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Interactive Voice Response in Humanitarian Contexts

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Question

- *What examples are there of using Interactive Voice Response (IVR) in humanitarian contexts? (including for 3rd party monitoring, accountability to affected populations etc).*

Contents

1. Overview

Interactive voice response (IVR) uses recorded messages to provide a menu of options for callers to access information and provide survey feedback. The potential advantages of IVR in humanitarian contexts include: improved reach to less literate populations, anonymity, data collection and analysis efficiency gains, and rapid response. However, users who are less familiar with technology may be excluded and there is potential for data collection inaccuracies. It is recommended that face-to-face surveys are used with IVR as a supplement (WFP, 2016; Bonino et al., 2014). When used to provide information, time must be taken for careful scripting of messages.

Experience with IVR in humanitarian contexts was found in Somalia, Afghanistan, Niger, Rwanda, DRC and Haiti. Reports were often anecdotal and formal evaluations were not identified within the scope of this report. This review found the World Food Programme's (WFP's) mobile Vulnerability Analysis and Mapping project the most widely cited experience in this area. Their experience suggests that IVR is better for sharing than collecting information. It is also recommended that users are contacted in person to test and prepare them for the IVR process.

2. Background

IVR is a technology which uses a recorded script for users to follow via telephone with automated options entered on touchphone keypads (Corkey & Parkinson, 2002).

The two main functions in humanitarian contexts are for surveys and complaints (Desie & Ismail, 2017). One of the key advantages to IVR in humanitarian and development contexts is that IVR is able to reach less literate populations who would not be able to respond to a written survey. It is also beneficial for communities with a strong tradition of passing on information orally. It makes anonymity easy so people may feel more comfortable in reporting sensitive information. There are speed and potential efficiency gains. Automation of data collection where a numbered option has been chosen streamlines data gathering allowing real-time analysis (Költzow, 2013). Foley (2017) reports estimates of US$20-40 per questionnaire for traditional implemented in person, and taking around 6 weeks. SMS costs around US$5-6 per response with a one-week turnaround and IVR US$7-9 per questionnaire with a two-week turnaround. It also has the advantage of being available at all hours of the day (mVAM, 2018).

Disadvantages include high network call costs and problems of reaching users who are unfamiliar with technology, particularly older members of the population.

A Center for Global Communication Studies (CGCS) literature review (Marchant, 2016) on IVR and radio for peacebuilding found only a few studies mentioning the use of IVR for recovery from violence and peace negotiation. The author notes lack of research on how practitioners and users in humanitarian contexts are implementing IVRs. Much of the literature identified for this report is 'grey' and anecdotal. Examples are described but formal evaluations were unavailable. Recent material was sought for this report however, less recent experience from, for example, Haiti are included as not much was found.

3. mVAM

The WFP's mobile Vulnerability Analysis and Mapping project (mVAM), started using IVR for data collection for the World Food Programme in the Democratic Republic of Congo (DRC) in 2013 (mVAM, 2018). Survey respondents reporting on food security were then using the same number to call back asking questions. It was therefore a natural progression to extend the system to enable feedback. A case study on mVAM in DRC notes the need to establish and manage a beneficial dynamic between WFP and private sector companies (Foley, 2017).

mVAM was able to respond quickly to reporting needs in the Ebola crisis when data collection took around a month to set up in three countries (Guinea, Liberia and Sierra Leone) (Morrow et al., 2016). It was able to highlight food insecurity in rural areas where infection rates were comparatively lower but food distribution had been disrupted.

In Afghanistan, live calls were used initially because of lack of familiarity with robo-calls (WFP, 2016). WFP note that IVR should not mean that face-to-face surveys are no longer necessary. They recommend it as a complement to in-person assessments to enhance field surveys.

One challenge noted on mVAM in Somalia is that the mobile network consists of a large number of carriers who do not communicate with each other (mVAM, 2018). Technologies to improve systems are also noted to be expensive or difficult to set up.

Experience recorded in an mFAM blog highlights the lesson that IVR is better for sharing than for collecting information (mVAM, 2018). Although IVR improves reach of data collection compared to field surveys it was felt that respondents not having much time to think about the answer can lead to messy data. This is not an issue with information sharing. Users only need to listen and to press keys to navigate options rather than registering a response to be analysed. mVAM also note that set-up must differ between countries with availability and infrastructure for the four main components: telephone network, internet network, technology which translates between telephone and internet; and a software application where calls are programmed.

Other considerations before setting up (mVAM, 2018):

- Is IVR going to be standalone or part of a helpline? If it is part of a helpline will it only be required outside of staffed hours?
- How many people are expected to be using the system per day or hour?
- Will the system manage multiple calls simultaneously?
- Does the system need to be part of a call centre? If so, what type of phones will they be using?
- What mobile technologies are available in the country context you are setting up in?
- Explore outsourcing to a local system versus setting up in-house.
- The best system is not the cheapest, so the need to assess and balance need with costs is important.
- It is better to integrate with operated call-centres. IVR is an efficient way of providing straight forward information and operators can deal more effectively with difficult issues.

4. Somalia

The World Food Program (WFP) used IVR, alongside SMS and phone calls, to collect household food data in inaccessible areas in Somalia (Dette et al., 2016). This improved data on the impact of food deliveries. In-person phone calls were used initially to ensure the survey worked. Questions were asked on food consumption, stock prices and other details that could be provided over the phone. Staff phone-calls were replaced by IVR once this was established. Information was gathered into a database through automation. This enabled a great deal more information gathering in these areas than previously where insecurity limited access as significant staff capacity was required for outreach and processing. Experience from this project recommends making the first contact either in person or via SMS. Explanation of the automated process can then be given to participants, improving future response rates.

IVR surveys involved pre-recorded, interactive questions to beneficiaries (Desie & Ismail, 2017). Accountability to affected populations is a key WFP Nutrition Cluster function and IVR was part of the system used to communicate directly with service users on the quality of services, geographic coverage and priorities and preferences on services. WFP established a two-to-three step verification process to ascertain the importance of the complaints raised.

UNICEF and Africa Voice Foundation (AVF) used IVR as part of a cash transfer programme in Somalia which is described in a blog post (Moman, 2017). Firstly, voice messages were sent explaining cash transfers to beneficiaries. The message also gave instructions for a feedback and complaints mechanism via free SMS. IVR was then introduced to respond to beneficiaries complaints. Somleng open source interactive voice response technology was used. The two-way communications were found to be accessible and widely used. It was used equally by men and women though more widely used by younger beneficiaries. UNICEF were able to respond more effectively to distribution bottle-necks and modify programming.

A large-scale research project in Somalia, Afghanistan, and South Sudan used IVR to measure aid presence relative to need (Stoddard at al., 2017). One part of the field work involved remote mobile surveys of local populations as additional evidence to triangulate humanitarian presence information. Residents' views on security in the area and barriers to humanitarian assistance were also collected with IVR. The IVR element was a small part of the project and experience of using the technology was not described in the paper.

5. Afghanistan

IVR was being used as part of a mobile cash transfer programme in Northern Afghanistan (Samual Hall Consulting, 2014). Funds were transferred through an SMS and IVR system. IVR provides a menu which is particularly useful in Afghanistan where 70% of the population are illiterate. The technology is called M-Paisa and is paired up with the mobile phone operator Roshan.

M-Pesa (a different system to M-Paisa), a mobile money system originating in Kenya, uses IVR to pay salaries in dangerous physical environments in Afghanistan. A study identified cost savings for employers (Blumenstock, 2015). Evidence on wealth and well-being improvements for employees was mixed. The IVR interface was said to be popular as it required low-levels of literacy or technical proficiency.

6. Niger

mVAM have been using their IVR system in the Diffa region since around May 2018 (mVAM, 2018). It receives about 1500 calls per month. Refugees served by WFP in the region call for free to listen to the information messages and record their own message. Food distribution problems are reported. The initial technical set-up was new to mVAM and the mobile network operator and so considerable time and effort was required to establish a well-functioning system but it is perceived to be a success.

7. Rwanda

The Center for Advanced Research in Global Communication (CARGC) conducted a pilot investigating the use of IVR to distribute and evaluate radio content in Rwanda (Kogen and Smith, 2016). Radio La Benevolencija broadcasts peacebuilding programmes to education audiences about the cycle of violence and healing from the trauma of mass violence. Usability was found to be a concern and users needed training. Young callers tended to rate the system as easy to use. 91% of surveyed users said they would use it again suggesting education and literacy were not needed. Problems with the mobile network were potential reasons for surveys not being finished. The technical system, VOTO was free in that there was no hardware to purchase but credits were purchased for the calls to go through and this cost added up. The researchers suggest using an IVR system that can collect both quantitative and qualitative data. They also recommend negotiating to reduce call costs and coordinating directly with platform managers from the IVR service employed.

8. Haiti

Early experience with IVR within humanitarian contexts in Haiti found the system's operations slow (International Red Cross, 2014). The system was used to give out critical health and emergency information, record feedback from callers, and conduct surveys. The system was widely used: in March 2014 it had registered two million calls just under two years after it had been set up. Lessons noted were that the careful scripting of messages was more time consuming than initially thought and downloading data was slow.

Telefon Kwa Wouj (Red Cross Telephone) used SMS-based interactive phone messages to inform people about public health, hygiene, disaster preparedness and violence prevention (Bonino et al., 2014). They then invited users to take a quiz through IVR to assess their understanding of the knowledge that had been shared. Feedback questions were also asked. This enabled assessment of the messages given out and whether the content needed to be refined or improved. The Haitian Red Cross were able to adjust the content for the Health Department sensitisation campaign based on survey responses. Programme managers did raise concerns that valuable in-person participation may be lost with these automated systems. However, the volume of feedback data that was enabled was noted as a positive.

Technological problems were experienced in early use of IVR for aid accountability in Haiti in a project entitled Listen and Learn (DARA/Keystone, 2014). Telephone numbers provided by agencies did not work as SIM cards and numbers often change and phones are shared around between family and friends. As an alternative to SMS it was found to be cumbersome. All forms

of telephone enquiry are recommended to require advanced communication to overcome suspicion and to ensure truthful response.

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