

U4 Expert Answer



Use of mobile phones to detect and deter corruption

Query

What are the main ways in which mobile phone and camera/satellite technology are being used to detect and deter corruption? (e.g. community monitoring of health and education services, public monitoring of budgets, contrasting performance between government bodies in different districts). What are the critical design factors for success and what are the limitations of such tools?

Purpose

To advise country offices on anti-corruption impact of this type of technology.

Content

1. Benefits and challenges of using Information Communication Technologies (ICTs) for anti-corruption
2. Examples of using ICTs to detect and deter corruption
3. Lessons learned for designing ICTs based anti-corruption interventions
4. References

Summary

Mobile technologies offer remarkable opportunities for promoting good governance, increasing accountability and fighting corruption. As they reach citizens directly through interactive channels of communication, they

allow rapid data collection and access to information and offer innovative avenues for social mobilisation and participation.

Although still in its infancy, there are many examples from around the world, where mobile technologies have been successfully used for anti-corruption. Experience indicate that they can be used as efficient social accountability tools, empowering local communities to engage with political and decision making processes as well as providing effective voice mechanism to hold local leaders accountable. They have also been used to facilitate the reporting of corruption, allow the monitoring of projects, budgets, elections and public service delivery as well as to promote transparency in operations by providing information to service users. In countries such as Pakistan and Afghanistan, mobile phones have also been used to promote more transparency in financial transactions.

In spite of its potential, the use of mobile phones and new technologies for anti-corruption has not yet realised its full potential. Success in this regard

Author(s): Marie Chêne, Transparency International, mchene@transparency.org

Reviewed by: Robin Hodess, Ph.D., Transparency International, rhodess@transparency.org

Date: 6 February 2012 **Number:** 321

U4 is a web-based resource centre for development practitioners who wish to effectively address corruption challenges in their work. Expert Answers are produced by the U4 Helpdesk – operated by Transparency International – as quick responses to operational and policy questions from U4 Partner Agency staff.

www.U4.no

depends on the local political, infrastructural, social and economic context. There are also challenges of operational nature such as access, anonymity, cost, to be taken into account when designing successful mobile technologies based anti-corruption interventions.

1 Benefits and challenges of using Information Communication Technologies (ICTs) for anti-corruption

Potential benefits of the use of new technologies for anti-corruption

In facilitating freer flows of information between government institutions, between government and citizens, as well as between citizens, new technologies offer remarkable opportunities for promoting transparency, accountability and civic participation. They allow rapid data collection and access to information and facilitate information sharing. They have the potential to enable social mobilisation at the grassroots level and provide innovative methods of campaigning. They can also be used as social accountability tools, empowering local communities to monitor development interventions and public service delivery and hold leaders accountable. In particular, development practitioners are experimenting with a wide range of tools and applications for mobile phones that enable citizens to report on areas of concerns, monitor the integrity of elections or provide instant feedback on the quality of public services.

There is a growing body of evidence showing how information communication technologies (ICTs) in general and mobile phones in particular can be instrumental in detecting corruption. In Zimbabwe for example, a corrupt public official was recorded soliciting a bribe, while in India, the Central Bureau of Investigation launched a campaign urging citizens to report corruption via SMS with the view to building a data base of officials who need to be watched (Hellström, J., 2010).

Beyond anecdotal evidence, some scholars have also started investigating the potential of information and communication technologies (ICTs) on corruption. Drawing from CPI and mobile data from 46 African countries between 1999 and 2006, Catie Bailard found that higher mobile phone penetration is significantly correlated with lower levels of perceived corruption

(Bailard, C., 2009). These findings suggest that decentralised information and communication networks can reduce opportunities to engage in corruption and increase the risk of detection. There are many reasons for using mobile phones for good governance in developing countries (Hellström, J., 2008 and 2010):

Access: Mobile phone usage has grown rapidly in the last decade, and developing countries have experienced exponential growth of penetration rate. Mobile teledensity (the number of phones per 100 people) went above 100% in Western Europe in 2007, and many developing countries such as South Africa and Ghana have since followed suit. Kenya and Tanzania are expected to get to 100% by 2013 (The Economist, 2009).

Appliance innovation: The growing multi-functionality of mobile phones makes them adaptable to a wide range of citizens' needs and services. Mobile phone with multimedia capabilities can be instrumental to access other media, such as Internet. In China, more than 73 million people (or 29 % of internet users) use mobiles to go online while in India, camera phone already account for 36% of the total phone market (USAID, 2008).

Outreach: Due to its mobility and network infrastructures, mobile phone can reach areas where there are no other communication possibilities.

Affordability: The relatively lower costs of mobile phone technology versus internet technology have lowered entry barriers for poorer people. Mobile phones are no longer considered as luxury goods but as an integral part of people's lives and citizens in the developing world are prepared to allot a significant amount of their income to mobile communication. For example, recent research from Research ICT Africa reveals that the average Kenyan spends over 50% of their disposable income on mobile communication (Gillwald A. & Stork, C., 2008).

Interaction: Mobile phones enable real-time interactive dialogue as opposed to other traditional media and offer opportunities to provide instant feedback on events or interventions.

Efficiency: Due to high access, affordability, coverage and real time interaction possibilities, mobile phones can be considered efficient solutions to government communication challenges in developing countries.

Potential for social mobilisation: Mobile phones can help make individual activists aware of other people who have similar concerns, enabling more effective community mobilisation against corruption. In particular, new media – including mobile phones – provide opportunities to reach specific segments of the population who are often more difficult to reach through more traditional media. For example, mobile phones are extremely popular with the young generation and can be used to engage the youth.

Challenges and limitations

In spite of its potential, the use of mobile phones and new technologies for anti-corruption is not a magic bullet. The realisation of its full potential depends on many factors of political, infrastructural, social and economic nature and there are still significant challenges of access, anonymity, cost, etc., to be addressed (Hellström, J., 2008 and 2010).

Political environment: The prerequisite for the success of such interventions is an enabling political environment that promotes and protects free speech. In many countries, governments have made efforts to control the development and use of ICTs.

Potential for misuse: ICTs can be used and misused for social mobilisation. A case study of the 2007/2008 Kenyan presidential election crisis illustrates how digital technologies can serve as catalyst for predatory behaviours such as ethnic-based mob violence (Goldstein J. and Rotich, J., 2008). There is also a risk of ICTs being misused by undemocratic governments for control. Such discussions have arisen in Uganda within the discussions around the proposed Interception of Communication Bill which sought to authorise security agencies to intercept phone, e-mails and postal communication for national security reasons.

Infrastructural environments: While mobile phone penetration is progressing at rapid pace, obstacles remain to universal mobile access, and beyond to Internet access, which has not been achieved in Africa for example. In particular, the lack of backbone links, limits the continent's connectivity with the rest of the world. A series of new cables in the works will eventually address the issue, increasing capacity and reducing the cost of internet access. The first of these, the SEACOM cable, eastern Africa's first modern submarine cable, was completed in July 2009 (The Economist, 2009). The lack of reliable access to electricity in some developing countries can also be an

obstacle, making it difficult and costly for people to charge their phones, especially in rural areas. Support systems may also be lacking if a subscriber in a remote area runs in technological problems.

Security and anonymity: There are also security challenges associated with the use of mobile phones for reporting corruption, as the whistle-blower risk being identified or the message intercepted. In China, for example, the government has allegedly established a SMS monitoring programme to monitor and censor textual messages, by setting up SMS surveillance centres around the country (USAID, 2008). According to USAID, plain text messages should not be considered secure, particularly when it is possible that the receiver or sender has been placed under surveillance. Many governments are also putting pressure on operators to register SIM cards to be able to connect a person to the SIM and some countries require identification for purchasing a SIM card, which may facilitate the identification of the sender. The challenge is therefore to secure anonymity in situation where sensitive information is being communicated.

Operational issues: There are also many operational issues that need to be considered including usability and the limitations of mobile phones (small screens, short messages, and complicated commands), regulations and legal aspects of mobile applications, costs, payment, revenue sharing, etc. Some services are also tied to a specific operator, creating challenges of interoperability between operators and roaming between countries (Hellström, J., 2009).

2 Examples of using ICTs to detect and deter corruption

ICTs in general and mobile phones in particular can be used for awareness raising and social mobilisation interventions. They can also facilitate the reporting of corruption, allow the monitoring of projects and budgets as well as promote transparency in operations by providing information to service users. A wide range of initiatives have been successfully implemented in recent years across the world as reflected by the examples below.

ICT for monitoring

Using mobiles for data collection is increasingly common in the development community, particularly in the area of public service delivery. For example, UNICEF Ethiopia implemented a Rapid SMS

programme for fieldworkers to monitor food shortages across the country. They were trained to record data with their mobile phone and transmit it via SMS to central servers for analysis, allowing immediate response to emerging crisis. In the health sector, applications have also been developed, using video, audio, touchscreen quizzes, GPS and SMS to collect, store, transmit and analyse large amounts of health related data (Mobileactive.org, 2011). Applied to the anti-corruption agenda, such approaches can be promoted as a citizen based monitoring tool, including but not exclusively for collecting feedback on the quality and quantity of public service delivery.

Monitoring attendance and absenteeism in schools

In Uganda for example, the CU@school project facilitates the monitoring of pupils and teacher attendance in primary schools by using an SMS based information system. The project intends to pilot an SMS application that generates frequent and detailed overviews of teacher and pupils' attendance in 100 primary schools in 2 districts (Hellström, J., 2010).

A similar approach has been used in Rajasthan, where in a randomised field experiment, cameras were used by a non-governmental organisation to monitor teachers' school attendance in a rural district where remote locations made school monitoring difficult. Before starting the experiment, teacher absentee rate was 44 %. In 60 schools, each school was given a camera and instructions for the teacher to take a picture of himself/herself with the students at the beginning of each school day. Teachers would receive a salary of about USD 22 if they were present for at least 21 days and USD 1 for each additional day. Teachers were penalised for each day past the 21 day benchmark that they were absent. In 60 other schools, teachers received a salary of USD 22 and were reminded that they could be fired for non attendance. One monthly unannounced visit was made to each school. The absence rate fell by half in schools that were given a camera, much more than in the other 60 schools. Extreme absences (over 50 % absence rate) were completely eliminated in those schools, and the number of teachers with very high attendance rate rose (Patrinos, H. A. and Kagia, R., 2007).

Election monitoring and political accountability

Mobile phone reports uploaded and mapped on a platform have also been used during emergencies like

natural disasters or man-made crises but also for election monitoring and citizen participation.

In the Philippines for example, during the 2010 presidential elections, VoteReportPH project encouraged voters to report electoral fraud and irregularities via SMS, email, Twitter and the website, uses an Ushahidi-based platform.¹ The project has gained much online popularity, attracting around 2500 unique hits per month (Grönlund, A. et al, 2010). In Uganda, Ugandawatch 2011 is an independent hotline where citizens can report problems, fraud and irregularities that they encounter during the electoral process. The organisations involved then analyse and make reports available on their websites covering issues such as refusal to register, voter registration not accessible, wrong voter registrations, gender issues, money and politics as well as violence and intimidations (Hellström, J., 2010).

Similarly, the National Democratic Institute has designed a simple SMS-based system for trained volunteers to report on irregularities during election campaigns all over the world, in countries as diverse as Albania, Bahrain, Indonesia, Palestinian territory and Sierra Leone (USAID, 2008). The information gathered is used to generate awareness and increase accountability.

Satellite monitoring of carbon accounting

The use of satellite images/cameras to monitor illegal logging is being currently explored within the context of the initiative for Reducing Emissions from Deforestation and Forest Degradation (REDD). There are major corruption risks associated with carbon emissions reduction schemes such as REDD. First, REDD takes place in a corruption-prone sector. In addition, there are specific governance challenges associated with emerging forest development practices and carbon trading schemes, such as inappropriate validation and verification, misappropriation of carbon rights, double counting and fraudulent trade of carbon credits, etc. **Satellite Imaging Technology (Remote Sensing)** can be used as a tool for monitoring, assessment, reporting

¹ The Ushahidi (witness in Swahili) platform was originally developed as a crowd-sourcing tool and used for post-election monitoring in 2007/2008 in the aftermath of Kenya's disputed 2007 presidential election allowing ordinary citizens to report outbreaks of ethnic violence using multiple channels such as SMS, the web, e-mails and Twitter. Cases were then verified, collated and placed them on a Google map.

and verification of carbon credit and co-benefits. Such technologies are currently widely tested and suggested as a tool for REDD monitoring, assessment and verification (UN-REDD Programme, 2008).

ICT for social accountability and social mobilisation

Social mobilisation and information campaigns

ICTs can also be used for citizen mobilisation and awareness raising campaigns. Mobile applications can be designed to reach the majority of mobile subscribers through outreach/publicity campaigns using SMS. However, organisations running such initiatives need to build a substantial data base of targeted subscribers with active phone numbers, which can prove challenging as phone companies are usually reluctant to share their customers' details (Hellström, J., 2010). An example of similar approaches is the campaign run by #InternetNecesario in Mexico, which used a combination of twitter, blogs posts and media outreach to put pressure on Mexican legislators to eliminate a 3 % tax on internet access which was passed without civil society consultation (Technology for transparency Network, 2010).

Communication and citizen-to-government interaction

ICTs can also be used to promote more direct interaction between governments and citizens and empower citizens to influence local governance in their constituency through the use of SMS and the Web. In Kenya for example, several initiatives intend to enable mobile phone users to pose questions to their local parliamentarians, with the view to enable bottom-up communication and citizen-to-government interaction in governance. BungeSMS, a commercial vendor in South Africa, has designed a platform for holding Kenyan Members of Parliament accountable. Citizens can send an SMS to a MP through a designated number which is then routed to the BungeSMS website (Hellström, J., 2010).

Budget tracking tool

In Kenya again, the Budget Tracking Tool has also been developed as a platform for grassroots communities to actively engage in public resource management, enabling citizens to monitor and track both disbursements and utilisation of development funds. The tool can be accessed both by SMS and the

web and also used for feedback on particular projects (Hellström, J., 2010).

ICT for Whistleblowing and reporting corruption

New technologies can also provide effective channels to report fraud and corruption and facilitate the making of complaints. This can be done through setting up corruption hotlines and/or SMS based mechanisms that empower the public to report problems or make complaints. Transparency International national chapters have successfully experimented such approaches in many countries of the world.

For example, **TI Georgia** recently launched an open-source platform, FixMyStreet.ge (in Georgian: chemikucha.ge - "Our Street"), where people can map problems on the streets of Tbilisi and upload pictures and a description of the problem they are concerned about. Whenever a problem is submitted, Tbilisi City Hall is automatically notified and can fix it. Solved problems are then marked accordingly. (For more details on how the platform works, please see: <http://www.fixmystreet.ge/about>) Within the first 2 weeks, the service was used by almost 10,000 users, 290 problems were reported and 90 problems have already been addressed - before any advertising for the site. Although this platform does not monitor bribery, it is a tool that allows the public to easily report problems and to monitor the activities of the city administration. In Russia, **TI Russia** has piloted a website for the city of Vladimir where people can report problems in the city via phone, SMS, email or the website, and propose how the issue could be resolved (<http://karta.vibor33.ru>). In **India**, the Janaagraha Centre for Citizenship and Democracy, developed the *I paid a bribe* website (<http://www.ipaidabribe.com/>) which analyses market prices of bribes, based on user reports.

In Panama, *Mi Panama Transparente* (<http://www.mipanamatransparente.com/>) tries to track and map corruption and other crimes. It is based on the Ushahidi crowd-sourcing model.

A group of activists around www.openleaks.org is also currently building a new tool box for whistle blowers that build on lessons learned from wikileaks.org.

ICT for dealing with petty corruption

Some countries are pioneering innovative technological solutions to deal with widespread police corruption. In Mexico for example, an application created for iphones

and BlackBerrys smartphones guides drivers about what to do when confronted with bribery request from the Mexico City police. The application offers all necessary information from a traffic fine calculator to avoid being swindled to a map that gives directions to all parking lots where vehicles are impounded after drivers commit traffic infractions. The programme also includes all traffic regulations, a list of the most frequent sanctions and a connection with emergency telephones. This anti-bribe application is sold at \$ 1.50 and reportedly has had more than 11,000 downloads in the first three months following its launch.

ICT for Financial transactions

Monitoring land transfer transactions in Pakistan

Mobile phones have also been used to promote more transparency in financial transactions. In Pakistan for example, civil servants working with land transfers must submit transaction data per SMS stating the amount paid and the mobile numbers of the seller and buyer, allowing senior officials to make spot checks on these transactions (Hellström, J., 2010). Similar systems could be implemented in situation where rural citizens receive government funding via local governments (The economist, 2009).

Mobile phone payment in Afghanistan

In 2009, the Afghan National Police began to test paying salaries through mobiles instead of cash, using a text and interactive voice response system. Most policemen assumed that they had been given a significant raise in salaries, while there were simply receiving their full pay for the first time. The new system revealed that at least 10% of its payments had been going to ghost policemen while middlemen in the police hierarchy were pocketing the difference (Rice, D and Filippelli, G., 2010).

ICT for Training

In the health and education sector, mobile phones have also been used as an innovative approach to healthcare worker training using mobile phones as a personal learning environment. For example, in Peru, twenty physicians used individual Smartphones, each equipped with a portable solar charger. A set of 3D learning scenarios simulating interactive clinical cases was developed and adapted to the Smartphones for a

continuing medical education program lasting 3 months. A mobile educational platform supporting learning events was used to track participant learning progress. Learning outcomes were verified through mobile quizzes using multiple choice questions at the end of each module (Zolfo, M. et al, 2010). In Kenya, a similar approach has been used in the education sector. The SMS Education Management Application enables SMS based communication with primary school teachers for school empowerment programs and ongoing teacher training (Hellström, J., 2009). Although the Helpdesk has found no evidence that such an approach has been used for anti-corruption training, the feasibility of adapting such an approach could be explored further.

3 Lessons learned for designing ICT based anti-corruption interventions

The use of mobile phones and new technologies is still in its infancy and its potential for catalytic change has not been yet fully realised. However, a few general lessons emerge from case studies of technology interventions aimed at increasing accountability of public and private institutions through transparency initiatives (Fung, A., Russon Gilman, H., and Shkabatur, J., 2010). The greatest opportunities for technological interventions are those that support the agendas of non-governmental organisations as a tool to amplify their capacities and strategies or interventions that compliment traditional media efforts – especially investigative journalism – by making information about public officials or governmental activities generally available. In the first case, interventions are more likely to succeed when the designers are embedded in local NGO networks so that they can tailor the technical solutions to fit the motivations and strategies of the targeted audiences. When technology interventions compliment more traditional approaches, they are more likely to succeed when 1) they serve highly credible sources of information; and 2) are of high interest and utility to journalists and political advocacy campaigns.

Conditions of success at the planning stage

The first step in designing successful interventions is to understand how information is used and consumed, how and why citizens engage and how new technologies may lead to empowerment, accountability and development outcome (Tisné, M., 2010). This involves documenting impact of past interventions and

carefully assessing how and when innovations are transferable to other contexts and settings. Such assessment can look at issues such as: 1) what information the intervention will provide and who will provide it; 2) who will use that information, why and how; and 3) how that use will result in gains for accountability.

The overall political context and anti-corruption environment also need to be taken into account when designing ICTs based anti-corruption interventions to anticipate and address possible challenges. For example, issues of privacy, anonymity and security need to be considered in contexts where mobile phones could be tapped or where there is insufficient whistleblowing protection (Hellström, J., 2010).

At the operational level, developing a mobile application is relatively easy from a technological point of view and the intervention can in theory be rapidly scaled cheaply and quickly. However, for the intervention to be successful, it should be based on a thorough understanding of the target group's needs and incentives, be driven by end-users and fit into already existing users patterns (Hellström, J., 2010). Involving the right stakeholders at all stages of the process as well as using local capacity can help in this process.

Operational recommendations at the implementation stage

At the implementation stage, Johan Hellström further identifies a number of success factors, including:

- Securing predictable funding flows;
- Involving end-users in content creation where applicable;
- Implementing a decentralised solution rather than a centralised (cross network instead of working only with one operator when possible);
- Awareness raising/educating the end users;
- Documenting throughout the process, success as well as failures.

Of particular importance is to accompany mobile phone interventions with awareness raising and marketing campaigns explaining how to use the service (e.g. why use the service, who is running it, step by step guide on how to participate/send SMS, etc.).

4 References

- Hellström, J., 2010, *Mobile technology as a means to fight corruption in East Africa*, <http://upgraid.wordpress.com/>
- Bailard, C., 2009, *Mobile phone diffusion and corruption in Africa*, Political Communication, Volume 26, Issue 3.
- Hellström, J., 2008, *Mobile phones for good governance – challenges and way forward*, http://www.w3.org/2008/10/MW4D_WS/papers/hellstrom_gov.pdf
- Gillwald A. & Stork, C., 2008, *ICT access and usage in Africa*, http://www.researchictafrica.net/publications/Towards_Evidence-based_ICT_Policy_and_Regulation_-_Volume_1/RIA%20Policy%20Paper%20Vol%201%20Paper%202%20-%20ICT%20Access%20and%20Usage%20in%20Africa%202008.pdf
- USAID, 2008, *A Mobile Voice: the Use of Mobile Phones in Citizen Media*, http://www.usaid.gov/about_usaid/hrd/A_Mobile_Voice.pdf
- Mobileactive.org, 2011, *eMOCHA: android data collection for mhealth*, <http://www.mobileactive.org/emocha-android-mhealth>
- Patrinos, H. A. and Kagia, R., 2007, Maximising the performance of education systems: the case of teacher absenteeism, *The many faces of corruption* <http://www.u4.no/recommended-reading/the-many-faces-of-corruption-tracking-vulnerabilities-at-the-sector-level/>
- Grönlund, A. et al, 2010, *Increasing transparency and fighting corruption through ICT: empowering people and communities*, SPIDER ICT4D Series No. 3 | 2010, http://upgraid.files.wordpress.com/2010/11/ict4d_corruption.pdf
- UN-REDD Programme, 2008, *Role of satellite remote sensing in REDD*, http://www.google.no/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CD0QFjAA&url=http%3A%2F%2Fwww.unredd.net%2Findex.php%3Foption%3Dcom_docman%26task%3Ddoc_download%26gid%3D940%26Itemid%3D53&ei=hjNrT7anJueJ4gTrvNGfBg&usg=AFQjCNF9cD8LqjOAMwGLuN3gr8thGTiWA
- The economist, 2009, *Mobile marvels: a special report on telecoms in emerging markets*, <http://www.economist.com/node/14483856>
- Technology for transparency Network, 2010, *Technology for transparency: the role of technology and citizen media in promoting transparency, accountability and civic participation*, <http://ifap-is-observatory.ittk.hu/node/498>
- Rice, D and Filippelli, G., 2010, *One Cell Phone at a Time: Countering Corruption in Afghanistan*, <http://commonamericanjournal.com/?p=18685>
- Zolfo, M. et al, 2010, *Mobile learning for HIV/AIDS healthcare worker training in resource-limited settings*, <http://www.ncbi.nlm.nih.gov/pubmed/20825677>
- Goldstein J. and Rotich, J., 2008, *Digitally networked technology in Kenya's 2007/2008 post election crisis*, http://cyber.law.harvard.edu/publications/2008/Digitally_Networked_Technology_Kenyas_Post-Election_Crisis
- Tisné, M., 2010, *Harnessing the potential of new technologies in governance reform*, Transparency and Accountability Initiative Note for World Bank, http://siteresources.worldbank.org/INFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/TAI_Note_by_MartinTisneforpresentation.pdf
- Fung, A., Russon Gilman, H., and Shkabatur, J., 2010, *Technologies of transparency for accountability: an examination of several experiences from middle income and developing countries*, <http://www.google.no/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcQFjAA&url=http%3A%2F%2Fright2info.org%2Fresources%2Fpublications%2Ftech-of-transparency-for-account&ei=8TdrT9GTAaXe4QS2kdyLBg&usg=AFQjCNEpbmLMt2kbFCtpSpof2JnPR-kUuQ>