

# Mobile phones for good governance – challenges and way forward

Draft discussion paper

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## Background

During the past ten years, we have witnessed how mobile phones and the simple functions of voice and text messaging (SMS) can empower citizens and affect the way citizens interact with each other and with the society as whole. Mobile phones are also thought to open up for a deepened democracy through citizen participation and insight into state affairs, through influencing the political decision making process, and helping in holding governments accountable. Is this the case?

So far, few East African government institutions have adopted the idea of using mobile phones as a tool for service delivery and a way to communicate with the citizens. This paper describes a few interesting cases and pilots, focusing on East Africa (mainly Kenya, Rwanda, Tanzania and Uganda), where mobile phones and mobile applications have been used for improving governance, either independently or as a compliment to other methods and strategies. The paper will critically examine some of the challenges as well as the main opportunities for improving good governance through mobile phones and present ideas on how these projects could effectively be scaled-up.

## What is good governance?

The term governance is wider than government: it encompasses the relationships between the three actors state, market and civil society and how these actors organise themselves and make decisions according to a set of informal and formal rules. Democracy is a mode of governance and there exists a symbiotic relationship between the concepts democracy and good governance. Good governance can therefore be seen as an umbrella term for a functioning democratic system where freedom of expression and a sound juridical system is in place.

The concept of good governance is not readily defined. UNDP, in a comprehensive policy document from 1997, states that good governance is characterised by participation, the rule of law, effectiveness and efficiency, transparency (built on the free flow of information), responsiveness, consensus orientation, equity, accountability, and strategic vision. According to DFID, good governance centre upon three main concepts (DFID, 2006):

- 1) state capability: the ability to get things done, to formulate and implement policies effectively.
- 2) accountability: a set of institutionalised relationships between different actors that might help bring about responsiveness.
- 3) responsiveness: when a government or some other public authority act on identified needs and wants of the citizens.

Similarly, the Asian Development Bank defines the four elements of good governance as accountability, participation, predictability and transparency (Coffey, 2007).

Why is good governance important? Simply put, poor governance will not lead to a society's development. Inefficient use of state resources, corruption and unstable systems will not lead to poverty reduction. Poor governance threatens not only the countries sociopolitical sustainability but

also the environmental and economic sustainability. However, good governance is not the sole determinant of sustainable development but it sure makes a difference. William Easterly (2006), Professor of Economics at New York University, states that “[b]adly governed countries are poor countries” (p.130) and that “good governance tend to come together in packages, so it is hard to tell which one is causing economic development” (p.131).

It is proven that access to information and communication in its own right plays an important role in promoting good governance (Coffey, 2007). Further, information delivery to public is a key task of government and it is their responsibility to keep citizens informed of what is happening around them. In a policy note, DCERN (Development Communications Evidence Research Network) concludes that if “we accept the view that governance requires an inclusive public space based on informed dialogue and debate – an environment in which voice and accountability are central – then it is clear, in theory at least, that communication must have a positive impact on good governance” (DCERN, 2007, p 5). Can mobile phones facilitate in creating this inclusive public space, or at least access to it, where dialogue and debate is key?

## Rationale – why mobile phones?

There is no need to re-emphasize just how appropriate information and communication technology (ICT) systems (here computers and internet) are for the capture, processing, storage, organisation and presentation of data and information. ICT used as a tool to improve good governance, ie. e-governance, facilitates openness and transparency and creates a freer flow of information between departments, institutions and layers within government. ICT, as seen in many developed countries, also facilitates a freer flow of information between government and citizens and opens up for opportunities for citizens to participate more directly in influencing decisions that effect them. But how about mobile phones as the new interface between government and citizens? Can slow government processes be combined with mobile phones that are ever-changing, quick and direct in their usage? Why mobile phones? Is it not just another hype that often accompanies the latest technical breakthroughs? We have witnessed that mobile phones help to create an informative, connected, innovative, participative and converging society all over the world (see Hellström 2009, for a number of cases regarding empowerment in developing countries). What is the rationale to use mobile phones for good governance in East Africa?

- 1) **Access.** Penetration rate is ever increasing and even more have access through shared usage and ownership. Related to access is that mobile phones add the dimension 'anywhere and any time': due to their mobility and that mobile phones are switched on most of the time, which opens up for new possibilities.
- 2) **Reach.** Again, due to its mobility and network infrastructure, mobiles can reach areas where there is no other ICT infrastructure (like internet, fixed lines).
- 3) **Adoption.** As mobile phones more and more become an integral part of people's lives, m-commerce, m-government and m-x will be the the normal way of doing things. Further, there is an increasing public demand for mobility and easy access to services.
- 4) **Interaction.** Mobile phones make it possible for real-time, two-way dialogue as opposed to radio, brochures, posters, public speeches etc.
- 5) **Costs.** The relatively lower cost of mobile phone technology versus internet technology has lowered the entry barriers for poor people. Affordability is still a concern though – somebody needs to pay for the infrastructure, communication and services.
- 6) **Efficiency.** Due to high access, its reach, good adoption and real-time interaction mobile phones offer efficient solutions to governments communication challenges.
- 7) **No other option?** In developing regions with poor infrastructure, going mobile may be the only viable option.

The table below show the total number of subscribers, penetration rate (percentage of people with an active SIM card), percentage of the population covered with a mobile signal, monthly mobile expenditure as percentage of monthly disposable income, and number of mobile operators in each of the four countries.

| Country  | Subscribers, Q3 2008 | Penetration rate | Mobile coverage | Mobile expenditure of disposable income | Operators |
|----------|----------------------|------------------|-----------------|---|-----------|
| Kenya    | 14,503,964           | 41.7%            | 77%             | 52,5%                                   | 4         |
| Rwanda   | 1,263,300            | 12.0%            | 90%             | 65,5%                                   | 3         |
| Tanzania | 11,556,329           | 28.0%            | 65%             | 28,9%                                   | 5         |
| Uganda   | 7,460,011            | 25.8%            | 80%             | 48,6%                                   | 5         |

Table 1. Sources (CCK 2008, MTN 2009, TCRA 2008, UCC 2008, Stork 2008)

Much as penetration rates are increasing, universal access is not yet achieved in East Africa. Poverty and geographic isolation are two dimensions that explains why. Operators do their best to close the market efficiency gap, ie move into new areas that are considered commercially viable. An access gap still remains though because operators will not invest in areas that will not make profit. The issue of access is a strong argument why mobile phones can not be seen as the only solution for improving communication in governance. Traditional channels (physical visits and meetings, billboards, radio, information brochures, various e-government initiatives etc) that build on an effective back office still need to be functioning – mobile solutions just add an extra dimension.

However, looking at the three main concepts above, defined by DFID in 2006, good governance builds on the concept of action: to create relationships, to listen, inform, act and deliver government services in a sustainable and transparent way. If implemented correctly, mobile applications can support these actions by creating a higher efficiency in information sharing and communications and to create access to the inclusive public space that is a prerequisite for good governance.

## What is m-governance?

Before elaborating about mobile applications for good governance, what is mobile government (m-government)? A common definition of m-government, is Kushchu and Kuscu (2004) who define m-government as a “*strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, services, applications and devices for improving benefits to the parties involved in e-government including citizens, businesses and all government units*”.

A major weakness in this definition is the pre-assumption that m-government is a staged process, that m-government must build on existing e-government infrastructure. This is not necessarily the case. Looking at East African countries where governments have very few e-government services up and running, one can still find a number of m-government applications. E-government is not a prerequisite for m-government, at the same time m-government should not be seen as a replacement for e-government initiatives: m-government is a complement and refers to the transfer of government services to mobile platforms where it is applicable.

The term m-government and m-governance often refers to the same kind of applications. However, governance is wider than government: m-government applications can be seen as a tool for more efficient administration and flows of information mainly within government at all levels. Mobile phone applications for good governance is more about using the mobile technology to make government ministries “*even more accessible and citizen-centric by extending the benefits of remote delivery of government services and information to those who are unable or unwilling to access*

public services through the Internet or who simply prefer to use mobile devices” (World Bank, 2007). Mobile phones make it possible to create a bottom up participation and ultimately – what m-governance is all about – empowerment.

## Mobile applications for good governance

This section is divided into “what?” and “how?”. 'What' characterises the activities and applications that seem to work (in terms of supporting good governance through mobile phone usage). 'How' deals with practical considerations, experiences and how these projects could be scaled-up.

### What? Cases in East Africa

There is a very wide range of *potential* governance related services which can be delivered and communicated via mobile phones, including services relating to health care, agriculture, education, employment, transportation law and order, tax, judicial and legal systems, etc. Mobile payments, now available in all East African countries, opens up for even greater opportunities and possibilities for transactions (bill/loan/fine payments and mobile payments for a variety of public services like transport and school fees). However, integrating systems and back-end is complex. For example, how to go ahead in a country like Uganda where there is no functioning ID-system in place?

Table 2 tries to summarize and map some of the existing initiatives in East Africa related to good governance. It stretches a bit to include education, agriculture and health applications too but since they are all dealing with increasing the efficiency of public administration they are still included.

| Area/sector                           | Project / application  | Country / region | Description  | Comments  |
|---------------------------------------|--|------------------|--|---|
| Government news / information updates | Road Safety (Transport Licensing Board)                                  | Kenya            | Allows commuters to report public vehicles contravening traffic regulations run by Transport Licensing Board of Kenya. Text 2303.  | Government news updates – usually traffic, weather, emergency and disaster management (ie alarms and notifications) – are not necessarily run by government institutions. However, the applications in this section are still typical Government to Citizen (G2C) information applications. |
|                                       | Weather (Applab, MTN Ugandan Department of Meteorology)                  | Uganda           | Allows people to send and receive text messages to find out the weather forecast for their region. <a href="http://www.applab.org">www.applab.org</a>  |   |
|                                       | e-Service Delivery Project (Ministry of Migration, Directorate of e-Gov) | Kenya            | Information on progress of identity card (text 2031) and status of passport (text 2032). <a href="http://www.e-government.go.ke/">www.e-government.go.ke/</a>  | According to the website, the government will expand this service to cover other key areas of service delivery such as Lands and Health.  |
|                                       | Emergency / notification   | Kenya            | In Kenya, post election 2007, threats and misinformation was floating around using SMS. The government authorities intervened with the help of mobile operators and sent out a mass SMS stating, as reported by AllAfrica (2008), “The Ministry of Internal Security urges you to please desist from sending or forwarding any SMS that may cause public unrest. This could lead to your prosecution”. | This is an anecdotal example but yet interesting: the state and the operators working together in the event of crises.  |
|                                       | Voter registration (Electoral Commission)                                | Kenya            | In the run-up to the 2007 Kenya elections, the Electoral Commission of Kenya (ECK) launched a voter registration service where you could SMS the register by sending your ID number to receive   | They later tried to sell the application, I do not know who bought it if any.   |

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|  | of Kenya)  |                         | verification of voter registration.  |  |
|  | Voter reminder (Electoral Commission Uganda, SMS Media)  | Uganda                  | The Electoral Commission (EC) sent out 500,000 SMS to remind potential voters for an upcoming referendum in 2005. SMS Media's bulk SMS tool was used.  |  |
| <b>Law Enforcement / safety</b>  | Public Alert System (E-Fulusi, Tanzania Police)  | Tanzania                | Tanzanian police have implemented an SMS alert system to allow for anonymous reports on crimes, wrongdoing by police officers, or request emergency services. <a href="http://police.efulusi.co.tz/">http://police.efulusi.co.tz/</a>  |  |
|  | Other short codes  | Kenya, Tanzania, Uganda | Regional numbers are 112 for emergency/police/SOS, 114 for fire and 115 for ambulance. In Kenya and Tanzania there are some designated short codes for 'Crime Stoppers' (111) and 'Anti-corruption' (113). In Tanzania, if you call 113 you will come to the Prevention of Corruption Bureau (PCB). In Uganda, one can leave anonymous complaints on a special hotline (347387) to the Inspector General of the Government (IGG) "for rapid response to complaints" (IGG, 2009). Kenya Anti-Corruption Commission (KACC) have a similar system in place.                         | Even though designed for voice I find them worth mentioning.   |
|  | Albino hotline   | Tanzania                | Police handed out free mobile phones to 350 Tanzanians with albinism. According to the Economist: "Each phone comes with a "hot line" to the police. Albinos text in their location if they suspect they are being tracked by gangsters determined to kill them and harvest their body parts." (The Economist, 2009). Vodacom offered free top-up vouchers, while both Vodacom and Zain offered equipment to the police to record incoming SMS messages.   | Also anecdotal but worth mentioning. Many albinos have been killed recently (especially in Tanzania and Burundi but also in Kenya and Uganda) supply witch doctors with organs, teeth, limbs and hair. |
| <b>Employment Services</b>   | Kazi560 (M4G, OneWorld Kenya)  | Kenya                   | A job information service that allows employers to post job listings and job seekers to get personalized text messages based on the kind of work they are looking for. <a href="http://www.kazi560.co.ke">www.kazi560.co.ke</a>  | Two private initiatives that creates jobs.   |
|  | Job Platform (Daily Monitor, True African)   | Uganda                  | Employers are able to access the labour force and recruit instantly through a SMS service. All the job seekers need to do is type an SMS with credentials and availability and send it to a designated number.   |  |
| <b>Agriculture Services</b>  | eSoko Project (e-Rwanda, Ministry of Agriculture)  | Rwanda                  | Agricultural Market Price Information System that allows farmers to access prices of agricultural commodities in different markets in Rwanda. It is being implemented with the patronage of the Ministry of Agriculture of Rwanda. Launch 2009.  |  |
|  | Agricultural Market Information System (AMIS) / Acacia II (African Highland Initiative, IDRC, NAADS) | Uganda                  | Acacia II was an IDRC funded project implemented by African Highlands Initiative in south western Uganda. It was implemented through establishing ICT-centres, telecentres and village information centres where mobile phones are used for data collection and information dissemination. Project is now handed over to the National Agricultural Advisory Services (NAADS), which is a program of the Government of Uganda put in place to increase the efficiency and effectiveness of agricultural extension service. <a href="http://www.naads.or.ug/">www.naads.or.ug/</a> |  |
|  | MPAIS (Marketplace for Information and Services)   | Uganda, Rwanda          | MPAIS is a demand driven information and service platform that brings together demand and supply of information and services. Uses SMS to provide information to farmers and extension workers. It's been running since 2005. <a href="http://www.mpaisuganda.com">www.mpaisuganda.com</a>   |  |
| <b>Health projects (selected projects where the Ministry of Health is involve)</b> | Phone for Health (Ministry of Health)  | Tanzania                | Mobile voice application for collecting data, uses voice to ask question as means of reporting. The Phone for Health system helps clients to: 1) Collect real-time information from the field, 2) View, analyze and map the data in real-time to make more informed decisions, 3) Communicate and send alerts and information back out to the field in a timely and systematic way. <a href="http://groups.google.com/group/tanzam/files">http://groups.google.com/group/tanzam/files</a>  |  |
|  | Bloodbank SMS  | Kenya                   | BloodBank SMS was developed to improve the communication between local district hospitals and  |  |

|                           |  |          |  |   |
|---------------------------|--|----------|--|---|
|                           |  |          | Kenya's centralized blood banks. The system enables medical workers at the local district hospitals to provide information about their remaining blood stock directly to their centralized blood bank.<br><a href="http://eprom.mit.edu/bloodbank/">http://eprom.mit.edu/bloodbank/</a>  |   |
|                           | MIDAS, Mobile Information Datacollection Analysis System, (COMTEL Integrators Africa LTD)                              | Uganda   | A simple SMS data collection tool that gets health data from villages to Ministry of Health through answering questions designed by the ministry.<br><a href="http://www.comtelafrica.com/">www.comtelafrica.com/</a>  |   |
|                           | TRACnet (Voxiva)   | Rwanda   | An application that gathers clinic level information on infectious diseases through mobile phones. Virtually all facilities providing ART to HIV patients submit monthly reports using mobile phones. Been running since 2003. <a href="http://www.tracrwanda.org.rw">www.tracrwanda.org.rw</a>  | Although the Ministry of Health is not directly involved, TRAC depends administratively on the Ministry of Health, and especially on the Minister of State for HIV/AIDS and Related Diseases.                           |
|                           | Episuveyor (Datadyne. Ministry of Health)  | Kenya    | Open source mobile data collection system that allows users to easily create questionnaires and send them to mobile phones, collect data and send it back to server or computer for analysis. Currently being used by Ministry of Health officials to collect data about vaccine programmes. <a href="http://www.datadyne.org">www.datadyne.org</a>  |   |
|                           | IMCI, HIV/AIDS, TB, Diabetes, CommCare, Malaria, Reproductive Health<br><br>(D-Tree International, Ministry of Health) | Tanzania | Runs a number of projects but all are based on a decision support system for health workers to check patients condition before going to see doctors. A system of protocols, that are delivered from mobile phones, allows community health workers and other non-professionals to deliver high-quality and effective care, where there is no doctor. The mobile phones take the health worker step by step through the diagnosis and treatment options for a range of illnesses. <a href="http://www.d-tree.org/">www.d-tree.org/</a>  |   |
| <b>Financial Services</b> | Utility bill payment (SMS Media, Electrogaz, the national electricity company)   | Rwanda   | The service is to sell prepaid electricity scratch cards. Using the proven airtime scratch card model, entrepreneurs purchase the prepaid electricity cards in bulk and then sell them throughout Rwanda.  |   |
|                           | Bill payment<br><br>E-bill and SMS Alert<br><br>(Kenya Power & Lighting Company Ltd)                                   | Kenya    | Bill Payment through the mobile phone if you are a registered Cooperative Bank customer + one must have registered their KPLC account number with the bank.<br><br>E-bill is a electronic bill querying service that allows one to check the electricity account balance and bill due date any time by SMS. Type the first part of the account number and send to 5551.<br>SMS Alert is also part of E-bill. It gives the customer disconnection alerts and power outage alerts. Customers will be reminded via SMS to pay their bills two days prior to the due date .(Run by Adtel <a href="http://www.adtel.com">www.adtel.com</a> ) <a href="http://www.kplc.co.ke">www.kplc.co.ke</a> | Although a private company, their services affects many citizens. Also, the company manages the Rural Electrification Programme (REP) on behalf of the Government of Kenya.   |
|                           | SMS and Direct Email innovation (HELB, Adtel)  | Kenya    | The Higher Education Loans Board (HELB), which is mandated to source funds and finance Kenyan students pursuing higher education, have a service where students send an SMS to a shortcode with their ID-number. The sent SMS will query a database and send back name, loan balance and a note thanking them for using the service. <a href="http://www.helb.co.ke">www.helb.co.ke</a>  |   |
| <b>Crises management</b>  | Violence-Prevention Tool (Oxfam GB, PeaceNet)  | Kenya    | Involved in supporting mobile monitoring and reporting of post election violence. Created text messaging 'nerve centre.'; a hub for real-time information about actual and planned attacks between rival ethnic and political groups. The messages were then sent to local Peace Committees for action and response.   | The Violence-Prevention Tool and Ushahidi are two good example on how mobile phones provide a good complement to government lead governance by adding the dimension of quick participation and action regarding certain |

|                                  |  |          |   |         |
|----------------------------------|--|----------|---|---------|
|                                  |  |          |   | issues. |
|                                  | Ushahidi   | Kenya    | Grew out of the post election violence in Kenya – originally a website then with a mobile phone accessible system for reporting, alerts etc. They had a short code donated and able to publicise that for people to text in incidents. A database was able to see the number and the message.<br>www.usshahidi.com                          |         |
| <b>Education services</b>        | Examination results (Kenya National Examinations Council, Ministry of Education)                   | Kenya    | Kenya Certificate of Secondary Education (KCSE) national examination results and orders of merits can be accessed by candidates and parents through sms by typing KCSE (Full Index Number) and send to 2228.  |         |
|                                  | eNota Project (e-Rwanda, Ministry of Education, Rwanda National Examinations Council, RNEC)        | Rwanda   | A mobile based system that will allow students (primary leaving and secondary leaving students) to access their national examination results via their mobile phones. Launch 2009.  |         |
|                                  | PurcAI Mobile  | Uganda   | Entry of student marks by teachers. After processing these grades by the server, students, teachers and parents can access grades of their students using SMS.  |         |
|                                  | SEMA Project (Ministry of Education, DFID)   | Kenya    | Piloted in 10 district (now plans for countrywide implementation). SEMA (SMS Education Management Application) provides the Ministry of Education with technology to enable SMS based communication with primary school teachers for: school empowerment program, EMIS (Education Management Information System), ongoing teacher training. |         |
|                                  | BridgelT (Ministry of Education, International Youth Foundation, Nokia, Vodacom, Pearson and FAWE) | Tanzania | Innovative combination of mobile phone and TV to deliver content in primary schools, in science, mathematics, and life skills. Started in 2008.<br>www.moe.go.tz  |         |
| <b>Mobilisation, empowerment</b> | BungeSMS (Made in Kenya Network)   | Kenya    | Civil and political mobilization services that combines the internet and mobile telephony with the aim of empowering Kenyan citizens to influence local governance in their constituencies. Collate citizen opinions and development project priorities and forward them to parliamentarians.   |         |

Table 2. List of m-governance applications in East Africa.

### *Anecdotal usage*

Mobile applications related to elections have been fairly well explored in East Africa and have been used in various ways to make elections more meaningful exercises. For example, in the run-up to the Ugandan elections 2006 and Kenyan elections in 2007, text messaging was used to advertise political parties. In Kenya, President Mwai Kibaki called potential voters who could then listen to his pre-recorded voice (Limo, 2007). Mobile phones have been instrumental in encouraging better voter registration (in Kenya 2007) and voter turn out (in Uganda 2005) and also been used for post-election monitoring (in Kenya 2007/8). Also in Kenya, media houses provided election results via SMS at a premium rate and breaking news (Limo 2007). Mobile applications and usage in election observation have so far not been tried out in East Africa but plans are underway to involve both accredited and trained observers as well as citizen reporting of elections in the 2011 elections in

Uganda.

A question that must be asked is if only because it is technically possible, do you have to do it? For example, are Governments really interested in hearing from each and every citizen? The president in Uganda tried it out some few weeks prior the 2007 Commonwealth Heads of Government Meeting (CHOGM), which Uganda hosted. As an engaged citizen, you could mail/post or SMS question's and concerns "directly" to the President. He simply re-invented the black hole (ie no replies) and the service was disabled when CHOGM was over. To create this window of citizen involvement using SMS as a mean of providing feedback to many government leaders is tempting but failure rate high! The concept 'many to one' is tricky. However, in the other direction, when mobile phones provide governments of the developing world a direct channel to its citizens (one to many) seems more promising.

There has been a number of political actions taking place in East Africa using the mobile phone as a complementary tool. Nairobi People's Settlement Network used mobiles to get organised against evictions in Kibera, Nairobi. BBC reports: “[t]hey used what we would call flashmobbing to call people from across the many different and rival settlements together where big evictions were planned, and threatened to sit down in front of the bulldozers” (Mason 2007). Yet another example of political mobilisation was the Save Mabira Forest campaign in Uganda, where the Anti-Corruption Coalition Uganda (ACCU) played an instrumental role together with other civil society organisations in mobilising the citizenry to oppose government plans to give away one third (roughly 70 km<sup>2</sup>) of the Mabira Forest to the Sugar Corporation of Uganda Limited (SCOUL), owned by the Mehta Group (which to 51% is owned by the Government), for sugarcane plantations. The most successful part of the campaign was to urge people, through SMS, to boycott sugar produced by the company (ACCU 2008). The blogger Abubaker Basajjabaka writes: “*Over the weekend, packets of Lugazi Sugar have been piling up in supermarkets besides some business owners withdrawing them from their stalls*”. (Basajjabaka 2007). The government consequently suspended the idea of giving away the forest.

## How?

How to design a successful mobile governance project? Donner, Verclas and Toyama (2008) list a set of choices that the ICT4D literature identifies as being correlated with project success:

- evolutionary (vs. revolutionary)
- embed the mobile component into an already ongoing initiative (vs. being on its own)
- use existing practises as a starting point (vs. introducing totally new behaviours or patters)
- basic skills (vs. complex and/or additional skills needed)

Of the 30+ projects mentioned, more or less all fits into this success template (D-Tree, Midas, Bloodbank SMS, PurcAI Mobile, Episurveyor, TRACnet, SEMA Project and BridgeIT all requires some additional skills, also, they are for niche populations, see below).

Donner, Verclas and Toyama (2008) also add four other fundamental choices linked to mobile projects. However, how these choices correlates to the project's success or not is yet to be said. The four identified choices are:

- Who is the intended user? General public (all) vs. niche populations (students, civil servants, business owners etc)
- What kind of technology is used? Universal low feature handsets vs. smart phones for example
- What other platforms is needed? Self-contained (no other input needed) vs.



- web/audio/multimedia (dual mode of operation and linking to external sources etc)
- Is involvement from the manufacturer or operator needed? Independent vs. network operators or handset manufacturers (pre-loaded on SIM card, making USSD channel available etc)

The majority of the applications are designed for the general public and for universal low feature handsets (exceptions already pointed out). Most are self-contained and independent, a few need the web to function (Ushahidi, BridgeIT for example where the later also demand a Nokia phone to function) while the financial services are multi-modal in nature.

The applications/services listed are mainly used for information gathering and sharing and for coordinating direct political actions (ie. more targeting a mass-public and breadth). Mobile applications for policy and other political deliberations (in depth) are not used that much, BungeSMS being a unique example. Many of the projects have a strong local technological partner (SMS Media, E-Fulusi, Adtel, True African). This makes it easier to manage, integrate and sustain the applications. Successful m-governance applications rely on a functioning, effective backend for content and support. Partnering with a local technological firm makes the adoption of technologies much easier, the responsible body running the service hardly needs to know more than the end-user.

The identified m-governance applications all have a decentralised approach where the retrieval of information is decentralised rather than a centralised. This is must be considered good since an information society cannot be centrally planned. However, an information society can be centrally facilitated and coordinated, which is generally not the case in the East African countries (Rwanda being an exception). A decentralised, uncoordinated approach makes it extremely hard to identify projects and initiate collaborations and partnerships. For the end user, ie. the citizen, this is extremely problematic – there is no central m-governance (or m-government) hub or portal. How can a citizen know that a particular service exist? There is for example, so far, no short code that gives information and access to all the other available services run by other ministries. And running campaigns promoting every new service is way too costly.

Related is another challenge in that East African economies generally have only to a limited extent been controlled by governments. The majority of the East Africans citizens survives through the informal sector. A citizen can spend a whole life without being involved in any formal sector transactions. There is a clear need for government-citizen interaction but do citizens want to deal with the government? How can trust be built and awareness of citizen rights and state obligations best be communicated? How to protect your identity when airing opinions and sending inquiries to the government?

Other identified challenges regarding adapting and implementing m-governance applications include but are not limited to:

- costs, payment, revenue sharing - who should pay for the services?
- content, who should produce and update content? Can this also be done by ordinary citizens? Generally, people tend to be consumers of the available services and applications rather than provide and create content themselves
- usability issues and the limitations of mobile phones – small screens, short messages, complicated commands. Advanced phones with bigger, colour screens that are GPRS enabled are still too expensive for the East African masses.
- some services are tied to a specific operator – interoperability issues between operators and roaming between countries must be solved. Compatibility and a variety of platforms are related challenges.
- how to promote mobile penetration and increased accessibility in areas that are not

commercially viable? Universal funds and Rural Communication funds are used but they are not efficient enough.

- regulation and legal aspects of mobile applications and use of the services are lagging behind in East Africa. The content providers are far ahead.

Most of the applications in Table 2 are very harmless, non-political and for personal information needs. Could it be that mobile phones challenge the traditional means of service delivery and existing power structures? If so, how to go around it and implement applications that really empowers the citizen, even if it is at someone else's expense? People with power will not let it go that easy.

This leads to the question of ICT double potential for control and freedom. ICT may empower not only citizens but also the state – for good and for bad. As East African regimes learn how to manage and engineer information flows, promotion of and protection of free speech becomes really important. The latest developments in Uganda constitutes a good example where there has been a long discussion regarding the proposed Interception of Communications Bill. The bill seeks to authorise security agencies to intercept phone, email and postal communications in the country with the motive to fight terrorism and make the country safer. It is a controversial suggestion from the Government and the opposition from Members of Parliament are worried about the real intentions of a Big Brother Executive. Operators are concerned about the costs involved of purchase and implement the wire-taps and the costs related to registering each subscriber. Journalists are concerned about the threat to sources. Civil liberty groups that defend the individual right to privacy are just concerned in general. Even Uganda's regulator, the Uganda Communications Commission (UCC), means that if passed in its current form will violate the Constitution and the UCC Act. Maybe we must be more realistic about the true extent of ICT transformational potential.

### *Sustainability, scaling-up and way forward*

How to go from successful pilots to national scale? For m-governance applications to make sense they must be inclusive and have a national spread. However, to scale-up m-application initiatives have proven hard.

Some ideas have already been mentioned: a central body that facilitate and coordinate m-governance activities and make them visible: citizen awareness campaigns of existing applications should be made (marketing is highly needed and lacking at the moment and there is no information regarding where to find the existing services). Also, an innovative billing plan is needed for m-governance services since cost and affordability constitutes a major challenge in East Africa. Most of the subscribers in East Africa are on a prepaid scheme where they top-up (load airtime, credit) when they need to make a phone call, beep or SMS. Most of the time there is no credit on the phone which means that if the system is designed in a way where the citizen are supposed to pay for the service, the completion rate will be low. The billing platform only works if there is money on the subscribers phone but no money, no service.

When designing m-governance applications, another important aspect of the architectural framework is to really understand and capture the existing knowledge about processes and workflows. What is working, what is not working, how could things be done better? Next step is to map the solutions into an abstraction that then can be translated into applications. Too often a mobile “solution” is designed for a problem that never existed in the first place (and “too many solutions looking for problems”). Applications should be developed having the end users point of view, not the application as such.

Government ministries and agencies related to the planned m-governance application should be

highly involved in the planning and implementation phases. This will ultimately lead to a change in attitude towards provision of services and transform their models of providing public information to citizens.

## Some ideas and conclusions

Some ideas regarding m-governance applications:

- Explore the concept of accountability. How can mobile applications lead to a higher accountability?
- Applications hardly ever come in packages. Why not put many applications together and form a package, a bundle. Creating an election kit is a one way to go, developing a health kit another. Benefits? Easier to attract funding, easier to understand and integrate for non-techies.
- Why not create a “law in the pocket “? For example, if you are stopped by the traffic police who claims you have broken the paragraph yy/xx, then SMS the paragraph to a short code to get that particular paragraph returned as a SMS. Maybe the police is right, probably not.
- Alert (not report) head quarters of corrupt police officers and civil servants by SMS the number of policeman's badge to a dedicated short code.
- Integrate and merge m-government service with other services and further connect mobile money and transfer systems to government services for payment of school fees, tax, bills etc. M-Pesa on water pumps in Kenya is an innovative and interesting case that should be explored.

There is a lot of hype surrounding m-governance and its potential to transform the society and make it more dynamic, participatory and democratic. The mobile applications identified in East Africa will at this stage not open up for a deepened democracy and create inclusive public spaces. Government institutions are not really sharing information or giving insight into state affairs, at least not through mobile applications. BungeSMS being an exception, but the identified applications will not influence the political decision making process and will not help in holding governments accountable. However, governance is a complex phenomenon, so is implementing innovative mobile phone applications in its right context. It will take time to find a good, sustainable, scalable match. There are many challenges in regard to good governance, there are also many small solutions ready available – imagination, innovation and courage is the limitation.

M-governance is about identifying and solving real problems, come with realistic solutions involving the state, market and civil society state in order to improve the way people live. Many, small solutions together will eventually empower the citizens.

## List of abbreviations

ACCU = Anti-Corruption Coalition Uganda

CHOGM = Commonwealth Heads of Government Meeting

DCERN = Development Communications Evidence Research Network

DFID = Department for International Development

G2C = Government to Citizen

ICT = Information and Communication Technology

ICT4D = Information and Communication Technology for Development

SMS = Short Message Service

UNDP = United Nations Development Program

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