ELICITING THE USER REQUIREMENTS OF MOBILE GOVERNMENT SERVICES IN MALAYSIA USING FOCUS GROUP METHOD

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Abstract

Mobile government implementation in Malaysia is still in its very early stages. In this regard, we need to investigate the potential needs of users of m-Government services. In addition, there is a need to identify the factors that lead to the integration of the services provided with users' everyday practices. In this research, we examined different groups of citizens with varying needs and practices in the available technologies. Focus groups are used as a data collection method in different fields. They have been used as a data collection method in this research. Our results show that although awareness of mobile government services is reasonably high, only a small number of Malaysians actually use mobile government services. However, citizens acknowledge that mobile government services can be useful, easy to use and convenient. Moreover, both the discussion groups and the questionnaire addressed the problems, limitations, and improvement needs related to the m-Government services.

Key words: *m-Government, e-Government, Focus group, User requirements*

INTRODUCTION

M-Government stands for the use of mobile wireless communication technology within the government administration and tools for delivery of mobile services and information to citizens and business (El-Kiki & Lawrence 2006). By connecting a wireless part to a wired end part, the m-Government will create and guarantee mobility of information and services for the public, firms, and other government agencies. Furthermore, convenience in accessing information, real time access to information, and personalization of information access are guaranteed to maximize the benefits of using information and in turn creating further advanced e-Government services.

Mobile government implementation is still in its very early stages – indeed a perfect m-Government has not been shaped yet. Transition from e-Government to m-Government requires researching the integration process between the two. It also requires investigation of all the pressures that may affect the transition process. Such pressures differ between nations and include the nation's technological and

information infrastructure, mobile device penetration, user acceptance, public and social pressures, and security and privacy (Kushchu & Kuscu 2003).

According to Carroll (2006) success of the m-Government requires active engagement of both the government and its citizens since providing services by the government is only one side of the m-Government equation. Another, and more challenging aspect, is achieving acceptance and widespread persistent use of m-Government by citizens. The acceptance of m-Government services can be achieved with a proper design and implementation. Services should be delivered in ways with which the public is already familiar and/ or in which users are actively engaged. In addition, the mobile phone is a perfect device for rapid and brief interaction. Hence, content should be short, targeted and relevant to specific users. Another significant parameter that should be taken into account while designing m-Government services is security. Applications that require security must make minimal demands on the user.

Motivations

By the year 2020, the mobile and wireless communications are expected to play a central role in all aspects of the lives of Malaysians. The technology will substantially expand on the current concept of "anywhere, at any time" to a new paradigm: "Individual's quality of life improvement by making available an environment for instant provision and access to meaningful multi-sensory information and content." This vision statement entails that the starting point of the design of future systems and services should be consideration of a person's basic needs and interests. The basic needs and interests involve comfort and welfare spanning of one's personal, family, professional and private life. The technology should be all about improving the quality of life in terms of creating wealth; improving education; improving job skills; enhancing health, security and safety; and stipulating appropriate entertainment at the right time with appropriate content in a secure and reliable way (van de Kar & Verbraeck 2008).

In Malaysia, we need to investigate the potential needs of users in terms of m-Government services, where "users" here and henceforth describes citizens who access public sector services using the mobile technology. Additionally, we need to describe the driving factors that lead to successful integration of the services provided by the government to satisfy users' everyday practices. In empirical research, we must examine different groups of citizens with varying needs and practices in the available technologies. At present, it appears that there exists a need to build users' portfolios' of electronic and non-electronic resources to meet their needs in real time, especially when they move from one place to another. However, the introduction of new technologies leads to emergence of new practices and, consequently, new requirements for more technological support. Moreover, in the case of using the mobile technologies in a variety of practices, there is little evidence on the convergence of practices in which 'one size fits all' services are likely to meet

the expanding needs of the citizens (Carroll 2005). In view of the evolution and diversity of the nature of using mobile technology and the design of m-Government services to support the current practice are short-sighted and likely to lead to rapid obsolescence (Carroll 2005). An evolutionary approach, where a small group of high-value services that can be obtained from a group of technologies developed over time, are likely to be more successful.

The degree of market penetration of mobile devices in Malaysia will put severe pressure on m-Government implementation. The users will want to have government services (those which are compatible with mobile technologies) deliverable and accessible anywhere and at anytime. This will result in mobile government activities reaching a larger base in a more convenient manner.

Objective of the study

The objective of this study is to gain better understanding of citizens' needs and requirements in an m-Government development project. Additionally, this study explores (i) the motivations for m-Government implementation by the government and adoption by the public, (ii) attendant limitations, and (iii) means for improving government services and hence expanding public acceptance and use of these services.

Research questions

1. What are the limitations to utilization of m-Government services for Malaysians?
2. What are the problems that citizens face when they use m-Government services?
3. Why do Malaysians need m-Government?
4. What reasons drive its use by the public?
5. What requirements do citizens have for improvement of the m-Government services?

This paper is organized as follows. Section two presents an overview of the m-Government services. Section three offers a brief discussion of the m-Government initiative in Malaysia. Section four discusses challenges to m-Government implementation in Malaysia. Section five introduces a brief discussion of the focus groups method. Sections six elaborates on application of the focus group method in this research. A summary of the output of the focus group discussions on mobile government services is presented in section seven. Finally, concluding remarks are to be found in section eight.

MOBILE GOVERNMENT SERVICES

The e-Government initiatives have failed to live up to expectations of citizens. The m- Government initiatives can rebuild trust through faster interaction with the citizens and more effective and efficient service delivery (Gang 2005; Song & Cornford 2006). Stable interaction and managed fluid organization with great potential for enhanced hierarchy and vertical integration can provide a suitable underpinning for mobile government initiatives (Gang 2005). M-Government offers a new level of immediacy, effectiveness, and convenience in the type of service delivery. Mobile communications are fast becoming an accepted part of mainstream society. They provide a dynamic means for citizens, particularly young ones, to interact with local authorities and other government agencies to providing location-based services. In places with low levels of Internet or PC access, the mobile access is a cost effective way to deliver government information and service. In Japan where space for home computers can be limited, most citizens under 30 years of age consider their mobile phone to be their primary Interne-access device (May 2001).

M-GOVERNMENT INITIATIVE IN MALAYSIA

In 2007, the government of Malaysia launched a new initiative under the electronic government program known as eKL. It is an effort to integrate services delivery across agencies in an effective and efficient manner for the benefit of citizens and businesses within the Klang Valley (Klang Valley is an urban area of Kuala Lumpur and Selangor state) and its vicinity. The eKL initiative focused on the "One government, many agencies" principle to establish a digitally connected Klang Valley whereby services of all government agencies are linked. This joint-up approach enables the sharing of resources and information among government agencies and thereby facilitates the provision of end-to-end interactive online services 24 hours a day and 365 days a year (24/365) via multiple services channels. One of these channels is the mobile device. The short messaging services (SMS) of mobile technology enables citizens on the move to stay connected to government news and services. Within this context, the MySMS initiative was launched. It aims at standardizing the use of a single number, 15888, for accessing government news and services such as summon to a payment and renewal of driving licenses. By 2015, 158 additional SMS services were expected for 50 agencies including payment services offered by mySMS (eKL, 2008).

CHALLENGES TO IMPLEMENTATION OF THE M-GOVERNMENT IN MALAYSIA

The high level of market penetration of mobile devices in Malaysia will put severe pressure on m-Government implementation. The users will want government services which are compatible with mobile technologies to be deliverable and accessible anywhere and at any time. This will result in m-Government activities reaching a larger base in a more convenient manner (Kushchu & Kuscu 2003).

According to Althunibat et al (2009), until now the m-Government services in Malaysia are very limited and the percentage of utilization of the mobile government services in Malaysia is very low. On the other side, the design of the e-Government official portal doesn't allow citizens to navigate through it and access the services it supposedly offers using their mobile devices. And a need in Malaysia calls for exploring the public's level of acceptance of the mobile government. This is a very important step to identify user requirements and system problems for the purpose of system optimization.

Malaysia's e-Government initiatives face serious challenges in moving to a higher level of maturity and impact. Major reasons behind this include (Raman et al. 2007): (i) lack of public awareness – 60% of the public are not aware of the services offered; (ii) slow adoption of m-Government applications due to lack of integration and insufficient engagement of key stakeholders (especially users and citizens); (iii) the information provided by government agencies via the e-Government sites is stale and not current; and (iv) the sites are not easy for the novices to navigate. A more challenging aspect, on the other hand, is achieving public acceptance and widespread persistent use of the information and services of the m-Government by citizens.

THE FOCUS GROUP METHOD

Focus groups techniques — also called "focused group discussions" or "user groups" — were developed after World War II to evaluate audience response to radio programs. The focus group method is a qualitative research process designed to elicit opinions, attitudes, beliefs and perceptions from individuals in the effort to gain insights and information about a specific topic (Tool 2004). Focus groups can also be used for program development and evaluation, planning, and needs assessment (Krueger & Casey 2008).

A focus group may be defined as a group of interacting individuals having some common interest or characteristics, brought together by a moderator, who uses the group and its interactions as a way to gain information about a specific or focused issue (Marczak & Sewell 1998) . Unlike the *one-way* flow of information in a one-on-one interview, focus groups generate data through the "give and take" group discussion. Listening as people share and compare their different points of view provides a wealth of information — not only about what they think about and how they think, but also why they think the way they do.

Focus groups have been used since long as a data collection method in the marketing field (Fern 2001). The method becomes an instrument in the public society that allows for hearing the people's voice. A moderator guides the group during discussion of pre-set issues by posing questions that have, accordingly, been formulated in advance. A focus group is always created with a certain purpose; there is a need objective that the focus group is supposed to respond to. Focus groups are a feasible tool to gather knowledge and enquiries from different users (Axelsson &

Melin ; Morgan 1998). Different persons have parts of knowledge about a certain topic and when these parts are brought together and discussed the total amount of knowledge increases. When establishing a focus group it is important to state what the group is supposed to construct.

According to Morgan (1998), a focus group often consists of six to eight persons. Nonetheless, other researchers propose different preferable group sizes ranging from four to twelve persons, depending on the purpose of the group discussion. It is a complicated task to choose persons for the focus group. The participants should be chosen such that they can contribute to the discussion. It can be difficult to encourage persons to join the focus group; they may demand for some benefit in return. It is also important to consider type of data the focus group discussions will produce and how the data can be analyzed after discussions. Data must be presented in an understandable way and be familiar to the target group (Morgan, 1998).

The moderator who leads the focus group must make sure that everyone participates and that no one dominates the group. The discussions atmosphere should be friendly in order to encourage everybody to contribute to the discussion and contribute to fulfilling the purpose of the focus group meeting. The moderator is not supposed to state his or her own opinions before or during the discussion (Krueger & Casey 2008); instead he/ she should ask questions to the group. Morgan (1998) argues that the focus group can be either structured or unstructured. There are advantages of groups of people who know each other as well as of groups of people who are strangers to one the other. Individuals view issues from different perspectives and the focus group is thus a suitable method to use in order to understand how different views constructed and expressed (Graafland-Essers & Ettedgui) and provide a deep discussion of the subject of concern.

EMPLOYMENT OF THE FOCUS GROUP APPROACH IN THIS STUDY

In this study, six focus groups were arranged and special attention was paid to homogeneity of the composition of each group such that the particular group is either composited from citizens who used mobile government services or those who didn't. Age was the main factor in sample selection. We decided to compose groups from five university students each. The main reasons for targeting young persons and IT students were that they represent an important target group of the mobile government portal and that they possibly may have their own opinions about mobile services in recent past or in the near future. Each group was led by one moderator. The main assignment was to discuss the present m-Government portal in terms of information, m-services and user interface. The assumed outcome was thoughts about information structure and presentation. Discussions addressed public e-services in general and m-services in particular. By design, all postgraduate university student members of two of the five groups had used e-Government services. This was a conscious choice since Morgan (1998) argues that the participants' background should be as much homogenous as possible. The focus groups were directed by a moderator who

illustrated the purpose of the focus group meeting, the mobile government field in general and the m-Government services in particular. He also described the process of using mobile government services in order for every group member to better understand how a web-portal may be used.

After this background and introduction to the topic, a brainstorming activity was performed. In the next phase of the focus group meetings, the participants were asked questions in order to discuss information and m-services on the future portal with respect to search alternatives and service content, among others. Two subgroups were addressed in the discussions; citizens who already used m-services and citizens who didn't yet do. Feedback from these discussions was then prioritized according to participants' points of view regarding the importance of the proposed m-Government service through a questionnaire designed for this purpose. For the purposes of data collection in this part of the study, group members were asked to respond to a questionnaire made up of a number of items of ranked importance. It should be highlighted, however, that group members were provided with a prototype demonstration of the m-Government services of interest to help them develop an idea sufficiently well enough for the theme of the study. The next phase of each focus group meeting implied a discussion of how mobile government concepts were understood by the participants. The concepts discussed were those which could possibly be misunderstood by the citizens who use, or may use, a portal because of their technical literacy or lack thereof. Examples of discussed concepts are quality of mobile service, efficient transactions, strategic data, acceptance, and value for money.

Results of the study indicate that most of the concepts and related issues raised and discussed were hard to understand by the respondents and that the definitions proposed by the participants were more or less incorrect. The meetings concluded by an evaluation of the e-Government portal. The participants were asked to focus on information content, information presentation, system structure, search alternatives, and navigation logic. The discussions found many comments with outstanding potential to contribute to improving the performance of the portal. An important suggestion to improve the use of the portal was to add a personalized m-service that may be called "m-Government," where the citizen can login and find all information related to the services which he/ she needs or wants using his/her mobile device. In the six focus group meetings, we found that the scenario of letting everybody express his/ her opinion to be the most effective for creating a convenient discussion atmosphere and drawing meaningful feedback. A problem that we encountered was a difficulty in engaging participants in the discussions. It was hard to find incentives for persons to motivate them to participate without offering them some compensation. Our experience indicates that the focus group approach is a feasible method for exploring citizen opinions and attitudes with relation to m-Government services under development. We also recommend that the groups should be rather homogeneous (Axelsson & Melin ; Graafland-Essers & Ettedgui). Instead of having heterogeneous groups, several groups with, for example, different life situations can

be arranged in order to illuminate different perspectives and viewpoints. Preparation as well as data analysis after the meetings demand resources, but focus groups as a method require relatively small resources compared to other methods like citizen surveys performed by telephone or through questionnaires. On the other hand, this kind of qualitative methods unfolds some citizens' attitudes and needs rather than statistically representative data about what citizens as a group really want. This is obviously very important to remember when using data collected from focus groups in e-Government development projects. This fact might be considered as a weakness of the focus groups approach. However, deep "pictures" of some citizens' views are considered a good way to grasp citizen requirements as compared to the total negligence of citizens which is a fact in many e-government projects of today. If focus groups are used to a larger extent than in our project, the groups may also function as a justification to legitimatize and launch an m-Government service.

Focus groups have also turned out to be useful for later stages of m-service development, as in our case. If results from focus group discussions should influence the project's outcome, the method must not be used too late in the development process. On the other hand, focus groups can also be used as part of the assessment of the developed m-Government service and, thus, the method can be used in the evaluation phase as well. Our empirical findings through using focus groups can be related to general user participation research, since drawing citizens' opinions and needs in focus groups may be seen as a special case of user involvement in information systems development projects. Mumford (1979) who is a pioneer in the field of user participation distinguishes between three types of user participation that imply varying user influence on the outcome; consultative (i.e. user needs influence the design decisions made by the design team), representative (i.e. affected user groups are represented in the design team), and consensus (i.e. all users are involved through communication and consultation). In line with this, the focus group approach that we have used is closest to consultative user participation.

Administrator Focus Groups

In this study, two focus groups of seven members each were arranged. In one group, the participants were administrators in the m-Government project while in the other members were administrators in the e-KL initiative.

SUMMARY OF THE OUTPUT OF THE M-GOVERNMENT SERVICES FOCUS GROUP DISCUSSIONS

As described above, the meetings consisted of three phases; an introduction, prioritization of the importance of discussed information, and a conceptual discussion of the m-Government services. All together, these phases generated a set of information that is essential for future orientation of the development project. Some feedback indicated that the project must build right assumptions regarding citizen requirements while on the other side findings extracted from the focus groups will

have the effect of motivating the project. Common aspects of these findings were that they represented attitudes of the young generations who lived their entire teenager life as frequent users of the Internet chatting with friends and using the mobile telephone not only for talking but also for navigating the Internet and taking photos, sending short messages (SMS), and listening to music while carrying in mind certain expectations as to the mobile web portal of the particular government agency. Their high experiences in these kinds of communication media enable them to take some issues for granted. Therefore, they request and prioritize other functions more meaningfully than the inexperienced or less experienced users. Some participants did, for example, mention that they are used to doing everything using their mobiles and that they become irritated when some services are impossible to handle through this device. All participants also had very high expectations of what this kind of portal would have and offer, even though the moderators were asking about the minimum level of services expected. The composition of the group is thus important. Morgan (1998) states that there should be some common characteristics between participants or the participants should have relations with one the other. This could make the discussion climate open-minded and convenient.

Our results show that administrator focus groups are very important for the interest of project developers and development. Feedback from these groups reveals that the current web portal design doesn't support mobile technology. This means that the users cannot navigate the e-Government portal using their mobile device devices. Other findings include that the administrators want more security and better user interface in the new portal. They also emphasized the need for increasing the speed of transaction and suggested that the mobile government service prices are affordable so as to motivate citizens to take advantage of these services.

The meetings concluded with an evaluation of the m-Government implementation by exposing the participants to a number of related questions extracted from the discussions. The participants then ranked the answers, listed according to their importance. The results of the feedback are presented in the figures below.

Results showed that there are limitations to the m-Government services related to security, design, and the extent to which needs of citizens can be met as shown in Figure 1. On the other hand, the most important reasons behind utilizing the m-Government services are getting services at any time and any place, new channels for service delivery, more comfortable access, and high access speed (see Figure 2). These outcomes are consistent with previous studies (Al-Khamayseh & Lawrence 2006; Kushchu & Kuscu 2003; Raman et al. 2007; Song & Cornford 2006).

Figure 3 shows the problems faced by Malaysians in the m-Government services, such as difficulty of use, lack of security, poor quality of service, service is not personalized enough, high cost of mobile access/ services and inconvenience in using the mobile device

Conclusively, the m-Government is still at an early stage. This calls for more efforts to expand public manipulation of the m-Government services, which may be brought about by improving the ease of use, the access speed and security, decreasing the cost, enhancing customer support, and expanding the range of services and service providers to cover all government agencies and public needs (see Figure 4).
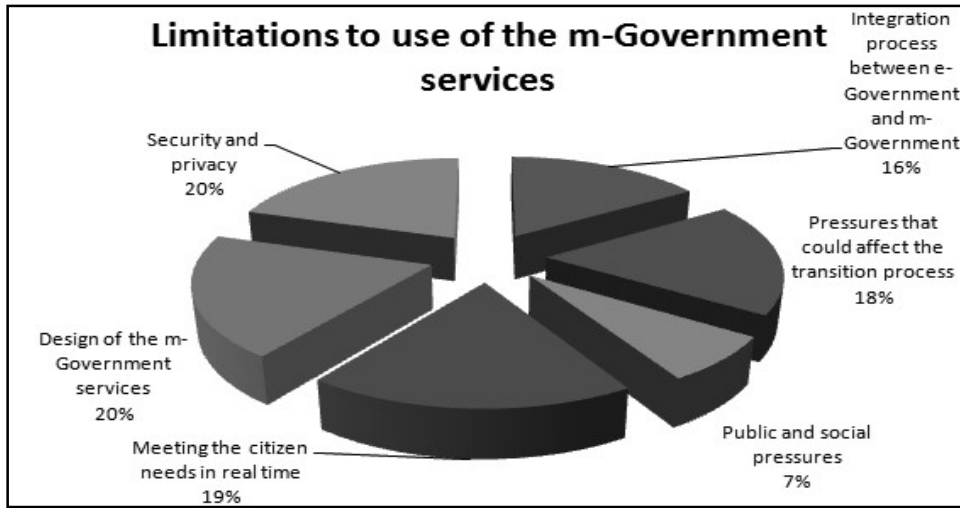
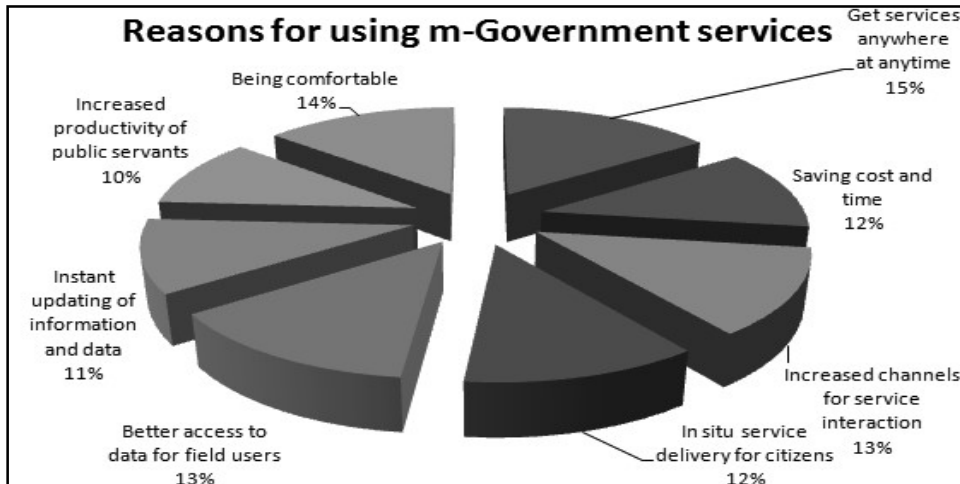**FIGURE 1: Limitation of Using m-Government Services**

FIGURE 2: Reasons for Using m-Government Services

CONCLUSIONS

Our approach of using focus groups to engage users and collect their opinions indicates that focus groups are a valuable tool to use for the benefit of m-Government project design, implementation, and development. Successful implementation of the focus group research can be achieved by careful planning and by paying attention to important executional details.

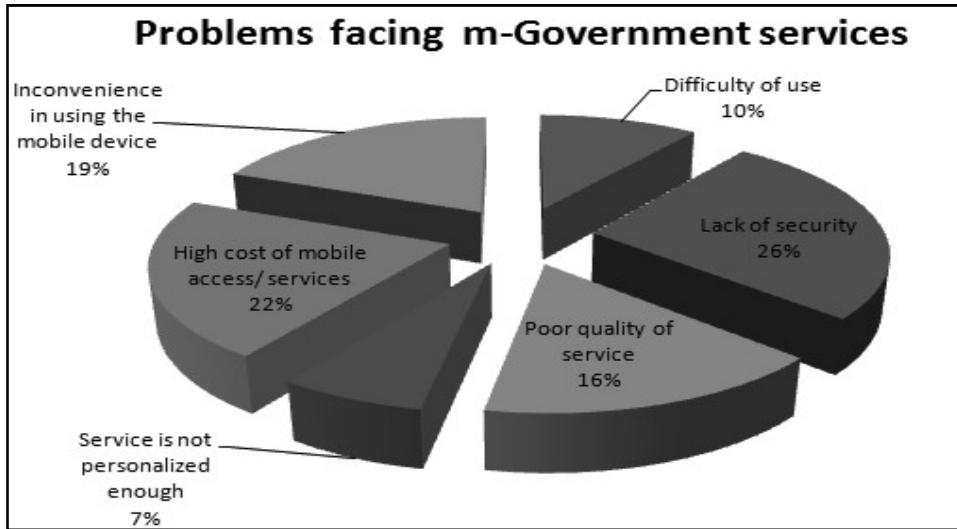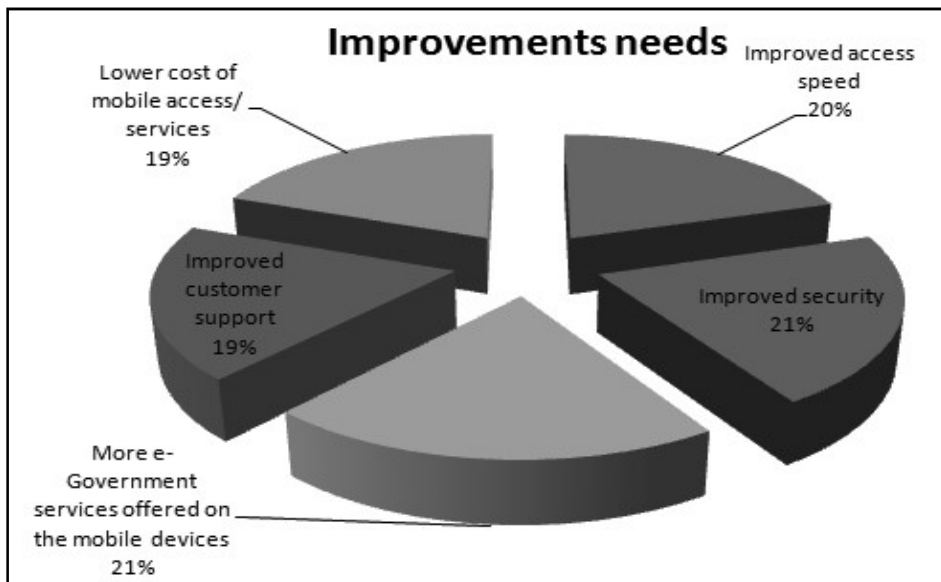**FIGURE 3: Problems Facing m-Government**

FIGURE 4: Improvements Needs

The fact that human behavior is rooted both in rational and emotional reactions to stimuli requires that researchers supplement the hard data from quantitative research with "soft data" from qualitative methods. Focus groups, along with one-on-one interviews, are of the most effective means of gaining insight into the vast array of emotional aspects of service recipient and user behavior.

Questions during the focus group meetings should be open-ended so that as many sound and pertinent feedback as possible is obtained. Short-answer questions, like the "yes" or "no" ones should be avoided. It is also important to avoid leading questions which suggest the moderator's opinion or the answer that s/he hopes to receive. Questions should also be: (i) clearly formulated and easily understood, (ii) neutral so that their formulation will not influence the answer, (iii) carefully sequenced with easier, general questions preceding the more difficult ones, and (iv) ordered in such a way that the less intimate topics precede the more personal questions.

One additional finding unfolded by this work is that Malaysians welcome the idea of getting services through the mobile device and that they are ready to adopt such services. However, it seems that they need more improvement and enhancements to these services for them to be more effective. Moreover, group discussions showed that respondents faced many problems related to security, cost and quality of services, access speed, interface design and information updating. On the other hand, the young people are more ready to use and utilize the mobile government services in the future than the old ones and they need more convenient services.

Mobile government in Malaysia still needs more research to improve the effectiveness of service deployment and to achieve wide acceptance. As a matter of fact, comprehensive mobile government services in Malaysia are not yet created.

The feedback derived from the administrators focus groups proved critical to m-Government developers, and to project development, successful implementation, and improvement. We were able to identify the administrator requirements and discussed the problems prevailing in the current web portal. As a consequence, we found out that the current web portal design doesn't support the mobile technology. This means that the user cannot navigate the e-Government portal using his/her mobile device. As to administrators' demands and problems encountered by e-Government users, the administrators asked for good user interface, higher transaction speed, and more security in the new portal. They suggested that the mobile government service prices are affordable so as to motivate citizens to take advantage of them.

This paper has reported findings of a first test using focus groups to gain better understanding of citizens' needs and requirements in an m-Government development project. We find it necessary for future research to further investigate employment of

focus groups as a method and develop techniques to support the performance of focus group meetings in the context of m-Government development projects.

ENDNOTES

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