



TECHNOLOGY, MONITORING AND EVALUATION

The Use of Technology by UN Agencies in Afghanistan
in support of Monitoring and Evaluation

Abstract

This report provides a summary of responses to a Risk Management Unit survey of the use of Technology by United Nations Agencies in Afghanistan in support of Monitoring and Evaluation. The report also includes discussion of the benefits, challenges and opportunities that exist to enhance data collection, data aggregation, oversight and decision making.

Contents

Executive summary3

Introduction4

Section One: Summary of Responses to the RMU Survey7

Section Two: Beyond the Survey – Technology and Innovation in the Field19

Conclusion26

Recommendations26

Annex A: Examples of Data Platforms which are available free of cost28

Executive Summary

Technological advances in a number of fields have resulted in falling costs, increased access, and exponential growth in the ways in which technology can be applied. The continuous expansion and improvement of connectivity, for telephony, internet and satellite has also led to the ability to usefully deploy or make use of connected technologies in areas which were previously offline or hard to reach. Such developments have increased the potential not only to better communicate and share information with communities and individuals on the ground, but also to establish means by which data can be collected, either in-person or remotely.

The ability to gather information from land and from the air, and to aggregate it in real or near real time presents significant opportunities for humanitarian and development actors to access accurate, electronic data first-hand. In areas where direct access is not always possible, such data can provide invaluable support to inform decision making and coordination.

Within Afghanistan, several United Nations (UN) agencies are in the process of incorporating technology for both data collection and data aggregation into Monitoring and Evaluation programmes. A number of other agencies report they are currently considering if, how and when they might do the same. The means by which agencies, not only in Afghanistan but also elsewhere, are seeking to enhance information gathering capabilities include the use of call or internet enabled devices, call centres, hotlines, and the collection of satellite and aerial imagery.

As a result, a range of data types, including voice, Short Message Service (SMS), photographic, multimedia, Global Positioning System (GPS), survey data, and in some cases biometric data, can

be gathered. Aggregation of this range of information is typically facilitated through use of dedicated platforms to which data is electronically transmitted or transferred to enable data visualisation and analysis.

Particularly because the deployment and use of technology by UN agencies in Afghanistan is largely in its' infancy, there is significant opportunity to benefit from the experiences of other actors (both national and international) and to incorporate this learning into the planning and implementation of projects and programmes. There is also scope to identify and exploit resource sharing opportunities, both as a means of streamlining approaches, and managing operational costs.

The potential to learn and to identify new ways of approaching challenges is not only limited to the field of Monitoring and Evaluation. A plethora of innovation-focused initiatives established by the UN and others, are currently working to support the ongoing evolution and adaptation of practices and products in support of humanitarian and development activities.

The adoption by the UN Country Team (UNCT) of a proactive stance towards the use of technology and exploring monitoring developments will demonstrate a commitment by agencies to the timely, informed and effective evolution of working practices. This will provide significant benefit to the people of Afghanistan.

Introduction

Purpose

The purpose of this report is to provide an insight into how technology¹ is being used by UN agencies in Afghanistan to enable or support Monitoring and Evaluation (hereafter 'M&E') activities, and to better understand the benefits, challenges and opportunities that using technology in this way can present. To do so, the report considers the following questions:

- To what extent and how are UN agencies in Afghanistan currently deploying technology?
- What are the drivers, benefits and challenges associated with the use of technology?
- What sorts of technology-based tools are available?
- How is technology being used in other similar contexts?
- What opportunities exist to learn, adapt and to adopt new approaches?

It is intended that consideration of these and other related issues will help inform discussions, identify lessons learned, and present opportunities, for the UNCT to proactively use technology and enhance current M&E practices.

Scope and Structure

The contents of this report are based on the findings of a survey which was circulated by the Risk Management Unit (RMU) in late December 2015 to UN agencies operating in Afghanistan. The survey was designed to gather information about both the types of technology being utilised by agencies in Afghanistan for M&E purposes, and the drivers for and impacts of its use. The survey also provided agencies with an opportunity to highlight any applicable technology - based initiatives and

tools which they were aware of, but which are not being used in Afghanistan at present. In addition to information obtained as a result of the survey, the RMU undertook supplementary research into both the established and evolving technologies in this field.

Consequently, the first section of the report provides a breakdown of the findings of the survey, identifying the ways in which technology is being harnessed to support M&E activities. This includes a discussion of the benefits this can bring, as well as some of the common and less common institutional and operational constraints and challenges encountered. The section concludes with an exploration of some of the key lessons identified by respondents based on their experience of the use of technology to date.

Section two of the report reflects the findings of supplementary open source research conducted by the RMU, looking at ways in which technology has been applied in Afghanistan and in other challenging contexts to support humanitarian and development activities. It also briefly examines the experience of private sector enterprise in introducing mobile technology across Afghanistan. Lastly, the section touches upon the subject of innovation in these fields, and considers the ways in which the UN and other actors are seeking to and might seek to benefit from it.

The concluding section of the report highlights a number of key observations as well as some recommendations for consideration by the UNCT.

¹ For the purposes of this paper 'technology' is defined as: electronic measures to enable data collection or collation; including but not

limited to the use of call centres, handheld devices and satellite technologies.

Limitations

This is an exploratory report based on the responses to a survey of UN agencies operating in Afghanistan which was conducted in late 2015. Not all agencies responded to the survey, and among those that did, a number indicated that they were in the process of piloting or rolling out new approaches; or approaches adapted from elsewhere. As such, the report presents a snapshot of what is reportedly a changing technological landscape.

Further, it is highlighted that the report is intended to focus on the use of technology in support of M&E activities and not necessarily the broader ICT for Development (ICT4D) debate. As such, there is a particular focus on the use of technology to support data collection, aggregation and analysis. As a means of discussing ways in which the adoption of technologies is creating opportunities, the report identifies examples of other ways and contexts in which technology is being deployed. The report does not however, seek to provide a comprehensive list of all such activities.

Background

In recent years, significant efforts have been made to incorporate and adapt existing and evolving technologies in order that these can be harnessed to support humanitarian and development activities across a range of activities and sectors. Many such technologies have existed in the commercial sphere for a number of years, and as such are not necessarily new (or particularly 'high-tech').

A growing emphasis on evidence-based delivery and an appetite for data, combined with greater levels of connectivity, higher levels of IT literacy, and falling costs of hardware has fueled the efforts of commercial firms, governments, international

institutions, academia and philanthropic partnerships to find ways in which technology can be used more widely to support data collection, aggregation and analysis. This has resulted in the development and application of a variety of technology-based approaches across a range of disciplines globally, in planning, operating and response situations.

The ability to use technology as a means to enable more accurate and responsive data collection and aggregation tools as a means to inform decision making at both a policy and a programme level, presents a wider variety of options where these may previously have been limited². This includes the potential to explore ways in which the use of technology can supplement more traditional information gathering methods, as well as enabling the collection of new types of data; or simply data from areas where for reasons of inaccessibility, none was previously available. The adoption of technology is not however, a panacea to all of the challenges associated with information gathering and collation. This is particularly relevant in a context such as Afghanistan, where factors such as insecurity, access and cultural sensitivities play a significant role in determining if and how activities can be undertaken.

Although such constraints are important considerations, they do not necessarily preclude the adoption of more modern approaches. As the potential of mobile technology is increasingly explored by actors in the humanitarian and development sectors, the ability to identify and benefit from lessons already learned is a valuable means by which to avoid unnecessary mistakes and to better manage risks. Within Afghanistan, technologies – particularly those enabled via mobile phone – have been developed, tailored and

² 'Human Development Report 2015: Work for Human Development', UNDP 2015 (pg. 25)

rolled out by private sector actors (sometimes in conjunction with Donor partners) for a number of years. While some of the institutional and operational factors associated with the adoption and deployment of technologies may be unique, it is likely that existing experience of some of the core issues and challenges in adopting and adapting technology for use within the Afghan context can help to inform the approach of UN agencies and others.

The growth of the telecommunications sector in Afghanistan reflects the fact that there is not only growing connectivity, but also that a larger proportion of the Afghan population is familiar with mobile or internet technology in some form, and that there is an increasing capability to engage in and benefit from its' use. In the 2015 Asia Foundation annual Survey of the Afghan People³, results indicated that 82 per cent of respondents stated there was at least one mobile phone in their household, whilst 21 per cent of respondents indicated that someone in the household had access to the internet.

The fact that connectivity and access exist does not however guarantee that on a practical level, it is equally available to both men and women, nor that everyone is comfortable with the use of technology. It is therefore critical to ensure that technology is used in a way that fosters two-way communication, as opposed to creating a divide between actors and the communities they seek to serve.

For the UNCT in Afghanistan, the progress made in the development of communications infrastructure and technologies presents a potential opportunity to counter some of the challenges associated not only with the

geographical remoteness of some locations, but also decreasing levels of access due to heightened security considerations in parts of the country. There is however a need to apply lessons to the way in which technology is applied. Subsequently, this report explores how, why and to what effect technology is being deployed by agencies, as well as some of the benefits and challenges that this can bring.

³ 'A Survey of the Afghan People', The Asia Foundation (2015)

Section One: Summary of Responses to the RMU Survey

Findings from Survey – Overview

In December 2015, the RMU circulated a short survey to UN agencies operating in Afghanistan, in an effort to better understand the extent to which technology is being used to support M&E activities. This was undertaken at the behest of DSRSG/RC/HC.

Nine separate UN agencies responded to the questionnaire. Of the nine respondents, eight agencies confirmed that they are proactively using technology in some way at a country level to support M&E activities. Of these eight, three agencies stated their intention to expand the use of technology for this purpose in the coming year, with a fourth indicating that expansion of the use of technology is something that is being actively considered. Only one responding agency indicated technology is not currently being used to support M&E, and that no plans are being made to use it in the future.

Data Collection Technological Methods and Models

The majority of respondents indicated that the use of technology was a relatively recent addition to their respective M&E toolkits. With the exception of satellite imagery, it is in many instances still being trialed. As such, the survey indicates that the use of technology for monitoring is not yet necessarily an integral part

of M&E planning and processes for all agencies, and that understanding of the potential scope (and limitations) of its use are still being explored. The way in which technology is being deployed, typically comprises of two separate but connected elements:

1. A means of collecting data

This includes technology being used to collect data to support or enable M&E such as: handheld devices for data collection and transmission; photographs; satellites, and; call centres and hotlines. Examples highlighted by survey respondents include:

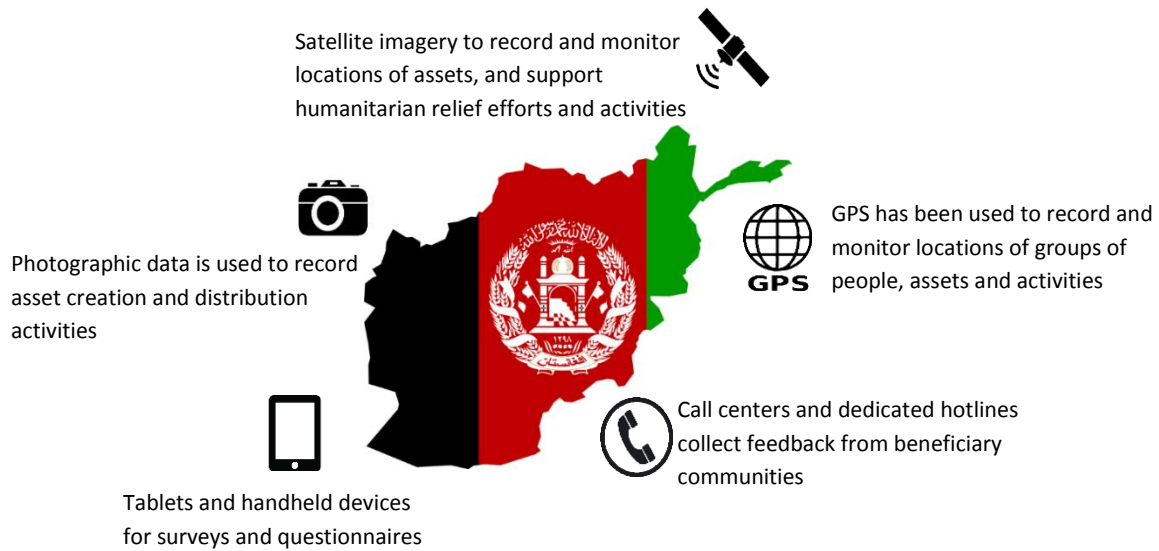
- GPS⁴ data to record and monitor locations of groups of people, assets and activities⁵.
- Photographic data to record asset creation and food distribution.
- Call centres / dedicated hotlines to collect feedback from beneficiary communities.
- Satellite imagery for monitoring environmental change, and mapping.

2. A means of aggregating data

Responses indicated that data is typically aggregated using either excel spreadsheets, a dedicated data platform/database, or a combination of the two. This is explored in further detail in the following pages.

⁴ Global Positioning Satellite (GPS)

⁵ Activities identified included crop production and landmine evaluations



Satellite

Of the respondents, one agency indicated that it had hoped to make sporadic use of satellite imagery to detect environmental change, however this has not yet not been undertaken. The RMU understands that a further agency also makes use of satellite imagery, combined with GPS data to develop a picture of land usage (and change) across the country. In this instance, satellite data is reportedly provided by a project Donor. RMU research indicates that UNOSAT has also previously provided imagery to support damage, landslide and flooding assessments in some provinces of Afghanistan.

For more information on UNOSAT, see: www.unitar.org/unosat/maps.AFG

Hotline

The survey highlighted one hotline initiative progressed by a UN Agency at the country level. This hotline was established by UNMAS / MACCA in 2012 to provide a mechanism between the organisation and communities to ensure feedback and information can be shared. The hotline is a dedicated line, managed through the agency radio room, which is manned 24 hours a day. Radio room staff are trained to collect and record information received via the hotline. Call information is recorded on a database and is shared with the relevant regional offices for follow-up action.

Call Centre

A second example of a country-led initiative is the UN OCHA call centre which was launched as a pilot in 2015. Based in Kabul, using proactive beneficiary outreach, the call centre collects feedback from across Afghanistan using structured telephone interviews which are conducted by a dedicated operator. Data from the calls is captured using KoBo Toolbox¹, a free-to-use data platform that enables OCHA personnel to aggregate the information received.

Responses to the RMU survey highlighted a trend towards the operationalisation of handsets such as mobile phones, tablets or GPS equipment to collect data from the field. Depending on the operator, these handsets are reportedly used either for the collection of photographic and GPS information, or contain structured pre-programmed questionnaires to be used by monitors.

Among those agencies who are deploying handsets, a number of 'owner/ operator' models have been adopted. In one case, a UN agency owns and operates handsets used to collect data, whereas two other UN agencies provide or are planning to provide agency-owned equipment to be operated by NGO partners or Third Party Monitors (TPM). In a further example, one agency reported that a TPM had been engaged to provide handsets to community monitors it had recruited in order to collect data on its' behalf. A separate agency highlighted that the distribution of equipment to enable a similar type of community-based monitoring was also being considered, but had not yet been implemented.

What Types of Data are being Collected?

Whilst basic mobile handsets typically enable only voice calls and SMS exchange, so-called 'Smart Devices', such as more advanced mobile phones and tablets offer the potential to capture a range of data types, including geographic data, multimedia data (such as photos or video recordings), and in some cases, sensor related data (such as fingerprints, vibrations or bar code readers). With the adoption of methods that enable the collection of larger amounts of different types of electronic data (both quantitative and qualitative) comes a need to be able to effectively collate, structure and analyse it. As such, the evolution in technology for data collection has been accompanied by parallel developments in supporting software and data

platforms. While several respondents to the survey indicated that they continued to use Excel spreadsheets as a means of aggregating data, others have moved towards the use of customised data platforms to which data is transmitted directly from devices. Such platforms may be owned by agencies at a national or Headquarters level, can be provided at cost by TPM companies, or are offered free of charge through academic and/or corporate partnerships. Findings from the survey indicate that agencies are typically using a combination of two or more ways in which to collate M&E data. Excel was the most commonly identified means by which M&E data is collated (typically on a by-project basis), with five respondents indicating that they used Excel, or a combination of Excel plus other means to capture data. Notably, of these five only one agency reported being reliant solely upon Excel to serve this purpose.

The next most commonly identified means of collating data, as reported by four respondents was the use of an agency database established at the country level. A further three agencies indicated that a global database was one of the tools they use to aggregate data, with a fourth respondent anticipating the roll-out of a global database in the coming year. In addition to these 'in-house' approaches, three agencies stated that they used a data platform provided by a TPM (which in one case was customised by the agency). It appears that the use of multiple approaches by single agencies to enable data collation is likely reflective of the different reporting requirements placed on agencies, and the fact that in a number of instances, trials or pilots of new approaches are currently being implemented. The text box below highlights how some agencies are proactively addressing the need to enhance data aggregation capabilities in a cost-effective manner.

UN Partnerships supporting development of free-to-use Data Platforms

As technology and data management systems evolve, UN agencies - in partnership with academia, the Donor community, NGOs and other actors - are playing a leading role in global initiatives to develop and use customizable and free-to-use data platforms designed for humanitarian and development actors.

One example is the development of the UNICEF-sponsored Rapidpro, an open source platform which allows users to build mobile-based applications from anywhere in the world. Rapidpro is being used in a number of countries to support activities ranging from the Ebola response in Liberia and Education tracking in Zambia, to WASH kit distribution evaluation on Pakistan.

Rapidpro has also been deployed by UNICEF on a pilot basis in Afghanistan to track education indicators ('Edu trac') and polio cases ('Polio trac')*.

A further example is the KoBo Toolbox suite of data collection, mapping and analysis tools, which was designed and launched with the support of UNOCHA. Like Rapidpro, KoBo is a free, open source tool which allows users to customize it to meet their requirements.

KoBo has been used by OCHA in support of multi-cluster assessments in the Central African Republic, by UNDP in Democratic Republic of Congo to conduct monitoring of judicial services, and by USAID to evaluate a water access project in Brazil. KoBo Toolbox is currently also being used by OCHA in Afghanistan in support of project monitoring.

Further information regarding both Rapidpro and Kobo Toolbox is located at **Annex A**.

Data and Mapping

The ability to not only aggregate but also to geographically map and visualise data of different types was highlighted as a desirable and useful capability by survey respondents. Tools being utilised specifically to enable mapping activities include the free to use Google Earth, and the commercially provided subscription-based specialist ArcGIS mapping and analytics tool. Although already being used by one agency, and recognised by a second agency as having the potential to be highly effective, the cost associated with subscribing to the ArcGIS service was highlighted as a prohibitive factor⁶. The RMU notes that agencies seeking less costly alternatives to specialist mapping services may benefit from the mapping functionality provided in some of the free to use platforms, such as those identified in Annex A.

Why are UN agencies adopting technology?

The reasons identified by agencies for the adoption of technology to support M&E activities were many, and encompassed contextual, programmatic and institutional factors. Whilst it is acknowledged that decisions to adopt technology to support M&E may be influenced by more than one driver, of note is the fact that most agencies identified a different primary reason for initiating this approach. This is discussed below.

The RMU acknowledges that the reasons behind the choice to (or not to) deploy technology is likely reflective of the nature and scope of the work undertaken by agencies (e.g. a response-focused agency will require quick time information, and one which oversees many projects will benefit from more effective data

⁶ For more information, see:
<https://www.arcgis.com/features/plans/pricing.html>

aggregation). The range of responses is perhaps also indicative of the ad-hoc way in which approaches to technology are being driven by individual agencies. This highlights the potential benefit of the exchange of lessons and experiences between agencies at a time when new options are practices involving technology are being explored.

The table below captures the reasons identified by respondents. It is important to note that the RMU survey did not provide a set list of options. Some responding agencies identified multiple drivers. While the responses identified do not necessarily highlight any unforeseen factor behind the adoption of technology for M&E, the variety of reasons - and apparent lack of emphasis on access and security challenges - is somewhat surprising.

The use of technology to support M&E is often identified as an effective means by which to collect data in areas where access is limited, thus reducing the need for physical presence⁷. This may be explained by the fact that the need to find ways to address access and security challenges are an unspoken assumption.

It may also be explained by the survey responses, where security concerns in particular were identified not only as a *driver of*, but also as a *constraint on* the adoption and deployment of technology based approaches. This is discussed more in the relevant section.

What Challenges associated with the use of Technology exist?

Respondents to the survey were asked to identify limitations or challenges associated with the use of technology. Responses to this question can be split into two categories:

- Challenges which prevent the adoption of technology, and;
- Challenges encountered whilst attempting to introduce or deploying technology.

Key issues identified as barriers to the adoption of technology (such as hand-held devices and data platforms), included a lack of funding, expertise and capacity. As an illustration, one agency expressed an opinion that the use of technology was much more part of the domain of TPMs. The same agency indicated that many of its (national) staff did not have the knowledge or expertise required to use technology, further stating that those staff who did have technological capability did not have access to the necessary platforms.

The question of financing was identified by a separate agency, with the observation that it was easier to roll out globally adopted technology initiatives due to the fact that “with corporate systems, come corporate funding”. A further challenge highlighted by a third agency was an inability to adopt practices to enhance data aggregation, as a result of a lack of clarity / flexibility within existing organisational

Reason why technology adopted	Number of Agencies citing this reason
A. Ability to access Remote Locations	2
B. Ability to overcome Security Challenges	2
C. Institutional Drivers (audit, minimum standards)	2
D. Enhanced Oversight of Projects / Programmes	2
E. Ability to collect and process large volumes of Data	1
F. Cost Effectiveness of approach	1
G. Accuracy of data collected	1
H. Speed of receiving information	1

⁷ ‘World Humanitarian Data and Trends 201’, OCHA (2014)

Information, Communication and Technology (ICT) policies. Combined, the issues identified by respondents do increase the challenges of attempting to adopt technology.

However, given the availability of free and easy to use software, and the decreasing costs of hardware, the cost factor need not preclude the adoption of technology where it is deemed to have potential benefit. Indeed one of the agencies responding to the survey indicated that because of exactly these factors, it had opted to develop a customised data management system hosted on a free platform.

The same agency indicated that this had been achieved in less than one week, using only personnel from the country office. As such it may be that perceptions of the potential technical challenges held by some are not necessarily reflective of the reality of the evolving technological landscape. Furthermore, the need to ensure that institutional polices evolve to enable and support such innovation is key.

On the question of barriers to the deployment of technology based approaches, key issues identified included: a need to train frontline staff to use technology; concerns about the safety and security of personnel using handsets on the ground; high levels of staff turnover, and; poor internet connectivity in some areas.

“Perceptions of the potential technical challenges held by some are not necessarily reflective of the reality of the evolving technological landscape”

The table below provides an overview of the distribution of concerns by responding agencies⁸. Two recurrent themes emerged as being barriers to the deployment of technology – Security and Lack of Knowledge.

The first recurrent theme concerned the security of monitoring personnel, which is a concern which arguably exists regardless of whether technology is being deployed or not. Furthermore, security issues specifically associated with the use of handsets encompassed two separate but interrelated issues:

- Concern that individuals using handsets in less secure and more remote provinces could potentially be accused of being ‘spies’, and thus subject to heightened levels of personal risk; and

Barriers to Adoption / Deployment of Technology	Number of Agencies citing this reason
I. Lack of Knowledge / Skilled Personnel	4
J. Security Concerns (for personnel)	3
K. Expense / Lack of Funding	2
L. High levels of Staff Turnover	2
M. Ongoing need to Train Community Monitors	1
N. Lack of Connectivity	1
O. Institutional Policies (internal)	1
P. Regulatory Issues (external)	1
Q. Technology perceived as Not Useful / Relevant	1

⁸ Please note, some agencies cited more than one reason, which is reflected in the total figures

- Awareness of the need to respect cultural beliefs that women should not be photographed. Regardless of intent, for any outsider seen to be working with a handset can result in risks to personal security.

What is not clear from the survey is whether there is a correlation between the level of risk faced by those conducting monitoring in insecure or remote areas, and a high turnover of personnel, which was reported by three agencies. This is an area which may merit further exploration.

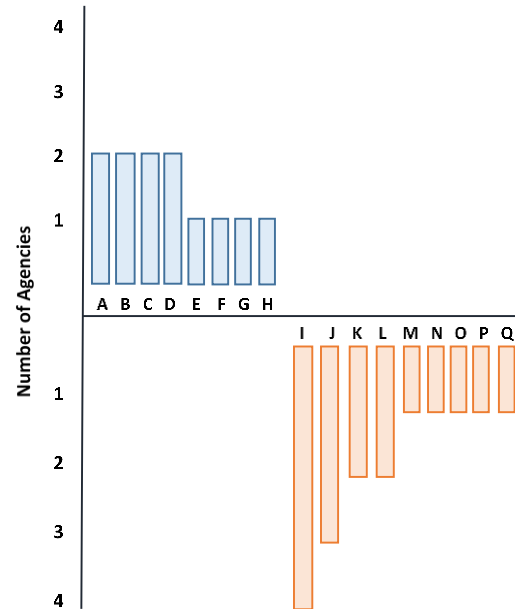
The second theme related to the lack of knowledge among personnel, also encompassed a need for ongoing training to ensure familiarity with handheld devices and supporting data platforms. This was an issue that was identified not only for those personnel directly employed by agencies, but also those personnel who were recruited either as TPMs or by TPM companies.

Acknowledging some of the broader challenges posed by illiteracy – many of which can be overcome through training, the use of translators, or the simplification of surveys (such as the use of symbols, logos and pictures) efforts are ongoing to improve monitoring capacity and capability within Afghanistan.

One such initiative, focusing on developing capacity, is the Afghanistan Monitoring Accreditation Scheme (AMAS) which is currently under development by the RMU and supported by the Collaborative Monitoring Working Group⁹. Designed in recognition of the need to ensure that monitoring can be undertaken in a professional and reliable manner, this scheme will offer tailored training on monitoring (including the use of technology) to selected Afghan nationals in a number of provinces,

⁹ The Collaborative Monitoring Working Group (CMWG) is a dedicated multilateral forum in Afghanistan, which works to deliver practical solutions to common monitoring challenges. For more please visit: www.collaborativemonitoring.com

Reasons for Adoption Deployment of Tech vs. Barriers to Adoption /Deployment of Technology



delivered using both on-line and in-person methods.

Challenges with respect to connectivity were also identified by one respondent. When considering this, it is worthwhile noting that this is not necessarily an issue which is an impediment to all types of electronic data collection. Many hand held devices are now enabled to capture data offline, and to store this until such point as data can be transmitted or uploaded¹⁰.

Such an approach may delay the receipt of information until connectivity is available, however other benefits of electronic data capture and upload remain. The ability to capture and transmit data electronically also negates the potential risk of loss of information which damage to or loss of paper-based data can pose. Of interest is the fact that in addition to internal policy challenges, one agency highlighted the existing regulatory framework in Afghanistan as

¹⁰ For an example, see: <http://www.intrac.org/data/files/resources/775/ONTRAC-55-New-technologies-in-monitoring-and-evaluation.pdf>

being a barrier to the deployment and effective use of technology. This was mentioned with particular regard to the use of mass SMS, and crowdsourcing information.

The challenge of the capacity of some elements of the existing regulatory system were also highlighted in a World Bank report which emphasised that existing Afghan telecommunications law focuses on technical elements of regulation, and does not, in its' current form, cover areas such as content and services¹¹. Specific gaps identified included an absence of regulatory provision applicable to mobile applications and to software providers.

While this report does not intend to examine the legal framework which governs this area, it is noted that a revised ICT law intended to address some of these gaps, has reportedly been drafted and will be reviewed by the Ministry of Justice in the coming months¹². As such, it may be the case that some of the challenges currently being encountered may become less of an impediment to progress in the near future.

What are the Benefits of Using Technology?

Challenges aside, more than half of the responding agencies involved in using technology for M&E purposes identified one of the key benefits of its' use as enhanced management and

oversight of projects and programmes. Other main benefits identified by respondents related to the improved ability of agencies to rapidly collect, aggregate and process data in way that resulted in improved accuracy and ability to analyse results.

Of note is the fact that there was a general correlation between those factors identified by agencies as drivers for and as benefits of the adoption of technology. Interestingly, one factor was highlighted by two agencies as an unintended benefit of the adoption of technology – a reduced data entry burden on agency personnel. The table below reflects the responses received¹³.

Outside of the survey, the RMU became aware of some additional but noteworthy practical additional benefits of using mobile technologies which was highlighted by monitors using mobile devices for field surveys in Africa. Monitors reported finding mobile devices lighter and easier to carry than cumbersome reams of paper forms, which enabled them to interact less formally, and build better rapport with the people they were interviewing¹⁴.

Benefits using Technology for M&E has delivered	Number of Agencies citing this reason
Better Oversight / Support to Management	4
Ability to Aggregate Data easily	2
Reduced Data Entry burden	2
Speed of receiving information	2
Easier to identify Lessons	1
Ability to access Remote Locations	1
Enhanced Accuracy of Data collected	1

¹¹ 'Developing a Mobile Applications Sector in Afghanistan: A Feasibility Assessment', InfoDev, World Bank, (2014)

¹² http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/S DN/2015/06/29/090224b082f9fbc9/1_0/Rendered/PDF/Afghanist an0000Report000Sequence008.pdf

¹³ Note that some agencies cited more than one benefit – this is reflected in the total numbers

¹⁴ For more information, see: <http://www.intrac.org/data/files/resources/775/ONTRAC-55-New-technologies-in-monitoring-and-evaluation.pdf>

Costs associated with using Technology

The survey included questions to agencies regarding the cost associated with the use of developing and implementing technology based approaches for M&E. While some respondents opted not to answer this section of the survey, those responses that were received reflected the different 'owner/operator' models adopted by agencies, with different models incurring different levels and types of cost. As a result no direct comparisons between approaches can be drawn, and no exact extrapolation of actual costs can be provided. However, the following figures provide a sense of the level of costs associated with different elements.

For those agencies who had undertaken to develop their own data platform at a country level, the cost of doing so was reported to be between USD 10,000 and USD 30,000¹⁵. Annual maintenance fees for such platforms was reported to be at a cost of around USD 3,000. Within the limited financial information received, the cost of procuring and operating handsets (e.g. smart phones) linked to such platforms was identified as being approximately USD 126 per handset per year¹⁶. Those agencies using internal global data platforms or databases reported that this was, as would reasonably be expected, free of cost.

A wide range of mobile phones are available on the market, and the evolution in smart phone technology has driven competition. Prices for smart phone handsets vary widely depending upon the make, model, functionality, durability and number of units to be purchased. They are also becoming progressively cheaper. For example, a basic smartphone can cost as little as USD 40.00 per unit¹⁷ As such, and given that there

is a range of equipment that is potentially affordable, reliable, and fit-for-purpose, equipment costs need not be an inhibiting factor.

For those agencies to which no organisation-wide database is available, the option of making use of a free-to-use platform may be a worthwhile consideration. At a global level, the UN and others have provided funding to not-for-profits to develop and operate such platforms, with the intention that these can be used by humanitarian and development actors to enable and enhance data collection practices at no cost.

Initial feedback from one UN agency currently using this approach in Afghanistan suggests such tools can be effectively and successfully operationalised, with a relatively small outlay for data collection equipment, and also by relying only on in-house expertise. However, given that most agencies who are deploying technology in support of M&E report that they are in the early stages of trialing or rolling this out, it is somewhat difficult to extrapolate the nature of the relationship between the cost of any investment in or deployment of such means, and the medium to long term effectiveness of such approaches.

What appears to be the case, is that those agencies who have made some investment (either time or financial outlay), are initially indicating that such initiatives have already demonstrated the potential to provide exponential benefits to their projects and programs.

To illustrate the apparent balance between cost and effectiveness where technology has been deployed, the chart below provides an indicative visualisation of the three main means of data

¹⁵ This figure based on reporting by three separate agencies

¹⁶ This figure based on reporting by one agency.

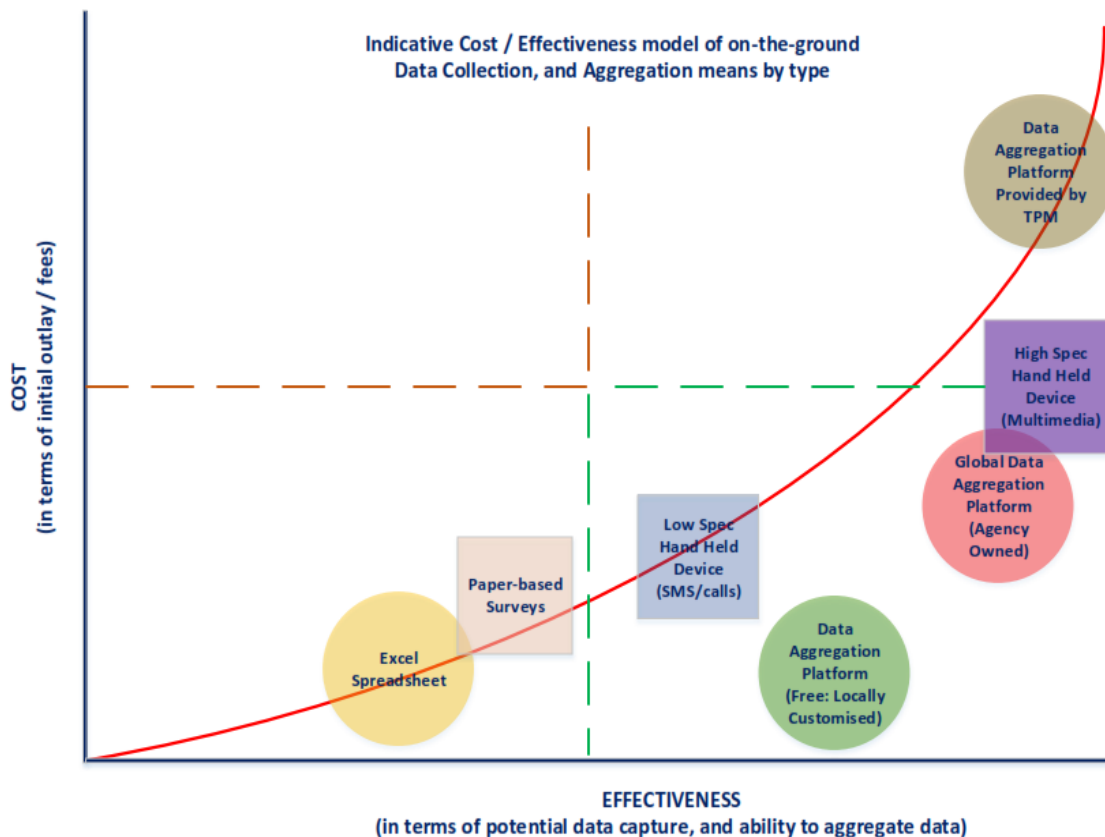
¹⁷ Please see:

<http://www.mysmartprice.com/mobile/pricelist/adcom-mobile-price-list-in-india.html#subcategory=mobile&property=200088-200563>

collection and the three main means of data aggregation identified by survey respondents. For purposes of the graph, 'cost' is defined in terms of initial outlay (such as equipment purchase, or survey / platform design and build), whereas 'effectiveness' is defined in terms of ability to collect accurate a variety of data, and the ability to aggregate and analyse it. It is acknowledged that those agencies who have access to and use global agency-owned platforms may do so at no cost, but highlights that costs for the establishment of any such platform have typically been absorbed at a headquarters level. The difference in the effectiveness of data aggregation between the (free) locally customised platform and that provided by the TPM is reflective of the fact that some limitations in the analytics capability of the free platform were identified by a survey respondent as a minor constraint on effectiveness.

Not reflected in the below graph is consideration of man hours (e.g. human efficiency) in terms of operability of each approach. This factor may vary according to the way in which the means by which to collect data is used or distributed (e.g. in person using surveys or handsets, or handsets distributed to and held within community), and the means by which data is returned (e.g. data is electronically transmitted directly to a platform or requires manual transcription).

Whilst the survey did not explore the number of work hours associated with the adoption of technology based approaches, survey findings indicate that economies in time may have been achieved through reducing the burden of data input and cross-checking on agency personnel, as well as increasing the efficiency of analytics and reporting. Efficiency was specifically highlighted by one respondent as being a clear benefit of using technological means to collect and transmit data.



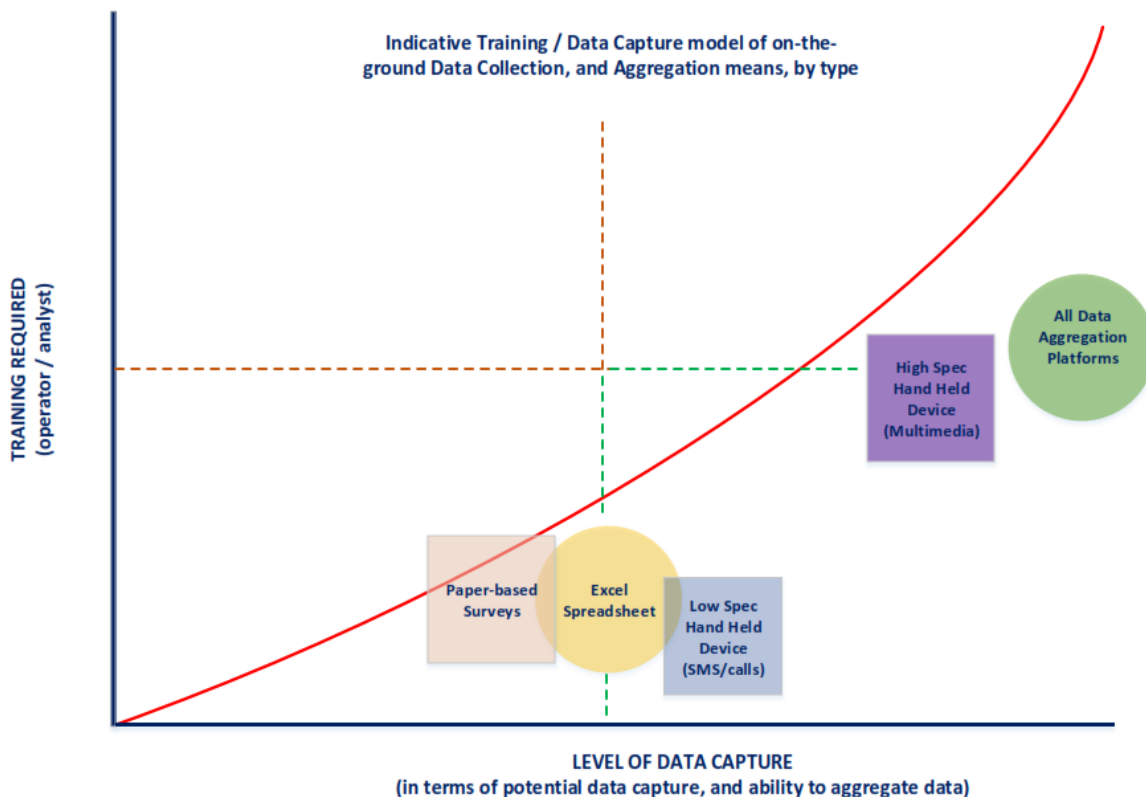
As has been highlighted, the need to provide training to users was highlighted as a significant consideration when it comes to the adoption of technologies. The chart below offers an illustrative examination of the training requirement against the reported benefit that using technological means delivers in terms of the ability to capture and efficiently aggregate data.

While the need for training to ensure effective results is clear, survey responses and research indicate that new technologies – especially applications intended to support those working in the field - are being designed to be more iterative, and more user-friendly. Where adopted, these technologies reportedly enable the capture and delivery of more types of data, and data which is of a higher quality. Although survey respondents who were using or introducing technologies consistently indicated a need for ongoing training, none of them had either abandoned the use of technology or found

it too onerous to use. In fact, each of the agencies who had already adopted or rolled out technology indicated a willingness to expand its' use if possible. As such, the perception of technology as being 'too difficult' to adopt or operate, appears to be one which is in practice, rapidly being proven to be outdated.

Government and Technology

Although the survey primarily focused on how UN agencies are using technology to support M&E, agencies were also asked to identify any major initiatives being pursued by the Government of the Islamic Republic of Afghanistan (GIROA) in this area. One respondent indicated that one of the Government Ministries with which it was engaged had expressed great interest in the use of mobile data collection technology, and that as a result, the Ministry will be participating in training provided by the agency during 2016. Additionally, the Afghanistan Reconstruction Trust Fund (ARTF) was identified as another area in which



Government is being exposed to the use of technology for monitoring on a range of projects, such as rural rehabilitation, education and irrigation.

Within the ARTF programme, monitoring approaches include the collection of voice, SMS and electronic data. Data is aggregated on dedicated data platforms and interfaces which are owned and operated by a TPM but to which at least one government ministry has direct access for monitoring reporting and evaluation purposes¹⁸¹⁹. This type of monitoring is supplemented on an ad-hoc basis by project specific monitoring and limited community based monitoring.

In a (largely positive) 2014 review of monitoring of the ARTF programme, the need to build capacity was observed. This related not only to end users, but also to engineers and those responsible for back-up and maintenance. It also highlighted the need to address practical challenges associated with the transferability of technologies and the operation of physical systems including technical requirements and running costs²⁰.

These findings reflect the ongoing need for the UN and international community to support the development and adoption of technologies and data management infrastructure, and to find fit-for-purpose solutions which are sustainable and can be readily absorbed by national stakeholders.

Such an approach is consistent with the emphasis on promoting, supporting, and enabling

technological innovation highlighted in the 2015-2030 Sustainable Development Goals.

As such, the ability to identify and adopt technological approaches which are appropriate, proportionate and which can contribute to building skills and capacity both in the field and within Government has the potential to enhance not only the amount and type of data available, but to help ensure that data supports the future development of Afghanistan.

¹⁸ For more information, see:
http://www.artf.af/images/uploads/M__E.pdf

¹⁹ For more information, see:
http://www.artf.af/images/uploads/ARTF_Supervisory_Agent_Review_FINAL_March_2014.pdf

²⁰ For more information, see: For more information, see:
http://www.artf.af/images/uploads/ARTF_Supervisory_Agent_Review_FINAL_March_2014.pdf

Section Two: Beyond the Survey – Technology and Innovation in the Field

Responses to the RMU survey suggest that the level of awareness, understanding of, and appetite for the integration of technology-based approaches into the work of UN agencies for the purpose of M&E varies widely. The reasons for this include organisational appetites, the availability of time and resource to explore new options, and personal attitudes to the changing environment.

In some cases, a further factor also appears to be the gap between the understanding of what technologies are available and how technological developments might contribute to work being undertaken by the UN and its' partners in Afghanistan.

As a means of seeking to highlight what is possible – and with limited resources – this section will briefly highlight additional examples of practical ways in which technology has been deployed in support of monitoring and other activities in Afghanistan, as well as in other like environments, both by the UN and other actors.

The many ways in which similar technologies, typically using a combination of mobile handsets, dedicated apps, and data platforms, have been or are being applied to a range of non-emergency and disaster response situations is reflective of the potential opportunities that exist.

The progress in this area reflects that fact that innovations need not necessarily rely on 'new technology' but can instead emerge from rethinking approaches to challenges, and applying or adapting existing tools or equipment to help address them²¹.

²¹ For more information, see 'Innovations in International Humanitarian Action, ALNAP, <http://www.alnap.org/pool/files/8rhach3.pdf>

²² Digital Dividends', World Development Report, World Bank, 2016

Innovation

"Innovations are dynamic processes which focus on the creation and implementation of new or improved products and services, processes, positions and paradigms. Successful innovations are those that result in improvements in efficiency, effectiveness, quality or social outcomes / impacts"



Humanitarian Innovation Fund

Other Technology at Work in Afghanistan

In an example of how technology can be applied in a 'low capacity' setting to replace more intensive approaches, USAID sponsored a pilot scheme which used photographic monitoring to capture vote tallies at individual polling centres in Afghanistan 2010²². These images were then used to enable comparison of the tallies with aggregated totals posted by the Afghan Election Commission²³.

The scheme, which was implemented at 238 polling centres by monitors using smart phones reportedly resulted in a significant reduction in both the number of stolen or spoiled ballot papers, and the number of votes cast for powerful candidates²⁴. It also contributed to the detection of vote fraud during the aggregation process.

A further means by which technology was harnessed to effect monitoring of elections was under the 'Alive in Afghanistan' project. In 2014, this project made use of the open source

²³ <https://www.povertyactionlab.org/evaluation/election-fraud-and-government-legitimacy-afghanistan>

²⁴ http://epod.cid.harvard.edu/files/epod/files/american_economic_review_vol_105_no_1_called_2015.pdf

Ushahidi²⁵ crowdsourcing mapping platform, which was combined with the Afghan SMS social networking company, Paywast²⁶ to gather, aggregate and publish real time data from across the country²⁷. The platform enabled the collection of a range of information from contributors including: whether or not observers were present; whether intimidation was encountered; verification of police presence, and; whether fraud was being alleged.

Importantly,, one of the challenges associated with the use of polling and crowdsourcing in a context such as Afghanistan is the potential for results to be skewed, due to the fact that those whose views are likely to be sampled tend to originate from areas that are more secure (i.e. Kabul), rather than those where government has less control²⁸.

It also appears in this particular example that the aforementioned regulatory obstacles highlighted by one UN agency, may have been overcome due to the fact that SMS were being received as opposed to being sent in bulk.

Other ways in which technology has been utilised in Afghanistan - whilst not in each instance for the specific purpose of M&E - suggests the potential for broader applicability and use of technologies in Afghanistan, and include real-time price monitoring and educational support projects.

For example, the 'Ustad Mobile' application ('app') launched in April 2013 by the United Nations Assistance Mission in Afghanistan (UNAMA) Police Advisory Unit, is designed to

complement the adult literacy curriculum of the Ministry of Education. This app promotes literacy among female Afghan police officers whose ability to attend in-person classes may be limited²⁹. Around 200 policewomen from 11 provinces were provided with handsets onto which the mobile learning app was loaded³⁰. Benefits identified by those using the app included increasing literacy and higher levels of personal confidence and self-assurance³¹.

Another example is the 'Malomat' service, operated by Roshan, an Afghan telecommunications provider. Launched in 2010 with the support of USAID and Mercy Corps, Malomat provides farmers and traders in 13 provinces with real-time commodity information using either SMS or Interactive Voice Response (IVR) technology³².

At a national level, GIRA with the support of the World Bank is seeking to promote citizen innovation in the field of technology. In 2013, it launched the DEWAE (Innovation Beacon) programme, aimed at stimulating innovation in the fields of mobile technology, applications and ICT to strengthen both government services and the ICT sector within the country³³.

DEWAE encourages the submission of innovative ideas by citizens, with the incentive of financial grants for successful submissions³⁴. Specific areas where DEWAE has sought submissions include the enhancement of public sector service delivery through the adoption of technology, and

²⁵ For more information, see: <https://www.ushahidi.com/>

²⁶ For more information, see: <http://paywast.af/>

²⁷ For more information, see: <http://www.internews.org/mapping-election-coverage-afghanistan>

²⁸ 'Effective Monitoring and Evaluation in Conflict-Affected Environments: Afghanistan Post 2014', USIP (2014)

²⁹ For more information, see:

<http://unama.unmissions.org/afghan-female-police-improve-literacy-through-mobile-phone-programme>

³⁰ For more information on Ustad Mobile, see:

<https://www.ustadmobile.com/case-studies/>

³¹ For more information, see:

<http://www.un.org/apps/news/story.asp?NewsID=47917#.VsVVTk1ukdV>

³² For more information, see:

http://www.roshan.af/roshan/Roshan_Community/Work/Communities/Malomat.aspx

³³ For more information, see:

<http://reliefweb.int/report/afghanistan/harnessing-technology-promote-afghan-development-and-governance-goals>

³⁴ For more information, see: <http://dewae.mcit.gov.af/en>

the development of mobile applications which address social and economic problems³⁵.

Previous areas on which DEWAE has focused have included: using technology to report mismanagement to municipalities; circulating information about disasters to affected areas, and; improving youth employment prospects, protection and empowerment³⁶.

This reflects not only the potential for actors in Afghanistan to learn from the private sector, but also to benefit from the DEWAE approach, and use the ideas of the Afghan people to address Afghan problems.

And Further Afield

Outside Afghanistan, a range of approaches involving the use of technology to support activities, including M&E are being tested or introduced by UN agencies and others.

- In DRC, Somalia, and Yemen WFP has trialed a mobile Vulnerability Analysis and Mapping (mVAM) project³⁷ which pilots the use of mobile technology and voice based surveys to monitor food access and consumption. This is enabled through the free-to-use InSTEDD hosted Verboice system (see Annex A)³⁸.
- In Jordan, UNHCR has recently deployed portable biometric systems which enable iris and/or fingerprint scanning) for identification and registration of beneficiaries using portable systems³⁹. This approach has been used to support the distribution of cash assistance to Syrian refugees, and to register Myanmar refugees in Thailand⁴⁰.

³⁵ For more information, see:

<http://dewae.mcit.gov.af/en/documents>

³⁶ For more information, see:

<https://www.facebook.com/DEWAE.MCIT/?fref=ts>

³⁷ For more information, see:

<https://www.wfp.org/content/yemen-mvam-monitoring>

Case Study: Lessons from the Private Sector

The following Roshan/M-Paisa case study highlights some key issues and challenges facing the private sector, which are also experienced by UN agencies.

In 2008, Afghan telecommunications company Roshan launched the M-Paisa service, (based on a model first launched in Kenya) to facilitate the transfer and payment of monies using mobile phone technology. Marketed as the 'Hawala on your Mobile', M-Paisa utilises a combination of SMS, and Interactive Voice Response (IVR). To overcome barriers created by customer illiteracy and language constraints, the IVR now operates in three languages.

To address capacity challenges which had slowed the initial expansion of the service, Roshan developed a rolling programme of dedicated M-Paisa training to promote knowledge transfer to vendors at outlets around the country. This training, which is delivered in-person by Roshan personnel, includes an anti-fraud component. This provides enhanced assurance, and helps Roshan to comply with regulatory requirements.

As a means of expanding the operation geographically in what is a non-traditional retail environment, the M-Paisa distribution network includes licensed retailers, non-traditional outlets (e.g. barbers and salons), village elders, women and micro- entrepreneurs.

Roshan also established a call centre for the specific purpose of handling M-Paisa enquiries raised by agents and customers. As of 2014, the M-Paisa service was reported to have over 33,000 distribution agents and 1.2 million subscribers nationwide.

For more information, please see:

<http://www.ifc.org/wps/wcm/connect/cad6888049585efe9e8abf19583b6d16/Tool%2B6.9.%2BCase%2BStudy%2B-%2BM-Paisa%2BAfghanistan.pdf?MOD=AJPERES>

³⁸ For more information, see:

<http://documents.wfp.org/stellent/groups/public/documents/ena/wfp267100.pdf>

³⁹ For more information, see:

<http://www.unhcr.org/550c304c9.pdf>

⁴⁰ For more information, see:

<http://www.biometricupdate.com/201506/unhcrs-biometrics-solution-helping-myanmar-refugees-in-thailand>

- In Pakistan, USAID established a call centre, which is operated by Transparency International (TI) on its' behalf. While initially intended to receive calls regarding fraud or complaints about USAID funded projects, the centre also began receiving calls relating to other Donor-funded projects. As a result, TI now disseminates fraud reporting and complaints (received both by telephone and email) directly to the respective project sponsor (Donors, the UN and NGOs). Copies are also sent to the USAID Office of the Inspector General (OIG), and to the relevant public authorities⁴¹.
- In 2014, a similar project, known as 'Phones Against Corruption' which was supported by UNDP and other partners was introduced in Papua New Guinea⁴². Rather than using an interactive call centre, this system uses only SMS.
- In Somalia, UN OCHA makes use of an OCHA operated call centre to determine whether beneficiaries of the Common Humanitarian Fund (CHF) are satisfied with projects intended to benefit them⁴³.

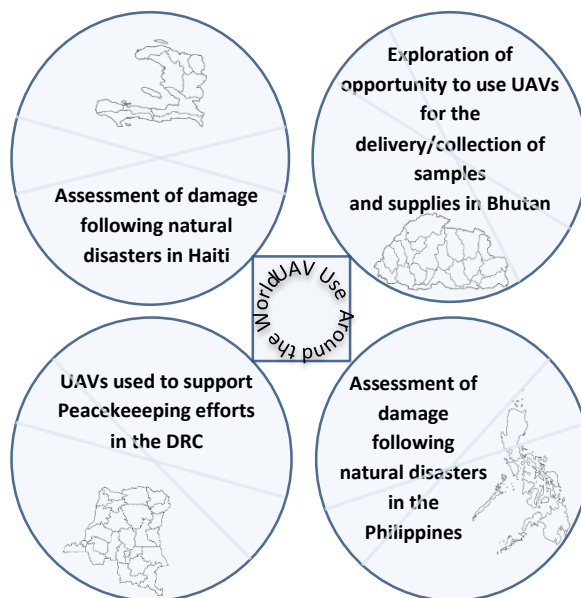
A further area in which significant technological process continues to be made is in the area of Unmanned Aerial Vehicles (UAVs), and in which these have been deployed in support of humanitarian and development operations. In addition to widely publicised Security Council decision to approve the use of unmanned drones by UN peacekeepers in DRC in 2013, UN agencies operating in a number of countries have deployed smaller system UAVs - typically in support of disaster response activities. ⁴⁴.

⁴¹ For more information, see: <https://www.anti-fraudhotline.com/>

⁴² For more information, see: <http://www.asia-pacific.undp.org/content/rbap/en/home/ourwork/development-impact/innovation/projects/png-phone-against-corruption.html>

⁴³ For more information, see: <https://docs.unocha.org/sites/dms/Documents/2014%20Somalia%20CHF%20ANNUAL%20Report.pdf>

Examples of UAV Use in Support of UN Activities



Although some benefits have been observed following the deployment of UAVs, a number of regulatory, ethical and operational questions regarding their potential efficacy remain. The potential for use of UAVs in Afghanistan for such purposes is likely to remain limited, not least because of the military connotations associated with them. As was highlighted in a recent OCHA paper:

“until UAVs are much more established in general civilian use, the risks of humanitarians using UAVS particularly in conflict settings are greater than the benefits”⁴⁵.

The above examples represent only a small sample of initiatives involving available technologies to gather and/or manage data that are being or have been implemented. It is though observed that with some adaptation (and with the likely exception of UAVs), similar approaches could if required, be deployed in support of the

⁴⁴ <http://www.independent.co.uk/news/world/asia/unmanned-quadcopters-could-deliver-medicine-in-bhutan-9660292.html>

⁴⁵ 'Unmanned Aerial Vehicles in Humanitarian Response' OCHA Occasional Policy Paper Pg. 14, (2014) <https://docs.unocha.org/sites/dms/Documents/Unmanned%20Aerial%20Vehicles%20in%20Humanitarian%20Response%20OCHA%20July%202014.pdf>

work of UN agencies (and others) working in Afghanistan.

This report has highlighted that as capabilities to collect data, both in terms of volume and data type improve, so too does the potential for accurate and previously unavailable data to inform policy and programming decisions.

This is particularly the case where physical access to certain areas is limited. However, in addition to the ethical questions regarding mass collection of such data, it is also important to ensure that the collection, storage and security of such data is properly governed. Achieving a balance between using data effectively, and ensuring appropriate and balanced levels of data protection, access and privacy is a critical element of this. This is necessary at an individual, organisational and governmental level.

Privacy issues related to data collection and storage have been highlighted as a priority area in a number of recent high level reports⁴⁶. There is a recognised need to project a clear sense of purpose, transparency and accountability when it comes to the collection and communication of data. There is also a critical need to gain the trust of those whose lives, habitats and infrastructure are being examined. Adherence to such principles and methods also helps to ensure the safety of those who are working in the field.

Innovation and the UN

In recent years a number of initiatives have been established with the purpose of nurturing ideas and innovation to address problems and challenges by those operating in the humanitarian sectors, and to support communities in developing nations. The text box on the following page highlights some examples of such innovation initiatives- particularly those which exist within the UN system, and provides

an outline of the types of activities they are supporting⁴⁷.

The number of Innovation funds, hubs, labs and initiatives identified (and this is by no means exhaustive) clearly indicates that this is a growth area, and one which is delivering results for both beneficiaries and those who provide assistance. It also illustrates the ways in which partnerships between humanitarian and development actors, academia and the private sector can significantly contribute to the rapid development of scalable solutions to challenging problems.

What is less clear, and potentially of some concern is the potential for duplication, and apparent lack of in-built lesson sharing across the various silos in which these labs and hubs exist. Whilst there are inevitably contextual and programmatic differences in different countries, and in the way that UN agencies operate, the ability to benefit from and adapt ideas undertaken elsewhere should be a key component of effective and efficient innovation.

⁴⁶ Human Development Report 2015: Work for Human Development, UNDP (2015)

⁴⁷ This is not intended as an exhaustive list. Additional Innovation initiatives have been established by WFP (<http://www.wfp.org/innovation>), UNWOMEN (<http://unwomeninnovation.tumblr.com/>),

Innovation in Progress

Humanitarian Innovation Fund

The Humanitarian Innovation Fund (HIF) is a USAID/DfID funded project which seeks to support innovation in the Humanitarian sector, through the provision of funding and grants to support the development and realization of ideas which can be scaled to meet challenges within the sector. Grants are available to INGOs, Public and Governmental Organisations, Research institutes and private companies. Projects funded by the HIF cover a broad range of areas including: mobile technology projects in Africa, a manufacturing project in Haiti, a drone project in Nepal, and a global translation project.

For more information, see: <http://www.elrha.org/hif/home>

UNICEF Innovation

UNICEF Innovation, which comprises of dedicated units and laboratories around the world, which in collaboration with academia, the private sector and other organisations, supports the promotion, realization and application of innovative thinking to develop approaches for the benefit of communities around the world. Projects being led by UNICEF innovation relate not only to the development of technology based approaches (such as Rapidpro and UReport), but also include digital currency, engineering and design projects, diagnostic tools, and cold-chain transportation.

For more information, see: <http://www.unicef.org/innovation>

UNDP Innovation

In 2014, UNP established an Innovation Facility, intended to support global collaboration and innovation through enhanced communication and the provision of seed funding. Technology-based innovations supported include: SMS and mobile polling in Cote D'Ivoire and in Sao Tome; working with private sector to create and roll-out an e-recycling app in China, and; providing recommendations to the Government of Mauritius for the establishment of a mobile feedback and E-learning system.

For more information, see: <http://inno4dev.org>

UNHCR Innovation

UNHCR Innovation was launched in 2012, with the purpose of exploring, amplifying and connecting innovations to enable the sharing of good practise, lessons and opportunities. UNCHR has established Innovation Labs on a thematic basis – Emergency, Learn, Link, and Energy. Innovation projects being implemented include: alternative shelter design; biometric cash transfers, and; connected learning.

For more information, see: <http://innovation.unhcr.org/about-us/>

UN Global Pulse Labs

Global Pulse was established by the UNSG to help address the challenges of Big Data and to identify opportunities for partnership and the development of innovative high impact tools. Pulse Labs have been established in the US, Africa and Asia, and are pursuing projects across a range of areas including digital M&E, advocacy monitoring, seasonal mobility analysis, and crowdsourcing food price data. For more information, see: <http://www.unglobalpulse.org/projects>

Risk and Innovation

One of the defining features of technology is the flexibility in the ways and purposes for in which it can be applied. It is important that this is reflected in the way we think about it. As has been highlighted, innovation is as much about adaptation of existing ideas as it is about the generation of new ones. Importantly, is also about understanding the implications and potential benefits and risks of innovation in specific terms, rather than in a generic fashion⁴⁸. The ability to support and create space for innovation is however not only reliant on good will and creativity, but also on the existence of policies which establish clear parameters and guidelines for innovative practice, and help to effectively understand, assess and manage risks⁴⁹.

Having acknowledged the gaps which exist, one way in which the UN has begun to address this potential duplication and lack of lesson-sharing is the establishment in 2015 of an inter-agency task force, which promotes coordination on science, technology and innovation (STI) in support of the Sustainable Development Goals⁵⁰. One of the stated goals of the team is to establish an online platform intended to map ongoing STI initiatives both inside the UN and further afield. It should be noted however, that the timescale for the establishment of this platform is as yet unclear⁵¹.

Moves by the UN, its agencies, donors and partners to increasingly explore and adopt technologies will enable better, smarter ways of operating and delivering. This will inevitably also require changes in the way that work is undertaken, as well as a willingness to learn new methods and approaches. The adoption of a proactive approach to horizon scanning at the country level, supported by a willingness to

better understand what options and solutions exist could help to ensure that agencies operating in Afghanistan are well positioned to benefit from developments. Opportunities in this field are significant, and the ability to identify potential, share experiences, and enable innovation at global, regional and country levels will be key to unlocking them.

⁴⁸ 'Innovation: Managing Risk, Not Avoiding It', UK Government office for Science (2014)

⁴⁹ 'Innovation Spaces: Transforming Humanitarian Practice in the United Nations', Refugee Studies Centre (2015)

⁵⁰ For more information, see:

<https://sustainabledevelopment.un.org/topics/technology/facilitationmechanism>

⁵¹ For more information, see:

<https://sustainabledevelopment.un.org/content/documents/8569TOR%20IATT%2026%20Oct%202015rev.pdf>

Conclusion

As this report has highlighted, many UN agencies operating in Afghanistan are on the cusp of adopting or rolling out technologies which will bring significant change to some of the ways in which they collect and aggregate data. This has the potential to enhance information obtained during the M&E process, and as a result to better understand the efficacy and impact of activities and projects. In turn, this will also inform the broader programme cycle, including planning, oversight and decision making.

The ways in which individual agencies in Afghanistan are approaching decisions regarding such changes is, (and as has been discussed), reflective of different organisational appetites, requirements and budgets. Such variables need not however prohibit the proactive exchange of ideas and lessons at the country level. Although challenges have been identified, those agencies who have initiated the use and application of newer technologies to support M&E in Afghanistan have reflected that this has been a positive development.

It is noted also that success in this area has not necessarily been contingent on significant financial outlay, but has instead been enabled through proactive exploration and use of customizable free or low-cost data management options. Such approaches enable experimentation with technology without significant financial outlay or commitment. Additional opportunities exist to overcome other potential barriers to the adoption of technologies, including the development of a dedicated training scheme for monitors, as well as options to explore the sharing of technical resources.

The fact that there are a number of embryonic approaches in existence presents a real opportunity to incorporate learning into the design and implementation phases of projects and

programmes, and to look for ways in which approaches being implemented might be adapted to maximise benefit to the UN Country Team as a whole. The exploration of the potential of technology should not be compartmentalised, but should where practical, be part of a common endeavour. Cross-pollination of new ideas and ways in which to use technology across agencies, funds and programmes will be an integral element of helping the UN to deliver not only together, but better.

What is also clear is that due to its nature, the opportunities associated with the development and application of technology extend well beyond the immediate activities of the UN. This is particularly true within a developing country such as Afghanistan. As the UN and its' partners become more technologically capable, there is a greater chance that knowledge, understanding and appreciation of the potential of such tools will transfer to partners in government, industry and civil society. As was observed by UNEG in 2014, "strong leadership by the UN is vital to make the data revolution serve sustainable development"⁵². The application of technology in support of M&E is a small but significant step towards this.

Recommendations

The following recommendations are drawn from the observations highlighted in the report. They are grouped to reflect the structure of the report, however it is recognised that interdependencies exist between many of them.

1. Training

Given that multiple agencies identified a need to provide ongoing training to enable personnel to utilise technology in support of M&E activities, it is recommended that agencies collaborate to identify common training needs, and to explore a common way

⁵² 'A World That Counts: Mobilising the Data Revolution for Sustainable Development', UNEG (2014)

in which those which are generic can be addressed. It is likely that the AMAS scheme could help to address key parts of the common requirement.

2. Data Capture

Access to and use of data platforms which enable enhanced data aggregation and analysis need not be perceived as cost prohibitive. As has been demonstrated, a number of free-to-use options exist, which have the potential to enable all agencies, including those with fewer resources, to get more from the data they collect. Where appropriate, use of such tools also demonstrates a commitment to ensuring value for money. On this basis, it is recommended that agencies who may be considering initiating the use of a data platform actively consider such tools as an alternative to more expensive outsourced options.

3. Lessons from the Private Sector and elsewhere

As has been noted, significant experience exists in the development and operationalisation of technology (particularly mobile technologies) in Afghanistan – not only within the private sector, but also within the broader community. It is recommended that the UNCT explore the possibility of engaging with such actors, in an effort to benefit from this experience.

4. Call Centre Technology

Drawing upon the lessons and best practice approaches adopted here in Afghanistan and elsewhere, it is recommended that the UNCT explores whether there may be benefit from

and appetite for a common/ joint hotline or call centre which acts as a pooled resource.

5. Innovation

a) It is recommended that the UNCT maintain a watching brief on new innovations, not only in the field of M&E, but also those which relate more broadly to the work of the UN in Afghanistan. A part of this watching brief could be the regular circulation of short papers on innovations (taking place within Afghanistan and elsewhere) and the potential applicability and benefit of these to the UNCT.

b) It is further recommended that the UNCT actively continue seek out opportunities to engage with actors in the innovation field in Afghanistan, in order to identify existing capabilities, and to benefit from potential opportunities. The DEWAE initiative is one such example.

6. Policy

a) Recognising that in at least one case, internal ICT policies have been identified as an impediment to the adoption or use of technology and enhanced data aggregation, it is recommended that problematic policy directives are reviewed, and potential amendments highlighted to organisational policy owners.

b) Finally it is recommended that an analysis of the pending Government ICT policy is undertaken, with a view to understanding any constraints or limitations this may pose on the ability of the UN and other actors to deploy mobile technologies in support of not only M&E, but also other activities.

Annex A: Examples of Data Platforms which are available free of cost

This Annex contains profiles of some of the entities which offer free access to and use of Data Platforms which have been designed to be used to collect and aggregate data from the field. This section is not intended as a comprehensive catalogue of such platforms, and should not be considered as such, neither should the inclusion of a particular entity be considered an endorsement of its' performance or capabilities. This following profiles do not capture information related partner performance related data. Any such data which agencies wish to share should be entered into the RMU Contractor Information Management System (CIMS).



Fulcrum provides an example of a technological platform that was specifically designed and developed to support digital smartphone based data collection. Fulcrum was launched in 2011 and enables clients to build customised field surveys with mapping applications, which can be loaded onto any smart device (iPad, iPhone and Android devices/tablets). Data, which may include photo capture and GPS, can be collected on-line or off-line, then synched to a central cloud-hosted service for mapping and analysis. Additional functionality included within the Fulcrum platform includes the ability to integrate existing relevant organisational data, to support analysis.

As with all third party data collection and storage platforms, ownership and security of data is an important consideration. In recognising this, Fulcrum has stated it employs a 256-bit secure

SSL data encryption and the ownership of the data remains with the client⁵³. One of the advantages of utilising a service such as Fulcrum, is the removal of paper based data collection mechanisms, and the ability to collect data off-line. While this reduces transaction time and mitigates the risk of poor data collection (quality of handwriting and/or damage to documents) it is still dependent upon access and support.



Open Data Kit (ODK) is an open-source suite of tools to support mobile data collection. ODK was initially developed as a google sponsored project in 2008 and is now directly funded / sponsored by Google. ODK's Core developers for ODK are researchers at the University of Washington's Department of Computer Science and Engineering department, who are supported by an on-line community of developers and users who are able to contribute to not only improving the product but also through providing technical support. The suite of tools provided include the ability to build custom questionnaires and forms, which can then be loaded onto an Android platform. Types of data that can be collected include text, GPS, photos, video, audio, and barcodes. As with similar technologies, data may be collected off-line. Once back in network coverage, completed forms can be copied out of the device or sent to a server for analysis. Data can be hosted by Google through an on-line data repository, which is provided free of charge. Alternatively, the data may be transferred to the users own server, ensuring data ownership and providing an additional element of data protection⁵⁴. There however some challenges

⁵³ For further information see: <http://www.fulcrumapp.com/>

⁵⁴ For further information see: <https://opendatakit.org/>

with respect to using mobile data collection tools with network/Wi-Fi data transfer modalities. This include limitations on data volumes that may be transferred via network/Wi-Fi, and network coverage limitations, which may impact upon where data transfer can occur.



RapidPro is an open source platform that was launched in 2014 as a collaborative partnership between UNICEF and the Rwandan software engineering firm Nyaruka. Rapidpro is a mobile data collection application designed to enable users to build an interactive messaging system to send and receive data using sms/text functionality⁵⁵. The development of the sms/text questionnaire process enables an organisation to send a questionnaire out via a sms/text service, which has a number of benefits as well as limitations. Benefits include real time data collection (as responses are received), reduction in physical risk (monitors do not have to be at a location for data to be collected), and simplicity (with a sms/text process there is a need to keep questionnaires succinct and logical). However, limitations may include a lack of 'face-time' with the beneficiary, increased time as each questions needs to be answered and sent via sms/text before the next one is received, and increased cost (most sms/text messages are subject to a telecommunications carrier charge). It has been noted that there are also some hosting constraints with the application of RapidPro. As the codebase changes daily, it is not recommended that an organisation hosts RapidPro on their own server⁵⁶, and instead use a third-party service provider. This then requires a separate assessment of the third-party service

⁵⁵ For further information, see: <https://community.rapidpro.io/>

⁵⁶ For further information, see: <http://rapidpro.github.io/rapidpro/docs/hosting/>

provider to ensure security of data and ownership of the information collected.



Instedd, which was founded in 2006 and which is funded by the Rockefeller Foundation and Google, is a platform containing a large number of free and open source technology tools, designed to support actors involved in providing services to vulnerable populations⁵⁷. Tools hosted on the platform include those which enable voice operated applications (Verboice), the construction of SMS based apps (mBuilder, Pollit), and data aggregation, visualisation and analytics tools (Riff, Seentags). The application of such tools ranges from creating and conducting polls via SMS, collecting feedback on a voice based platform, and conducting text based analysis of incoming data. Applications offered by InSTEDD have been designed with the purpose of enabling collaborative approaches, and as such have a stated commitment to developing technology based solutions which are usable. Any drawbacks?



Kobo Toolbox Suite, was designed with the needs of the humanitarian sector in mind, and is currently free to access and use⁵⁸. The system, which enables the creation of questionnaires for use on mobile devices, and the capture and mapping of data on a platform, offers a flexible approach to structuring data within the system. The system also offers users the ability to download aggregated data into offline formats. A particular drawback is however, an inability to sufficiently ensure the security of data held on

⁵⁷ For further information, see: <http://instedd.org/about-us/>

⁵⁸ For further information, see: <http://www.kobotoolbox.org/>

the system. Further, Kobo Suite currently does not offer the capacity to collect biometric data, which might be used to assist with beneficiary verification. Questions also remain about the extent to which data collected on such systems can be shared with for example Donors and Government, and also made available to beneficiary populations as an aid to transparency and accountability.
