: The government of the Republic of Congo is adopting a national data centre for monitoring and early warning of disasters and extreme events (this is rather different from those above but there seems to be a number of similar initiatives elsewhere in Africa).
Challenges

The following challenges have been faced:

- Overcoming the human factor, institutional, attitudinal and infrastructural constraints required for successful change management
- Ensuring high level of compliance among trade operators and declarants
- Overcoming the seeming reluctance of some regulatory agencies to interface with the system to enhance trade facilitation
- Developing complementary electronic systems for other trade-related agencies (e.g. Port Cargo management systems and MDA internal systems)
- Addressing infrastructural constraints especially at land borders.

C. I-Network Uganda

This is a national network of individuals and organisations that share knowledge and information on applying ICTs. One of its programmes, DistrictNet, focuses on providing public information using ICTs. The spread of mobile phones and FM radio stations has enabled the development of an interactive public discussion forum in local languages on topics such as politics, health issues, agriculture, education, gender issues and the environment. The Reflect ICT resource centre has been equipped with computers (Internet-connected), printers, digital cameras and videos, generators, UPS, a public address system, WorldSpace radio and solar-operated radios, along with other office equipment including a photocopier. The aim is to facilitate access to agricultural, health and commercial information based on needs that the community has identified. The project uses VSATs to offset the high cost of connectivity and to demonstrate the use of ICT-equipped schools as school-based community learning centres.

3.7. Exploiting technological advancements to meet service delivery objectives

Limited access to financial and other services in developing countries (especially in rural and remote areas), availability of cheaper handsets, mobile technology advances and the inherent mobility advantage of these devices, all add to the potential of how mobile telephone technology can be used in Africa. This is not limited to better delivery of public services but as a tool to meet broader developmental goals. In Africa, basic SMS text messaging is expected to be a key revenue driver for mobile network operators, helping to offset declines in average revenue per subscriber (ARPS) for mobile voice services in the regions (53).

Newly commissioned national identification systems use advanced biometric and data storage technologies. Examples are:

- Botswana  First SADC country to develop a national ID system with the Automatic Fingerprint Identification System;
- Somalia, “latest contactless chip technology incorporating facial and fingerprint biometrics”;

eTransform Africa: Modernising Government through ICTs

Page 69
• Angola, two fingerprint biometrics, iris images, digital colour portrait, stores additional data such as a birth certificate, updateable, counterfeit-resistant, durable.

Networking solutions are also important. A prime example is the WoredaNet Initiative in Ethiopia which provides court services through video conferencing (amongst other services).

Internet 2.0 solutions: Ushahidi, an open source software that originated in Kenya, is a good example of crowd-sourcing innovations. It creates a crowd-sourcing platform to which citizens can report incidents during elections or crises, via the web and SMS. It now includes a cloud-based free service called CrowdMap.

3.8. Summary of Africa Scan cases

More narrative detail on these cases can be found in Annexure A. Table 9 indicates how the examples from Africa fit in to the categories and sub categories used in Chapter 1. Examples have multiple features and hence usually fit into more than one category. Please use the following as the column headings in Table 9 as the subheadings cannot be shown in the table itself.

A. Commitment to excellence in public service delivery
   I International forums and commitments
   II National plans

B. Accountability, transparency, citizen collaboration and interaction
   III Accountability and transparency
   IV Collaboration and interaction with citizens

C. ICTs as a means of extending social democracy
   V e-Participation
   VI Social media
   VII Unintended consequences of the Internet

D. Convenience and efficiency in service delivery
   VIII Beyond workflows, integration of structure, systems and service, networks
   IX Multi-channel service delivery, online

E. Reform and re-engineering of government
   X Re-engineering organisations and processes
   XI Legal foundations for public service delivery

F. Exploiting technological advancements to meet service delivery objectives
   XII Cloud and satellite
   XIII Mobile and mobile applications
   XIV Biometrics

<table>
<thead>
<tr>
<th>Aspects (see legend on previous page)</th>
<th>Commitment to excellence</th>
<th>Accountable, transparent, interactive</th>
<th>Extend social democracy</th>
<th>Convenience &amp; efficiency</th>
<th>Reform gov &amp; BPR</th>
<th>Exploit new technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arab Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angola: Portal</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botswana: Government-on-line</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botswana: Kitsong centres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botswana: National ID system</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Botswana: Nteletsa –universal access</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burkina Faso: Aden project</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burkina Faso, Portal</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cape Verde</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Cote d’Voire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Egypt: Knowledge sharing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia: WoredaNet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana: Single Window (GCNet)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya: Ushahidi &amp; Swift River</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya: Open Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malawi: IFMIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Mauritius: e-Gov in National Plan</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morocco: E-Fez</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Morocco: Marwan Project</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mozambique: Community Centres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Namibia: eGov policy &amp; National Plan</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria elections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rwanda: Development Gateway Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somalia: ePassport &amp; National ID Card</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>South Africa Government Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa eFiling</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Tanzania: ICT4RD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia: e-Government applications:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uganda: I-Network</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uganda: Women of Uganda Network</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia: eBrain forum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia: Chipata District Women’s Development Association</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9: An Analysis of Key Africa Scan Cases
3.9. Conclusion

The following are types of ICT initiatives specifically located in the public service delivery sector for which examples were found in African countries:

1. ICT national policy development together with the compiling of strategic plans was highlighted in Chapter 3 and cases from Africa were discussed there.

2. e-Government: Portals and government web sites which may be limited to providing information in one direction only, namely from government to the citizens or business, or may enable the citizens and businesses to interact with government by requesting services, making payments, or providing information. These communication channels may be intended for the Internet or mobile phones or both. Increasing, less structured communication is seen via Twitter and other social networks.

3. Mobile solutions

4. ICT infrastructure and network development including facilitating communication between government employees in different locations, between different branches of government and between businesses who need to interact with government officials. Multi-Purpose Community Centres are needed to give less affluent citizens access to information and services.

5. National ID initiatives are a specific example where new technologies are being used in important ways that benefit both the individual and government and create effective and efficient interfaces between citizens and public service systems.

6. Other administrative, back office systems as will be discussed in detail in Chapter 5.

Many governments focus to a large extent on ICT in Education, improving access to technology and the Internet for learners and teachers and there is some mention of these initiatives in Annexure B although there is a separate section of the eTransform report devoted to this particular topic. The resources provided in these ICT in Education projects are, however, frequently also made available to the entire community. Use of technology in the education of people employed in the public sector is also an area that overlaps between the two. Similarly, there are references to ICT in Health in the Africa Scan and Annexure B. In both the Health and Education cases, ICT initiatives may include the development of administrative systems and hence it is difficult to clearly demarcate what belongs in this report and what should be left for other sections.
4. Case Studies

4.1. Chapter overview

This chapter focuses on the application of ICT in two countries, with case studies on South Africa and Malawi. The selection of the South African Revenue Services (SARS) in South Africa and the implementation of the Integrated Financial Management Information System (IFMIS) in Malawi was in line with the objectives of the e-Transform study. These two countries are at opposite ends of the spectrum of development in Africa. South Africa is classified as a middle income country and the biggest contributor to Africa’s GDP. Malawi is at the lower end of the spectrum and is classified as a least developed country by the United Nations.

The South African case study on eFiling describes how ICT can be used effectively to transform service delivery to taxpayers. It provides an overview of the system, indicates the benefits and highlights areas for improvement. The Malawi case study on the other hand focuses on how ICT can be used for more effective financial management. It shows how ICT can transform government and provides insight into conditions and circumstances relevant when implementing such a system in government. It highlights the challenges faced and provides recommendations on what should be considered in order to achieve effective results. While ICT can be effective for transformation in the public sector it is not without its prerequisites. Services and interaction with citizens cannot be effective when dealing with a population where education levels, connectivity and mobile and Internet penetration rate is low. It is important for governments to understand the needs and capabilities of their citizens when designing tools and solutions for effective public service delivery. Hence, ICT is a necessary but not a sufficient tool for improving public service delivery.

In selecting the case studies, the following additional criteria were applied:

- **Success**: projects that achieved their outcome and development impact as well as those that struggled to meet their objectives but eventually overcame the challenges and had some success;
- **Coverage**: one project that affected the citizens of the country directly and one with indirect implications for citizens;
- **Diversity**: projects from different regions and implemented at different levels of GDP;
- **Ownership**: projects that have been implemented by the government.

An attempt was also made to identify cases not already documented in similar studies. Each case study is explored from two perspectives: first, a brief synopsis is given of the available data on the country and the system; and second, in narrative form, from the perspective of individuals directly involved in the implementation of the projects. The narrative sections are organised as follows: (i) the system and its

---

xxxii The World Bank published a study of what works and what does not work in terms of IFMIS. Malawi was not included as part of those countries studied.
design (characteristics including scope, functionality and technical dimensions); (ii) achievements (efficiency, successes and benefits); (iii) challenges (failure factors and limitations); (iv) potential improvements; and (v) circumstances under which the system would be most efficient, guidelines which create an opportunity for transformation in other countries implementing the same/similar systems.

4.2. Where do these examples fit in regarding the classification of ICT-enabled public service delivery systems?

In the overview of public service systems given in the landscape analysis and the Africa scan there were several examples of citizen-centric systems that focus on improving the citizen’s access to information and services and even on encouraging individuals to contribute information and participate in decision making. These fit into the Delivery Tier of the ICT-enabled Public Service Delivery Framework (Table 4).

In contrast, this chapter looks in depth at two systems whose contribution are primarily in terms of improvements to traditional government transaction processing systems and the management information systems fed by information derived from these systems. It may seem that these systems have as their primary goal the interests of Government, with the citizens as secondary users, but this is a misconception as the framework explains. Both enabling systems have delivery tiers and in the case of eFiling the citizen, business owners and tax professionals have the option of accessing the system via the Internet. As explained above, the decision to present these cases was based on both the magnitude of the opportunities related to the development of these systems and to some constraints.

As will be demonstrated in the detailed discussions of the two systems, there is an urgent need in the African context to upgrade enabling tier IT systems. Figure 1 in Chapter 2 clearly demonstrates how ineffective service delivery negatively affects society as a whole. A significant improvement in the underlying IT systems can make a very large difference to the efficiency of, and control over government administration, resulting in reduced operating costs, a decrease in corruption and in some cases increased revenue collection. The two cases discussed in this chapter demonstrate the predicted gains and hence are examples of grasping opportunities. These systems are considered essential rather than nice-to-have and devoting resources to them, and developing capacity in these fields of expertise is a priority. At the same time, the systems are expected to motivate those working for government and the ordinary citizen to cooperate with the system in a responsible manner.

4.3. Methodology

The research approach followed for both case studies is explorative and qualitative. To meet the objectives of the case study, the research design was as follows:
• Literature review and desktop analysis of secondary data to inform an overview of each of the countries’ use of ICT in public services. Literature sourced included recent studies conducted and additional data sourced from the Internet.
• Primary data collection and analysis by means of one-on-one interviews with a range of stakeholders involved with design and/or implementation of each ICT system.
• Primary data collected for unrelated projects but for which further analysis of the data sets provided insights directly relevant to this study.
• The findings in this chapter present the results of both primary and secondary data sourced.

4.4. Reform and re-engineering of government

Case study: Malawi’s integrated financial Management Information System (IFMIS)

This case study sheds light on the experiences, challenges and benefits that the IFMIS system has had among government officials in Malawi.

The objective of the IFMIS case study is to identify the circumstances required under which ICTs can be applied successfully (quick wins), thus creating opportunities for transformation in other African countries, some of whom have a poor track record of IFMIS implementation. Progress made by the government of Malawi in public service delivery has been relatively slow and the withdrawal of the IMF and other donor agencies has significantly impacted on the country. The government officials interviewed pointed out other challenges and what assisted the second round of IFMIS implementations in its progress towards financial transformation in Malawi.

“Financial forecasting—the projecting of a government agency’s revenues and expenditures into the future—is essential to help public officials evaluate the long range economic effects of proposed initiatives.”

Christopher Swanson, “Time Is Always Money,” as cited by (71).
Background information on Malawi

**Economic Profile**

Landlocked Malawi ranks among the world’s most densely populated and least developed countries. It is one of the poorest countries on the continent with a population of close to 13 million people. The about 85% of the country’s population lives in rural areas. Agriculture accounts for more than one-third of GDP and 90% of export revenues. The economy depends on substantial economic assistance from the IMF, the World Bank and individual donor nations.

The government faces many challenges including dealing with the rapidly growing problem of HIV/AIDS and satisfying foreign donors that fiscal discipline is being tightened. Investment fell 23% in 2009. Barriers to investment, such as unreliable power, water shortages, poor telecommunications infrastructure and the high costs of services, remain unresolved.

**The state of ICT in Malawi**

Malawi’s ICT infrastructure and technology readiness ranked 136th out of 139 countries for mobile telephony subscription and 125th for broadband subscriptions in the Global Competitiveness Index. Cellular network coverage is limited and is primarily based around the main urban areas. The country has access to satellite communications.

In an attempt to address the country’s need for ICT:
- the national telecoms operator, MTL has been privatised,
- copper and fixed-wireless lines are being rolled out and a national fibre backbone is being implemented
- the country’s electricity utility is also laying fibre and leasing capacity to operators
- additional national operators have been licensed
- ISPs are rolling out wireless broadband networks and mobile data services have been launched.

The map (Figure 7), excerpted from the Intra-Africa Fibre Map, shows the extent of international connectivity links supporting Malawi and emanating from each of its neighbours.
The UN ranking Malawi’s eDevelopment at 159th out of 184 countries assessed and providing a 0 rating for the country’s eParticipation Index (57). While government has a central information portal linking some of its ministries to the central website, access to the website was found to be unreliable. With most of the Malawian government connected to the government wide area network it is imperative to ensure acceptable Internet access.

**The legal framework for public finances**
Malawi was one of the first countries on the African continent to develop an ICT policy in 1998. The policy focused on ten thematic areas; namely: strategic ICT leadership, ICT in human capital development, ICT in governance, ICT in industries, ICT in the growth sectors as identified in the Malawi Growth and Development Strategy, ICT infrastructure development, community access to ICT, responsive ICT legal and institutional regulatory framework, regional and international integration and provision of universal access to ICT services. Most of the countries that used the Malawian draft policy as a basis for their ICT development process have moved far ahead as regards the implementation of the strategies.

“The ICT Policy aims at developing the ICT sector, promoting the development and use of ICT in all sectors and enhancing universal access to ICT services to achieve socio-economic development. ”

Leckford Mwanza Thotho
Minister of Information and Civic Education, 1998

The Constitution (1994) is Malawi’s legal basis for management and control of public finances. The following Acts are of relevance:

- The **Public Finance Management Act** (2003) is the main piece of legislation in financial management;
- The **Public Procurement Act** (2003) empowers the Director of Public Procurement to oversee and regulate public procurement in the public sector;
- The **Public Audit Act** (2003) empowers the Auditor General to perform audits in any organisation or programme which is receiving funding from the Consolidated Fund or public moneys.

Although Malawi shows an improvement in information on the central government’s budget and financial activities provided to the public according to the Open Budget Index, moving up from 29% in 2008 to 47% in 2010, it still fares poorly when compared to other countries (58). The various shortcomings in the budget can be improved by the effective adoption and use of a financial management system.
About IFMIS

An integrated financial management information system can broadly be defined as a set of automated solutions that enable governments to plan, execute and monitor the budget by assisting in the prioritisation, execution and reporting of expenditures, as well as the custodianship and reporting of revenues. Accordingly, IFMIS solutions can contribute to the efficiency and equity of government operations. Modern IFMIS platforms help governments comply with domestic and international financial regulations and reporting standards and support decentralised operations through centralised web-based solutions, providing access to a large number of authorised budget users at all levels.

A core IFMIS generally refers to automating the financial operations of both the budget and treasury units. The system tracks financial events and records all transactions; summarises information; supports reporting and policy decisions; and incorporates the elements of ICT, personnel, procedures, controls and data. An IFMIS usually supports key budget execution functions, such as accounts payable and receivables, commitment and cash management and the general ledger and financial reporting, combined with budget formulation (multi-year), debt management and public investment management modules. Non-core systems are personnel management/payroll, revenue administrations (tax and customs), public procurement, inventory and property management and performance management information. IFMIS solutions increase financial control, support informed decisions on policies and programs and publish reliable information on budget performance.

Implementation of IFMIS in Africa

A number of countries in Africa have implemented IFMIS relatively successfully, including Tanzania, Mauritius, South Africa, Uganda and Sierra Leone. However, in general the track record for IFMIS implementation in developing countries is very poor. There is often political resistance to IFMIS projects and change is usually incremental rather than transformative.

In Africa, an urgent need to improve Public Financial Management (PFM) practices and a substantial increase in development funds beginning in the late 1990s are likely the main drivers for most of the ambitious FMIS projects. These projects have involved relatively complex information systems covering a large number of PFM functions – at times without an adequate focus on capacity building and the necessary process improvements.

IFMIS in Malawi

The history that led to the introduction of IFMIS in Malawi

In 1995 the MTEF was introduced in Malawi as a central tool for public expenditure management in the budget process. In the same year, a computerised government accounting and financial processes project was initiated. The project, referred to as IFMIS Phase I, was financed by the World Bank. Activities included designing and developing an IFMIS, procurement of hardware, customisation of software and implementation of the system in five pilot ministries with rollout to all ministries by 1998. But by 1999, it became clear that the MTEF had not effectively transformed the budget.
Factors that led to the failure of the MTEF included a lack of support and ownership, especially at sector level; limited political support; continuing additional budgetary activities which undermined the credibility of the budget; a perception was that it was a donor-driven programme; and limited costing knowledge \(^{(59)}\).

A peer review conducted in 2004 identified 21 issues that could not be resolved for the system to function properly. In 2005, the government of Malawi decided to adopt and implement an EPICOR-based IFMIS following a study tour to Tanzania in March 2005. Implementation started in November 2005 with five sites online, namely, Education, Agriculture, Health, Treasury and the Accountant General’s department. By the end of 2006, IFMIS was rolled out to all ministries and departments, except regions and in 2008 rolled out to all local authorities.

**Design of the EPICOR based IFMIS in Malawi**

In line with the Financial Management and Transparency and Accountability Project, the IFMIS was developed and implemented to modernise the public accounting system. The main aim of the adoption of the system was to ensure that it was efficient, linked to the budget development system and that the IFMIS would improve and strengthen public expenditure management with a view to bringing about fiscal discipline. More specifically, the EPICOR-based IFMIS was set up with the following objectives in mind:

- To integrate all accounting modules;
- To provide government with a state of the art computerised accounting system;
- To ensure that other sub-systems properly interfaced with IFMIS for instance, the Human Resources Management Information System and debt service sub-systems;
- To enable government to reduce domestic borrowing and the accumulation of arrears;
- To assist government in the production of timely and reliable financial data.

The government decided to streamline its payment system by moving away from a decentralised to a central payment system. Since the introduction of IFMIS Phase II, processing of financial transactions is effected online for ministries with connectivity and offline for ministries and departments outside the network environment. The central payment system is housed in the Accountant General’s Department and handles all accounting transactions on behalf of Ministries and Departments.

Currently, all ministries with the exception of local government are on the EPICOR-based IFMIS and the majority of the government budget is processed through the system. Electronic copies of the budgets are submitted and uploaded to IFMIS once approved. Adjustments require approval. The budgeting system (Active Planner) integrates seamlessly into IFMIS.

The following accounting modules have been implemented in Malawi:

- General ledger;
- Accounts payable;
- Accounts receivable;
- Commitment planning and control including production of local purchase orders;
- Cash management, excluding cash flow planning and forecasting.

IT support was initially provided by the project team but each ministry now has their own support staff.
## Improvements brought about by investment in IFMIS in Malawi

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Commitment to excellence in public service delivery</strong></td>
<td>The improvement in information on the central government’s budget and financial activities provided to the public according to the Open Budget Index, moving up from 29% in 2008 to 47% in 2010 shows an encouraging trend which can be attributed to political will, improved systems (particularly the IFMIS) and increasing capability.</td>
</tr>
<tr>
<td><strong>B. Accountability, transparency, citizen collaboration and interaction</strong></td>
<td>The improved reporting capability has contributed to greater accountability, fiscal discipline and minimised fraud.</td>
</tr>
<tr>
<td><strong>C. ICTs as a means of extending social democracy</strong></td>
<td>Not evident in the IFMIS system</td>
</tr>
<tr>
<td><strong>D. Convenience and efficiency in service delivery</strong></td>
<td>The efficient IFMIS means that payments are processed more quickly, reports are published in time for decisions to be made based on the information they contain and financial reconciliations and statements can be prepared more easily. Budget execution data is now more reliable. Tracking the expenditure of actual money spent has improved cash flow management and saved the Malawian government money. Evidence of convenience to citizens is the timely production of accounts and reduced congestion in paying pensions and gratuities.</td>
</tr>
<tr>
<td><strong>E. Reform and re-engineering of government</strong></td>
<td>The centralised and integrated system used by all ministries and departments has required some restructuring and re-engineering in terms of processes but this has enabled the efficiencies, transparency and accountability gains.</td>
</tr>
<tr>
<td><strong>F. Exploiting technological advancements to meet service delivery objectives</strong></td>
<td>Although the system does not currently use cloud computing, mobile technologies or biometrics, these are all technologies that could be considered in future as a means of overcoming changes related to connectivity, improve convenience for citizens (mobile money applications for pensions is an example) and add security features using biometrics.</td>
</tr>
</tbody>
</table>

Table 10: Malawi’s IFMIS and the Modernising Government Trends
Achievements of the EPICOR-based IFMIS in Malawi
Malawi has not implemented all the EPICOR-based IFMIS modules. However, those modules implemented have been well supported and have created efficiencies in reporting and expenditure control. The following key achievements have been reached in Malawi:

- A key success factor for the adoption of the system is the championship of the Accountant General. There was political will and support by all stakeholders.
- Fiscal discipline: Arrears have been reduced and extra-budgetary expenditure is not being entertained. Re-alignment of expenditure to budgetary provisions has improved as no expenditure can be processed in the absence of a budgetary provision.
- Greater control over the cash budget was achieved through the centralisation of four linked government bank accounts. Key benefits include the ability to process payments faster, publish reports much more quickly and prepare the financial reconciliations and statements more easily. Budget execution data is now more reliable. Tracking the expenditure of actual money spent has improved cash flow management and saved the Malawian government money.
- Timely production of accounts and reduced congestion in paying pensions and gratuities.
- Medium-term planning is now active and the ministries are required to provide budget forecasts.
- Reporting: Currently over one thousand cheques are collected for payment daily. Reports are now readily available and the government is able to see the status of payments and can prepare month-end reports. The Accounting General’s Department is able to produce highly specialised reports on demand. Government is becoming more accountable to the National Assembly and the general public because financial reports are being produced on time and transparently.
- Minimised fraud: The Central Payment System, using local and regional processing of payments, has reduced fraud and theft activities.
- Training takes place on an on-going basis. A train the trainer approach has been followed. Key people including all accounting officers have been trained. On-going training is required.

Challenges of the EPICOR-based IFMIS in Malawi
Challenges and limitations of the IFMIS include the following:

- The biggest hindrance in the adoption of IFMIS is the heavy investment required to adopt/implement the system. Infrastructure investment is required to connect the cities not currently connected that cannot interface with the Accountant General. The government of Malawi is currently struggling to expand the data centre for the regions to process their own payments but unfortunately connectivity doesn’t allow for it.
- Limited access to original budget information: IFMIS only provides current budget information. It would be helpful to be able to view original and amended budgets on IFMIS.
- **Low levels of education** makes it difficult to implement ICT programmes in communities, particularly amongst women, the youth and the elderly and other disadvantaged groups.

- **System access and connectivity**: Accessibility is a big problem. The government wide area network has not covered all areas and is not quick or reliable. Currently, there are insufficient computers for each person using the system to have access simultaneously.

- **Connectivity influences the use and support of the system**. The accounting officers cannot work when the connectivity fails (estimated as half a day lost twice a week). Some departments report having no connectivity at all.

- **Processing payments**, there are delays in the processing of payments. Ideally, the regions should process their own payments – unfortunately connectivity does not allow for this.

- **Infrastructure investment**: Malawi needs to address underdeveloped telecommunications infrastructure especially in the rural areas. Investment is required to connect the cities not currently connected.

- Problems are being addressed where possible. For example, the problem of power blackouts has been addressed through installing generators. As a result, there are additional recurrent costs in terms of fuel and maintenance. Connectivity problems have been resolved to an extent through the installation of the virtual private network (VPN).

- **System maintenance and support**: Challenges are experienced with hardware such as printers. More people are required to support the system.

- **Training**: Not enough training has been provided to staff members and key individuals implementing the system. Training has to take place in Tanzania and is expensive.

- **Not all expenditure is captured**: Only about 60% of the data is being captured. Financing arrangements not paid by the Central Processing System, local government and donor funds are not captured.

- **No feedback loop on improvement**: Processes need improvement but advice is rarely followed.

- **Interface with other sub-systems**: Ideally HRMIS data should be uploaded directly into IFMIS.

- **Debt service instructions are submitted without passing through IFMIS**. The Malawi Revenue Authority continues to process their transactions in batch form (cash control) because their revenue collection points are not networked with headquarters.

### Under what circumstances will IFMIS be most effective?

Systems implementations of this nature are quite challenging and require planning, stakeholder consultation, change management, commitment and support from all stakeholders. The following section highlights requirements for successful IFMIS implementation.

### Project preparation

- The longer the time available to design FMIS projects, the greater likelihood that all components will be thoroughly assessed and potentially the shorter the implementation period.

- The preparation of a realistic cost/time estimate, procurement plan, disbursement schedule and technical specifications (bidding documents), as well as the clarification of FMIS prerequisites, needs to be completed during project preparation.
• The design and implementation of effective FMIS solutions is challenging and requires the development of country-specific solutions to meet a number of functional and technical requirements (60). It is critical for the functionality of the system to fit government strategy.

• The most important aspect is to identify what it is that a government wants from the system. Planning should be done by the people who will be using the system. Planning is key to identifying the needs and then matching to the correct solution.

**IFMIS priorities and sequencing to be carefully addressed**

IFMIS projects, in which the preconditions for reforms were assessed properly and a time-bound action plan was developed with realistic sequencing of reform activities, produce more effective solutions in a shorter time. Success also depends on adequate preparation before the approval of the project (realistic functional and technical requirements, cost/time estimates and procurement/disbursement plans) (60).

A rapid assessment of key PFM functions or a more comprehensive diagnostic study completed early in the project would identify the priorities and sequence of key actions based on country-specific conditions.

A good accounting architecture and adequate FMIS auditing capability are needed within the government. In general, a phased approach is advisable, where a basic transaction processing and accounting system is implemented first followed by enhancements in other areas.

ICT systems are no replacement for good management and robust internal controls (necessary but not sufficient) and will not be very useful if budget coverage is limited or budget planning and execution practices are not well established. There should be active participation and involvement of key stakeholders in the design and implementation of the IFMIS.

**Accurate cost estimates**

The cost of FMIS ICT solutions needs to be accurately estimated during project preparation and based on a detailed assessment of key design parameters and basic system requirements. It is not possible to make a realistic cost estimate without this information and the resulting uncertainty can result in accepting ICT quotations that are much higher than market rates. Therefore, initial cost estimates should be verified, based on the actual cost of similar solutions in other projects (60).

**Strong political will and support from senior management and policy makers**

Strong political will is required from the President, Cabinet and a strong Minister of Finance to reform its financial management activities. Strong support from senior management and policy makers and a high level of commitment from implementing staff is required for IFMIS to be most effective.

**Limited reliance on consultants and capacity development of appropriate skills**

Strengthening the capacity of government officials is usually a key factors. A key inefficiency results if few staff members have the experience and qualifications required to implement and support the IFMIS. Early on in the process, a capacitybuilding plan should be put in place to train the stakeholders responsible for running all daily operations. Capacity-building initiatives should also address current and future needs in financial management.
Malawian stakeholders admit that management of the system should not have been left with consultants. There should be a strong and dedicated project team who are motivated and well trained. Wherever possible, government’s own resources should be used rather than over-relying on consultants.

**Change management**
Adapting to new roles, responsibilities and procedures with a new system poses challenges. Training, meetings, workshops and streamlining of functions should enhance political will and stakeholder acceptance. Project objectives and progress should be continually communicated at all levels and the issue resolution process should be efficient and effective.

The following should be carefully controlled during the IFMIS implementation:
- Modification in the project scope or deliverables;
- Time slippages;
- Removing key resources from the project;
- Political will – if the project extends over a long time, key supporters at political and bureaucratic levels may be lost.

**Sound project methodology and collation of information for system improvements**
Sound project management and information gathering methodologies are needed as are consultation, full involvement and participation of users and visible improvements so as to build users’ commitment to the system. Project goals and objectives should be continually communicated and monitored.

**Small, manageable steps to be taken in implementation**
Project implementation should be divided into smaller manageable tasks with identified individuals or groups responsible for each task. Deliverables and methodology should be clearly defined.

**Connectivity**
Widespread use of centralised web-based ICT solutions using high-speed countrywide networks contributes substantially to the performance of FMIS but can pose challenges. Poor connectivity and lack of access to eSystems is a problem faced by most African countries.

The summary block highlights the most significant learning from the Malawian FMIS project implementation, in terms of requirements for early and quick implementation.

### Lessons Learned
The three quick lessons learnt from Malawi are that:

- The Malawian draft ICT policy provides a framework that has been successfully used in other countries, and can be readily embraced as a policy framework for Malawi itself and other developing countries.
- Large ICT projects require buy-in at the highest levels of government, but also at the lowest levels of those expected to manage it.
4.5. Convenience and efficiency in service delivery

Case study: South Africa’s eFiling system

“In 2010, South Africa’s Government declared the Information and Technology sector as a top priority and adopted a declaration that called on all African countries to prioritise ICTs as a vehicle for driving Africa’s Development Agenda. ”

Department of Communications Strategic Plan 2010/13

The digital revolution has had a profound impact not only in shaping how the world functions but also in shaping Africa’s global future including the implementation of the Millennium Development Goals. ICTs have been recognised as a catalyst for positive socio-economic change in both developed and developing countries.

This case study reviews the state of ICT in South Africa and more specifically the public sector industry’s use of ICT. The impact of eFiling on the South African taxpayer is explored with the findings noting exceptional change in services delivery as a result of the use of technology.

The study includes a literature review of available information and data gathered through series of interviews with identified stakeholders. Questionnaires were compiled to assist the interviewer to gather explorative information and feedback on the questionnaires is summarised under the headings key benefits, challenges and limitations and potential areas of improvement.

Setting the scene: background information on South Africa

General economic and market conditions of South Africa

South Africa has the largest economy on the African continent and together with Nigeria contributes more than 51% of sub-Saharan Africa’s GDP. While the economy is heavily reliant on agriculture and mining as its main export products, it is also a complex mix of sophisticated secondary industries and fast-growing tertiary services. The country’s infrastructure mirrors this, from first-world developed infrastructure in some parts of the country to poverty-stricken informal urban settlements and rural settlements lacking even the most basic infrastructure, like electricity and water (61).

The country has an estimated population of 49,991 million people (62) with more than 22% of the population residing in Gauteng, the heart of the country’s economic activity and also the smallest of the nine provinces. South Africa has achieved a high level of political and economic stability over the last ten
years. It is one of the few African countries to have joined the group of middle-income countries \(^{xxxv}\) with a gross national income (GNI) of $2,751.22 per capita. \(^{xxxvi}\)

For the African sub-continent, middle-income countries are important because they contribute to the overall economic health of nations as well as to knowledge development. While South Africa comprises close to 40% of sub-Saharan Africa’s GDP, it is even more important to note the significant spill-over effect this growth has on its neighbours and the rest of the continent. The global average of growth spill-overs when a country grows 1% is 0.4% growth for its neighbours. However, South Africa’s growth impact is 0.75% not only on neighbouring countries but also the entire sub-Saharan Africa.

South Africa’s economy is by far the largest in sub-Saharan Africa – exerting major influence on total output, trade and investment flows of the African continent. This makes South Africa a huge engine of growth for Africa. Ensuring that growth continues is therefore vital not only for South Africa, but the continent as a whole.

Even though South Africa is classified as an upper-middle-income country, it remains a country subjected to high HIV infection rates, crime, skills shortages, stringent labour legislation, poverty and insufficient infrastructure development. Foreign direct investment is declining and the road ahead to bridge the gap between low and high income groups is still a long one, despite the government’s commitment to job creation and poverty alleviation.

**About SARS**

**Introduction**

Even though public services in South Africa has made uneven headway in adopting ICT as an essential tool for service delivery in South Africa, the South African government is proud of the achievements of the South African Revenue Services (SARS) which has proven to be the exception to the rule with the immense strides made through eFiling. SARS’s online service delivery tool has made the Receiver the front-runner in public service delivery in the country and has assisted in depicting SARS as a world-class organisation.

The core function of SARS is to collect revenue and administer trade. For a number of years SARS has been managed as though it was a private sector organisation. Performance agreements are in place for...

---

\(^{xxxv}\) The World Bank’s main criterion for classifying economies is GNI per capita and every economy is classified as low income, middle income (subdivided into lower middle and upper middle), or high income.

employees, with attractive incentives in terms of bonuses for good performance. Highly skilled employees have been retained in the organisation to ensure that they are able to deal with the big listed companies and enhance the organisation. SARS has a zero-tolerance approach to corruption and crime. The retention rate is high and opportunities for personal development are good. Where skills are not found in-house highly skilled contractors are brought in for short-term contracts.

Leadership within the organisation remains strong and systems put in place focus on efficiency. Leadership has emphasised information sharing and learning about technologies from world-class systems and data interrogation packages. In terms of international leadership, SARS chairs the African Tax Administration Forum, launched in Uganda in the 2009/2010 tax period, which has already attracted over 30 African countries as members and forms the basis for closer cooperation and engagement between revenue authorities on the African continent. In addition, SARS continues to play a leading role in a number of international, multilateral tax and customs forums including the Organisation for Economic Co-operation and Development Forum for Tax Administration and the World Customs Organisation.

The environment within SARS is one that supports innovation, improvement, change and efficiency – it is a paperless government environment. There is a constant focus on change and improvement, evidenced through annual improvement of the eFiling system. Surveys are conducted regularly to inform the department about the status quo and feedback to enhance their systems and processes. An example of innovation includes SARS response to the financial crisis that manifested itself in 2009. As was the case with most revenue authorities in the world, the financial crisis adversely affected revenue collection in SARS. In response to these tough economic conditions, SARS initiated a number of special initiatives within its revenue management programme, including the following:

- Improved management of compliance and debt, which involved the proactive management of tax revenue that was due but not paid on time.
- Tighter management and monitoring of VAT collections and refunds, which resulted in a potential VAT refund saving of US $128 million due to the suspension of approximately 16,000 unlawfully registered vendors.
- Better use of third-party data, which resulted in SARS collecting over US$173 million (ZAR1.3 billion) in revenue for the 2009/2010 tax period. Verifying taxpayer information using independent third-party databases ensured increased accuracy and compliance with Acts administered by SARS.

First-world countries are aware of the achievements made by SARS. Countries such as the United Kingdom Tax authorities are in constant interaction with SARS to learn about the eFiling system.

The eFiling system is now an in-house system managed by SARS. SARS has acknowledged that outsourcing as a permanent solution is not ideal and has recently placed a lot of emphasis and focus on fully owning their systems by bringing the skills in-house. Where required, a specialist team at Interfile still handles technical queries where call centre operators cannot assist users.

---

xxxvi ZAR960 Million using an exchange rate of ZAR7.5 per US$. This rate is 7.7 on 23 Feb 2012. It has fluctuated between 7.00 and 8.5 over the past six months.
General overview
SARS developed a modernisation agenda in 2007/08, aimed at providing improved services to taxpayers and trader engagement through automation of routine processes and the optimal use of internal resources. The modernisation programme seeks to improve compliance in line with the compliance model by improving service to honest taxpayers and enhancing enforcement for non-compliant taxpayers. These gains are achieved both by simplifying and streamlining the tax process, the use of sophisticated risk engines to detect and deter non-compliance and by releasing resources within SARS to bolster both service and enforcement initiatives.

More specifically, the modernisation strategy aimed to:

- Increase revenue collection;
- Improve services;
- Build future revenue;
- Increased enforcement capacity.

Conscious of this onerous responsibility, SARS has based its strategy over the past decade or more on its compliance model of improving service quality, effective enforcement and increased taxpayer education. This tried and tested model of compliance paid rich dividends for South Africa over the past decade through significant revenue gains that allowed government to accelerate and expand its provision of services to its citizens. This compliance model continues to anchor the SARS strategic direction. It underpins all SARS’s activities, from the relentless drive for service delivery and efficiency to the continuous quest for cost-efficiency, from constantly evolving enforcement enhancements and improvements to education, outreach and communications initiatives to expand the tax and trader base.

The effective use of technology is explicit in the modernisation agenda. Examples of these are the introduction of eFiling and automated reconciliation of Pay As You Earn (PAYE) records and Personal Income Tax (PIT) returns. These initiatives serve to both speed up the execution of standard processes as well as to relieve staff of routine tasks, to enable the deployment of staff to areas where their skills and
knowledge can add more value, such as engagements with individual taxpayers and traders, and the assessment of complex tax returns (63). The modernisation approach is summarised in Figure 8 (63).

Through the modernisation programme and an aggressive compliance awareness campaign, SARS has been successful in exceeding its revenue target for most fiscal periods since the country achieved democracy in 1994. The tax areas most affected by the modernisation strategy are PAYE and PIT.

The most recent annual report (2009–2010) credits SARS’s increase in assessed returns to the automation of the tax collection process and an increase in eFiling users.

**About eFiling**

“It’s a process and it’s a journey. You need to go slowly and take a step at a time… focus on the high volume first, not the things of little urgency.”

SARS stakeholder interviewed

South Africa has adopted a system that is extremely mature for a developing country. SARS embarked on developing the eFiling system themselves, without the support of donor funds or a reliance on the European market. This section provides a brief description of the purpose and characteristics of the eFiling system and an indication of how to use the system.

**History and development of eFiling**

After numerous requests received by corporate South Africa for the development of electronic tools for the transactional taxes, Value Added Tax (VAT) and Pay As You Earn (PAYE), SARS awarded five companies with contracts to develop and provide the required solutions to the public. Organisations could engage with any of the five companies for the use of the tools in exchange for a fee. The uptake of the software was disappointing and at the end of 2002 only three of the companies were still offering the software solutions to the public. The main reasons cited for the lack of uptake were the cost elements associated with the tools and inability of the software to integrate with the SARS IT platform.

SARS identified that there was a definite need to establish a solution that would address the concerns and needs of taxpayers. Great effort was made to investigate leading revenue collection solutions and countries such as Spain, Chile and Australia were identified as the revenue collectors with the most cutting-edge solutions at the time. One of the most important common characteristics amongst these systems was the rendering of the service to taxpayer at no cost.

In an unconventional approach for a revenue authority, in order to address the issues identified in as short as possible a turnaround time, SARS acquired the remaining companies still providing the software solutions to taxpayers and established an independent external entity named Interfile. The newly formed entity would be responsible to launch and manage VAT and PAYE services within a three month period.
after its establishment. In June 2003 Interfile launched the VAT and PAYE eFiling modules. Although the system addressed the basic requirements of the taxpayer, a free and integrated solution at the front end, it still had a long way to go to complete the mechanics of the system at the back end.

The eFiling journey started off with a clear idea of the objectives and a long-term plan which included ICT as a key element. The leadership of SARS however realised that in order for SARS to build on their achievements and to ensure long-term success of the entity, a complete culture change and rebranding exercise would be necessary. A huge effort on the part of SARS to implement these changes included the recruitment of highly skilled individuals, adoption of performance measurements to monitor and reward effort and successes and very importantly a marketing campaign focused at educating the taxpayer on why and how to fulfil their tax duties.

A consultative process with key individuals ensured the necessary taxpayer insight in the development of the solution.

By 2006 Gartner gave SARS the highest ranking for its contribution to Thought Leadership and in the same year eFiling was first introduced to individuals who received basic salaries and allowances. Over 40,000 individual income tax returns were submitted to SARS in the 2006/2007 tax year making eFiling services available for taxpayers of VAT, PAYE, income tax, provisional tax, the skills development levy, unemployment insurance, secondary tax on companies, transfer duty and stamp duty.

Since eFiling was first launched the system has undergone considerable changes. The initial version was used by approximately 36,000 users made. Management of the solution has also changed significantly, with the management and support of the system now being housed within SARS itself.

In the 2008/2009 tax year, more than one million users registered and submitted tax returns via eFiling and by the end of tax season 2009/2010, SARS had received more than two million online tax returns.

**SARS developed the eFiling system for the following reasons:**
- Ensuring improved services by simplifying the tax return process to make it as user-friendly and attractive as possible;
- Improving operations management and productivity by reducing the requirement for users to come into the SARS branch offices or have to deal with SARS support staff. The aim of eFiling is to keep users out of the branch;
- Focusing on easing the administrative burden for the bulk of tax returns and dealing with fewer people. Hence, personal income tax was a first focus of eFiling, followed by company tax, which is the current focus of improvement;
- Securing the revenue;
- Strengthening compliance.

**Design and characteristics of the eFiling system**
The eFiling system is designed to be easy to use. A secure interface is provided to users, with easy access by means of the Internet. SARS has attempted to automate as many functions of the system as
possible. Their aim is to incentivise citizens to register on eFiling rather than provide manual submissions. Table 11 illustrates the incentives to file through eFiling rather than manually.

<table>
<thead>
<tr>
<th>EFiling submission</th>
<th>Manual submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>A wizard pre-populates the IRP5s, asks a few questions and provides a four-page return.</td>
<td>All questions answered manually throughout the form, which used to be 14 pages in length.</td>
</tr>
<tr>
<td>No substantiating documents are required unless requested by SARS.</td>
<td>All substantiating documents are required as part of the submission.</td>
</tr>
<tr>
<td>A record of contacts made with SARS is kept on file electronically.</td>
<td>A record of discussions with reference numbers must be kept by the individual.</td>
</tr>
<tr>
<td>VAT returns can be submitted five days later – on the 31st of every month.</td>
<td>Companies must submit VAT returns on the 25th of every month.</td>
</tr>
<tr>
<td>Personal tax return deadlines are January.</td>
<td>Manual personal tax return deadlines are October.</td>
</tr>
<tr>
<td>Assessments or re-assessments of submissions (audits) have a quick turnaround time and payment is made timeously.</td>
<td>Slow turnaround on assessments and payment.</td>
</tr>
<tr>
<td>A taxpayer can amend his return without going through an objection and an appeal by clicking on a re-submit button.</td>
<td>Amendments cannot be made.</td>
</tr>
<tr>
<td>Can be done in any time and any place.</td>
<td>Can only be done during office hours and with the burden of queuing.</td>
</tr>
</tbody>
</table>

Table 11: Incentives to File Electronically

The eFiling system provides a number of useful features: IRP5s are populated automatically so that there is minimal entry by individuals when they submit their returns; users can dispute electronically by submitting their objections online and they can view the status of objections online; they have access to the status of their account; they can move money around in their account; they can request corrections to submissions made; they are able to amend returns online; they can make amendments to bank account details online, etc. There are extended deadlines for online submissions and users of eFiling are not required to provide supporting documentation unless SARS asks for it as a result of an audit process. As a result of a more efficient processing of tax returns through eFiling, more individuals are now selected for an audit of their returns in order to minimise the changes of tax avoidance and corruption.
The screen shot in Figure 9 depicts the functionalities of the system, which includes (but is not limited to) an overview and benefits of using the system, a help function and contact details and the various uses of eFiling including payments to be made to SARS.

SARS continually aims to enhance eFiling to the extent that they can tell the taxpayer what was earned and the taxpayer can make changes where necessary. The Tax Administration Bill will provide SARS with the ability to obtain information from parties like banks, stock exchanges, etc. Such access by SARS will further simplify tax returns.
Electronic submissions through eFiling allow for returns to be submitted by the taxpayer or an agent on behalf of a taxpayer. Individuals also have the option to walk into a local SARS office and request an assistant to submit the return on their behalf although SARS discourages the manual system, creating incentives for the eFiling system that far outweigh the burden of manual submissions. The eFiling system allows for feedback or requests via email as well as telephonically and also runs frequent surveys to ensure the system keeps track with taxpayer needs. SARS aims to provide a quick turnaround time with the eFiling system, with refunds being paid timeously to users.

eFiling has been developed in such a manner as to allow for seamless interfacing with tax management software. A focus is placed on the security of the system to minimise abuse and the potential for fraud.

**How to use eFiling**

In order to use the eFiling system a free registration process is required. Users register either as individual users of the system for purposes of completing their own tax returns, as a tax practitioner who submits returns on behalf of their clients or as a business who submits returns on behalf of an enterprise. An easy six-step process is followed, with registration typically completed within 48 hours.

**Users of eFiling**

Users of the eFiling system can be divided into three stakeholder groups as follows.

- Individual Taxpayers
- Business Taxpayers

Organisations, including sole proprietors, making use of eFiling for business purposes (small, medium and large enterprises), register on eFiling as business taxpayers.

SARS’s records reflect that only 35,000 companies have made use of the small business tax benefits since the adoption of the measures in 2001. This is an insignificant number compared to the total number of small businesses currently registered as taxpayers with SARS.

- Tax Professionals

Tax professionals as users of the eFiling system differ from organisation to organisation. Smaller accounting firms or tax practitioners use most modules of the system when acting on behalf of clients while professionals at larger organisations, such as big auditing and law firms, have dedicated professionals for each of the modules available on eFiling.

Contrary to what was expected with the introduction of eFiling, tax professionals have not seen a decline in representing individual or business taxpayers – the more changes (including system enhancements) that occur to eFiling, the more individuals and organisations use these practitioners. In South Africa, individuals and business taxpayers prefer using a trusted person to complete and/or review their returns.

______________________________

**Improvements brought about by eFiling in South Africa**

<table>
<thead>
<tr>
<th>Benefits to government</th>
<th>Benefits to citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Commitment to excellence in public service delivery</strong></td>
<td>Strong leadership that includes playing leading roles in various international forums. Recruitment of highly skilled staff, performance measurements</td>
</tr>
<tr>
<td><strong>B. Accountability, transparency, citizen collaboration and interaction</strong></td>
<td>Improved perception of SARS, More consistent enforcement, Greater compliance and therefore more tax collected.</td>
</tr>
<tr>
<td><strong>C: ICTs as a means of extending social democracy</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>D: Convenience and efficiency in service delivery</strong></td>
<td>Improved enforcement, increased compliance, increased revenue collection</td>
</tr>
<tr>
<td><strong>E. Reform and re-engineering of government</strong></td>
<td>Continuous improvement, innovations and extensions to the system</td>
</tr>
<tr>
<td><strong>F. Exploiting technological advancements to meet service delivery objectives</strong></td>
<td>High standard of in-house and contracted specialist skills means that SARS is considered to be a global leader.</td>
</tr>
</tbody>
</table>

Table 12: Africa’s eFiling and the Modernising Government Trends
South Africans and filing of returns
Although SARS uses the concept of staggered eFiling dates, individual and business taxpayers generally file returns in the last week or two before the deadline. South Africans tend to wait until the last moment to comply with legislation.

While individuals have noted a reduction in the time required to complete their tax returns when making use of the eFiling system, tax professionals indicate that the preparation work for submitting tax returns is the same for eFiling and manual submission. Often complex calculations with supporting schedules are required to complete the tax returns and it is these calculations that require the majority of the tax expert’s effort and time, not the completion of the actual return (supporting documents are not submitted electronically, unless requested by SARS).

Achievements and benefits of the eFiling system in South Africa
Interviews were conducted with individuals in each stakeholder group in order to gain an understanding of how eFiling has affected each stakeholder group.

The following key achievements have been identified by South African stakeholders:

- **Increased revenue collection**: SARS established regional revenue committees in each region to champion special initiatives. These and other concentrated efforts on revenue collection – including making revenue target a compulsory feature of all performance scorecards of SARS managers – helped realise approximately US$3.4 (ZAR 25.5) billion from special initiatives and helped SARS to exceed the revised revenue target by US$1.1 (ZAR 8.3) billion by 31 March 2010.

- **Simplified tax returns**: With a focus on personal income tax, SARS have simplified the tax returns as much as possible. There is an improved audit trail with eFiling and users find the pre-populated returns user-friendly.

- Although individuals are technically obliged to submit a return when they earn less than US$16,000 (ZAR 120,000) per annum, have only one employer and no other deductions to claim, the law absolves them from submitting a return.

- **Improved service and turnaround time**: The quicker processing times through automation and increased use of electronic filing channels have resulted in improved assessment payment collections and allowed for a far greater number of refunds to be released. Over 80% of taxpayers using eFiling are refunded within 48 hours of submission.

- **Continuous improvements to the eFiling system**: As quoted by an individual interviewed, “We have seen improvements from year to year on changes that improve the system”. Users are able to provide on-going inputs and suggestions for improvement.

- Even though at times requests for improvements can take a long time, a great achievement is SARS’s ability to be responsive to user feedback. An example of responsiveness is a request made to SARS three years ago to provide reasons when they decline tax clearance certificates. A policy

---

xxxix Achievements identified from interviews with stakeholders implementing eFiling in South Africa.

xl SARS Annual Report 2009/2010 (most recent release at the time of this study).
decision needed to be made internally first, which took time, but by April 2011, SARS began making a
note available online, providing reasons for declined tax clearance certificates.

- In addition, SARS has conducted extensive usability research, commissioning third-party studies that
  benchmarked the eFiling system against equivalent systems world-wide and against best practice.

- Improved communication: SARS communicates with users via SMS and email.

- Engagement with stakeholders: A number of tax professionals representing the large companies in
  South Africa sit on the committee. When SARS considers making a change to the system, they
  engage tax professionals and committee members who are experts on tax returns/forms to workshop
  these changes in-depth. SARS listens and engages with stakeholders and this leads to
  recommendations that are considered as part of enhancing the system. The turnaround time on
  system enhancements for modules that SARS focuses on, is quick.

- User confidence in the eFiling system: Individual taxpayers are highly confident in the system.
  SARS indicated an excess of three million users, which is a great achievement within five years.

- Efficient support services: Tax professionals have personalised support from SARS when
  challenges are experienced – they have a specific person’s email and mobile telephone number for
  contact purposes. Should the eFiling system experience downtime or there are other challenges,
  SARS responds promptly. An example illustrates SARS’s efficiency and quick turnaround time: when
  an issue was identified with the IT14, SARS had a turnaround time of 45 minutes and contacted the
  organisation to explain what the issue was, which was resolved within 24 hours.

- Client management is easier: Tax professionals indicate that the client management process is
  easier as eFiling provides a client database and access to a statement of accounts.

- Improved perception of SARS: The personal income tax module is complete and extremely
  efficient. From an individual taxpayer’s point of view, there is an improved perception of SARS.

- Greater compliance to submit tax returns: Following a concerted campaign to alert non-compliant
  taxpayers to the looming imposition of penalties for outstanding returns, over 270,000 penalties were
  issued in January 2010 resulting in the submission of over 80,000 outstanding returnsxli. Before
  eFiling, when individuals or business taxpayers could not submit their returns on time, they merely
  asked for an extension, which was granted without hesitation by SARS. Deadlines were negotiable
  with minimal penalties. With the eFiling system, SARS has developed a table, which guides penalties
  anywhere from US$33 to US$3500 (ZAR 250 to ZAR 26,000) per month. Penalties for non-
  compliance recur monthly. Although only applied to individuals initially, from 2011 SARS is applying
  penalties to companies too.

- Enforcement: Using increasingly more accurate third-party data, allowed SARS to update taxpayer
  declarations with the information obtained and automatically revise the tax liability levied, resulting in
  US$173 million (ZAR 1.3 billion) of additional revenue for the 2009/2010 tax period.

- Matching of employee data against employer PAYE returns submitted has also identified thousands
  of unregistered taxpayers who were automatically registered.

xli SARS Annual Report 2009/2010 (most recent release at the time of this study).
Challenges and limitations of the eFiling system in South Africa

Although the SARS eFiling system is highly efficient, as with any system, there are challenges and limitations. The following challenges and limitations were identified:

- **Errors relating to the use of the system for personal income tax returns**: Through their marketing campaign SARS has created the perception that tax is as easy as ABC. Although the system is easy to use for basic tax returns, when the tax computation becomes complex, the use of the system becomes complicated and cannot assist with the complexities of the tax computations often leaving an individual feeling frustrated.

- **Some individuals lack the skills to complete tax returns correctly**: For this reason, taxpayers use the services of tax professionals to verify that information is correctly completed.

- **Another challenge for eFiling users is when they save their returns in draft format and neglect to click on the ‘submit’ button once completed**: If a return is in draft format, it is not regarded as submitted by SARS and individuals can incur penalties for non-submission.

- **Accessibility**: Although access to the system is generally good, close to a deadline, users cannot gain access to the system when too many users are online. Heavy penalties are incurred when submissions are not made timeously hence it is necessary to have the system live. Ensuring that planned system maintenance is not close to deadline days, may enhance accessibility.

- **Connectivity**: Up until the time that connectivity is a reality in South Africa and that every individual employed has access to the Internet, it would not be constitutional to only have an eFiling system. Many taxpayers still do not have access to the Internet. SARS has engaged with employers to request that they allow employees to access the eFiling system at their workplace to increase the potential number of eFiling users as a means to counter the lack of personal Internet access.

- **Resistance to change**: Some resistance to change has been experienced among individual taxpayers and even tax practitioners. Despite the fact that manual submissions are more burdensome (long telephone calls; a back-and-forth process to receive a form; manual completion and submission), there are certain individuals who do not use eFiling, which can possibly be attributed to a fear of change.

- **Lack of insights into challenges experienced by small businesses**: SARS agreed that they under-estimated the difficulties experienced by small businesses when using eFiling. Small businesses are the category of users who are least in favour of eFiling.

- **System improvement**: Although SARS is highly efficient and there is a quick turnaround time on system enhancements when they are considering changes to modules, isolated changes requested by members take longer to implement.

- **Lack of adequate skills by SARS call centre operators**: SARS call centre operators are not always suitably skilled to assist users, specifically tax professionals, in their queries.

- **The electronic system still requires a manual process**: This is seen as the biggest challenge of SARS’s service offering. An example includes tax clearance certificates that are requested online but still require users to collect from the branch.
Potential improvements to the eFiling system in South Africa

Potential improvements were highlighted as follows:

- **Functionality**: Business taxpayers and tax professionals have indicated that the functionality available for individual taxpayers should be made available to eFiling modules used by business taxpayers. SARS plans to expand the functionality for business modules in the next phase of improvement.
- **Uploading supporting documentation**: Users, from time to time, experience difficulties in uploading supporting documents when submitting returns. An additional future improvement includes the ability to do batch uploads for IRP6’s. Currently, tax professionals must download and upload one document at a time.
- **Users should be able to reply to letters issued by SARS online**.
- **VAT practitioners should be able to view statements of accounts online** – this functionality is already available to call centre operators.
- **System errors occur from time to time when the system automatically reassesses an individual, creating problems with assessments already completed**.

4.6. **Conclusion**

Transformation is a journey that never ends. In order for government to continue on this journey it needs to remain as close as possible to the citizens it serves. Use of tools such as social media and mobile technology has enhanced service delivery and should be embraced by governments across the globe.

eFiling sets an excellent example of just how levels of service delivery that the government would like can be achieved. While ICT on its own is not able to positively transform service delivery, it forms a core element of such a transformation, that is, it is necessary although not sufficient for transformation.

eFiling forms part of SARS’s modernisation strategy and has assisted SARS over the past nine years to improve service delivery to the South African taxpayer. Continuous engagement with taxpayers coupled with strong leadership has resulted in significant improvements to the way taxpayers fulfil their duties. The ease of completing an individual tax return and the turnaround time for processing such returns stands out as the major transformation elements of this case study. While SARS could improve the user experience for small business and focus energy on the development of call centre staff, the next major challenge is to develop a corporate eFiling solution. With access to and cost of Internet connectivity remaining a serious challenge in South Africa, a mobile-enabled eFiling solution should also be considered to leverage South Africa’s high mobile penetration rates.

The three quick lessons learnt from eFiling are that:

- The user interface must be simple, attractive and user-friendly;
- Processes must be simplified and streamlined;
- A driving focus of the project must be the ideal of minimising the time spent by both taxpayers and government employees on the system.
5. Recommendations

5.1. Opportunities and challenges related to ICT-based public sector transformation in Africa

The Africa scan of current public sector projects shows that various aspects of ICT-enabled public sector transformation are actively pursued in the various projects that were identified. The aspects that emerged most often in projects are: (1) Collaboration and citizen participation – both participation by citizens and collaboration between different agencies are receiving attention; (2) Some aspects of exploiting technological advancements, namely, universal access, and the use of the Internet as a means of empowering citizens; (3) Political and executive commitment to improving the service delivery aspect of public administration.

However, possibly more important are the aspects that under-represented at this stage in terms of ongoing public sector projects in Africa. These are: (1) the major redesign and development of new organisational and legal support structures - ; (2) A recognition of the political stake in success of service delivery; (3) Some aspects of exploiting technological advancements, namely, using mobile devices as an interface and a need to deliver services more rapidly. Given the high penetration levels of mobile devices in Africa, the apparently low use of mobile devices as an interface in public sector projects is surprising, especially as mobile technologies and Web 2.0 present Africa with the opportunity to leapfrog a generation in terms of ICT. Even though global role-players during recent years demonstrate a clear understanding that availability of and access to technology is not in itself sufficient to effect transformation it is also generally accepted that technology is necessary to effect such reforms. The under-represented aspects in projects in Africa highlight that there still is a pressing need for a more holistic approach to use of technology for service delivery, as the foundational tier (legal, institutional, monitoring and evaluation) and the enabling tier (largely related to human capital, processes and structures in addition to ICT) as these are still not addressed in an integrated manner as part of ICT-enabled public sector reform processes.

The findings presented in previous chapters highlight that some initiatives are indeed moving towards being service-seeker or citizen-centric through, for instance, having a focus on accessibility and emphasising service delivery. The absence of integration of foundational and enabling elements into initiatives would however hinder these initiatives from meeting all requirements from a service-provider perspective.

Access to service, especially in remote rural areas remains a challenge.

Without the political will to transform public service, transformation initiatives will fail. It is therefore recommended that efforts and resources are focused in countries where there is evidence of the political will to transform.
5.2. Purpose of the recommendations

The aim of the recommendations is to assist policy-makers and regulators, as well as the donor community to:

- Gain some insight in the benefits of ICT led interventions in their respective countries or regions;
- Implement interventions that would have a tangible outcome;
- Develop multi-country cooperation and best practices;
- Prioritize interventions that would be most beneficial specific public sector requirements.
- Principles applicable in recommendations to policy-makers and regulators

Citizen-centric approaches imply a collaborative approach between government and citizens. Those receiving the services need to be taken on board as fully-fledged partners and collaborators and need to be fully aware of the implications of initiatives undertaken in their domains.

Public sector transformation initiatives involving ICT should always be approached holistically. Technology initiatives without adequate consideration for institutional, legal, process, structural and human dimensions are bound to fail. There are common challenges that arise when there are diverse participants and interests:

- Ensure membership is representative.
- Ensure that expectations of participating members are managed in a realistic manner.
- Engage professional facilitators and negotiators in the process in order to manage any potential interpersonal or inter-group tensions.
- It is important that these forums be ‘technology neutral’, i.e. participants should not allow these to become ICT vendor driven.
- These forums should also consider the roles, responsibilities and mandates required by the various role players in order to be able to achieve transformation objectives and include these considerations into the framework.

5.3. Recommendations to policy-makers and regulators

Recommendation 1 – A coherent approach to public service delivery requires close inter-ministry coordination, suitable legislation and a national e-Government plan

Why: Currently many ICT-based public sector reform initiatives are fragmented with some ministries being very successful in improving public service from the point of view of the back office efficiency, transparency and accountability and others providing citizen-centric systems which are easy and convenient for the members of the public to access, make requests and obtain responses. Of course many do not achieve either. Although most countries do have ICT policies and subscribe to the ideal of good public service and of an information society, fully integrated systems that link several agencies and
achieve both sets of goals are rare. Carefully considered legal foundations are needed to guarantee that such far reaching systems do not undermine basic rights.

**What:** An over-arching national e-Government plan, undertaken by a national ICT public sector reform task team, needs to be developed that can look at the public service of a particular country as a whole. The team needs to focus on how existing systems can be integrated to allow different agencies to share information and communicate, quickly, easily and frequently or even continuously and at the same time include easy access and even participation by the citizens.

These teams need to promote dialogue and interaction, learn from international experience particularly from others in Africa, develop policies and undertake planning and implementation. Specific partnerships should be identified in these forums and built between stakeholders. These forums will promote knowledge and implementation skills related to use of ICT in public sector reform not only nationally but throughout Africa.

Many African states still do not have the complete legal framework required for electronic service delivery. Therefore, as part of the overarching e-Government national plan, a complete legal framework for ICT-enabled service delivery needs to be installed, which includes such aspects as cyber crime and misuse, electronic signatures and data protection. Furthermore, awareness campaigns need to be launched to drive home the message among communities that payment over electronic channels is completely safe and the data that they share with governments is confidential and will not be used to their detriment.

**Networks of interaction:** Governmental policy makers and public sector planners, experts in ICT law, civil society and domain experts. Ensure an integrated approach addressing all tiers of public service provision. Spell out roles, relationships and responsibilities and create forums for interaction and collaboration between those departments participating.

The role of these partnerships will go beyond advisory committees. As initiators, partners can play invaluable roles in the research, planning, problem solving and review of operations and in training relevant government officials and staff in the use of ICT in public sector service delivery. Partnerships should have specific targeted public sector outcomes.

It is recommended that in countries where there is no such national plan, service delivery agencies need not wait for one to come into being. ICT-enabled public service delivery interventions must be pursued regardless of the same; however, while planning for such measures see that all necessary components of service delivery are in place as has been described above.

Links with existing forums, e.g. COMESA, EAC, World IT Forum, Open Government Partnership should be actively pursued. Ensure that participants are aware of the need for both inter-governmental and intra-governmental forums to drive the initiative.

**Risks and constraints:** The risks associated with fully integrated systems, including robustness, accuracy, disaster recovery, security and privacy concerns must receive proper attention. Full recognition must be given to the fact that ICT is necessary but not sufficient for improving public service delivery.
Look for ways of connecting and extending existing infrastructure and functioning systems rather than starting from scratch. A modular and phased implementation schedule based on the integrated design will be needed to address the extensive scope of such projects and to cope with lack of capacity and capability. Develop an information repository accessible to all role players. This will contribute to building the capacity of less experienced participants.

**Recommendation 2 – Careful planning and design, supported by legislation, must precede implementation of national identification systems so that they benefits all sectors of the population**

**Why:** Accurate, effective and efficient national identification systems, incorporating technology that minimises fraud and identity theft, are fundamental in allowing access to public services by those entitled to receive them. Countries who are coping with an influx of refugees, including those seeking new homes for economic reasons, have an urgent need to identify their own citizens as well as those who are seeking refuge. In times of natural disasters it is essential to be able to identify people. Child support and other government grant systems rely heavily on good national ID systems. And proper identity documents are also very useful in compiling election registers and hence assist in providing free and fair elections.

Systems need to be carefully planned, designed and implemented to reduce the risk of abuse of national identity systems to a minimum. Civil liberty and privacy concerns need to be taken seriously. The full cost of technology as well as time and effort required in assessing applications for cards and issuing them must be calculated before embarking on such an initiative.

**What:** Not only can other countries emulate systems already in existence, such as those in Botswana and Somalia, but those systems can be enhanced to include payment and passport production systems. New biometric technologies complement textual information and, once these are in a national database, mean that people can be identified even without necessarily having a card or document at hand.

**Networks of interaction:** National identification systems that are supported by new technology are of great value to governments and the citizens of countries where existing identity documentation is poor, either because citizens have lost their documents during times of war or natural disaster, when they might have had to leave their homes or because existing systems are not reliable.

The governments take the lead in these projects. Lessons can be learned from the experiences of Angola, Botswana, Egypt, Ghana, Kenya and Nigeria.

**Risks and constraints:**

Completely replacing the identity documents of all citizens with a new format in which all cutting-edge technology options are included will take time to complete. In the cases where a high proportion of citizens have no, or minimal forms of, identification this is clearly a very challenging project which necessitates reaching remote areas, the elderly, illiterate and disabled. Strategies, such as getting people of standing to verify information for which no existing official documentation exists, will have to
complement the purely technological aspects of the process. Systematic, regulated and phased approaches will be necessary.

Various levels of security are needed to safeguard data in repositories, on smart cards and during transmission to and from these repositories. Audit trails are needed for transparency and accountability so that anyone requesting or updating data is easily identified.

**Recommendation 3 – Widen access to e-Government through mobile applications and community ICT centres**

**Why:** As noted in the first section of this chapter, access to service, especially in remote rural areas remains a challenge. Digital divide levels in African states are very high and without access to ICT-related infrastructure the poor cannot easily benefit from other e-Government initiatives. Those in rural communities, the poor and women, who are often particularly pressed for time, benefit particularly if transport costs and time can be reduced, but these are the groups least likely to have access to technology. Gradually, with the increasing uptake of ICT and increased information flow to and from communities, these groups would be in a much better position to make informed choices and better their socio-economic position.

Digital divides are actually a consequence of non-digital divides such as economic, geographic and literacy which are not the subject of this report. There are, however, some governmental interventions that can assist, such as making investments in ICT infrastructure, access and applications.

**What:**
- Access via mobile phones
- Connectivity should be addressed by exploiting mobile phone networks as their coverage is known to spread faster than that of the Internet. Country-wide ICT policies need to include the establishment of agencies tasked with regulation of the telecommunications sector to ensure that this is an affordable option for citizens.
- Options need to be explored for SMS-driven applications. The ICT policies of these countries must be such as to bring down SMS tariffs.
- Government call centres (VoIP or otherwise) operating on toll-free numbers need to be provided. This, with increasing mobile penetration rates, will take government right to the citizen's doorstep.
- Governments need to make simple and secure applications available over mobile phones with the most relevant features of applications available over relatively cheap mobile devices. Cross-sectoral services like paying registration fees or fees for services required, securely using mobile devices could be tried which would ensure that end-to-end service delivery can take place for most people over mobile phones, including for those who are unbanked or under-banked.
- Internet-enabled multi-purpose community information centres and Public Internet Access Points

These centres must:
- Be located so that they are within the reach of as many potential users as possible.
- Offer a comprehensive “bundle of services” so as to attract clients.
- Operate in a self-sustainable way with a balance between the business side and the government’s socio-economic priorities.
- Conduct (a) information sessions regarding new and useful ICT, (b) ICT training and (c) provide other value-added ICT-based services.
- Be run by community members who can then offer services that closely match local needs and preference.
- Incorporate local champions and capacity building at the local level as a means to upscale demand for ICT-enabled services; there are many examples of this having successfully taken place.

**Networks of interaction:** National government, local government authorities and communities, in partnership with private sector communication service providers and application developers. The infrastructure itself should be shared and financed by government agencies and the private sector. Appropriate public-private partnership models must be chosen for this.

The ADEN project and the countries involved with it, including Burkina Faso, are worth investigating fully as they have the advantage of a fairly large project and an already established attempt to replicate the project.

**Risks and constraints:** Experience in Africa suggests that government applications need to be designed and implemented centrally, but the delivery of public services has to be done locally. The identified risk is that only the views and needs of those located centrally will be heard. There are numerous examples in Africa of telecentres and multi-purpose community centres being under-utilised and unsustainable.

At the design stage, applications that will culminate in services being delivered to communities the needs and views of communities and therefore their representatives need to be heard and followed up. This needs to include rural communities, those who have little education, and other marginalised or less powerful groups. However, these groups need assistance in identifying and voicing their requirements. Diverse needs may even be in conflict and hence be difficult to accommodate.

**Recommendation 4 – Encourage e-Participation using social media and respond carefully**

**Why:** The power of social media in sharing and shaping public opinion in today's world is undeniable and at least partly as a result of this politics and political discourses are no longer the exclusive domain of a few or located in a parliament or an assembly as they used to be. Integration of mobile and social media platforms have powerful potential to reduce the complexity for citizens interacting with government through providing one-stop interaction.

**What:** Since the power of social media is undeniable and social media is here to stay, governments and public agencies can ill afford to ignore it. Valuable lessons have been learnt from research programmes in the integration of social media and mobile platforms in social support systems but these systems have not yet been applied on a large scale or to public sector transformation and could be extended. Public agencies should acknowledge the existence of social media and exploit it to their advantage. Following are some of the features that could be positively exploited by governments:
• Social media as a platform of transparency;
• Social media as a platform for the exchange of ideas and request for comments on government policies;
• Social media to handle crises;
• Social media to build political opinion among the masses.

Networks of interaction: Government, citizens, mobile and social media service providers, universities and research institutions, NGO’s, funding agencies, development agencies. The recent example from North Africa in “The Arab Spring” is particularly informative.

Risks and constraints: In recent times governments across several countries have found it impossible to control people’s political opinion or stem negative tides that emerge. In such times mobile phones, online networking and exchange of information through social media have been a major factor in mobilising forces and creating powerful centres of opinion. No clear ways have emerged to handle this. On the one hand policing on social media is seen to be undemocratic and very recent attempts to use legislation has been opposed across the globe, but giving it too much leeway can also threaten to cause on-going and endless rounds of political and social disruption.

Support existing research programmes working on the integration of social media and mobile platforms and facilitate their access to and collaboration with existing public sector projects.

Recommendation 5 – Exploit economies of scale

Why: ICT investments often require substantial budgetary allocations, which many Africa countries find discouraging particularly when there are competing demands to be met of basic developmental requirements. For example, the government of Malawi would like the regions to process their own payments but an infrastructure investment is required to connect regions to the centralised data centre in order for this to be possible. The biggest hindrance in the adoption of IFMIS in this case is the heavy investment required to adopt/implement the system. As noted in the text box on page 68, many African countries are in the process of investigating the feasibility of building a data centre or have recently done so,

Skilled human resources are often also a major constraint.

What: Identifying projects with greatest impact (systems that can provide benefits simultaneously to more than one large group of stakeholders) and potential for quickly recovering development costs (by reducing long term serve delivery operating costs, enhancing existing revenue streams or creating new revenue streams).

Intra-public sector collaboration could bring about economies of scale and scope, leading to better cost-benefit factors, by establishing:

• A unified data centre with adequate disaster recovery that will host all applications for all government agencies;
- A government-wide communications network with high availability and adequate redundancy that will connect all government agencies to the last mile of service delivery infrastructure;
- Common citizen helpdesks for trouble-shooting and general assistance on all application systems as well as infrastructure to both internal and external users in the shape of IVR-enabled call centres that would provide services at all times;
- Shared information systems to cater to the requirements of all public sector agencies in areas like human resources management systems, financial management systems, and inventory and asset management systems;
- Sharing the same service delivery infrastructure through citizen service centres.

Options could also be explored in sharing infrastructure, applications, expertise and experience not just within the public sector agencies of one country but also across countries through suitable cost-sharing arrangements. Cloud-based arrangements like infrastructure as a service, platform as a service and application as a service could also be tried.

**Networks of interaction:** Public-private partnerships represent one way in which public sector sensitivities and private sector efficiencies could be pursued together. PPP arrangements often also provide a way to share risks, rewards and responsibilities between the public and private sector. Depending upon the situation at hand a suitable PPP model could be opted for. This option, particularly, is under-exploited in the African e-Government context.

Illustrative examples are shared data centres and connectivity as required by the regions using IFMIS in Malawi; eFiling integrated with the back office tax revenue system in South Africa. National Identity Systems need to be integrated with other systems and share data and other resources, such as driver’s licensing systems, social security systems and passport control systems, that already hold a lot of similar data while still protecting privacy.

**Risks and constraints:** There is a temptation to think that existing systems that work elsewhere can simply be copied at relatively low cost. Unfortunately, very few systems can be transferred from one country to another without changes as infrastructure, existing practice and processes, language and many other factors need to be taken into account. Furthermore, as noted repeatedly elsewhere in this report, the technology component is necessary but not sufficient for transforming any form of information system. The human aspects require considerable attention with associated time, cost and risk and the larger the impact the more extensive the change management component will be. Nevertheless there are many lessons that can be learned from the experiences of another country. For example, Malawi learned from Tanzania when looking for a new IFMIS in 2005 and countries such as the United Kingdom Tax authorities are in constant interaction with SARS to learn about the eFiling system.
5.4. Recommendations to the donor community

Recommendation 6 – Expand support for citizen-centric initiatives using Web 2.0 and social media technologies

**Why:** Social media allow for citizens to voice concerns on any relevant issue (whether practical, institutional or political). Recent events in North Africa have for instance demonstrated the power of social media to effect political change and these media hold potential for supporting democracy in Africa. Social media also hold potential for the empowerment of groups such as women and minorities. The high mobile penetration rates in Africa make feedback loops to public sector functionaries and politicians a highly feasible option.

**What:** Use lessons learnt in existing initiatives to define and implement similar projects in other countries. This could be notably applicable in countries with upcoming elections, particularly where previous elections have been tainted by allegations of corruption, suppression of information or intimidation. Ensure that legislation and institutional requirements imposed by government do not restrict adoption and use of Web 2.0 and social media technologies.

**Networks of interaction** Donor organisations in collaboration with national governments. Governments need to support these initiatives through enabling legislation and institutional support, but significant contributions could be made by trusted third parties (in civil society), in collaboration with mobile service providers, civil society and development agencies.

A number of mobile applications are linked to Ushahidi for crowd sourcing and community mapping but the recent examples receiving attention are not in Africa. Community projects, for example “manned” by students at African universities could emulate the response to the 2010 earthquake in Haiti by various groups of “crisis mappers”. The example of use during the 2011 Nigerian elections should be replicated to improve election monitoring.

**Operation:** Government could incentivize mobile service providers to focus on these types of services.

Recommendation 7 - Pilot cloud computing for support of independent election monitoring organisations

**Why:** As discussed in chapter 1 cloud computing holds potential in the public service sector and a new application could be election monitoring as elections in Africa are often contentious. The main possible benefits relate to the on-demand use of computing with potential benefit of costs charged only for resources used, the possible dematerialisation of data and information outside of the domain of the elections and the benefit of the infrastructure being managed by the cloud service provider, rather than the organisations monitoring the elections themselves. Nevertheless the uncertainties related to the use
of this technology in this particular context first need to be fully assessed prior to it being implemented at large scale. The main issues relate to concerns about security, credibility and trust, usability, ease of use, constraining environmental factors and government attitude related to use of cloud computing in the election context.

**What:** Funding will be needed to do a pilot project that could serve as a proof of concept for the use of cloud computing in election monitoring.

**Networks of interaction:** Funding agencies/development agencies (project leads), NGO’s doing election monitoring and cloud computing service providers. Ushahidi, the open source project that displays crowd sourced crisis data on a map, includes a cloud-based free service called CrowdMap and hence can provide the basic technology of this recommendation.

**Operation:** Identify organisations doing independent election monitoring. Engage with these organisations to understand information needs. Study perceptions, issues and concerns regarding use of clouds. Where government regulations and legal constraints might impact on cloud computing, stakeholders should engage with the relevant government. Pilot user-focused cloud infrastructure and record best practices, lessons learnt. Expand to other projects and places.

**Recommendation 8 – Support development of technology platforms for completely anonymous whistle-blowing for exposing corruption in the public sector**

**Why:** Many African countries have endemic corruption plaguing effective and efficient public service sector delivery. The extent of corruption is in some cases so extensive that it threatens the fabric of society. Although legislation technically protects the rights of whistle blowers, the reality is that these persons are normally identified and harassed or threatened by those impacted by the whistle-blowing. It is technically possible to create solutions that would make tracing the identity of the whistle blower impossible (using technologies similar to Wikileaks). However such a system would have to be piloted in order to provide proof of concept.

**What:** Pilot a technology system using anonymous web communication and other technologies to completely hide the identity of whistle blowers.

**Networks of interaction:** NGO’s involved in anti-corruption in South Africa, funding agencies, systems developers. Contract a service provider to do a proof of concept, document lessons learnt and best practices. Engage with government departments to incorporate this platform into their operations.

**Recommendation 9 – Create collaborative incubation spaces for development of innovative technical solutions for application in the public service sector**

**Why:** Collaborative incubation spaces have been shown to provide powerful innovation impetus in allowing collaboration between role players such as universities, research organisations, communities, and within and between governments. Access to these innovation spaces should be equal to all role
players. Through collaborative and customer-centric projects these spaces hold powerful potential for adding value to technology innovation focused on public sector transformation.

**What:** Create incubation spaces for collaboration and innovation. These incubation spaces can be virtual and cloud computing can assist the sites in sharing data and software, hence only occasional face-to-face meetings are required.

**Networks of interaction:** Developmental agencies (as funding agencies), universities, communities, civil society, government departments, private sector (entrepreneurs).

Examples of innovation hubs that focus on mobile applications that meet the particular needs of the people of Africa include Nokia Research Africa in Nairobi, Ericsson Innovation centres in Nigeria and South Africa, AppLab supported by Grameen Foundation and MTN in Uganda and iHub in Nairobi, funded by Ushahidi. These initiatives should be encouraged, emulated and become involved in collaborative projects where the emphasis is extended from technology innovation to imaginative use in modern government.

**Operation:** Fund and support the creation of collaboration and innovation ‘spaces’ (virtual, physical and institutional) and provide financial support for the staffing of these entities for the duration of the project (e.g. bursaries for postgraduate students, etc.). Fund the exchange of ideas between different of these entities through travel grants, etc.

**Recommendation 10 – Initiate capacity building programmes for Open Data projects**

**Why:** Open data is a priority in public sector transformation. This is also an area of considerable expertise in some developed countries, for example, Canada. It has also received attention in Kenya and these initiatives can be replicated and extended.

**What:** Define capacity building projects, learning from open data initiatives in East Africa, with a focus on increased transparency and accountability.

**Networks of interaction:** Donors, NGOs and universities. Emulate similar initiatives.

**Operation:** Define open data capacity building projects focusing on all aspects of open data. Emphasize the capacitation of champions. Structure the project as collaborative.

**Recommendation 11 – Empower public sector workers in rural areas through promotion of adoption and use of mobile resources**

**Why:** This initiative would focus on piloting service-provider centric advances in efficiency and efficacy through providing government workers in rural areas with mobile applications that have the potential to reduce reliance on paper-based systems, especially amongst various field workers.
What: Reduce administrative burden on workers. This could be achieved through the reduction of paperwork through the development of mobile applications to replace paper-based solutions.

Networks of interaction: Collaborative networks between universities, communities, public sector servants in communities, mobile service providers and entrepreneurs. E-Fez is an example that could be replicated.

Operation: Ideally piloting these applications should be done within collaborative innovation and incubation spaces (See recommendation 9) created within research organisations (e.g. universities and other organisations) and piloted via a ‘living labs’ approach.

5.5. Conclusion

For ICT-based public sector transformation to be successful, a holistic approach is required that does not focus exclusively on technology as enabler, but also on the enabling environment, structures and processes and adding value to the ultimate customers, i.e. the citizens using the services.

Given the extent of public sector reform, extensive networks of collaboration will be required to make a significant impact on the continent. Role players will include the partners of this project, governments and government departments, development agencies, domain experts, entrepreneurs and private sector role players, technology and mobile service providers, community members and community interest groups.

The penetration of mobile and social networking technologies in Africa provides the continent with an opportunity to ‘leapfrog’ phases of technology evolution in other parts of the world and to be on the forefront of various technology developments and the potential these technologies offer.

In principle, significant support should be provided to the expansion of successful existing initiatives. This is a way of building capacity in delivery excellence and in managing the risk of project failure.

A strong focus should be maintained on ensuring that the continent has adequate skills to match the requirements made by these public sector transformation initiatives in terms of skilled labour.
6. Endnotes


47. The Role of Information Communication Technologies in the “Arab Spring”: Implications beyond the Region. Stepanova, Ekaterina . PONARS Eurasia Policy Memo No. 159, s.l. : Russian Academy of Sciences, Institute of World Economy and International Relations, 2011.


