

# Focus Groups in Rural User Studies

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## ABSTARCT

The OpenPhone system is a health information system that is developed to cater for the information needs of caregivers who are caring for HIV/AIDS infected children in Botswana, southern Africa. The system is accessible via an Interactive Voice Response (IVR) system in the local language of Setswana, through a normal telephone. The development of the system deploys usability engineering and participatory design methodologies in the ambition to make the system usable and useful to the target user population. The paper presents the first step in the development of a product within the paradigm of usability engineering and participatory design. This step is concerned with acquiring user requirements, users' present ways of doing things, and the tasks that they would like to use the system for, in the milieu of the fact that establishing user requirements is well recognized as a critical step in the development of useful and usable systems [1]. This paper

advocates the method of focus groups as a primary means of soliciting those user requirements and other user information particularly for the specified user population.

**Keywords:** OpenPhone, focus groups, BBCCCoE, IVR system, HIV/AIDS

## 1. INTRODUCTION

There are several research methods available for eliciting user requirements from potential users of an ICT system including survey methods, questionnaires, interviews, and others. This paper promotes the use of focus groups as a valid and effective method for user data collection in a setting whereby the users are technology challenged, illiterate to semi-literate but despite that are numerically literate and are not acquainted with the technology under development, the OpenPhone IVR system. The paper makes use of a case study that describes proceedings that occurred at the Botswana Baylor Children's Clinical Centre of

Excellence (BBCCCoE) where the focus groups were held with the caregivers in order to position focus group as a justifiable method for requirements elicitation in the aforementioned setting. The BBCCCoE is where the caregivers normally get services such as consultations, treatment supply, and lectures on care-giving issues. The lectures are presently the only mechanism by which the caregivers get information on care-giving issues and it is not an effective approach as the caregivers tend to forget the content they were told during the lectures.

## 2. RELEVANCE OF METHOD

In order to develop a system that meets the users' anticipation of the system the developers have to rely on the information that is provided by the users or anticipated users of the system [4]. The process of requirements elicitation is complex even when designing a 'simple' single user system because users often cannot properly articulate their needs [6]. In the OpenPhone project this complexity is elevated by the fact that OpenPhone is fundamentally a new system to the target users. Maunder et al. explain this phenomenon as follows:

*Developing ICT software that is useful and usable in a rural context poses many problems. One of the major difficulties is understanding the real needs of the end users and the constraints imposed by the rural environment. Many techniques exist in the field of Human Computer Interaction (HCI) that attempt to understand the needs of the end users but many are not useful in a rural context, or at least not when applied in a standard way [5].*

The focus group method is suitable for the targeted user population since focus groups:

- *Do not discriminate against people who cannot read or write*

- *Can encourage participation from those who are reluctant to be interviewed on their own (such as those intimidated by the formality and isolation of a one to one interview)*
- *Can encourage contributions from people who feel they have nothing to say [3].*

## 3. PROCEEDINGS

The caregiver focus group meetings were held over two sessions on two successive days with two different groups of participants. The participants were recruited randomly from the pool of caregivers that go to the BBCCCoE for consultancy and lectures. These are the ideal participants since the system will conceivably be used by them for information access instead of traveling to the BBCCCoE for lectures. The focus group meetings had 3 primary objectives:

- To study the user characteristics in order to develop a user profile.
- To allow the targeted users to voice their opinions as to what concerns would they like the proposed system to address.
- To take on board the targeted users to form a partnership with the developers in the design of the system through participatory design.

There were 11 participants on the first day and 16 on the second. All participants were female with only one male participant on the second day. The conversations and interactions with the caregivers were conducted in Setswana with the aid of 2 moderators who are both fluent in English and the local language of Setswana. One of the moderators was a local Botswana citizen and resident who has helped the research team in comprehending the local cultural nuances (which would not have been understood by any other means, not even by the other moderator who is fluent

in Setswana but not a resident nor a citizen of Botswana).

A demonstration of a health IVR system for immunization of children was presented so that the participants could see the use and the interaction that is involved with using an IVR system for the purpose of health information access. The participants were asked to complete consent forms which also requested the participants to provide demographic information such as age, highest level of education, gender, access to a phone, and others. This information allows the researchers to know the targeted population better in order to build a user profile and inform the OpenPhone design decisions more truthfully. The participants were notified that all the discussions would be recorded and that the participants had the right to stop participation at any time that they feel so. On the second day one of the participants decided that she did not want to participate any further and then the number of participants was reduced from 16 to 15. She was not asked any reasons as to why she had decided to quit. This demonstrated the participants' practice of the right to autonomy, including their right to abandon the meeting and the participation at any time for any reason.

The discussion was conducted by the 2 moderators and 2 observers were taking notes of the proceedings. The participants' enthusiasm was evidenced by the fact that they would chat amongst each other and discuss amongst themselves before giving their views to the moderators. Naturally some participants were more talkative than others but the moderators encouraged those who were less talkative by engaging them in the discussion. The focus groups took an average of 105 minutes each and at the end the participants were thanked for their participation.

#### 4. STRATEGY

Prior to the focus group meetings the research team generated a strategy on how the focus groups with the anticipated users would be conducted. The strategy for the focus group interviews was to initiate the discussion in the form of a semi-structured interview whereby the moderators generally had a framework of broad themes to be explored, and then relax the discussion into an unstructured form whereby the participants can converse freely around the theme at hand. This open discussion would then be gradually guided to converge towards a more specific issue by the moderators.

*To be effective, focus group questions need to be open-ended and move from the general to the specific [2].*

Figure 1 represents a graphical representation of the strategy that was used to conduct the focus groups. As an example, a broad theme of "hygiene and cleanliness" would be introduced by the moderators and then the participants would be allowed to discuss issues and concerns around that theme within the context of care-giving. The moderators would then direct the dialogue towards a more focused single subject such as "bodily fluids and infected waste" by asking further questions and probing as for example, "what would you like to know about hygiene and cleanliness...why?" When the participants give different answers to that question, the moderators would then probe more by asking questions such as, "what sort of bodily fluids are usually of concern?" This would then lead the participants to an even more specific question such as how to clean infected spilled blood properly.

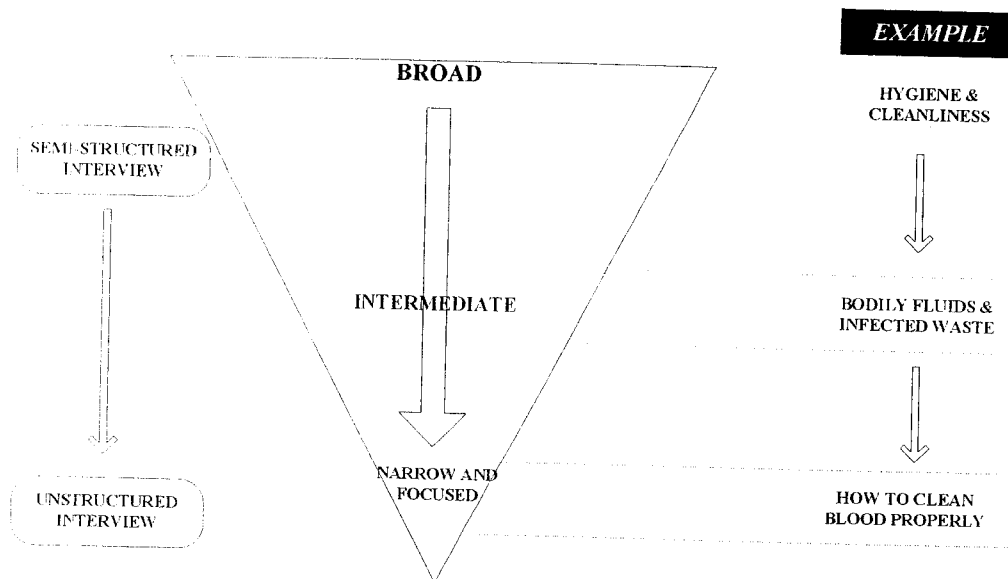


Figure 1. Questions generation strategy

Information charts were used to bring together the information that the participants were giving in the form of specific questions that they would like the system to address under each theme. The participants were then asked to prioritize the issues, through consensus, under each theme which then produced a list of specific issues in their descending order of importance under each theme as viewed by the participants.

Unexpected issues on social services such as government grants were brought up by the participants but unfortunately these issues cannot be addressed directly by the system. Issues that were contemplated by the designers as of high importance such as caregiver psychological support were perceived as of low priority by the participants. When the participants were probed about this issue they stated that they get psychological support through strong immediate and extended family support. This support can also be communal which is typical of the Tswana culture whereby family and close community members are supportive towards other community members especially in the rural areas where those communal values are still maintained.

## 5. CONCLUSIONS

Conducting the focus group meetings has had an impact on the developers' beliefs in terms of challenging the developers' general assumptions the users' needs. This supports Robinson's notion of the difficulty for the developers in anticipating a system's use in its actual applied work environment [7]. The meetings have enabled the developers to gain the targeted users' inputs on what their information requirements are and to eliminate unnecessary elements that the users don't need in the proposed system. The meetings have also helped the developers in building a persona which is a model user that the developers create to help understand the objectives, needs, and behaviours of the target users. User requirements gathering is a way of animating and furnishing influential information into the design process that will have impact in the manner in which the system is designed. In conducting real user observations the developers' findings get to be based on realities, not preconceptions.

In a new and modern design the designers may be misled into assuming that there is no need for user studies because the product idea is new and revolutionary to the target users and therefore there is no useful information that can be obtained from the users. In contrast, it is important for the developers to interact with people in order to understand how they cope with doing things the traditional way before bringing in the new way. Through the interactions with target users the researchers may discover that they are solving the wrong problem, or that they have overlooked some other more important problems that need to be solved.

We have found out that although the participants lack knowledge about technical matters on how to build an appropriate IVR system, they are rich in common sense knowledge about their needs and their typical concerns on care-giving issues. Both scientific and common sense knowledge is important in formulating a holistic solution.

We regard the focus group meetings to be a success as the information that has been gathered will enable us get started with the process of early designs of the proposed system. We hypothesize that this success is due to the fact that the targeted users are accustomed with communal meetings that resemble focus groups. When there are communal issues in rural areas that need to be discussed within the commune, people are usually summoned by the village chief or other relevant authorities to gather in a common place and the discussion is lead by the chief in a manner that is very similar to the way that focus groups are conducted between participants and the moderators. We believe that this resemblance has enabled the OpenPhone focus group participants to fully partake and contribute knowledge that is critical in the development of the proposed system, even though the discussion was about a relatively alien idea since the participants are not accustomed to such a system.

## 6. REFERENCES

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