

Finalization of m-Government Strategy of the Government of the Islamic Republic of Afghanistan

Finalized Strategy

ABOUT THIS DOCUMENT

This Final Draft (“Final Draft”) of the Strategic Plan for Mobile Government (“m-gov”) for the Government of the Islamic Republic of Afghanistan (“GoIRA”) is based upon a Study (“Inception Report”) of Best Practices for launching m-gov in Least Developed Countries (“LDCs”), responses to Questionnaires designed for GoIRA ministries, Afghan IT companies, Afghan GSM providers, and Afghan universities (“Questionnaires”), approximately sixty interviews with representatives of GoIRA, academics, and various members of Afghanistan’s private sector (“Interviews”), a ninety minute training review of a draft Strategy and Implementation Plan at a meeting of the Chief Information Officers of the GoIRA ministries (“Stakeholder Meeting Document”), and the structured feedback from that meeting (“CIO Meeting Notes”).

This Final Draft differs in format and approach from a previous document, the Draft Consultation Paper, which utilized post-modern concepts of strategy most recently espoused in Freedman, *Strategy: a History* (Oxford Press, 2013). The Draft Consultation Paper identified desired social goals of a) efficient, informed, government, b) transparent, participatory, governance, and c) private sector stimulation as the touchstones for an m-gov strategy for GoIRA. The Draft Consultation Paper then proposed an implementation plan for achieving the desired social goals through m-gov, informed by the findings of the Inception Report, the answers to the Questionnaires, the information gleaned from the Interviews, and data from web site usage analysis. The proposal anticipated that operational, financial, and prioritization delays would interfere with any planned outputs, outcomes, impacts and timelines. As such, the proposal outlined a series of immediate, short term and longer term activities to increase m-gov adoption by GoIRA and its citizens, but, in deference to the array of variables that could impact implementation schedules and program effects (as noted by Freedman in his preface) in a post-conflict society, included neither “impact goals” nor explicit measurements of success.

The proposed implementation plan was contained in the Stakeholder Meeting Document distributed to all ministries and discussed thoroughly and candidly at the CIO Meeting held February 26, ten days after distribution. At the request of the Electronic Government (“e-gov”) Directorate of the Ministry of Communications and Information Technology (“MCIT”), the approach and format of this Final Draft is modeled on the format and approach taken by the United Nations University team that drafted the Electronic Government strategy document, “E-Government Strategy Draft for Afghanistan,” (“UNU Report”) presented in January 2011, based on 2010 data. That team utilized a “Results Based Planning and Measurement” approach to its strategic formation, which this current Final Draft attempts to follow.

Submitted by Marc Lipton, Consultant to the Ministry of Communications and IT for the Finalization
of m-Government Strategy of the Government of the Islamic Republic of Afghanistan

Executive Summary

INTRODUCTION

Mobile telephony is one of the few experiences in Afghanistan that knows no economic, geographic, or ethnic boundary; almost everyone has a cell phone, can operate it, and can afford to use it. This is in stark contrast to internet participation, which hovers around 10 percent, and access to computers for personal use, which is rarer. In fact, according to a recent report, although almost 300 wireless towers were destroyed or damaged between 2006 and 2009 by the insurgency and common criminals, the attacks have largely stopped because “public discontent with service disruptions overwhelmed religious or tribal affiliations.”¹ Merging governance with the nation’s popular and ubiquitous wireless telephony provides GoIRA with a rare vehicle to achieve the above noted social goals: efficient, knowledgeable government, transparent and participatory governance, and stimulation of the private sector in a manner relevant to the 21st century global economy. E-gov, to the extent it conjures images of desk tops and flat screen displays, may become an initiative largely internal to GoIRA, automating existing processes and making existing government information accessible. M-gov will be the technology initiative that serves the Afghan people and commercial society, by delivering never before offered government services and programs through devices that can fit in a pocket..

This Final Draft, and the project under which it is developed, are overseen by the e-gov Directorate of MCIT, funded by a World Bank grant.² The e-gov directorate is simultaneously overseeing an m-gov platform development project, titled Standard Development Platform (“SDP”), under which ten m-gov services were to be deployed by the end of 2013 and another 20 are to be deployed by the end of 2014. Although no services have been fully deployed at the time of this Final Draft, the platform was ready to host the required ten applications by the end of 2013; delay is caused in large part by the failure of the mobile network providers (“MNO’s”) and MCIT to reach agreements on links to the platform from the respective MNO platforms. The readiness of the platform was ascertained based on trial links offered by Roshan. According to the consultant supplying the SDP, once the links are established, the platform will be able to support citizen surveying, utility outage alerts, exam results delivery, mobile health alerts, school admissions notifications, question and answer lines, disease surveillance and outbreak reporting, request/permit/license application tracking, transport alerts, and weather alerts.

M-GOV STRATEGIC PLANNING IN AFGHANISTAN

¹ May Jeung, *Mobile: The one thing that works in Afghanistan*, Afghanistan Times, March 1, 2014, p. 7

² The Consultant wishes to thank the e-gov Directorate staff for their support throughout this project. Long hours, multiple delays, and numerous translation issues were only manageable because of their hard work.

As noted above, the m-gov strategic plan contained in the Draft Consultation Paper and Stakeholder Meeting Document contained a set of value driven initiatives based on LDC Best Practices identified in the Inception Report. The initiatives were grouped by arc of time in which they could be practically performed; for example, those which were dependent on the passage of an ICT law could not be implemented immediately, although efforts to get such a law passed could be. The plan design contemplated that completion dates for certain conditions precedent were impossible to predict (such as the date of passage of an ICT law), and that there would inevitably be relevant variations in outputs, outcomes and impacts as multiple stakeholders in the public, private and academic sectors implemented their respective initiatives. As such, in accordance with post-modern strategic planning, the plan contained neither defined timelines for action (other than immediate commencement of qualifying initiatives) nor detailed outcome measurements (since ministries' prioritization, design, and funding of their m-gov initiatives is subject to external events, such as the outcome of coming elections and changes in the nation's security environment after foreign troop levels decrease). The only true imperative applicable to ministry actions under the proposal was an unceasing momentum to achieving the social value goals mentioned above relating to government, governance and the private sector. As long as all actions, whenever taken, were linked to those goals, they would be considered within the strategy.

The e-gov directorate believed the analytical and structural approach taken by in the UNU Report was easier to implement given the Afghan environment. The Results Based Planning and Measurement ("RBPM") approach taken by the UNU team starts with a *vision*, defined as an overarching statement of the way an organization wants to be in the future. From the *vision* flows a *mission*, a goal assigned to a particular organization that includes tasks to be undertaken and the reason (if not evident) for those tasks. *Strategic goals* also flow from the *vision*, except these are high level statements relevant to the operations of the particular organization's pursuit of the mission. The *strategy* is a long term plan of action to achieve one or more strategic goal, and *objectives* specify how a strategy can be implemented with measured targets and initiatives. *Projects* and *programs* are how *objectives* are implemented.

Visions, under the RBPM approach, are stated in terms of *impacts*, answering the "why?" of the strategy. *Outcomes* and *outputs*, on the other hand, define "what must be changed?" *Outcomes* are typically strategic goals, whereas *outputs* are the immediate results of a program or project. Thus, *outputs* lead to *outcomes*, which in turn lead to *impacts*. Stated another way, a *vision* defines the environment after *impacts*, the *mission* and *strategic goals* define what *outcomes* a particular organization is striving to accomplish to achieve the *vision*, and the *outputs* represent the *projects* and *programs* designed to achieve the *objectives*. The strategy is the set of projects and programs designed to achieve the objectives over a prolonged period of time.

The Consultant expressed a willingness to restructure the analysis and documentation to accommodate this request, but noted that the passage of time has proven some of the more

elemental theories espoused and actions recommended in the UNU Report to be impractical. In retrospect, this might have been anticipated, given the presence of factors described by Heeks in his seminal work on e-government project failures: the UNU analytical approach and structure of the UNU Report permitted a design-reality gap to develop and undermine many of the Report's key operational theories and initiatives.³ One of the goals of this Final Draft is to avoid such pitfalls.

1. CONCLUSIONS FROM THE FACTUAL RESEARCH

The investigation of the web sites, review of questionnaire responses, and the interview process lead to a number of conclusions which bear upon the m-gov strategy⁴. First, it is obvious that very few ministries have processes that have been automated and can be readily converted to the m-gov SDP. Most ministries do not even have documented processes, making it difficult to utilize the SDP to eliminate the human factor, which is a common approach to ridding a bureaucracy of opportunities for corruption. Further, most ministries' data bases are not designed to be queried remotely; they will have to either be reconfigured (in the case of Centralized Statistics Organization, for example), or loaded onto the SDP (as will be the case for Ministry of Higher Education). Additionally, there are a number of ministries that received donated equipment and software that lack a maintenance plan or update rights. Since there will likely not be enough money in the foreseeable future for GoIRA to support multiple platforms and operating systems, those ministries currently utilizing such "one off" technology need to prepare a plan to move to a platforms that other ministries use and for which support and upgrades will be reasonably priced.

As a result of donations, it appears there is sufficient computing power in the ministries to support their employees' IT needs, but the technology is underutilized and technically trained employees do not appear to be utilizing their training. Similarly, the web sites for each ministry are not being put to their best use, since they are not being updated, nor do they appear to be optimized to render properly on mobile devices (the end user experience appears more geared to viewing on a laptop or desktop, which most Afghans do not own). More importantly, the failure to update the web sites costs the GoIRA an opportunity to show the public the benefits of a technology-enabled government and lowers the credibility of e-gov and m-gov in the public's eyes. Due to the lack of data bases, technologically skilled employees, and updated web sites, the ministries' servicing of citizen requests is slower than necessary. Such institutional "slowness" offers the opportunity for "speed" to be "sold," such as by placing someone's application at the "top of the stack" in exchange for money.

On the positive side, many ministries have the same administrative and client facing needs, meaning that platform development and licensing that focuses on multi-ministry uses will have a positive payoff. Additionally, the universities have begun producing graduates who can write mobile applications, and the Afghan private sector appears to have the capacity a) to train government employees to improve their technological literacy and b) to perform data conversion

³ Heeks, Most eGovernment-for-Development Projects Fail: How Can Risks be Reduced?", Institute for Development Policy and Management, 2003

⁴ The summaries of the Interviews are attached as an Appendix to this document. The Questionnaire templates, the CIO training presentation, and discussion guide are also in that Appendix.

so that handwritten files, and those typed, but entered in Dari or Pashto (for which there is no OCR capability yet), can be entered into an interactive data base. Similarly, there is capacity to accept electronic payments, but a comprehensive ICT law must be passed before the benefits of such a currency-less system will be achieved.

This is in contrast to the apparent lack of capacity in the domestic private sector to train on process mapping, a task needed to move ministries from inefficient, ad hoc process that easily become breeding grounds for corruption to frictionless, transparent systems that provide no opportunity for graft-related mischief.

M-GOV STRATEGY DRAFT FOR AFGHANISTAN

A. The Long Term Vision

As stated in the 2011 UNU Report, the long term vision statement for

GoIRA's e-gov initiative is "Quality Public Services delivered Equitably by a Trusted Government to an Empowered Citizenry." The Consultant finds no basis on which to modify this aspirational statement, provided the definition of "quality" encompasses "efficient" and "knowledgeable" and that the definition of "empowered" includes not just "participating" but also "employed." By so defining the key terms of the vision, the UNU Report's hopes for Afghanistan mirror the three goals for the m-gov initiative as contained in the Stakeholder Meeting Document: efficient and knowledgeable government, transparent and participatory governance, and a private sector stimulated by newly available government information and funds.

B. The Mid-Term Vision

There is, however, a problem with also accepting the mid-term vision from the January 2011 UNU Report. That aspirational statement proclaimed:

"Within five years most of the people of Afghanistan will benefit from the equitable access to quality public information and services of high priority with equal opportunities to men and women in a balanced manner across urban and rural areas, reduced corruption, and improved security and participation in governance with everyone motivated and enabled to contribute."

The obvious problem with this mid-term vision is that it falls into the trap postulated by Heeks, *supra*, namely that a project cannot help but fail to achieve its goals if there is a significant gap between design and reality. In the case of the UNU Report, there is nothing improper about the substance of the goals; the problem was, and is, failing to recognize the amount of time it takes to implement the fundamental change in GoIRA operations and culture to achieve the goals. By setting the bar so high as to be unattainable (indeed, no comparable country cited by the UNU Report was able to achieve anything close to a similar result in a similar time frame), the UNU Report, in retrospect, promoted a plan that was sure to disappoint those initially encouraged by its boldness. This Final Draft seeks to avoid adding to this

disappointment by foregoing explicit time frames in favor of an “immediate,” “near term,” and “long term” designations.

In place of the e-gov mid-term vision, the mid-term vision for m-gov is

“Afghans will, shortly after adoption of comprehensive ICT laws, utilize mobile devices to fully participate in and transact with their government’s diverse set of efficient, up to date, automated services, ministries will distribute and obtain information from throughout the country utilizing the flexibility of wireless technology, and the private sector will be fueled by the release of, and new uses for, government information.”

This mid-term vision for m-gov, which also serves as its *Mission*, acknowledges the importance of enacting a set of ICT laws that enables transactions with GoIRA, provides rules for e-commerce, and provides e-signatures with legal status. Once this happens, the potential of m-gov will be unleashed, enabling the vision to move forward. The *Mission* centers on the difference mobile technology can bring to Afghanistan: the ability for citizens to transact and otherwise interact with government from any place, at any time, the ability of the government to operate more efficiently and offer new, better informed, services to citizens, and the private sector’s opportunity to play a role in making government information available and in finding innovative uses for it.

C. Strategic Goals

Achieving the mid-term vision requires the three key participant groups – citizens, government and the private sector – to interact in a symbiotic relationship where each is dependent on the other two for ultimate success. Moreover, each group has specific tasks it must accomplish in order for the three groups to succeed. GoIRA must a) pass the needed legislation, and b) develop the capacity to operate more efficiently and to receive and utilize citizen and other information. Citizens must utilize the new applications and participate in governance by delivering data to the government both voluntarily and when asked, and the private sector must create the new applications for government and then take the bold step of creating innovative services based on the newly released information.

Success of the mid-term vision thus depends on GoIRA meeting an array of Strategic Goals that support each of the three perspectives that underlie it. In the Stakeholder Meeting Document, these perspectives were described as the “Core Values” that drive the Strategic Plan:

- Government should constantly strive to be as efficient as practical
- Governance should be as participatory and transparent as the citizenry demands
- To the extent practical, Government should utilize the private sector to perform those functions that are not unique to the public sector.

They can also be considered the *Impacts*, or the “why?” of the Strategic Plan.

The *Outcomes* (also referred to as the Strategic Goals, or the “what must be changed?” component) of the Strategic Plan are the previously mentioned Six Best Practices:

- A single entity (in this case, a Ministry), takes responsibility and is accountable for the leadership on and success of the m-gov policy

- Common hardware, software, platform, and process standards are developed and adopted across GoIRA to maximize scarce financial and trained human resources.
- GoIRA employees are uniformly technologically literate; citizen facing m-gov technologies are based on ease of citizen use.
- Institutional barriers to m-gov must be eliminated, particularly the legal inability of GoIRA to do business electronically, and most ministries' inertia regarding retention of ad hoc, manual processes.
- The private sector will be given opportunity to participate in the m-gov initiative, and the participation will be stimulated by GoIRA
- Quick wins will be routinely planned while sophisticated and/or revolutionary technologies, such as those that can materially affect security or the economy, will be researched and developed as longer term projects.⁵

The *Outputs*, or “Strategic Directions” of the m-gov initiative, are the activities that are undertaken to achieve the *Outcomes/Strategic Goals*. Because there are several such *Outputs*, and completion of some are conditions precedent to commencing others, they are presented here batched for action as “Immediate,” “Near Term,” (awaiting completion of a condition precedent activity considered “Immediate”), and “Long Term” (sophisticated or revolutionary technological deployment requiring significant planning and impact analysis). The list of Immediate and Near Term Strategic Directions follows in chart form, after which they are presented in outline form sorted by the Best Practice that suggests their adoption.⁶ A fuller description can be found in the body of this Final Strategy document.

RESPONSIBILITIES

While MCIT, as the Ministry designated to house GoIRA’s communications and information technology expertise, plays a critical role in the implementation of the m-gov strategy, the successful adoption of m-gov in Afghanistan depends on many more institutions’ dedication to the strategy.

The elected leadership of the country, from the soon-to-be elected new President and the Parliament to the courts, jirghas, ulamas, and Dar-ul-Efta, need to demonstrate that m-gov has become a critical tool of governance; that receiving and providing information about the institutions of the country using wireless technology is, in part, what it means to be an Afghan citizen.

Those who are the leading professionals in GoIRA, the doctors, lawyers, scientists, businessmen and women in the various ministries, must also adopt m-gov as their source of disseminating and obtaining information to drive adoption through their fields.

⁵ Because virtually all of the Outcomes support almost all of the Impacts, there is no effort made here to map Outcomes to Impacts. This integration of Outcomes to Impacts is a byproduct of the bottom up approach advocated by Freedman, to be contrasted with the top down approach of RBPM, which starts with identification of the Vision, rather than a comprehensive understanding of the starting point.

⁶ The Long Term Strategic Directions, although discussed in the text, are highly speculative, and thus do not appear in this abbreviated Executive Summary.

The security services' open adoption of m-gov is also critical, since by doing so, they will publicly demonstrate the trust they place in such systems, helping to resolve the doubts of those suspicious of technology. Poll after poll demonstrates that security is one of the top three issues that concern Afghans about their daily lives (the others being corruption and the economy); there can hardly be a better endorsement of m-gov's importance to the security of Afghanistan than for the people responsible for that security to openly and institutionally embrace the technology as part of their standard processes.

Pulling m-gov through the population will also require the support of the private sector, specifically the mobile network operators who represent the nation's link between the technology that will help the government operate and the technology they carry. The carriers need to support the m-gov initiative through their public statements, their pricing, and their promotional activities so that no citizen feels any resistance from those intermediaries when attempting to use m-gov based services. Moreover, the carriers need to let the new entrepreneurs who will develop ways of mainstreaming the use of technology to flourish without interference or irresponsibly ruinous competition designed to keep m-gov related revenues within the carrier community.

Finally, although there are other institutions that will play key roles over time, mention must be made of the educational community. Afghanistan's schools need to prepare the graduating classes with the skills needed to live in a technologically oriented society, and to participate in the growing technology sector of the economy, which will be employing increasingly more Afghans as the conversion to a digital society gains momentum. To do this, the schools need to embrace technology in the classroom, at the students' homes and throughout the curriculum, since the best way to gain confidence in using technology is to grow up with it as part of one's daily life.

The charts below, and the outlines contained deeper in this report, provide greater detail regarding "who must do what" to mainstream m-gov in Afghan society, but the best executed plan will not survive if the institutions noted above fail to play their all-important roles of embedding m-gov in the Afghani consciousness.

DEPENDENCIES

M-gov will not obtain necessary momentum if a comprehensive set of ICT laws is not soon passed. The applications critical to m-gov's successful adoption are those that make life easier for citizens. M-gov will succeed when it enables transacting with GoIRA without traveling to Kabul and queueing, or obtaining one's salary or pension without a middleman seeking a percent for merely delivering what has already been earned.

Additionally, it will take funds to make m-gov work. The good news is that these funds will not be placed in physical embodiments of technology that grow obsolete; they will largely be invested within the Afghan citizens, who will be trained in m-gov use and related skills. The adoption of technology in the daily practices of the various ministries and by the citizens who regularly use those ministries' services are dependent on GoIRA employees and citizens being confident in using technology, which will only come with education.

Finally, mainstreaming m-gov is dependent on GoIRA leading the adoption curve. The charts that follow contain the initiatives (based on the Interviews) that each major ministry

claimed would facilitate m-gov adoption among that ministry’s user group. As such, it is imperative that GoIRA move forward the agenda suggested by the initiatives below .

Top Suggested Immediate M-gov Top Strategic Initiatives For Interviewed Ministries, By Social Goal

Ministry	Government (Internal Focus)	Governance (External Focus)	Private Sector Opportunity
1. MCIT	<ol style="list-style-type: none"> 1. Review M-gov strategy with NICTC 2. Complete GSM negotiations for SDP links 3. Obtain passage of ICT laws enabling e-documents from government and e-signature from citizens and government 4. Identify vendors for and license wireless enabled platform applications that can be forward integrated with GoIRA ERP: Inventory; vehicle dispatch/location/main tenance; physical security support (for guard shacks and property) 5. Develop processes to ensure the IT portion of donor projects receives MCIT approval before implementation 6. Oversee the IT inventory process at other ministries (hardware, software, platforms) 7. Create the Standard Technology Platform (STP) for all GoIRA (resolve Open Source v. 	<ol style="list-style-type: none"> 1. Deploy a survey capability on the SDP to identify what issues citizens want taken up by Ministry 2. Alert to bidders on IT RFP’s of bids, bid changes, and awards 3. Determine the policy for citizen location disclosure and default GPS “on” setting 	<ol style="list-style-type: none"> 1. Identify mobile applications creators that can develop apps for ministries from documented processes 2. Hold a consultative meeting with Afghan public relations and publicity firms to roll out an m-gov awareness program 3. Meet with IT firms to develop domestic process map training programs.

	<p>Proprietary Software issue)</p> <ol style="list-style-type: none"> 8. Assume responsibility for all master IT (hardware, software, platforms) contract negotiations for GoIRA 9. Wirelessly enable the MCIT campus as a model ministry. 10. Reassess personal computing needs of MCIT employees consider wirelessly enabled tablets or smartphones as substitutes for laptops; resolve Bring Your Own Device vs. Standard Platform issue. 11. Install GPS in Ministry vehicles 12. Deploy addresses in Kabul to facilitate mapping and directions for mobile. 		
MCIT/ATRA	<ol style="list-style-type: none"> 1. Identify manual processes and process map and automate 2. Negotiate with GSM providers for Public Service Announcement support of m-gov initiative 3. Consider additional powers needed over MNO's to accomplish m-gov, including providing free alert services for any ministry, and determine whether they can be negotiated or must be legislated 4. Require real time outage reporting by 	<ol style="list-style-type: none"> 1. Develop a "dead spot" alert service, so citizens who have had calls dropped/not go through can alert ATRA where the dead spot is, and which carrier is responsible 2. Deploy a survey on SDP to identify what issues citizens want ATRA to investigate 3. Develop price template form 	<ol style="list-style-type: none"> 1. Arrange for publicity of Dead Spot Alert service 2. Develop GIS capability to map dead spots 3. Retain firm to develop price template form for deployment on SDP

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	MNOs and ISPs, develop process to flow from report to alert service on SDP	and require MNO's to populate with prices for side by side comparisons by citizens	
MCIT/AFTEL	<ol style="list-style-type: none"> 1. Deploy wirelessly enabled inventory system as beta organization 2. Deploy vehicle system for the AfTel fleet, including GPS 3. Automate all customer records to enable mobile access to account information 	<ol style="list-style-type: none"> 4. Deploy outage alert service for mobile and internet services 1 Automate Customer Care process so that customers are able to use mobile devices to seek repair or lodge service complaints 2 Deploy the "cashless top up" system, eliminating cash and scratch cards from the AfTel mobile experience. 	<ol style="list-style-type: none"> 1 Retain firm to perform asset inventory 2 Retain data entry firm to populate vehicle and customer record systems 3 Restructure relationships with contract sales forces to pass through the savings from eliminating cash and scratch off cards
MAIL	<ol style="list-style-type: none"> 1 Prepare to receive data from citizens previously too remote to reach with field workers 2 Deploy inventory and vehicle internal applications 3 Wirelessly enable campus and arm field workers with wireless tablets to send data to Kabul servers, particularly market data on commodity prices 	<ol style="list-style-type: none"> 1. Deploy rainfall query service to determine moisture level in fields 2. Deploy weather trend alerts for planting, fertilizing, and reaping news 3. Deploy complaint app 4. Deploy Q and A app 5. Investigate mobile soil sample device 6. Deploy easily 	<ol style="list-style-type: none"> 1. Retain contract field workers to obtain pricing data 2. Retain firms to handle Q and A 3. Disseminate RFI for agriculturally relevant mobile devices that can feed technical data into MAIL data bases

MoCI	updated market information application.	<ol style="list-style-type: none"> 1. Deploy status application, sending wireless devices status reports on applications or responding on demand to queries 2. Q and A application 	
MoPH	<ol style="list-style-type: none"> 1. Perform process map training for numerous undocumented processes 2. Make the expired drug data base capable of being queried so it can be brought into the SPD 3. Study the GSMA M-health web site and select projects to trial. 	<ol style="list-style-type: none"> 1. Expired drug data base 2. Polio vaccination dates alert 3. Q and A for pregnant women/young mothers 4. Maternity monitoring appointments 5. Deploy maternity monitoring technology for self-examinations in remote areas 6. Track infectious diseases through citizen input 7. Complaint application 8. Nearest hospital/clinic/health care provider data 	<ol style="list-style-type: none"> 1. Identify data entry contractor to create expired drug data base capable of accepting queries 2. Issue RFI for wireless enabled mobile clinics

		base	
IDLG	<ol style="list-style-type: none"> 1. Deploy mobile enabled video conference capability 2. Develop tracking system to ascertain trends identifiable from complaint line 	<ol style="list-style-type: none"> 1. Complaint line 	
AISA		<ol style="list-style-type: none"> 1. Create directory searchable from mobile phones that provides contact information on businesses by business category (e.g., furniture dealers) 	<ol style="list-style-type: none"> 1. Identify vendor to associate citizen provided rankings with directory listings to alert public to good and bad business practices
Mol	<ol style="list-style-type: none"> 1. Deploy wirelessly enabled conference calling capability 2. Test and certify nationally approved wirelessly enabled physical security solution for guard houses. 	<ol style="list-style-type: none"> 1. Deploy short code wireless emergency call service that routes call to nearest police station or emergency service provider 	<ol style="list-style-type: none"> 1. Identify firm to populate database for the short code routing

		<ul style="list-style-type: none"> 2. Complaint application 3. Wireless tip line, with location tied into data stream 4. Alert service for local crime 	
MoFA	<ul style="list-style-type: none"> 1. Process map the passport and visa application systems 	<ul style="list-style-type: none"> 1. Deploy status application 2. Deploy complaint application 3. Deploy Q and A application 	
MoF	<ul style="list-style-type: none"> 1. Assist ministries in adopting inventory systems to obtain better asset control 2. Assist ministries in implementing vehicle support application to maximize efficiency in using drivers and vehicles for senior management 	<ul style="list-style-type: none"> 1. Mobile payroll notice application 2. Tax payment due alert 3. Alert to bidders of RFP changes 	
S. Ct.	<ul style="list-style-type: none"> 1. Document management system, searchable with wireless device 2. Case management system searchable with wireless device 	<ul style="list-style-type: none"> 1. Opinion search with wireless device 2. Text search with wireless device 3. Alert system for cases going to trial 4. Complaint system 	<ul style="list-style-type: none"> 1. Find data conversion firm to put current records into searchable format

MoE	<ol style="list-style-type: none"> 1. Mobile application to verify construction in remote areas using cameras and GIS 2. Inventory system 3. Vehicle system 4. Teacher payment system 	<ol style="list-style-type: none"> 1. Lessons through mobile devices 2. Homework hotline 3. Homework alerts to parents 4. Test result retrieval/push 5. Admissions to school 6. School test results 7. Complaints 8. Certificate Issuance for achieving diploma in the past 9. Diploma verification 10. School closing alert 	<ol style="list-style-type: none"> 1. Contract for coding of lessons into mobile environment.
IARCSC	<ol style="list-style-type: none"> 1. Staff development using mobile enabled lessons 	<ol style="list-style-type: none"> 1. Discussion Forum 2. Digitized recruitment system 3. Payroll notification system 4. Alert as to job exams and results 5. Q and A 	<ol style="list-style-type: none"> 1. Contract for display of job openings and ability to accept resumes and job applications sent in reply
MRRD	<ol style="list-style-type: none"> 1. Monitor development projects using mobile cameras and GIS 2. Inventory system 	<ol style="list-style-type: none"> 1. Project status data base retrievable by mobile device 2. Complaint system 3. Accept photos 	<ol style="list-style-type: none"> 1. Secure Contractor to input key times and opinions into data base to be delivered in near real time

		from remote areas of waste and poor workmanship	
MoHIA	<ol style="list-style-type: none"> 1. Dar-ul-Efta meeting time alert 	<ol style="list-style-type: none"> 1. Prayer time alert 2. Ramadan start and fast time alert 3. Announcement of Dar-ul-Efta opinions 	<ol style="list-style-type: none"> 1. Automate calculations and payments into bank accounts
MLSAMD	<ol style="list-style-type: none"> 1. Deploy pension, disability payment and martyr payment calculation on mobile devices 2. Payment system 3. Inventory system 4. Vehicle control system 	<ol style="list-style-type: none"> 1. Payment notification system 2. Complaint system 3. Q and A 4. Survey 	<ol style="list-style-type: none"> 1. Create application that accepts road condition complaint, dispatches for confirmation and schedules repair, including materials and equipment
MoPW	<ol style="list-style-type: none"> 1. Wireless avalanche, rockslide and flood detection 2. Weight sensors to detect overweight vehicles 3. Inventory 4. Vehicle control 5. Wireless cameras to monitor public works projects, equipment, 	<ol style="list-style-type: none"> 1. Road alerts through wireless billboards 2. Receive complaints and notices of road issues 	

	and ongoing conditions		
	6. Attendance application		
MoBTA	<ol style="list-style-type: none"> 1. Monitor borders with wireless cameras and sensors 2. Monitor migration of nomads with sensors 3. Monitor animal health and migration with sensors/RFID 4. Inventory control 5. Attendance programs 	<ol style="list-style-type: none"> 1. Monitor Jirgha participation 2. Send Jirgha alerts 3. Data base look up capabilities 	
Control and Audit	<ol style="list-style-type: none"> 1. Vehicle control 2. Inventory control 3. Wirelessly enable reporting of audit teams 		
MoJ		<ol style="list-style-type: none"> 1. Q and A hotline for legal question 2. Complaints 3. Survey 	
MoEc	<ol style="list-style-type: none"> 1. Wirelessly enable field teams so that they can directly enter data to data bases. 		<ol style="list-style-type: none"> 1. The greater amount of government information in the public domain the better; it will produce an information service

				sector based on finding relationships between government provided and privately available data.
CSO	<ol style="list-style-type: none"> 1. Wirelessly enable the field force, which currently enters data with pen and pencil, forcing it to be reentered two more times. 			<ol style="list-style-type: none"> 1. Convert the current on-line pdf's to readable data that can be manipulated for further use.
MoHE	<ol style="list-style-type: none"> 1. Inventory 2. Payroll 3. Vehicle control 	<ol style="list-style-type: none"> 1. Mobile learning 2. Survey 3. Test scheduling 4. Testing 		<ol style="list-style-type: none"> 1. Contract security firm to identify gaps in Koncor test security caused by wireless technology 2. Internet filtering
Parliament	<ol style="list-style-type: none"> 1. Enable parliamentary work on mobile devices 2. Create chat groups for virtual town halls 	<ol style="list-style-type: none"> 1. Posting current laws 2. Posting recent speeches 3. Posting pending legislation 		

Top Suggested Near Term (post ICT legislation) M-gov Top Strategic Initiatives For Interviewed Ministries, By Social Goal

Ministry	Government (Internal)	Governance (External)	Private Sector
MCIT	<ol style="list-style-type: none"> 1. Create a form template so all ministries forms look alike, require similar inputs, and can be commonly maintained 		
MCIT/ATRA		<ol style="list-style-type: none"> 1. Automate the complaint process 2. Automate all correspondence with regulated entities 3. Require fees to be paid electronically 	
MCIT/AFTEL		<ol style="list-style-type: none"> 1. Automate the service ordering process 2. Automate the payment process 	
MAIL		<ol style="list-style-type: none"> 1. Mobile ordering of supplies from GoIRA 	

MoCI	<ol style="list-style-type: none">1. Automate the license application process
MOPH	<ol style="list-style-type: none">1. Consider government run long term drug program, ordered through the mobile device
IDLG	
AISA	<ol style="list-style-type: none">1. Apply for AISA services through mobile devices, track progress of request.
Moi	<ol style="list-style-type: none">1. Pay fines2. Traffic Information3. Apply for automotive and drives licenses.

MoFA		<ol style="list-style-type: none">1. Passport Issuance2. Visa issuance
S. CT.		<ol style="list-style-type: none">1. Court filings2. Court pleadings3. Payment of fines
MoE	<ol style="list-style-type: none">1, Use mobile devices for contracting/procurement	<ol style="list-style-type: none">1. Test taking applications
MoF		<ol style="list-style-type: none">1. File taxes2. File business forms for taxes
IARCSC		
MRRD	<ol style="list-style-type: none">1. Contract using mobile devices	
MoHIA		<ol style="list-style-type: none">1. Hajj applications taken over wireless devices
MLSAND		

MoPW	
MOBTA	
CONTROL AND AUDIT	
MoJ	1. File court papers with wireless devices
MOEc	
CSO	
MoHE	1. Apply for schools using wireless technology
PARLIAMENT	

Strategic Directions

Immediate Activities.

A single entity (in this case, MCIT), takes responsibility and is accountable for the leadership on and success of the m-gov policy

Immediate Activity One: Confirm the MCIT mandate

Explain the m-gov strategy to the National ICT Council; to the extent perceived necessary, obtain confirmation of MCIT's mandate

Immediate Activity Two: MCIT leads standard setting for GoIRA IT procurements

Commence developing standards for IT acquisitions and licenses.

Immediate Activity Three: Suspend IT purchases where practical

Obtain National ICT Council agreement to suspend new IT purchases where practical until standards are set and process in place to confirm proposed purchase complies with standards

Immediate Activity Four: Assert control over donated IT

Inform donors that future donations of IT goods and services must conform to specifications set by MCIT.

Immediate Activity Five: Wirelessly enable MCIT campus

Develop a secure wifi network in and around MCIT Headquarters so that employees can use mobile devices

Immediate Activity Six: Reexamine personal computing support by MCIT for its employees

Ascertain who, and what level, is using what specification and product.

Rationalize needs according to job function

Create tiered standards for personal hardware based upon need for storage and computing capability in device.

Determine whether employee requires data storage. If not, consider migrating employee onto tablet or smaller device.

Make a policy decision to support "bring your own device" or develop a standard platform for devices accessing government data bases

As part of policy decision, ascertain whether Afghan fabrication/manufacture is available as a GoIRA supplier of devices

Immediate Activity Seven: GPS and Traffic

Deploy GPS in all MCIT vehicles

Set a deadline for deploying addresses in Kabul, removing a barrier to use of international delivery systems

Immediate Activity Eight: Begin to Automate MCIT

Identify paper/manual processes not affected by lack of ICT law

Process map those identified processes

Retain system programmers from the private sector to code the process map

Immediate Activity Nine: Inventory Assets

For each of MCIT, ATRA and AfTel, obtain inventory needs (what does each organization need to know about its assets?)

Using the inventory needs as the basis for RFI's seeking input from industry on capabilities of existing systems

Select wireless inventory program for each organization to understand strengths of various systems

Deploy private sector contractors to perform physical inventory

Assess performance of systems for selection of GoIRA wide platform

Immediate Activity Ten: Begin to Automate AfTel

Process map customer care and code the process, then deploy the automated process

Consider use of automated top offs as an alternative to sales of scratchoffs.

Consider elimination or automation of street agents' work

- Common hardware, software, platform, and process standards are developed and adopted across GoIRA to maximize scarce financial and trained human resources

Immediate Activity One: GoIRA IT inventory

CIO's inventory all physical IT assets in their ministries

CIO's inventory all software licenses used by their Ministry

CIO's inventory all systems run and reports created by their Ministry

Immediate Activity Two: MCIT and CIO's rationalize IT inventory results

Identify differences in IT hardware, commit to standard

Identify differences in software and system platforms and commit to standard

Immediate Activity Three: Standards

Based upon needed reporting capabilities, develop Standard Technology Platform ("STP") for all ministries

Pay particular attention to total cost of ownership issue when deciding between Open Source and Proprietary software for GoIRA administrative use

Consider migration and support cost for platform changes

Ministries develop road maps and timelines to migrate to STP

Immediate Activity Four: Commence use of the m-gov platform

Obtain inbound data retrieval definitions from each ministry (e.g., test score, drug lot expiration, court time and day, health results

Input data to SDP compliant data base

Deploy

Obtain survey questions from each ministry

Obtain feedback plan from each ministry

What will they do with survey results from an IT perspective?

What technology is available to capture results and measure ministry response to results requiring change in ministry?

Immediate Activity Five: Launch Alert and Action Status Application

Follow model for Inbound Data Retrieval and Survey

Immediate Activity Six: Standardize Mobile Administrative Applications

Using process for identifying best inventory system for MCIT, identify best inventory system, security guard support system, attendance and payroll system, and vehicle and driver management system for GoIRA

License key systems, develop internal expertise in deployment strategy, support desk, and ongoing operation.

Deploy administrative mobile applications in ministries as budgets allow.

GoIRA employees are uniformly technologically literate; citizen facing m-gov technologies are based on ease of citizen use

Immediate Activity One: Train GoIRA employees

Identify core curriculum to ensure all GoIRA employees above a certain level are technologically literate.

Identify vendors capable of bringing courses that meet the curriculum needs to MCIT and other ministries

Contract for training of MCIT employees as a trial

Immediate Activity Two: Process map

CIO's identify Process Mapping trainers

CIO's select a trial ministry to undertake process map training

Trial ministry process maps its most utilized customer facing process, codes it, and rolls out mobile-friendly application; other ministries follow as budget allows

Institutional barriers to m-gov must be eliminated, particularly:

the legal inability of GoIRA to do business electronically, and most ministries' inertia regarding retention of ad hoc, manual processes

Immediate Activity One: Get the ICT laws passed

Withdraw the current proposals

Rewrite the proposed law as separate laws

Empower MCIT through the proposal:

MCIT should control technology purchases and licenses as a matter of law

ATRA should be able to require MNO's to offer public service SMS and audio messages

MNO's should contribute to an emergency call fund to pay for location databases

Eliminate technical provisions of proposal; authorize the Minister of MCIT or his delegate to set technical standards such as PKI and encryption as a matter of regulation, rather than legislation. This eliminates the need to return to Parliament and amend the law when there is a technological change that the government must accommodate

Begin the public dialogue on privacy;

Should GoIRA have access to real time location information from mobile phones or from towers using emergency systems?

Should there be a data base connecting phone numbers with national ID's?

Have the law provide that disadvantaged groups can receive set asides in technology contracts to assure small firms business if they meet certain standards.

Immediate Activity Two: Convert manually maintained data

Retain Afghan firms to convert analogue data into readable data (Central Statistics Organization and Ministry of Higher Education)

Immediate Activity Three: Illiterate inclusion

Retain firms to record messages that accommodate persons who cannot read SMS messages

Retain firms to run "typing centers" where citizens who cannot read or spell can pay to have forms completed and submitted through their mobile devices.

Immediate Activity Three: Incentives to use m-gov

Make it easier for citizens to obtain services through m-gov than to use face to face processes

Provide "natural" incentives, such as faster processing, lower fees, etc.

The private sector will be given opportunity to participate in the m-gov initiative, and the participation will be stimulated by GoIRA

Immediate Activity One: Inventory the capacity of the private sector

Issue RFI for any business that wishes to perform IT services or sell equipment to GoIRA, identifying in which service categories they have expertise and their prior projects and references.

Determine the business model for information retrieval from GoIRA data bases: When, if ever, should the government wholesale its non-sensitive data and allow private sector to create applications using such data?

Quick wins will be routinely planned while sophisticated and/or revolutionary technologies, such as those that can materially affect security or the economy, will be researched and developed as longer term projects

Immediate Activity One: Accelerate negotiations with MNO's for connectivity to SDP

Resolve issue of how much citizens will be charged to access information, keeping in mind potential abuse of system if free; anticipate a nominal charge for all calls to retrieve data after the first call that day to the same data base.

Resolve geographically different pricing for Kabul and rest of country

Resolve usage data issue: GoIRA is entitled to information on usage of GoIRA sites, including by SIM.

Immediate Activity Two: Stimulate usage of the m-gov services

Meet with Afghan PR and promotion firms to generate ideas for publicizing m-gov and SDP; include in plan recognition that the population is moving towards the use of smart phones, so perhaps support for lesser phones can fade during the near term.

Immediate Action Three: Generate Usage on SDP

Develop sign up program for outbound SDP services, such as Alert and Update.

Develop and publicize inbound SDP capabilities, particularly survey, to generate information from citizens and have them participate in their governance

Near Term Initiatives (after ICT law enacted)

A single entity (in this case, MCIT), takes responsibility and is accountable for the leadership on and success of the m-gov policy

Near Term Activity One: Automate ATRA

Regulatory, SIM registration, and complaint processes should be capable of being performed on mobile devices. .

Require carriers to enter pricing into ATRA sponsored data base for publicly available price comparisons available from mobile phone

Common hardware, software, platform, and process standards are developed and adopted across GoIRA to maximize scarce financial and trained human resources.

Near Term Activity One: Maximize the SDP

Design a form template so ministries can create their own forms quickly and receive submissions through SDP

Design a data submission form template so ministries can easily seek data from citizens in remote areas.

GoIRA employees are uniformly technologically literate; citizen facing m-gov technologies are based on ease of citizen use.

Near Term Activity One: Engage GoIRA employees

Train employees on legislation requirements

Train employees on the use of location based services and the underlying technology

Train the employees on data entry into SDP compliant data bases.

Train employees on vehicle, security, inventory, and attendance programs, seek input on analysis of data being derived from those systems.

Institutional barriers to m-gov must be eliminated, particularly the legal inability of GoIRA to do business electronically, and most ministries' inertia regarding retention of ad hoc, manual processes.

(see other Near Term Activities)

The private sector will be given opportunity to participate in the m-gov initiative, and the participation will be stimulated by GoIRA

Near Term Activity One: Use private sector professionalism

Engineer and deploy emergency service call routing system sought by MoI

Engineer and deploy automatic payment system with assistance of MoF

Investigate use of wirelessly enabled public payment and form submission terminals

Quick wins will be routinely planned while sophisticated and/or revolutionary technologies, such as those that can materially affect security or the economy, will be researched and developed as longer term projects

Long Term Activities

Deploy M2M devices such as road and weight sensors

Consider programs that remove currency from the economy

Deploy wirelessly enabled border protection services

RECOMMENDATIONS

The Full Report that follows explains the steps taken to develop this Strategy, expands upon the concepts expressed in this Executive Summary, and discusses the various approaches to m-gov literature and strategy literature generally. Since it is possible to implement the proposed Strategy without reading the Full Report, Recommendations are contained at this point of the Strategy Document rather than at the end.

Recommendation 1: Identify services citizens want, but that don't require converting legacy government records into digital formats. "Leapfrog" legacy data when possible.

The time and expense associated with converting old records acts as a barrier to mainstreaming m-gov, and creates friction, rather than momentum. Applications that rely on current data, rather than legacy data, should take precedence where possible to sidestep this problem

Recommendation 2: The passage of ICT laws is critical to the success of m-gov' make it a national priority once the elections are over.

The inability of a ministry to use e-mail as official documents, or to accept or provide e-signatures with legal significance creates inefficiencies and allows the inertia of the analogue world to stop m-gov's momentum. The nation's leadership, particularly the ministries charged with serving the citizens and keeping them secure during a time of budget tightening, need to make Parliament realize that the long term cost savings (and better service) associated with mainstreaming m-gov (including legal recognition of e-documents and e-signatures) should be considered a national priority almost as important as security and clean elections.

Recommendation 3: Make dealing with the GoIRA easier with m-gov than without.

The ability to avoid coming to Kabul, or standing in line, or dealing with a bureaucrat who might be seeking a bribe, are inherent in the in-person alternative to m-gov. But as an additional incentive for citizens to adopt m-gov, there should be a tangible financial benefit, to provide an incentive for those who otherwise would be satisfied with doing business “the old fashioned way.”

Recommendation 4: MCIT should become the model GoIRA agency, and needs to be staffed accordingly.

There are few ministries that have a workforce as familiar with technology as MCIT. As such, MCIT has an advantage as an m-gov “champion” in that it has a workforce that is comfortable and “grew up” with technology. MCIT should embrace this role, perhaps becoming the GoIRA employer of choice among those tech savvy graduates of Afghan universities, and show other ministries and those who interface with ATRA and AfTel “the art of the possible” when it comes to m-gov.

Towards this end, there is probably a need for additional talent and manpower in several of the MCIT Directorates that will be performing standards setting and overseeing processes to assure other ministries’ initiatives do not stray from the Standard Technology Platform guidelines and the ministries’ roadmaps.

Recommendation 5: Embrace, do not fight, that M-gov starts behind the counter, not across it

Regardless of the ability to ignore certain legacy data bases when rolling out m-gov by “leapfrogging” into new applications, m-gov is not sustainable by ignoring the past; government work is largely about record retention and processes using yesterday’s data and core methodology to craft solutions for today and tomorrow. Thus, while the interactions with new ministry clients may become automated and wirelessly enabled, that merely changes the delivery system; the core work of government does not change much with the introduction of technology, but it can become more efficient. Thus, automating the “back room” methods becomes as important to the strategy as the client facing processes. In fact, during most interviews, ministry officials realized that revamping and automating their current internal processes was a necessary part of automating the customer experience. They may not “sizzle,” but process mapping and digitizing are prerequisites to many flashy customer facing m-gov applications, and should neither be ignored nor delayed .

Submitted by Marc Lipton, Consultant to the Ministry of Communications and IT for the Finalization of m-Government Strategy of the Government of the Islamic Republic of Afghanistan

INTRODUCTION to the FULL REPORT

Afghanistan's landlocked location in the heart of central Asia positions the country to be a strategic player in the distribution of goods and services moving to and from Europe to south Asia. However, the lack of access to the sea, the mountainous interior, and a century of wars (both internally and externally caused) has resulted in a fairly isolated society that has neither benefitted from developed world outsourcing (unlike India, Pakistan and Bangladesh), nor the efficiencies that are possible under highly centralized, less democratic, governments. The economy is heavily dependent on agriculture, but the rural population is slowly resettling in and around the urban areas as the members of a population boom seek non-rural employment. Per capita income remains among the lowest in Asia. About half the country is under 20, and although schooling is now open to women, illiteracy across the population remains high. The security situation in both the cities and more rural areas remains volatile, with even heavily protected Kabul being the scene of occasional insurgent attacks. Moreover, the eventual reduction in foreign troops will undoubtedly have an impact on the amount of money spent in the economy. Poor transportation infrastructure and the security situation makes it difficult to travel from the countryside to Kabul for government business, and makes it equally difficult for GoIRA ministries based in Kabul to obtain firsthand knowledge of conditions in the outlying areas. The country is perceived by both citizens and foreign investors as corrupt, and the government is often accused of using nepotism, rather than merit, as the basis for hiring, promotion and contract awards.

Against this background, the mobile communications sector is a huge success, with over 2 billion invested in the country and more than 20 million customers. Mobile telephony is one of the few experiences in Afghanistan that knows no economic, geographic, or ethnic boundary; almost everyone has a cell phone, can operate it, and can afford to use it. This is in stark contrast to internet participation, which hovers around 10 percent, and access to computers for personal use, which is rarer. In fact, according to a recent report, although almost 300 wireless towers were destroyed or damaged between 2006 and 2009 by the insurgency and common criminals, the attacks have largely stopped because "public discontent with service disruptions overwhelmed religious or tribal affiliations."⁷ Merging governance with the nation's popular and ubiquitous wireless telephony provides GoIRA with a rare vehicle to achieve the above noted social goals: efficient, knowledgeable government, transparent and participatory governance and stimulation of the private sector in a manner relevant to the 21st century economy.

This Final Draft, and the project under which it is developed, are overseen by the e-gov Directorate of MCIT, funded by a World Bank grant. The e-gov directorate is simultaneously overseeing an m-gov platform development project, titled Standard Development Platform ("SDP"), under which ten m-gov services were to be deployed by the end of 2013 and another 20 are to be deployed by the end of 2014. Although no services have been fully deployed at the time

⁷ May Jeung, *Mobile: The one thing that works in Afghanistan*, Afghanistan Times, March 1, 2014, p. 7

of this Final Draft, the platform was ready to host the required ten applications by the end of 2013; delay is caused in large part by the failure of the mobile network providers (“MNO’s”) and MCIT to reach agreements on links to the platform from the respective MNO platforms. The readiness of the platform was ascertained based on trial links offered by Roshan. According to the consultant supplying the SDP, once the links are established, the platform will be able to support citizen surveying, utility outage alerts, exam results delivery, mobile health alerts, school admissions notifications, question and answer lines, disease surveillance and outbreak reporting, request/permit/license application tracking, transport alerts, and weather alerts.

M-GOV STRATEGIC PLANNING IN AFGHANISTAN

As noted above, the m-gov strategic plan contained in the Draft Consultation Paper and Stakeholder Meeting Document contained a set of value driven initiatives based on LDC Best Practices identified in the Inception Report. The initiatives were grouped by arc of time in which they practically could be performed; for example, those which were dependent on the passage of an ICT law could not be implemented immediately, although efforts to get such a law passed could be. The plan design contemplated that completion dates for certain conditions precedent were impossible to predict (such as the date of passage of an ICT law), and that there would inevitably be relevant variations in outputs, outcomes and impacts as multiple stakeholders in the public, private and academic sectors implemented their respective initiatives. As such, in accordance with post-modern strategic planning, the plan contained neither defined timelines for action (other than immediate commencement of qualifying initiatives) nor detailed outcome measurements (since ministries’ prioritization, design, and funding of their m-gov initiatives is subject to external events, such as the outcome of coming elections and changes in the nation’s security environment after foreign troop levels decrease). The only true imperative applicable to ministry actions under the proposal was an unceasing momentum to achieving the social value goals mentioned above relating to government, governance and the private sector. As long as all actions, whenever taken, were linked to those goals, they would be considered within the strategy.

The e-gov directorate believed the analytical and structural approach taken by in the UNU Report was easier to implement given the Afghan environment. The Results Based Planning and Measurement (“RBPM”) approach taken by the UNU team starts with a *vision*, defined as an overarching statement of the way an organization wants to be in the future. From the *vision* flows a *mission*, a goal assigned to a particular organization that includes tasks to be undertaken and the reason (if not evident) for those tasks. *Strategic goals* also flow from the *vision*, except these are high level statements relevant to the operations of the particular organization’s pursuit of the mission. The *strategy* is a long term plan of action to achieve one or

more strategic goal, and *objectives* specify how a strategy can be implemented with measured targets and initiatives. *Projects* and *programs* are how *objectives* are implemented.

Visions, under the RBPM approach, are stated in terms of *impacts*, answering the “why?” of the strategy. *Outcomes* and *outputs*, on the other hand, define “what must be changed?” *Outcomes* are typically strategic goals, whereas *outputs* are the immediate results of a program or project. Thus, *outputs* lead to *outcomes*, which in turn lead to *impacts*. Stated another way, a *vision* defines the environment after *impacts*, the *mission* and *strategic goals* define what *outcomes* a particular organization is striving to accomplish to achieve the *vision*, and the *outputs* represent the *projects* and *programs* designed to achieve the *objectives*. The strategy is the set of projects and programs designed to achieve the objectives over a prolonged period of time.

The Consultant expressed a willingness to restructure the analysis and documentation to accommodate this request, but noted that the passage of time has proven some of the more elemental theories espoused and actions recommended in the UNU Report to be impractical. In retrospect, this might have been anticipated, given the presence of factors described by Heeks in his seminal work on e-government project failures: the UNU analytical approach and structure of the UNU Report permitted a design-reality gap to develop and undermine many of the Report’s key operational theories and initiatives.⁸ One of the goals of this Final Draft is to avoid such pitfalls.

⁸ Heeks, Most eGovernment-for-Development Projects Fail: How Can Risks be Reduced?”, Institute for Development Policy and Management, 2003

RESEARCH FINDINGS ON GoIRA TECHNOLOGY DEPLOYMENT AND M-GOV READINESS⁹

WEB SITES

Each ministry has a standalone web site accessible through the ministry acronym.gov.af URL.¹⁰ While there is a common look and feel to the sites, and they are hosted on a common server, the sites are not subject to scheduled updating; new developments and data are the responsibility of the relevant ministry, with no requirement that any updating be performed. As such, much information on the sites is neither updated nor removed, undercutting the credibility of the site and, by extension, GoIRA. For example, several sites link to a subsite of Afghanistan's compiled laws, but the subsite has not been updated in over five years. Much market information on other sites relating to commodities is similarly out of date.

In an effort to grasp the amount of current citizen use of technology to engage with GoIRA, a high level analysis was performed of activity on various representative ministry web sites.¹¹ Most of the sites contain minimal current information other than the biographies of senior ministry members, relevant laws, and tender documents. Some sites, including Interior and Foreign Affairs, maintain a near-real time sub-site of their press releases and media alerts. The sites which saw the heaviest traffic were Interior, Education, Finance, Agriculture, and Foreign Affairs. Given that the Loya Jirga was in session to debate the Bilateral Security Agreement

⁹ The UNU Report contained a Benchmarking exercise that the Consultant finds unnecessary to repeat or update. The benchmarking countries in the UNU Report, in retrospect, all were materially dissimilar from Afghanistan, and as such the exercise disclosed no meaningful data. The data from Korea, Singapore, United Kingdom, Estonia, Pakistan, India, Sri Lanka, Nepal and Saudi Arabia has little bearing on successful roll out of m-gov in Afghanistan because it fails to account for the array of cultural and institutional differences between virtually all of those societies and Afghanistan. For example, barriers to successful m-gov in Afghanistan, according to those ministry and private sector managers interviewed, include high illiteracy, lack of technological literacy in government, no private sector tradition of deployed technology, poverty, lack of products or services to sell to international markets, and absent or unreliable technology infrastructure. Of the studied countries, only Nepal presented a similar environment, and recent research into Nepal's m-gov deployment indicates large urban-rural and design-development gaps that Heeks' work warn against. Email from Maequish Doranga to Marc Lipton, 26 Feb, 2014, Re: *Nepal: Design-Reality Gap Analysis through Web Measure Assessment Model*; see also Purusittam Kharel and Subarna Shakya, *e-Government Implementation in Nepal: A Challenge*, International Journal of Advanced Research in Computer Science and Software Engineering, Vol.2, Issue 1, January 2012

¹⁰ There are about 120 sites maintained in the Data Center for various governmental bodies. The Data Center also hosts about 6100 email boxes for government employees. .

¹¹ Ministry sites for which data was available included Ministry of Communications and Information Technology, Ministry of Finance, Ministry of Foreign Affairs, Ministry of Interior, Ministry of Education, Ministry of Labor, Social Affairs, Martyrs and Disabled, Ministry of Agriculture, Irrigation and Livestock, Ministry of Energy and Water, Ministry of Higher Education, Ministry of Women's Affairs, Ministry of Hajj and Islamic Affairs, Independent Directorate of Local Governance, and Central Statistics Organization. While only November, 2013 detailed data was available (site visits and page views), aggregate site visit data from other months indicate November site visit data is representative of other months. Unfortunately, the server data did not reveal domestic versus international visitors,

during the survey period, interest in the news the Foreign Affairs and Interior sites provided is easily understood. The Agriculture site is the portal to Paywast, a trove of information on commodity pricing, trade and meteorological data, some of which is current as of the prior week. There is no explanation for the relatively heavy traffic on the Education site; the tabs all refer to static information. However, no site (other than the Interior site) had more than 10,000 visits (not unique visitors, merely visits) in an average month¹², and most sites receive fewer than 100 visitors per day. The combination of all sites yielded under 200,000 hits during the month of November, when interest in President Karzai's and the Loya Jirgha's reaction to the Bilateral Security Agreement was at its peak. There is an overall visible trend: those sites that offer information in real or near-real time have greater interaction with the populace.

2. QUESTIONNAIRES

To create the section of the UNU Report on the readiness of Afghanistan's government for E-governance, the team issued a survey to the various ministries to assess their use of technology in performing governmental services. Consultant and MCIT staff crafted a Questionnaire to update relevant data from those submitted three to four years ago. The results of the update for a sample of the major ministries indicates a sharp rise in physical assets deployed; many ministries increased the number of computers deployed in their workforce by over 75%.¹³ However, few identified uses for their increased computational capacity other than e-mail, word processing, scheduling, presentation/publication creation and budgeting; those that specified such computational uses identified them as relating to payroll. None, other than the Ministry of Finance, identified a networked solution whereby shared databases would populate based upon calculations made in standalone spreadsheets or forms, nor was any mention made of computer modeling of solutions for social problems.¹⁴ Just prior to the Ministry interview, the Ministry of Labor, Social Affairs, Martyrs and Disabled deployed a system to automate pension and disability payment calculations based on salaries, and the Ministry of Interior began paying federal police via automated deposits that could be viewed on mobile devices. Other than those isolated examples, no Ministry claimed to be using technology to improve efficiencies of internal

¹² Ministry of Higher Education's site gets 10,000 visitors per day for a few days in March and April, when the Koncor (college capabilities test) are made available. Ministry of Foreign Affairs received 26000+ hits in November, but few before that; the President's web site recorded 24000+ and 21000+ in December and January, respectively, again largely because it contained the latest statements on the progress of the BSA negotiations.

¹³ Ministry of Agriculture, Irrigation and Livestock went from 276 computers to 409, Ministry of Public Works from 60 to 423, Independent Directorate of Local Governments from 135 to 295, Ministry of Labor, Social Services, Martyrs and Disabled from 96 to 808. The Ministry of Finance is an interesting outlier, with over 2000 computers noted in the UNU study, but only 1030 computers noted in response to the recent Questionnaire.

¹⁴ Surprisingly, data on the Central Statistics Organization web site was displayed in scanned pdf files; there was no capability to manipulate the data without reentering it into a new spreadsheet.

ministry functions. Other than an automated application for retrieving Konkor scores, no mention was made of allowing the public to interact with governmental information.¹⁵

There is no question that GoIRA has not yet approached maximum use of its ministries' computational capabilities, but this should not be unexpected at this stage of the government's technological development. Often, even in developed countries, the donation/purchase of IT equipment precedes the intended users' comprehension of what its capabilities are.¹⁶ Moreover, there is an acceptance and learning curve that needs to be incorporated into expectations of ministries' capabilities. Lotus 123 and Excel were introduced in the 1980's; it would be unreasonable to expect GoIRA's office workers to be immediately as adept at spreadsheet work as a workforce with 30 years' experience in exploring the capabilities of the programs.¹⁷

Questionnaires were also distributed to the GSM carriers, ICT firms and universities. Each of the four privately owned carriers failed to respond to the questionnaire despite several follow-up requests. The universities and the ICT firms routinely did not respond, despite encouragement and assurances that they would do so.¹⁸

3. INTERVIEWS

The lack of questionnaire responses from entities outside government, and the inability to identify a model Ministry on which to base recommendations for multi-ministerial roll out of m-gov, led to holding a series of extensive interviews with ministries, ICT firms, universities, and the mobile carriers. In all, almost 60 interviews were held, most following the format of describing the conclusions of the Inception Report, then asking the interviewee for any objections or questions they may have and applications they would like to see deployed.

Support among the governmental entities for the m-gov strategy, following the principles set out in the Inception Report, was virtually unanimous. All commented favorably on applications they thought would move their ministry forward, increase transparency, reduce corruption, and cause people to have more faith in GoIRA. The only two comments not

¹⁵ Some ministries noted such interaction capability (available through their web sites) in their UNU survey submission, but a visit to their web site indicated that the information available was often no longer being kept current or deleted when out of date.

¹⁶ The United States' "e-rate" program is a good example of this phenomenon. The government program designed to put computers in every classroom, and "wire" the schools to enable integrated building, campus and headquarters networking, has resulted in billions of dollars spent on goods and services over the past two decades. However, the creation of curriculum that took advantage of the deployed technology (i.e., going beyond merely putting book text on large screens and streaming video) is still not deployed widely. Similarly, much of the entry of data for school administration purposes is not networked, so class attendance and grading data are reentered to create school-level data, which is then reentered to create district level data, and so forth.

¹⁷ However, this must be contrasted with the ability of even an uneducated populace to learn and refine the skills to query databases to derive a solution to a problem. See, e.g., http://www.ted.com/talks/sugata_mitra_shows_how_kids_teach_themselves.html, and the notes for the ExpressPay interview, *supra*

¹⁸ US Tronics, the consultant on SDP, provided a comprehensive questionnaire response.

expressing full support came from the Office of Control and Audit, whose representatives questioned the benefit to the Afghan citizens of the expenditures needed for m-gov, and the Ministry of Commerce and Industry, which expressed support for the project once the full scope of the government data available for the public through the project was explained. After additional discussion, the Office of Control and Audit provided conditional support, subject to there being sufficient security of the data about individuals that is being accessed by the public. By the time the Stakeholder Meeting document was discussed at the CIO Meeting, all reviewing ministries expressed unqualified support for the initiative.

Support among most of the GSM carriers (Etisalat and Afghan Telecom being exceptions) was lukewarm at best.¹⁹ None of the other three carriers wanted to discuss facilities specifications unless there was a business case presented for the project. The same three (one of which is the former sponsor of the lucrative Afghan Star voting application) did not think m-gov and its associated applications was a good idea; at least one thought the applications should be offered only by the GSM providers for a fee, without any competition from unaffiliated application providers, no government involvement, nor any charge for accessing the government data bases. This view was also expressed by the representative from the Ministry of the Economy, but through further discussion, particularly about the potential development of “information economies” built upon the release of previously inaccessible government data, the representative understood the advantages of government-directed data releases that did not depend upon the data’s identified market value as of the date of release.

Unlike the GSM providers, the members of the ICT community (including ISPs) expressed unflinching support for the strategy, as did the single journalist interviewed.²⁰ They not only saw the benefit of increased government efficiency, transparency, and consumer convenience, but also saw the easy accessibility of government data, and the creation of additional data by citizens and devices reliant on mobile technology, as a potential engine for the Afghan ICT economy. The ISPs were understandably concerned that the GSM providers would either intermediate or otherwise disadvantage ISP efforts to monetize m-gov applications, but were placated to some extent by understanding that if they brought better developed applications to market, they would prevail regardless of such carrier conduct. The concept of “information market” development was supported by the interviewed representatives of both the Central Statistics Office and the Ministry of the Economy.

The results of the interviews at universities were as diverse as the schools. Kabul Polytechnic’s computer science staff saw the initiative as a form of validation of the school’s

¹⁹ Even so, post-interview support promised by Etisalat never came. The company was supposed to send documents and set meetings for negotiating connectivity for their customers to the SDP, but has yet to do so despite repeated reminders.

²⁰ The GSM providers and other private sector players agreed on one item, namely that corruption was interfering with their ability to do business. While no one pointed a finger at MCIT, allegations of being made to “pay for speed” (discussed *infra*) and unfair treatment in the procurement process were commonly heard.

curriculum choices, and openly spoke of the employment opportunities in both government and private sector for graduates as the m-gov initiative gained traction. Kabul University's representative did not see the initiative as of much relevance to its graduates' employment futures, since they neither included application development nor functional system design as part of the curriculum. American University in Afghanistan, a private university, saw the potential to adapt government developed m-gov applications for its use in the private sector (m-currency, inventory, alerts/surveys/questions) , but saw little advantage in m-gov per se. ICIT and Kardan viewed the initiative as an opportunity for its students, but hoped that the bulk of the work was kept in Afghanistan, rather than given to large international consulting firms, since it encouraged its students to open their own businesses.

Summaries of the interviews are available in a separate Appendix. The interviewed parties included:

Deputy Minister (then, Director General) IT for MCIT, Aimal Marjan	NEDA
Ajmal Ayan, ATRA Board Member	Barya Consulting
Ahmad Saeed, COO, Afghan Telecom	NetLinks
Abdul Mujeeb Mohmand, Director, E-government, MCIT	Ministry of Agriculture, Irrigation and Livestock
Eng. Baryalai Hassam, Deputy Minister Technology and IT, MCIT	Ministry of Commerce and Industry
Roshan	Ministry of Public Health
Dr. Aziz Safi, Director of Planning, MCIT	Glory Consulting
US Embassy, Economic Development Section	Sharifullah Sahak
USTRonics/Paywast	Kabul Chamber of Commerce India-Afghan Innovation Fair Participants
TechNation	Independent Directorate of Local Governments
Dr. Siddhartha Raja, World Bank	Afghanistan Investment Support Agency
Inter-Ministry CIO Committee	Ministry of Interior
Altai Consulting	Ministry of Foreign Affairs
NetZone	Entrepreneur Founders Meeting Participants

Submitted by Marc Lipton, Consultant to the Ministry of Communications and IT for the Finalization
of m-Government Strategy of the Government of the Islamic Republic of Afghanistan

NISPAA	MTN Afghanistan
Ministry of Finance	Ministry of Education
Afghanistan Information Management Service (AIMS)	Independent Administrative Reform and Civil Service Commission
Supreme Court	Afghan Wireless Communications Company
Afghanistan Reliable Technology Services (ARTS)	Information and Communication Technology Institute
Ministry of Rural Reconstruction and Development	Afghanistan ICT Solutions
Ministry of Hajj and Islamic Affairs	Kardan Consulting Group
Ministry of Labor, Social Affairs, Martyrs and Disabled	Directorate of Nomadic Peoples, Ministry of Borders and Tribal Affairs
Ministry of Public Works	
Ministry of Borders and Tribal Affairs	
GTR	
Kabul Polytechnic University	
Afghanistan Payment Systems	
Control and Audit Office	
Kabul University	
American University of Afghanistan	
Etisalat	
ExpressPay/MarikhTech	
Ministry of Justice	
Ministry of Economy	
Central Statistics Organization	
Ministry of Higher Education	
Member of Parliament, Ibrahim Ghakhtalai	

4. LESSONS LEARNED FROM SIMILARLY SITUATED COUNTRIES

As discussed in the Inception Report, while the benchmark countries identified in the UNU Report were not found by the Consultant to be relevant to the m-gov research, there were countries with nascent m-gov programs that shared sufficient other characteristics with Afghanistan to make their m-gov rollouts worthy of study and comment. These countries are Nigeria, Bhutan, Moldova, Malawi, and Rwanda. With the exception of Nigeria, which has a significant oil economy dependent on information services, none of these countries has a significant technologically literate population. Additionally, these countries are each for the most part poor, lacking in wireline infrastructure, rural, home to a significant illiterate population, unbanked, prone to infectious disease outbreaks, and have reputations for corruption, all characteristics shared with Afghanistan. Interestingly, each of these countries has managed to successfully launch at least one m-gov service and has organizations in place to build on that success and roll out further services.

These countries' activities are worthy of study because they appear to have discovered a path to engage their populations through technology even though their citizens have neither a tradition nor a visible model for such e-participation. Boiled down to its essence, this is what GoIRA is attempting to do with the m-gov initiative. A study of the public descriptions of the processes these countries undertook to attain their successful launches establishes six common tactics: identifying a lead organization responsible for the m-gov initiative, compensate for scarcity of resources by committing to common hardware, software and platforms, build technological capacity within government,²¹ eliminate institutional barriers to m-gov, engage the private sector, and generate momentum by deploying "quick wins."²²

5. CONCLUSIONS FROM THE FACTUAL RESEARCH

The investigation of the web sites, review of questionnaire responses, and the interview process lead to a number of conclusions which bear upon the GoIRA m-gov strategy. First, it is obvious that very few ministries have processes that have been automated and can be readily converted to the m-gov SDP. Most ministries do not have documented processes, making it difficult to utilize the SDP to eliminate the human factor, which is a common approach to ridding a bureaucracy of opportunities for corruption. Further, most ministries' data bases are not designed to be queried remotely; they will have to either be reconfigured (in the case of Centralized Statistics Organization, for example), or loaded onto the SDP (as will be the case for Ministry of Higher Education). Additionally, there are a number of ministries that received

²¹ The import of building technological literacy inside GoIRA cannot be overstated, but it nonetheless was not stressed in the UNU Report. There is an argument that starting a strategic analysis with a vision (the desired end state) masked the critical nature of the foundational work (the necessary first stages). As noted in the Stakeholders' Meeting Document, the post-modern approach to strategy recognizes that understanding the beginning state, and knowing what must follow thereafter, produces better results than working backwards from a ideal end state that may or may not ever materialize.

²² Interestingly, some (but not all) of these tactics can be found favorably discussed in the UNU Report. One major difference appears to be the need to place technological expertise and authority (but not budget) in one organization rather than distributing it among ministries. Distributed expertise dilutes the ability to establish and enforce government-wide standards, a key component to maximizing limited resources.

donated equipment and software that lack a maintenance plan or update rights. Since there will likely not be enough money in the foreseeable future for GoIRA to support multiple platforms and operating systems, those ministries currently utilizing such “one off” technology need to prepare a plan to move to a platforms that other ministries use and for which support and upgrades will be reasonably priced.

As a result of donations, it appears there is sufficient computing power in the ministries to support their employees’ IT needs, but the technology is underutilized and technically trained employees do not appear to be utilizing their training. Similarly, the web sites for each ministry are not being put to their best use, since they are not being updated. More importantly, the failure to update the web sites costs the GoIRA an opportunity to show the public the benefits of a technology-enabled government and lowers the credibility of e-gov and m-gov in the public’s eyes. Due to the lack of data bases, technologically skilled employees, and updated web sites, the ministries’ servicing of citizen requests is slower than necessary. Such institutional “slowness” offers the opportunity for “speed” to be “sold,” such as by placing someone’s application at the “top of the stack” in exchange for money.

On the positive side, many ministries have the same administrative and client facing needs, meaning that platform development and licensing will have a positive payoff. Additionally, the universities have begun producing graduates who can write mobile applications, and the Afghan private sector appears to have the capacity a) to train government employees to improve their technological literacy and b) to perform data conversion so that handwritten files, and those typed but entered in Dari or Pashto (for which there is no OCR capability yet), can be entered into an interactive data base. Similarly, there is capacity to accept electronic payments, but a comprehensive ICT law must be passed before the benefits of such a currency-less system will be achieved.

This is in contrast to the apparent lack of capacity in the domestic private sector to train on process mapping, a task needed to move ministries from inefficient, ad hoc process that easily become breeding grounds for corruption to frictionless, transparent systems that provide no opportunity for graft-related mischief.

M-GOV STRATEGY DRAFT FOR AFGHANISTAN

The Long Term Vision

As stated in the UNU Report, the long term vision statement for the e-gov initiative is “Quality Public Services delivered Equitably by a Trusted Government to an Empowered Citizenry.” The Consultant finds no basis on which to modify this aspirational statement, provided the definition of “quality” encompasses “efficient” and “knowledgeable” and that the definition of “empowered” includes not just “participating” but also “employed.” By so defining the key terms of the vision, the UNU Report’s hopes for Afghanistan mirror the three goals for the m-gov initiative as contained in the Stakeholder Meeting Document: efficient and knowledgeable government, transparent and participatory governance, and a private sector stimulated by newly available government information and funds.

The Mid-Term Vision

There is, however, a problem with also accepting the mid-term vision from the January 2011 UNU Report. That aspirational statement proclaimed:

“Within five years most of the people of Afghanistan will benefit from the equitable access to quality public information and services of high priority with equal opportunities to men and women in a balanced manner across urban and rural areas, reduced corruption, and improved security and participation in governance with everyone motivated and enabled to contribute.”

The obvious problem with this mid-term vision is that it falls into the trap postulated by Heeks, *supra*, namely that a project cannot help but fail to achieve its goals if there is a significant gap between design and reality. In the case of the UNU Report, there is nothing improper about the substance of the goals; the problem was, and is, failing to recognize the amount of time it takes to implement the fundamental change in GoIRA operations and culture to achieve the goals. By setting the bar so high as to be unattainable (indeed, no comparable country cited by the UNU Report was able to achieve anything close to a similar result in a similar time frame), the UNU Report, in retrospect, promoted a plan that was sure to disappoint those initially encouraged by its boldness. This Final Draft seeks to avoid adding to this disappointment by foregoing explicit time frames in favor of an “immediate,” “near term,” and “long term” designations. In so doing, this Final Draft acknowledges the “inherent unpredictability of human affairs” seen by Freedman as a necessary ingredient in any successful strategy. In place of the e-gov mid-term vision, the mid-term vision for m-gov is

“Shortly after adoption of comprehensive ICT laws, Afghans will utilize mobile devices to fully participate in and transact with their government’s diverse set of efficient, up to date, automated services, ministries will distribute and obtain information from throughout the country utilizing the flexibility of wireless technology, and the private sector will be fueled by the release of, and new uses for, government information.”

This mid-term vision for m-gov acknowledges the importance of enacting a set of ICT laws that enable transactions with GoIRA, e-commerce, and e-signatures. Once this happens, the potential of m-gov will be unleashed, enabling the vision to move forward. The vision centers on the difference mobile technology can bring to Afghanistan: the ability for citizens to transact and otherwise interact with government from any place, at any time, the ability of the government to operate more efficiently and offer new, better informed, services to citizens, and the private sector’s opportunity to play a role in making government information available and in finding innovative uses for it.

Strategic Goals

Achieving the mid-term vision requires the three key participant groups – citizens, government and the private sector – to interact in a symbiotic relationship where each is dependent on the other two for ultimate success. Moreover, each group has specific tasks it must accomplish in order for the three groups to succeed. GoIRA must a) pass the needed legislation, and b) develop the capacity to operate more efficiently and to receive and utilize citizen and other information. Citizens must utilize the new applications and participate in governance by

delivering data to the government both voluntarily and when asked, and the private sector must create the new applications for government and then take the bold step of creating innovative services based on the newly released information.

Success of the mid-term vision thus depends on GoIRA meeting an array of Strategic Goals that support each of the three perspectives that underlie it. In the Stakeholder Meeting Document, these perspectives were described as the “Core Values” that drive the Strategic Plan:

- Government should constantly strive to be as efficient as practical
- Governance should be as participatory and transparent as the citizenry demands
- To the extent practical, Government should utilize the private sector to perform those functions that are not unique to the public sector.

They can also be considered the *Impacts*, or the “why?” of the Strategic Plan.

The *Outcomes* (also referred to as the Strategic Goals, or the “what must be changed?” component) of the Strategic Plan are the previously mentioned Six Best Practices:

- A single entity (in this case, a Ministry), takes responsibility and is accountable for the leadership on and success of the m-gov policy
- Common hardware, software, platform, and process standards are developed and adopted across GoIRA to maximize scarce financial and trained human resources.
- GoIRA employees are uniformly technologically literate; citizen facing m-gov technologies are based on ease of citizen use.
- Institutional barriers to m-gov must be eliminated, particularly the legal inability of GoIRA to do business electronically, and most ministries’ inertia regarding retention of ad hoc, manual processes.
- The private sector will be given opportunity to participate in the m-gov initiative, and the participation will be stimulated by GoIRA
- Quick wins will be routinely planned while sophisticated and/or revolutionary technologies, such as those that can materially affect security or the economy, will be researched and developed as longer term projects.²³

The *Outputs*, or “Strategic Directions” of the m-gov initiative, are the activities that are undertaken to achieve the *Outcomes*/Strategic Goals. Because there are several such *Outputs*, and completion of some are conditions precedent to commencing others, they are presented here batched for action as “Immediate,” “Near Term,” (awaiting completion of a condition precedent activity considered “Immediate”) , and “Long Term” (sophisticated or revolutionary technological deployment requiring significant planning and impact analysis)

²³ Because virtually all of the Outcomes support almost all of the Impacts, there is no effort made here to map Outcomes to Impacts. This integration of Outcomes to Impacts is a byproduct of the bottom up approach advocated by Freedman, to be contrasted with the top down approach of RBPM, which starts with identification of the Vision, rather than a comprehensive understanding of the starting point.

Strategic Directions

Some of the strategic activities listed below are self-explanatory, but several require understanding the natural progression of the project and the vision of the CIO's and the e-gov and m-gov teams to grasp the implications. Those explanations are in parentheses.

Immediate Activities.

- **A single entity (in this case, MCIT), takes responsibility and is accountable for the leadership on and success of the m-gov policy**

Immediate Activity One: Confirm the MCIT mandate

Explain the m-gov strategy to the National ICT Council; to the extent perceived necessary, obtain confirmation of MCIT's mandate

(Like the e-gov strategy, it is important that other ministries and the public understand that the m-gov initiative is lead by MCIT, but is endorsed across GoIRA and that the underlying philosophies will be adopted not just by MCIT, but by all ministries.)

Immediate Activity Two: MCIT leads standard setting for GoIRA IT procurements

Commence developing standards for IT acquisitions and licenses.

(GoIRA will not have the long term wealth and talent base to support multiple hardware and software platforms. As such, standards need to be written by MCIT so that other ministries on a going forward basis procure only that technology that will be supported over the long term).

Immediate Activity Three: Suspend IT purchases where practical

Obtain National ICT Council agreement to suspend new IT purchases where practical until standards are set and process in place to confirm proposed purchase complies with standards.

(Purchasing additional non-essential equipment that will not be supported under MCIT's IT roadmap merely compounds the problem noted above. The ministries should accordingly avoid further technology acquisitions to ensure all newly purchased technology will have long term support)

Immediate Activity Four: Assert control over donated IT

Inform donors that future donations of IT goods and services must conform to specifications set by MCIT.

(The ministries have discussed during the interview process that much donated technology is not, or will not be, supported. There needs to be a process to ensure all IT conforms to standards set by MCIT, which will be responsible for identifying what technology will be deployed throughout the government, including the m-gov support. Donors need to realize that GoIRA is not indifferent to the ability to support IT that will be connected to its network.)

Immediate Activity Five: Wirelessly enable MCIT campus

Develop a secure wifi network in and around MCIT Headquarters so that employees can use mobile devices

(GoIRA employees need to become familiar with the mobile applications they will be supplying to the citizens; the best way to develop that familiarity is to make MCIT the model m-gov Ministry)

Immediate Activity Six: Reexamine personal computing support by MCIT for its employees

Ascertain who, and what level, is using what specification and product.

(An inventory matching job requirements to equipment specifications will arm people with the right technology for the position they are in. Some employees clearly do not need the computing power in the devices they operate. Those who can perform their jobs with less expensive devices should do so. This will have the benefit of having more employees using the same technology that the citizens use, thereby developing an understanding of the m-gov user experience)

Rationalize needs according to job function

(As an expense control measure, employees who are only using computers for email or internet research can be given smart phones or tablets for governmental use. Ideally, this will enable MCIT to reduce dependence on wired devices that are more expensive to deploy and serve.)

Create tiered standards for personal hardware based upon need for storage and computing capability in device.

(MCIT should lead GoIRA in utilizing mobile technology to perform government work. It is cheaper to deploy and more flexible when deployed.)

Determine whether employee requires data storage. If not, consider migrating employee onto tablet or smaller device.

Make a policy decision to support “bring your own device” or develop a standard platform for devices accessing government data bases

(As GoIRA moves to mobile devices, security becomes an issue. It would be far easier for GoIRA to ensure its security if it only had to concern itself with a

single platform. It would then be in a position to have the devices made to order. On the other hand, there are clearly employee satisfaction considerations to take into account. This is an issue to be studied by MCIT)

As part of policy decision, ascertain whether Afghan fabrication/manufacture is available as a GoIRA supplier of devices, and whether internal government programs will run on “open source” or proprietary programs.

(Using an Afghan fabricator would be a money saving way of keeping money and jobs in the domestic economy. As to open source vs. proprietary, the UNU Report presumed, without discussion, that GoIRA should prefer open source. However, as seen in the Kurdish autonomous region in Iraq and other economies that have studied the issue, there often is no cost advantage to open source and there are frequently issues of reliability and quality support. It is not the purpose of this document to resolve this issue for GoIRA, merely to raise it as an issue that must be resolved as part of m-gov strategy implementation.)

Immediate Activity Seven: GPS and Traffic

Deploy GPS in all MCIT vehicles

(For both security and efficiency, MCIT vehicles should have a tracking system that also would assist in finding addresses/offices)

Set a deadline for deploying addresses in Kabul, removing a barrier to use of international delivery systems

(The current lack of addresses delays wide deployment of e-commerce and creates inefficiency of the delivery of government service. Addresses are an easy solution to solve these problems)

Immediate Activity Eight: Begin to Automate MCIT

Identify paper/manual processes not affected by lack of ICT law

(MCIT should serve as a model ministry for performance of system inventories; it is an activity all ministries should have done as part of the move to e-gov, and will have to do to operate efficiently as donor dollars become scarce)

Process map those identified processes

(Again, process mapping is a skill set needed by every ministry as they convert to automated systems to preserve resources; MCIT should serve as the model for how to take this step)

Retain system programmers from the private sector to code the process map.

(GoIRA simply does not have this talent, and needn't acquire it, since once the key processes are automated, the skill set no longer is needed in GoIRA.

Under such circumstances, the better long range plan is to let the private sector develop the expertise and bring the skills to those who need process system programming in the private sector)

Immediate Activity Nine: Inventory Assets

For each of MCIT, ATRA and AfTel, obtain inventory needs (what does each organization need to know about its assets?)

(AfTel, for example, needs to know the age of certain assets so it knows when replacement needs are likely to occur and thus can intelligently plan a parts inventory. AfTel also needs to know the current book value of the assets on the chance that a privatization takes place; the potential buyer will want to know the book value of the company. MCIT and ATRA need to be able to track inventory to ascertain and prevent theft. For human resource planning purposes, they also need to know when they will need to support PC and laptop changeouts.)

Use the inventory needs as the basis for RFI's seeking input from industry on capabilities of existing systems

(Different inventory systems will have different capabilities, such as expandable columns, pull down menus for asset categories, input of dates and model numbers and depreciation calculations. MCIT, on behalf of GoIRA, should survey the market and find the most flexible system to license across GoIRA)

Select wireless inventory program for each MCIT organization to understand strengths of various systems

Deploy private sector contractors to perform physical inventory.

(The physical inventory of AfTel is literally spread throughout Afghanistan, and the field visits to locate and log those assets should be done through a bid process to maintain a low cost structure for such work.)

Assess performance of systems for selection of GoIRA wide platform

(By trialing different inventory systems for the different activities of MCIT, the Ministry will be able to identify which is the best system for broad deployment across GoIRA).

Immediate Activity Ten: Begin to Automate AfTel

Process map customer care and code the process, then deploy the automated process

(Developing a process map methodology for customer care, AfTel can reduce its costs as it enters a new line of business, GSM, and create a model for other customer/client facing organizations in other ministries to adopt, all without waiting for an ICT law)

Consider use of automated top offs as an alternative to sales of scratchoffs.

(Technology exists to arm the current scratch off card vendors with the ability to sell MSO time through mobile devices, eliminating the cards as well as the large amounts of currency they each carry in their pockets (which double as a cash register and bank. AfTel may be able to create a competitive advantage for itself if it rolls out such a system and it becomes popular as a non-currency dependent way to “top up” your account.)

Consider elimination or automation of street agents’ work

(The above referenced mobile top off process could have the effect of eliminating many of the street vendors who sell the cards. While this paper does not advocate delaying technology from solving market problems, the issue of whether automating the top up will result in depriving these street vendors of their livelihood needs to be considered, and if their earning power is significantly impacted, a creating a transition plan would be appropriate.)

- Common hardware, software, platform, and process standards are developed and adopted across GoIRA to maximize scarce financial and trained human resources

Immediate Activity One: GoIRA IT inventory

CIO’s inventory all physical IT assets in their ministries

(There must be an understanding of what the current situation is across GoIRA before there can be an efficient common solution designed and a road map built to achieve the solution)

CIO’s inventory all software licenses used by their Ministry

(There must be an understanding of what the current situation is across GoIRA before there can be an efficient common solution designed and a road map built to achieve the solution)

CIO’s inventory all systems run and reports created by their Ministry

(There must be an understanding of what the current situation is across GoIRA before there can be an efficient common solution designed and a road map built to achieve the solution)

Immediate Activity Two: MCIT and CIO’s rationalize IT inventory results

(This will provide the opportunity for MCIT and the CIO’s to discuss which of the trial solutions used at MCIT would work best for GoIRA given the common needs of the ministries and the results of the MCIT trials)

Identify differences in IT hardware, commit to standard

(This will provide the opportunity for MCIT and the CIO's to discuss which of the trial solutions used at MCIT would work best for GoIRA given the common needs of the ministries and the results of the MCIT trials)

Identify differences in software and system platforms and commit to standard

(This will provide the opportunity for MCIT and the CIO's to discuss which of the trial solutions used at MCIT would work best for GoIRA given the common needs of the ministries and the results of the MCIT trials)

Immediate Activity Three: Standards

(The explanation of these outputs and the reason for them is the same as above)

Based upon needed reporting capabilities, develop Standard Technology Platform ("STP") for all ministries

Pay particular attention to total cost of ownership issue when deciding between Open Source and Proprietary software for GoIRA administrative use.

Consider migration and support cost for platform changes

Ministries develop road maps and timelines to migrate to STP

(While MCIT will be the lead Ministry on technology standards issues, the prioritization of automating processes and moving to the STP will be the decision and responsibility of each ministry, with the understanding that at some point in time, determined in advance by MCIT, there will be no centralized support at MCIT for non-standard technology utilized in other ministries.)

Immediate Activity Four: Commence use of the m-gov platform

Obtain inbound data retrieval definitions from each ministry (e.g., test score, drug lot expiration, court time and day, health results)

(One of the key activities of SDP initiative is the ability of citizens to retrieve information from GoIRA data bases. This step is to enable each ministry to identify what information it seeks to place on the SDP for citizen retrieval and to create the specifications for placing such data on the SDP)

Input data to SDP compliant data base

(This could be automated, if a given ministry has created its data base in the proper manner. Otherwise, the data will have to be reentered into a compliant data base; domestic data entry firms are available to perform this work and keep the money in the Afghan economy)

Deploy

Obtain survey questions from each ministry

(Each citizen-facing ministry should utilize the survey capability of SDP to ascertain what the citizens' opinions of its service are).

Obtain feedback plan from each ministry

(Each ministry should have a feedback plan in place before the survey application goes live. This way, the ministry will not only receive the survey results and be prepared to internally distribute them, but also take such remedial action as is called for and be able to explain to the citizens that it is taking such action)

What will they do with survey results from an IT perspective?

(See above)

What technology is available to capture results and measure ministry response to results requiring change in ministry?

(See above)

Immediate Activity Five: Launch Alert and Action Status Application

Follow model for Inbound Data Retrieval and Survey

(See above)

Immediate Activity Six: Standardize Mobile Administrative Applications

Using process for identifying best inventory system for MCIT, identify best inventory system, security guard support system, attendance and payroll system, and vehicle and driver management system for GoIRA

(See above regarding software, hardware and platform inventories)

License key systems, develop internal expertise in deployment strategy, support desk, and ongoing operation.

(Several ministries and private sector spokespersons advocated for MCIT to lead the negotiations for non-commitment volume discount contracts for IT needs: hardware, software and platforms. This was routinely suggested by all parties as a way to capture MCIT expertise to benefit all of GoIRA and to eliminate allegations of corruption from this part of the procurement process. MCIT would not, however, be responsible for placing non-MCIT orders against the contract, nor for administering the contract for purchases other than its own)

Deploy administrative mobile applications in ministries as budgets allow.

- GoIRA employees are uniformly technologically literate; citizen facing m-gov technologies are based on ease of citizen use

Immediate Activity One: Train GoIRA employees

Identify core curriculum to ensure all GoIRA employees above a certain level are technologically literate.

(As the lead technology ministry, MCIT should identify what skills it believes employees in the ministries will need to perform their jobs over the next several years, and then find a training program for those skills at an Afghan institution.)

Identify vendors capable of bringing courses that meet the curriculum needs to MCIT and other ministries

Contract for training of MCIT employees as a trial

Immediate Activity Two: Process map

CIO's identify Process Mapping trainers

(Afghanistan cannot truly move to m-gov until it learns how to automate many of the processes that are in use in the ministries. There will be far more work to document the processes than there are skilled employees to perform it. Hence, the CIO's will have to train additional personnel on how to lead and perform process mapping sessions)

CIO's select a trial ministry to undertake process map training

Trial ministry process maps its most utilized customer facing process, codes it, and rolls out mobile-friendly application; other ministries follow as budget allows

- Institutional barriers to m-gov must be eliminated, particularly: the legal inability of GoIRA to do business electronically, and most ministries' inertia regarding retention of ad hoc, manual processes

Immediate Activity One: Get the ICT laws passed

Withdraw the current proposals

Rewrite the proposed law as separate laws

Empower MCIT through the proposal:

MCIT should control technology purchases and licenses as a matter of law

ATRA should be able to require MNO's to offer public service SMS and audio messages

(The Ministry of Justice believes the current proposal is too long and complex to pass through the Parliament. As such, the law needs to be divided into smaller laws, but needs to have a common set of definitions so that the IT sector does not wind up with a confusing set of laws that do not fit together. Additionally, the sections that are highly technical, such as those involving encryption methods and PKI's, should be replaced with non-technical provisions that place the authority to make technology rules and standards in the hands of His Excellency, the Minister of Communications and Information Technology. This way, various technical changes need not always go back and be explained to the Parliament. Instead, H.E. the Minister can make the change far more quickly if necessary. Further, many ministries see the law as a vehicle to place MCIT in control of IT procurement standards across GoIRA. Additionally, other ministries see the law as an opportunity to confer additional powers on ATRA, including the ability to ask for and inspect the books of account of MNO's even when no finding of Significant Market Power has been made, and to force MNO's to contribute to emergency telecommunications network funds and to provide public service SMS messages without charge)

MNO's should contribute to an emergency call fund to pay for location databases

Eliminate technical provisions of proposal; authorize the Minister of MCIT or his delegate to set technical standards such as PKI and encryption as a matter of regulation, rather than legislation. This eliminates the need to return to Parliament and amend the law when there is a technological change that the government must accommodate

Begin the public dialogue on privacy;

Should GoIRA have access to real time location information from mobile phones or from towers using emergency systems?

Should there be a data base connecting phone numbers with national ID's?

Have the law provide that disadvantaged groups can receive set asides in technology contracts to assure small firms business if they meet certain standards.

(If the law discusses procurement, the subject of set asides for IT contracts should be considered. However, this should not be left up to MCIT to decide when set asides should be used; that decision should be made by the Ministry of the Economy or another ministry that tracks women and minority business results. The decision of what to set aside, and what the contracting standards are, should be left to MCIT.)

Immediate Activity Two: Convert manually maintained data

Retain Afghan firms to convert analogue data into readable data (Central Statistics Organization and Ministry of Higher Education)

Immediate Activity Three: Illiterate inclusion

Retain firms to record messages that accommodate persons who cannot read SMS messages

Retain firms to run “typing centers” where citizens who cannot read or spell can pay to have forms completed and submitted through their mobile devices.

Immediate Activity Three: Incentives to use m-gov

Make it easier for citizens to obtain services through m-gov than to use face to face processes

Provide “natural” incentives, such as faster processing, lower fees, etc.

(It is critical to both the citizen and the GoIRA employee that m-gov be utilized. Both groups need the efficiencies the technology brings. As such, there may have to be an incentive to get people to use the m-gov systems, such as guaranteed speedier handling and lower (if any) prices for processes that are not currently free).

- The private sector will be given opportunity to participate in the m-gov initiative, and the participation will be stimulated by GoIRA

Immediate Activity One: Inventory the capacity of the private sector

Issue RFI for any business, including universities, that wishes to perform IT services or sell equipment to GoIRA, identifying in which service categories they have expertise and their prior projects and references. Have a similar period of indexing skills every year to capture new skills and businesses.

Determine the business model for information retrieval from GoIRA data bases: should the government wholesale its non-sensitive data and allow private sector to create applications using such data?

(This is a major issue for the start of the initiative. There is a sense that government information should be accessed for free, as “the people’s information.” However, there is a good argument that the SDP should pay for itself and its maintenance over time, which would require a charge. Additionally, there are a number of scenarios where a free service could get abused and the abuse drive up costs unnecessarily. This prompted some commenting CIO’s to suggest charging after the first several attempts to access a data base. Additionally, there is likely a wholesale market for the government information, by which a firm could license the entire data base of a ministry, add value to it, and charge its users a small fee. As such, there may be another cost covering revenue stream for GoIRA if it opts to create a wholesale license scheme for the data. An example would be a free government service that allowed retrieval of Konkor scores off the SDP, while an MNO could license the entire Konkor score data base, align

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it with certain universities' data bases, and inform a caller not just what the score was, but what schools in Afghanistan and neighboring countries would accept such a score in the admissions process. For this value added, the MNO could charge a small fee.)

Quick wins will be routinely planned while sophisticated and/or revolutionary technologies, such as those that can materially affect security or the economy, will be researched and developed as longer term projects

Immediate Activity One: Accelerate negotiations with MNO's for connectivity to SDP

Resolve issue of how much citizens will be charged to access information, keeping in mind potential abuse of system if free

Resolve geographically different pricing for Kabul and rest of country

Resolve usage data issue: GoIRA is entitled to information on usage of GoIRA sites, including by SIM.

Immediate Activity Two: Stimulate usage of the m-gov services

Meet with Afghan PR and promotion firms to generate ideas for publicizing m-gov and SDP

Immediate Action Three: Generate Usage on SDP

Develop sign up program for outbound SDP services, such as Alert and Update.

(There should be a discussion with the publicists referred to above regarding how to stimulate usage of the SDP applications. One important standard application is going to require citizens to sign up to get alerts from the various ministries. Since it is obvious most Afghans do not visit government web sites, the promotions will have to be "off-line," and particularly accommodate those who do not read. Thus, while billboards may be effective near universities, radio and manned sign up booths in key locations, particularly in the rural areas, may also have to be used.)

Develop and publicize inbound SDP capabilities, particularly survey, to generate information from citizens and have them participate in their governance

Near Term Initiatives (after ICT law enacted)

A single entity (in this case, MCIT), takes responsibility and is accountable for the leadership on and success of the m-gov policy

Near Term Activity One: Automate ATRA

Regulatory, SIM registration, and complaint processes should be capable of being performed on mobile devices. .

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Require carriers to enter pricing into ATRA sponsored data base for publicly available price comparisons available from mobile phone

Common hardware, software, platform, and process standards are developed and adopted across GoIRA to maximize scarce financial and trained human resources.

Near Term Activity One: Maximize the SDP

Design a form template so ministries can create their own forms quickly and receive submissions through SDP

Design a data submission form template so ministries can easily seek data from citizens in remote areas.

Near Term Activity Two: Publicize the ability to do business with the government through a mobile phone, and without coming to Kabul

GoIRA employees are uniformly technologically literate; citizen facing m-gov technologies are based on ease of citizen use.

Near Term Activity One: Engage GoIRA employees

Train employees on legislation requirements

Train employees on the use of location based services and the underlying technology

Train the employees on data entry into SDP compliant data bases.

Train employees on vehicle, security, inventory, and attendance programs and seek input on analysis of data being derived from those systems.

Institutional barriers to m-gov must be eliminated, particularly the legal inability of GoIRA to do business electronically, and most ministries' inertia regarding retention of ad hoc, manual processes.

(see other Near Term Activities)

The private sector will be given opportunity to participate in the m-gov initiative, and the participation will be stimulated by GoIRA

Near Term Activity One: Use private sector professionalism

Engineer and deploy emergency service call routing system sought by MoI using local companies

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Engineer and deploy automatic payment system with assistance of MoF using local sources

Investigate use of wirelessly enabled public payment and form submission terminals from local companies

Quick wins will be routinely planned while sophisticated and/or revolutionary technologies, such as those that can materially affect security or the economy, will be researched and developed as longer term projects

Long Term Activities

Deploy M2M devices such as road and weight sensors

Consider programs that remove currency from the economy

Deploy wirelessly enabled border protection services

Conclusion

This document describes a strategy for deploying m-gov in Afghanistan, resulting in more efficient, knowledgeable government, more participatory and transparent governance and a stimulated information service market fueled by previously inaccessible government information. The strategy, if events allow, will enable GoIRA to restructure its operations in a manner that will pay for itself in a very short time frame by reducing government costs, but increasing the velocity with which businesses and citizens can transact with GoIRA and by eliminating unnecessary trips to Kabul to obtain information or submit a form. The path will not be easy, but traveling the path is inevitable; GoIRA cannot afford to take its current inefficient, manual and ad hoc processes into a post-donor driven world and be financially viable. The path to that manner of emancipation should begin as soon as possible.

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