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E-government in Africa: An Overview of Progress Made and Challenges Ahead

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In contribution to the efforts of the United Nations Division of Public Administration and Knowledge Management to support African member States, this paper will present an overview of the progress made and challenges ahead for African governments in building e/m-Government for development. Beginning with definitions of e-government and its essential elements, it will proceed to an analysis of measuring and evaluating progress in e-government in Africa and examine challenges to further development. It concludes with suggestions for building successful e-government projects and outlines some aspects of the road ahead for e/m-Government for development in Africa.

Definitions of e-Government
Definitions abound of e-Government (a shorthand for electronic or digital government). The simplest definitions that encompass virtually all existing e-Government projects in Africa refer to content and modalities. Prof. Dele Olowu, writing for ECA, defines e-Government as "all the information and communication technology platforms and applications in use in the public sector of the use of the internet for delivering government information and services to citizens" (Olowu 2004). Such definitions are value-neutral and technology oriented. The author prefers a definition of e-government that focuses on its transformative possibilities for governance and emphasizes service delivery as per the focus of the *United Nations e-Government Survey 2008: from e-Government to Connected Governance*. Following closely the United Nations (2002) definition, the following elements are central:

- E-government is the use of ICT to**:**
  - promote more efficient and effective government
  - Facilitate the accessibility of government services
  - allow greater public access to information
  - make governments more accountable to citizens.

The three major objectives listed below of the technology element in e-Government are interconnected and interdependent. They need to be seen holistically as an integrated platform for a management system:

- Improving information management
- Improving service delivery
- Improving accessibility and participation of the different stakeholders (Misuraca 2007).

E-Government projects in Africa encompass a wide variety of approaches, ranging from the technologically and internally oriented (introducing ICTs into all aspects of government activity) to the more external but still value-neutral approach of Internet government service delivery, to the customer-centred and development oriented approach advocated by UNPAN of seeing in e-Government the capacity to transform public administration through the use of ICTs[1]. In all the approaches, the constant caveat is that the use of ICTs is not technology for the sake of technology, but rather for their capacity to improve communication between people and as tools for development, as embodied in

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[1] This classification of the definitions of e-government into three groups follows that of OECD (2003.)

the ICT4D approach (information and communication technology for development). The use of ICTs can enhance a government's ability to foster development and support broad public sector reforms and good governance both within government administrations, as well as in their interaction with citizens and the private sector (Misuraca 2007). The keyword in e-Government is government, not electronic; the emphasis needs to be on government and governance, not technology.

At the same time as we underline that government and not technology is the essence of e-Government, it must also must be emphasized that although the general approach to e-Government is through the Internet, e/m government need not be technologically specific. E-government can be delivered using non-Internet Protocol (IP) devices such as telephone, fax, PDA, SMS, MMS, GPRS, WiFi, RFID, biometric identification and smart identity cards as well as community radio (Kitaw 2007).

The distinction also needs to be made between e-Government and information technology in government. Computerized operations, to automate the internal workings of government by processing data, particularly financial data, have been part of most African government operations for nearly 50 years. The e-Government model differs from the old model by using Information and Communication Technologies (not simply Information Technology) to support and, ideally, transform the external workings of government by processing and *communicating* data. The main difference between e-Government and computers in government lies in the emphasis on the external orientation and data communications, not simply data processing, and the link with economic and social development and improved governance as opposed to automation of work processes alone.

E-governance is the outcome of E-government done well . . .
Emphasis on the transformative possibilities of e-Government make it clear that e-governance is the successful outcome of e-Government. This is evident in the definition of e-governance developed by the African Training and Research Centre for Administration for Development (CAFRAD):

> The use of ICTs, especially the Internet, to adopt a new conception and attitude of governing and managing where participation and efficiency are required of all the partners linked in a network . . . Governments can utilise *e-governance* to re-invent themselves, get closer to the citizenry and forge closer alliances and partnerships with diverse communities . . . within the context of development. (CAFRAD 2002)

E-government without e-governance is business as usual. As Kitaw observes "Fundamental to seize the opportunities of e-Government in Africa is the genuine commitment and willingness of governments to induce transformational patterns towards being more citizen-centred." (Kitaw 2006, 55)

Origins of e-Government in Africa

While it is difficult to make a precise identification of the origins of e-Government in Africa, we can note that as early as 1996 the African Information Society Initiative (AISA) adopted by African ministers of planning and economic development at ECA recommended e-Government related activities for the whole region. AISI called for development and implementation of national policies and plans to promote ICT adoption throughout key economic sectors and national administration (National Information and Communication Infrastructure strategies and plans-NICIs) and especially for using ICTs to improve effectiveness of government service delivery (ECA 1996). Since1996 AISI has remained ECA's blueprint for working with African members States in the area of using information technology to promote economic and social development in Africa.

Primary e-Government delivery models

There are three primary delivery models for e-Government, all of which are presently in evidence in Africa. In its work with member States, UNDESA/UNPAN puts most emphasis on the Government-to-Citizen model. Descriptions of the four major models follow:

•**Government-to- Citizen (**G2C) — Talking to citizens by providing them with details of public sector activities, increasing the input of citizens into public sector decisions and improving public services delivered to members of the public, in terms of quality, transparency, accessibility and cost. G2C includes such applications as e-Banking, e-Procurement, e-Education and e-Health. Among G2C services are information dissemination, providing of licenses, birth/death/marriage certificates, tax information and filing, education results and online libraries. Examples of G2C in Africa are the Rwanda Online Government Services and the Mauritius Government Online Centre.

•**Government-to-Business (G2B)** —Includes services exchanged between government and the business community, such as dissemination of policies, rules and regulations, downloading application forms for licenses, renewals, payment of taxes and e-procurement. An excellent African example is the Contribution Network Project Mauritius.

• **Government-to-Government (G2G)** — Also known as e-Administration, G2G involves harnessing technology to improve public administration processes for better service delivery. It is especially employed in the decentralization of government and the connection of local to central government. The Woreda Net project of the government of Ethiopia is a G2G project.

In addition, there are also Government-to-Employee (G2E) projects, less common than the other three in Africa, which involve specialized services for government employees, and Government-to-Any (G2X) by which government delivers ICT-enabled services to non-citizens such as the online issuance of visas and foreign investors, as done by Rwanda.

Evaluating progress in e-Government in Africa
The UNPAN E-government readiness survey 2008 showed that few countries globally
have made the leap from e-Government to connected governance, and the region with the
fewest of all was Africa.

Africa region's comparative e-readiness
Table 1, based on the UN e-Government survey of 2008, illustrates the situation of
Africa's five regions in comparison to the world average. Five African countries initiated
an e-Government presence online since 2005, leaving only two not yet online (Central
African Republic and Somalia). The region with the highest e-readiness is southern
Africa, with West Africa appearing as the least ready.[2] The highest country readiness in
Africa was recorded in South Africa and Mauritius — the only African countries to
exceed the world average —, followed by Seychelles, Egypt, and Cape Verde.

Table 1: Comparative e-readiness of Africa's regions

Region	Rating	Best in region	Newly online since 2005
Southern Africa	0.39	South Africa 0.51 Lesotho 0.38	
Northern Africa	0.31	Egypt 0.48 Libya 0.36	
Eastern Africa	0.28	Mauritius 0.51 Seychelles 0.49 Kenya 0.35	Zambia
Central Africa	0.24	Angola 0.33 Gabon 0.32	Equatorial Guinea
West Africa	0.19	Cape Verde 0.41 Nigeria 0.31 Ghana 0.30	Liberia Guinea-Bissau
World average	0.45	N American average	0.84

Source: United Nations 2008.

The comparative global rankings and e-readiness of the top 10 African countries in the
2008 survey are shown in Table 2 below.

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[2] Ratings are based on UNDESA/DPADM's composite e-Government Readiness Index comprised of (1)
the Web Measure Index, designed and measured by DPADM, of member States comparative ranking of
their ability to deliver online services to their citizens, based on a five-stage model ranging from emerging
to connected; (2) the Telecommunication Infrastructure Index; and (3) the Human Capital Index. The two
latter indexes are themselves composites of five indicators each from international data sources.

Table 2: 2008 E-Readiness ratings: top 10 African countries

Country	Global ranking, n=182	E-readiness index
South Africa	61	0.51
Mauritius	63	0.51
Seychelles	69	0.49
Egypt	79	0.48
Cape Verde	104	0.42
Lesotho	114	0.38
Botswana	118	0.37
Libya	120	0.36
Algeria	121	0.35
Kenya	122	0.35

Source: United Nations 2008.

On the other hand, Table 3 shows the African countries with the lowest rankings in terms of the percentage of possibilities offered by the Web that they used in their online e-Government presence.

Table 3: African countries exploiting fewest online possibilities

Country	% Web utilization Possibilities
Chad	1
Burundi	1
Guinea-Bissau	2
Comoros	2
Sierra Leone	5
Mauritania	5
Sudan	6
Eritrea	6
Equatorial Guinea	6
Cote d'Ivoire	6

Source: United Nations 2008.

It should be noted that Guinea-Bissau and Equatorial Guinea's only initiated their online presence since 2005.

African achievements 2007-2008

Several quantitative and qualitative measures show progress made in individual African countries in e-Government over the last two years. There were a number of benchmarks that African countries achieved:

- Mozambique, uniquely in Africa, entered the top 30 countries, as no. 26, in e-participation (citizen participation in policy making) as well as the top 20 (no. 19) in e-information (citizens given basic information as the foundation for citizen participation)
- Botswana was in the top 25% of all countries worldwide on e-consultation (governments soliciting citizen opinion)
- Five African countries now have open web forums to discuss topics
- Eight African countries now have 10% of their population online. (United Nations 2008)

The survey also identified several best practices in e-Government in Africa, notably the development of e-voting in Cape Verde, allowing near-instant vote tallies, avoiding conflict about results, and moves towards integrated information systems in two countries:

•Databases of Environmental Information Network and Forest Research Institute linked in Ghana

•Contributions Network Project in Mauritius that connects firms for tax payments to various government departments (United Nations 2008).

Another measure of progress-ECA TIGA awards

Another measure of e-Government progress in the Africa region is the unique Technology in Government Award (TIGA), established in 2006 and first awarded in 2007 by ECA in collaboration with the Canada Fund for Africa, with the aim of recognizing innovation, excellence, and leadership in Africa's public sector e-Government development. As shown in Table 4 the first award winners were:

Table 4: ECA TIGA award winner 2007

Category	Category title	Winners
Category 1	Public service delivery to citizens/communities	Government Portal Project, Angola- one-stop shop for government public information and services for citizens
		Fez Government Project, Morocco
Category 2	Improved health services through the use of ICTs	**Rwanda TRACnet- one-stop shop on case and treatment of AIDS**
Category 3	Improved educational services through the use of ICTs	Automation of Secondary School Placement and Online Exam Result Delivery, Kenya
		Egyptian Education Initiative (EEI)
Category 4	**Public Private Partnership**	**ORBUS, Senegal**

	(PPP) in economic and financial eServices delivery	**Electrogaz SMS Utility Payment System, Rwanda**

Outside of the four main categories were the Judges' Awards made to *Classes Rurales en Langues Nationales* in Burkina Faso for its use of distance learning and local languages; to the Integrated Revenue Management System of the Addis Ababa city government that brings automated services to customers at neighbourhood level and the Court Administration Reform in Ethiopia that makes legal redress more accessible to citizens; to the Instant Money Transfer Service, Ghana that delivers remittances from abroad via telephone; and to the Project des Demarches Administratives, Senegal that provides up-to-date details on all automated service delivery possibilities to citizens of Senegal.

As another indicator of progress in e-Government in Africa, ECA identified three countries (Lesotho, Namabia and South Africa) that elaborated e-Government policies strategies since the second phase of the World Summit on the Information Society (November 2005).

Challenges in developing e-Government in Africa
It must be said that while Africa as a whole remains behind the rest of the world in e-Government development, the challenges that it faces in designing and implementing e-Government programmes are the most formidable in the world. One way to assess the degree of progress in Africa is to examine its situation with regard to the prerequisites for e-Government.

A basic list of e-Government prerequisites would probably include the following:
- A minimum threshold level of technological infrastructure
- Near-universal Internet access
- Human capital (of both designers and users)
- Legal frameworks/enabling environment
- Political will
- Integration and redesign of government organization and processes
- Consideration of people issues: public service culture, technophobia, reaching minorities

Examining the first three of these factors, we can see that many African countries are far from fulfilling the basic prerequisites for e-Government development but in varying degrees. With regard to technology infrastructure, it is generally agreed that widespread broadband access is needed for Internet-based e-Government systems. On that measure, four out of a thousand Africans have broadband access, while the comparative figure in Sweden is 81 out of 100. Only five African countries have broadband density that can be measured in integers (ranging from 1 to 6) out of 100: these are South Africa, Cape Verde, Morocco, Seychelles and Mauritius. Thirty-three countries (% of the total) have no broadband at all, while fine others have broadband density of 1/1000. In Internet connectivity the African leaders are Seychelles, Mauritius, Morocco, Sao Tome, Tunisia, South Africa and Sudan, with Internet density ranging from 10 to 40/100, while those at

the bottom of the scale (Liberia, Ethiopia, Sierra Leone, Democratic Republic of the Congo and Niger) register from 1 to 3 users per one thousand.

The technology infrastructure is quite different when one looks at the African situation from the perspective of m-Government. Africa is the fastest growing area of the world in cell phone adoption, with an overall cell phone density of 13/100. The African leaders in cell phone diffusion are Seychelles, South Africa, Tunisia, Libya, Mauritius, Botswana and Gabon with densities ranging from 37 to 57/100.

The difference in cell phone penetration between African countries and the richest developed countries, such as Sweden, is miniscule compared to the gap in broadband access. In the latter, broadband density in Sweden is 205 times the African average, while in cell phone penetration the gap is only 5 times (and only ½ to 1/3 more than the best African cases). African countries lagging behind in cell phone adoption are Ethiopia, Eritrea, Comoros, Burundi, Sierra Leone and Guinea, where usage ranges from 3 to 9 per 1000.

With regard to the necessary human capital, the available indicators are adult literacy rates and overall enrolment ratios. The overall literacy rate is African is 62 %, with 13 countries having 80% or higher adult literacy. The highest literacy rates are found in Seychelles (92%) and Zimbabwe (89%). Those countries with the lowest level of adult literacy (ranging from 24 to 29%) are Mali, Chad, Niger and Guinea.

Enrolment ratios for primary, secondary and tertiary levels combined are 53.3% for African overall, with nine countries possessing rates of 70% or more. The best five countries in educational enrolment are Libya, Seychelles, South Africa, Egypt and Tunisia while the lowest enrolment ratios (ranging from 22 to 30%) are found in Niger, Djibouti, Angola, Burkina Faso and Central African Republic. Again we can make the comparison to Sweden, where literacy is 99% and enrolment 95%.

Regrettably, no macro-level data is available on computer literacy for African countries. However, as African countries are rapidly moving to introduce the use of ICTs in formal education, the computer literacy will move towards equivalency with the enrolment ratio.

From the data we can conclude that while infrastructure gaps between Africa and the rest of the world are wide, except in the case of cellphones, Africa is relatively rich in human capital where gaps are much smaller in comparison to developed countries than in infrastructure. The infrastructure gap must be corrected to advance in e-Government, while the most easily realizable future of e-Government lies in mobile interoperability.

However, aggregate figures on both infrastructure and human capital often mask internal divides such as on gender, age, rural vs. urban, minorities and the disabled. Questions of equity and accessibility involve not only people and skills but also e-inclusion: reaching all people. Special attention is needed to ensure access and participation of women, the disabled, ethnic and religious minorities, the aged, illiterates, and rural dwellers.

Gender issues in e-Government

Looking at the issue of gender e-inclusion, we can see that African governments, economic communities and international organizations based in Africa have made substantial progress in raising awareness of gender issues and defining needs and modalities for increasing the access of women to e-Government.

Uganda's e-Government strategy includes a reference to the importance of including women in universal access and the Gambian strategy identifies gender as a crosscutting issue. In their NICI Swaziland is explicit and pro-active about the inclusion of gender in e-Government, referring to developing "a robust e-Government programme that would promote the use of ICT across all ministries and departments, with a deliberate gender bias."

The East African Community Regional e-Government strategy addresses inequality issues in ICT access and use in the region and outlines specific action points in view of the potential use of ICTs as tools for gender equality. They are:

- The need for e-Government strategies to be geared to enhancing women's productive capacity of the poor by promoting labour-saving devices for women, creating rural multimedia centres for women, as well as access to credit and loans and opportunities and information through online agricultural research and development.
- The need to address gender at national and local levels through the use of innovative ICT applications such as rural multimedia centres for women that can act as the participatory hub/link to national development process and programmes;
- The institutionalizing of dialogue between government, civil society and donors, links through nongovernmental and community-based organisations to mainstream gender dimensions in e-Government;
- Providing education for human resources development to provide adults, unemployed women and retrenched segments in the labour markets with ICT skills training to improve their employability and overall quality of life;
- Awareness raising about and facilitating the inputs of women into national development processes and programmes.

The United Nations Economic Commission for Africa has taken the lead, in collaboration with the Canada Fund for Africa, in creating awareness, direction and strategies for the full inclusion of women in e-Government in Africa, starting with two country-level workshops (in Tunisia, and Mozambique) and culminating with a regional meeting (Addis Ababa 2009) to ratify the Action Plan on Gender and e-Government in Africa (ECA 2009) and the publication of a handbook on e-Government (Huyer in press).[3]

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[3] The overall objective of the *Action Plan on Gender and e-Government* is to provide and use ICTs as tools for empowering and benefiting women and men, for full inclusion in e-government programming and service delivery.

Hopes are particularly strong for women benefiting from m-Government, as in most African countries women's mobile usage equals or exceeds that of men, as compared to their far lower computer usage. Women in particular benefit from voice access and the ability to access government services without travel, harassment and corruption (Nath 2006).

Critiques of African e-Government implementation
There has been relatively little scholarly analysis and evaluation of African e-Government efforts. What little there is has come largely from outside Africa and has not been updated for recent developments. Given the rapidity of growth in Africa of information technology in general and e-Government in particular over the past decade, more up-to-date assessments are needed. More recently a few African scholars have come on the scene presenting a more Afro-centric view, grounded in the realities of the region.

The most generally known critique of e-Government practices in Africa is that of Richard Heeks (2002a). Heeks estimates that 85% of e-Government projects in developing countries end in either partial or total failure (Heeks 2002c) that in Africa is due largely to "the large gaps that often exist between project design and African public sector reality" arising from a Western supply-driven animus that fails to take into account African realities (Heeks 2002a, 1). Heeks attributes the Western focus of African e-Government efforts to international donor agencies, (presumably international) consultants, information technology vendors – who often bring with them the "If it works for us, it'll work for you" mentality (Odedra-Straub 1995) – and Western-trained African civil servants.

Among the other reasons for failure that Heeks and others (e.g. Berman and Tettey 2001) point to are:
- Project goals being too ambitious given production capacity
- Efforts directed at supporting instead of redesigning dysfunctional processes
- E-government agendas diverging from other sector government agendas
- Ignoring cultural elements in project delivery strategies
- Ignoring poor infrastructure and inequitable diffusion of technology.

Others (Coleman 2005) see Heeks, Berman and Tettey falling into the error of "African exceptionalism " – seeing failure as inevitable because things, especially those based on new technologies, simply don't work in Africa because African bureaucratic institutions "differ fundamentally from those of the Western states within which computing and IT have been developed" (Berman and Tettey 2001, 1). African government leaders on several occasions have rejected this view of the irrelevance and unsuitability of e-governance to Africa, declaring, for example, at the fourth African Development Forum (organized by ECA in Addis Ababa in 2004) that:

> E-governance … is an important innovation for enhancing good governance and strengthening the democratic process that can also facilitate access to information,

freedom of expression, greater equity, efficiency, productivity growth and social inclusion. Successful e-Government initiatives can have demonstrable and tangible impact on improving citizen participation and quality of life as a result of effective multi-stakeholder partnerships. African governments need to develop appropriate policy frameworks, supported by legislation for e-governance, that are linked to strategic development objectives; enlist high-ranking political e-Government champions; focus awareness, outreach and training efforts on the less privileged segment of targeted users, particularly women and neglected rural communities; and promote local content and supports local language development. (ECA 2004)

Participants at the UNPAN e-governance workshop held in Addis Ababa in February 2009 also reacted to Heeks' criticism, feeling that it was out of date and that e-Government efforts in Africa needed to be evaluated by African scholars in the context of the African milieu and not in direct comparison with more developed and wealthier countries.

Since Heeks' critique, several African scholars, including Chango, Ngulube and Mutula, have undertaken analytic approaches to e-Government in Africa.

Chango (2007) accepts Heeks' assertion that there is a high rate of failure among African e-Government projects and attributes it as well to problems in the design process. He uses the case of Gambia working with the ECA on e-Government as his case in point. Chango regards what Gambia called its e-Government strategy as best as a pre-e-Government phase:

> What was supposed to be an e-Government program strategy can in fact be accurately described as an advisory for the implementation of an ICT for development program by the government, or that of the national communications infrastructure. (Chango 2007, 1)

In other words, a NICI plan is not sufficient to constitute an e-Government policy or strategy.

An important contribution that Chango makes is the need to connect communities of practice with research communities, especially local research communities in order to build social knowledge. He warns that if local scientific communities don't engage in these activities, the opportunity will be lost to capture much useful data and to build knowledge. Among the topics that he suggests for local research communities are: IT adoption and organization change in public organizations. Chango also poses a number of important anthropological problems (following Rabinow 2003) that researchers as well as communities of practice need to consider regarding e-Government adoption in Africa:

> •How to implement a technological system in an environment where it has no reality to most of those who live there?
> •How to design systems where there is no critical mass of ICT users?

•How to implement a technology system when costs of technology exceed those of human employment and amid high unemployment?

　　•How can e-Government be more transparent and accountable that the government it represents? (Chango 2007, 392).

Another African author to attempt critical analysis of African e-Government efforts is Ngulube (2007). He points out that ICT infrastructure is not widely available to rural populations and, in most cases, government officials and potential users lack the basic skills to use ICT-based systems. Other deficits that he points out are the absence of properly organized government information in records management systems as well as the lack of digitalization of existing records, which he terms the "Achilles' heel of e-Government in Sub Saharan Africa." He also underlines the lack of legal frameworks regarding cyber-security, digital signatures and personal data protection and confidentiality, privacy laws and access to information legislation in most African countries.

While less analytic than Chango and Heeks, Mutula's analysis (2008) is the most current and, apparently, the most evidence based. He compares African e-Government development to that of development and transitional countries based on several indices, besides that of UNDESA/DPADM, looking also at those of the Economist Intelligence Unit, Brown University and the 2005 Global Digital Government concentrating on municipalities. He points to the general lack of reliable data on the e-Government status of Africa (a weakness that emGKR has as its objective to correct) and concludes that Africa's lagging far behind Europe, North America and Asia in e-Government is due largely to barriers in infrastructure particularly in Internet density and bandwidth, in the absence of regional network(s), and in the direction of traffic as well as in the scarce distribution of electricity, and policy, legal and skill factors as well as high tariffs. He concludes that African must invest more in infrastructure and enhance a legislative and policy framework to effectively enter the universe of e-Government.

Again following Heeks, Mutula also emphasizes the gap between strategy and reality, particularly in the case of Mozambique, which has an excellent e-strategy and is often cited as a leader in e-Government in Africa. The reality, according to Mutula, is that the focus has centred on infrastructure development around Maputo and even basic information services are not yet in place elsewhere. Given the gaps in infrastructure in most of the country, the failure of the Mozambique e-Government strategy to explicitly indicate how citizens would engage government through electronic means is striking. Mutula faults most Africa e-Government efforts, with the exception of South Africa, Mauritius and Seychelles, for being government-centric in their approach, providing information on government structures but offering very little to the average citizen wanting to access them. He also notes that most African government portals do not integrate resources across ministries and department (Mutula 2008).

Strategies for building successful e-Government projects
There is no shortage of prescriptions for building successful e-Government projects in Africa in ways to, if not ensure, at least have a better chance at success. It is worth taking

a look at some of these strategies for risk reduction. Perhaps the greatest depth and breadth of analytic experience is that of Gianluca Misuraca, who has worked directly with UNDESA as well as indirectly on secondment with CAFRAD. Based on four in-depth case studies of e-Government in Africa (from Senegal, Ghana, Uganda and South Africa), Misuraca drew a number of conclusions on the building e-government/governance in Africa:

1. Customized approaches are needed- no one strategy fits all.
2. Local conditions must be taken into account; wholesale import of external models does not work.
3. Local content is essential.
4. Engaging substantial numbers of the local population is difficult but important.
5. The high cost of ICT equipment, applications and services remains a deterrent to the adoption or successful implementation of e-Government programmes (Misuraca 2007).

The common element in all of these is "think local." Without consideration of the local context — especially of the people issues — it is hard to see how e-Government projects can succeed.

Heeks also offers success strategies in simple but useful form, reducing the various e-readiness studies to six questions that governments should pose to themselves when embarking on e-Government projects:

1. is our data systems infrastructure ready to promote the quantity and quality of data to support e-Government?
2. Are the laws and regulations (e.g. accepting digital signatures) required to support e-Government in place?
3. is our institutional infrastructure ready (is there an e-Government coordinating office)?
4. is our human infrastructure ready?
5. is our technological infrastructure ready?
6. is our leadership and strategic thinking ready? (Heeks 2002c).

Based on a selection of successful e-Government projects in developing countries Ruth and Schware (2008) contribute further to suggested strategies in emphasizing that agency-centric or "silo" approaches rarely work because they correspond to government structures but not to the needs and problems of users. They also stress the importance of achieving technical interoperability as well as cross-agency cooperation.

Excellent suggestions to improve technical aspects of e-government websites on such topics as site organization, navigation, use of languages, maintenance, personalization, and the issue of advertisements are available from West (2008).

The author of this paper would add the following to the above-suggested strategies:

- Work is needed on achieving interoperability with mobile devices
- Use human intermediaries between citizens and digital infrastructure to make up for the widespread lack of ICT access and skills
- Build greater awareness of social and cultural issues into project design
- Establish contact with local research community especially on evaluation to build a local knowledge base
- Try the use of Web 2.0 techniques for increased e-participation.

The road ahead
The development of e-Government in most countries is primarily aimed at developing electronic services that customers can access via the Internet. Unfortunately, most African countries have not reached even this stage. They have a long road to travel before reaching the development of integrated government portals and reengineering of back-office processes. Developed countries are increasingly tailoring their e-Government strategies in the direction of customer-orientation and instead of persisting with rigid organisational structures are working on integrating services and processes across individual administrative bodies and institutions and even include private businesses. To do this the development of e-Government requires a holistic strategic approach that encompasses the entire public administration and is not limited to individual bodies and institutions, or individual sectors and levels of administration.

E-government efforts must do this to make progress towards the development of services based on user's needs and problems that most commonly involve a need for integrated services and are directed towards life-events (Kunstelj and Vintar 2004).

By the time of the next United Nations e-Government survey it is expected that we will see more two-way information flows and citizen input as part of a move from e-Government toward integrated, connected governance in Africa. Given such movement, at the next review we can expect to see benefits for African citizens in public sector reform, more efficient government, improved public sector capacities, improved governance/strengthened democracy, increased government transparency, reduction in corruption, high level of citizen participation and greater citizen trust in government as well as an increase in ICT diffusion and literacy.

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