Chapter 21:

Freedom to Learn: Blending Interactive Voice Response and Radio

(Excerpt from Part Five: Tools for Integrating Mobile Devices and Telephony)

In Chapter 21, Bart Sullivan shares a case study of Freedom Fone, an open source tool for telephones using interactive voice response (IVR) menus to make content available to callers. Although Freedom Fone can be used by anyone with a dedicated computer, a special modem and mobile phone number, the focus of Sullivan’s study is the use of Freedom Fone by radio broadcasters as a way of complementing and extending communications, particularly feedback from listeners.

More information: www.col.org/LearningWithCM

COL’s Healthy Communities programme: www.col.org/HealthyCommunities
The mobile phone is becoming increasingly ubiquitous — the communication tool of choice for people around the world. Recently, there has been a convergence between distance learning modalities and innovative uses of mobile phones.

The “m-learning” field is full of applications and initiatives to turn mobile phones into content-rich learning tools. However, which of the existing tools use the simplest communication media of all?

This chapter explores the potential of leveraging voice, the most basic function of a mobile phone, as a means to supporting learning, specifically using what is known as IVR and radio.

**What is IVR?**

Interactive voice response (IVR) has traditionally been used as a customer service tool by banks, government offices and other institutions to automate the process of making information accessible over the phone.

Since the 1990s, callers around the world have been greeted with the familiar: *Press 1 now to get information about X. Press 2 now to learn more about our office locations. Press 3 for...* Although many of us scramble to push 0 to speak to a customer service representative as quickly as possible, a well-designed IVR menu holds numerous other possibilities.

Farm Radio International, an international non-governmental organisation (NGO) working in communication for development, was interested in finding out whether an IVR system could be used to complement radio-based educational programming by enhancing the process of participatory learning among agricultural communities in Tanzania.
**Freedom Fone set-up: What do I need?**

In 2009, an open source and easily deployable IVR system called Freedom Fone was released and made available to the public as a free online download at www.freedomfone.org. The Freedom Fone website also features an online demonstration that allows the user to test out the system before committing to the install. Once the 1-GB Ubuntu iso image is downloaded, the operating system can be installed on a standard desktop computer. In contrast to a typical Windows-based piece of software, Freedom Fone is a complete Linux-based operating system. It is therefore recommended that the computer be configured and used as a server, one dedicated to running the Freedom Fone software exclusively.\(^\text{14}\)

In addition to the desktop computer, a GSM (Global System for Mobile Communications) modem/device is required to bridge the mobile service to the Freedom Fone server. These GSM devices are available in several vehicles, ranging from a Mobigater with one SIM card ($70 [US]) to the Office Route device with room for four SIM cards ($850 [US]). These can be ordered with help from the people at Freedom Fone.

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**Freedom Fone features: What can it do?**

Freedom Fone has numerous features that make it well suited for community learning applications. Easy-to-design interactive audio voice menus help make information available to non-literate callers. All voice menus can be offered in multiple languages, making it a tool for serving a diverse group of users. Multiple voicemail boxes can be set up to allow callers to leave messages to specific people or departments or even to submit stories for broadcast. Short message service (SMS) polls can be designed and used to conduct surveys with a community — a useful tool for conducting quick community quizzes on a particular topic or for identifying a community’s interest areas. Finally, Freedom Fone software keeps track of detailed statistics on calls, voicemail and SMS made to the system.

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**Freedom Fone and radio: a perfect match**

Radio remains one of the best tools for reaching communities on the margins of society. Radio sets are affordable, costing as little as $5 (US). Radios are portable: they can travel to the field, the kitchen or the neighbour’s house. Radios run on batteries: they don’t require electricity. Radios are great for groups: more than one person can listen to a radio together. And, most important of all, radios are for listening:

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\(^{14}\) Dual booting is possible and instructions for putting Windows and Freedom Fone side by side exist on the Freedom Fone website.
those who cannot read or write can still understand and learn from a radio broadcast.

Freedom Fone presents the opportunity for radio to further develop another opportunity: interactivity. Mobile phones share many of the aforementioned features of radio (e.g., accessibility and portability). However, there are at least two essential differences:

- First, mobiles allow for two-way communication between parties.
- Second, mobiles feature primarily one-to-one voice communications (unlike radio, which is one-to-many).

Given the complementary attributes between radio and mobiles, integrated applications have the potential to be both far-reaching and two-way. Freedom Fone is a low-cost and practical opportunity to bridge the realm of radio and the mobile phone. Freedom Fone can be used to make summaries of programmes available for on-demand listening (that is, for repeat listening at a later time); it can be used to gather listener feedback and stories for incorporation into upcoming broadcasts; and it can be used to conduct real-time polls with listeners via SMS.

A case study: Kuku Hotline at Radio Maria

Between May and June 2010, Farm Radio International helped Radio Maria Tanzania integrate Freedom Fone into their radio campaign about improving local chicken management. The campaign was called “Heka Heka Vijijini” (Busy, Busy in the Village). As the final month of Radio Maria’s five-month participatory radio campaign15 approached, broadcasters and researchers were interested in how much knowledge had been absorbed by listeners, how attitudes towards chicken farming had changed, and whether farmers had altered their chicken management practices.

A small competition was created to help gather stories from the listening community. A radio jingle16 that invited listeners to call in and leave a voicemail message was produced and aired. It asked, What knowledge has most impacted you and how do you plan to use it? The Kuku Hotline,17 as it became known, received 1,448 unique calls and voicemail messages over the course of five weeks. A panel of broadcasters selected approximately 20 of the recorded messages to be re-broadcast each week. At the end of the campaign, callers who had had their message played on air18 were awarded with a Kuku Hotline t-shirt.

15 As defined by Farm Radio International, participatory radio campaigns are planned, radio-based activities conducted over a specific period of time and in which a broad population of farmers is encouraged to make an informed decision about adopting a specific improvement selected by their peers. See Chapter 1 in this publication for further information.
17 Kuku is the Swahili word for chicken.
Use and applicability

Using the Freedom Fone at Radio Maria presented several challenges. Although female listeners were, on average, twice as likely to be aware of the Kuku Hotline as male listeners, the same female listeners were half as likely as men to actually call the hotline. Most women cited lack of mobile phone credit as the main reason they didn’t call to participate in the hotline competition. An upcoming version of Freedom Fone features a call back function that could help improve participation by women and other financially marginalised community members.

The challenges that occurred at the radio station level were more operational. A computer hard-drive failure in a second-hand computer caused the hotline to go offline for three days during a peak time (which highlighted the importance of buying new and quality computers for use as the Freedom Fone server). Several software challenges were encountered when broadcasters and technicians did not know how to troubleshoot the system (resulting in more thorough two-day training sessions for future deployments at other radio stations).
Freedom Fone as a participatory learning tool

Although FRI’s experiences using Freedom Fone aimed to enhance the interactivity of a radio campaign, the tool itself presents several opportunities to enhance participatory learning. Learning modules can be recorded and made available weekly, with previous archived modules being accessible through voice menu navigation. Learners can contribute to and collaborate on upcoming modules by leaving voicemail messages for the system’s facilitators. These comments can be re-incorporated into the following week’s modules.

Freedom Fone’s built-in contact manager functionality could also enable a rudimentary level of learner management by associating mobile phone numbers of particular learners with incoming calls, messages and SMS linked to learners. The SMS poll functionality has the potential to allow a community of learners to determine the direction of learning modules based on a voting system.

Conclusion

Freedom Fone is a mobile phone tool to be added to the repertoire of any community-based organisation interested in engaging citizens in non-formal learning. It is user friendly, low cost and global and it operates without Internet access— features that go a long way to maximising success in today’s high-tech world.

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For further reference, see:

- Freedom Fone, a free, open source telephony platform directed at mobile phone users – www.freedomfone.org

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20 DVD versions of Freedom Fone can be mailed to your address where downloading from the website is not possible.