

## ISSUES AFFECTING THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY AMONG THE ELDERLY: A CASE STUDY ON JENII

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### Abstract

The diffusion of information and communication technology (ICT) for adoption among the elderly faces the issue of reluctant to adopt and use the technology. Unlike some of the other categories of users, individuals in this category show little interest to use ICT. Reasons for not using ICT among the elderly are fear of the technology, do not know how to use, do not need the computer, and cannot afford to buy computer and fee for Internet connection. As the elderly are perceived to be low ICT literate and fear to technology, their desire to use the technology need to be develop through provision of simple and easy to use technology. A simple gadget called *Jendela Informasi Anda* (literally translate as your window of information) or in short JENii was developed and introduced to this segment of the population as a strategic step to bridge the age digital divide. JENii contains easy applications and steps to teach the elderly on how to operate the gadget, how to access the content and how to overcome minor technical problems. This paper reports on the findings from the impact study on the use of JENii among the 26 pioneer users in Kota Kinabalu areas in East Malaysia. The focus of the discussion is on perception and experiences of users in using JENii. The study employed survey and focus group discussion. The findings indicate that the users' interest to use JENii depend on the knowledge to operate JENii i.e. to on and off, use the icons, and seek the information. Some users report that they don't use JENii often because they forget how to operate it and the content is not updated. Thus, the users feel frustrated and their motivation and interest

level to use JENii will definitely decrease. The paper concludes that the introduction of JENii is a right step by the government to encourage wider usage of ICT and to address the issue of digital divide among the society, especially the marginalized group such as the adults and elderly.

**Keywords** : *diffusion of innovation, digital divide, JENii, fear of technology, adoption*

## ISU YANG MEMPENGARUHI PENGGUNAAN TEKNOLOGI KOMUNIKASI DAN MAKLUMAT DALAM KALANGAN WARGA EMAS: KAJIAN KES JENII

### **Abstrak**

Penyebaran meluas teknologi komunikasi dan maklumat (TKM) dalam kalangan warga emas seringkali menghadapi masalah kurang mahu untuk menggunakannya. Berbeda dengan kategori pengguna yang lain, individu dalam kategori warga emas ini menunjukkan sangat kurang minat menggunakan TKM. Antara alasan kenapa warga emas tidak mahu menggunakan TKM adalah perasaan takut kepada teknologi, tidak tahu menggunakan TKM, tidak perlukan computer, dan tidak mampu membeli computer dan bayaran akses sambungan ke Internet. Oleh kerana warga emas dipersepsikan sebagai golongan tidak celik TKM dan takut kepada teknologi, maka keinginan mereka menggunakan teknologi perlu dibentuk melalui penciptaan alat komputer yang mudah. Satu alat yang mudah dan dinamakan JENii iaitu singkatan kepada Jendela Informasi Anda telah dibangunkan oleh MIMOS, Malaysia. JENii telah diperkenalkan secara pilot kepada golongan warga emas sebagai satu langkah strategic untuk merapatkan jurang digital. JENii dimuatkan dengan perisian dan kaedah mengguna yang mudah untuk mengakses kandungan. Makalah ini membincangkan hasil kajian impak yang dijalankan ke atas 26 orang pengguna rintis di Kota Kinabalu, Sabah. Fokus perbincangan adalah berkaitan persepsi dan pengalaman pengguna ke atas JENii. Rekabentuk kajian adalah tinjauan dan perbincangan kumpulan focus di kalangan 26 responden tersebut. Hasil kajian mendapati minat pengguna untuk menggunakan JENii bergantung kepada pengetahuan untuk memendalikan JENii dari segi buka dan tutup, menggunakan ikon dan mencari maklumat. Terdapat

beberapa pengguna yang menyatakan bahawa mereka tidak kerap menggunakan JENii kerana lupa cara-cara mengendalikannya dan kandungan tidak semasa. Justeru, mereka merasa kecewa dan minat untuk menggunakannya menurun. Makalah ini merumuskan bahawa memperkenalkan JENii adalah langkah bijak untuk mengalakkan perluasaan penggunaan TKM dan usaha mesti diambil untuk menangani masalah teknikal yang dihadapi oleh pengguna tersebut.

**Kata Kunci** :*difusi inovasi, jurang digital, JENii, ketakutan teknologi, penggunaan inovasi*

## **Introduction**

An innovation whether in the form of an equipment or tool, an idea or a system must serve the needs of human beings. Human beings are the end users of any innovations. Thus, any innovations must fit with the need and the ability of human beings to use and adopt it. Information and communication technology such as computer and Internet are innovations being introduced to the society. They are still considered innovations to adult and the elderly because many of them still not yet adopt. The adoption rate of ICT among adult and elderly is still low which is termed the age divide. A study in Turkey confirmed this. TurkStats survey results reveal that computer and the Internet usage rate among young generation is considerably higher than that among elders (Acilar 2011). The age digital divide is expected to diminish steadily as younger computer literate generations replace older non-users (Broos & Roe, 2006). The United Kingdom also face the issue of non-usage of ICT among certain segments of the population. A survey by National Statistics Opinion in the first quarter of 2010 (<http://www.statistics.gov.uk/statbase/Product.asp?vlnk=5672>, access on 1 Jun 2011) revealed that the majority (60 per cent) of those aged 65 and over had never used the Internet compared with 22 per cent of those aged between 55 and 64 and just 1 per cent of 16 to 24 year olds.

Unlike some of the other categories of users such as the teenagers and young adults, individuals in category of adults and elderly show little interest to use ICT. Reasons for not using ICT among adults and the elderly are fear of the technology, do not know how to use, do not need the computer, and cannot afford to buy computer and fee for Internet connection.

As the elderly are perceived to be low ICT literate and fear to technology, their desire to use the technology need to be develop through provision of simple and easy to use technology. Many steps were taken by the government of Malaysia to address the issue of digital divide among the segments of the population. A simple gadget called Jendela Informasi Anda (literally translate as your window of information) or in short JENii was developed and introduced to this segment

of the population as a strategic step to bridge the age digital divide. This paper reports on the findings from the impact study on the use of JENii among the users in Kota Kinabalu areas in East Malaysia. The focus of the discussion is based on perception and experiences of users in using JENii.

### **JENii as an innovation**

Information and communication technologies have the potential to support economic growth, to provide opportunities, and to increase democracy in both developed and developing countries. Yet, many citizens of developing countries have not been able to take advantages of the opportunities offered by ICTs (Acilar 2011). There are significant differences between developed and developing countries in terms of accessing and using the ICTs. This phenomenon is commonly defined as global digital divide. There are also different types of digital divide within a country, such as the gender divide, the age divide and the income divide (Boje & Dragulanesu, 2003).

Rogers (2003) defines several intrinsic characteristics of innovations that influence an individual's decision to adopt or reject an innovation. The relative advantage is how an innovation is perceived as beneficial to users. Compatibility is the second characteristic, the level of compatibility that an innovation has to be assimilated into an individual's life. The complexity of an innovation is a significant factor in whether it is adopted by an individual. If the innovation is too difficult to use, an individual will not likely adopt it. The fourth characteristic, trialability, determines how easily an innovation may be experimented with as it is being adopted. If a user has a hard time using and trying an innovation this individual will be less likely to adopt it. The final characteristic, observability, is the extent that an innovation is visible to others. An innovation that is more visible will drive communication among the individual's peers and personal networks and will in turn create more positive or negative reactions.

At the core of national ICT agenda is the goal of ICT for all, that is all Malaysians should have access to affordable computer and Internet services. This agenda aims to address the issue of digital divide between groups defined by income, age, and geographic area. The invention of easy to use technological gadget with computer applications by MIMOS (Malaysia's premier applied research centre), is one of the initiatives in bridging the digital divide particularly among the ICT illiterates. This gadget called JENii or *Jendela informasi anda* or literally translated as *your window of information* aims to alienate the fear of using computer among ICT illiterate adults, senior citizens and women. This gadget is affordable for the purpose of reaching out to those who are ICT illiterate. The goals of JENii are to increase awareness of ICT and to ease adoption of technological gadget for the users. This will ultimately empower the ICT illiterate group so that they can have equal access to ICT.

Features of JENii which include community applications such as chat, e-mail, SMS, simple navigation controlled by icon user interface, touch screen function

which eases complexity of usage, lightweight and built-in WiFi, Bluetooth, WiMax certainly makes it the right technological gadget in order to reach citizens who are considered ICT illiterate. Given the easy to use features of JENii, will the technology attract the target users to adopt and use it? A pilot usage of JENii among 26 selected users comprised of adults and elderly in Kota Kinabalu areas was carried out for the period of three months. The criteria for users selection are those ages 40 years above and have low or zero knowledge of computer usage and exposure.

## **The study**

A study was conducted to assess the impacts of pilot usage of JENii in order to find out how it functioned in bridging the digital divide. The goal of the study is to understand target usage behaviour and device-user interaction towards JENii. The objectives of the study are a) to address the impact gap in terms of usefulness of content and community applications; b) to find out users' acceptance towards JENii in order to eliminate technophobia and complexity of the device.

Both quantitative and qualitative approaches were carried out to collate the maximum input for the research. In order to evaluate the effectiveness of JENii on bridging digital divide as compared to the other central government initiative it is very important to conduct and observe the use of technology applications for 30 hours of usage. This is to avoid the novelty effect of the introduction of the technology. Thus, in order to cover all the aspects of the impact study 3 months data were collected and the total duration of the research was 10 months beginning September 2009 – June 2010.

There were three phases of the study. Phase One is the pre exposure to JENii and it was the environmental scanning phase, which involved a survey of the locations or sites. Face to face interview was conducted with the selected samples of JENii recipients in Kota Kinabalu areas of Putatan, Lintas Station, and Bukit Tiga.. Set of questionnaires were distributed with the objective of gathering data.

Phase Two is the exposure phase and in this phase more focus was given to observation and face to face interview. For recipients who could write and willing to write they were encouraged to record their reflection and experience in using the technology via the log book provided to all the recipients. The observation was to collate information regarding the target group usage behavior and device user interactions.

The Third phase involved a focus group interview to evaluate the effectiveness of the technology introduced to the community after 30 hours of usage. In order to evaluate the impact of technology introduction, results and data obtained in the first and second phase and data obtained from phase three were correlated. However, this paper will reports on the exposure phase of using JENii based on users' perceptions and experiences.

## **Impact of JENii as perceived and experienced by the users**

A total of 26 people agreed to participate in the pilot usage of JENii. There are six males and 20 females. Their age ranges from 40 to 70 years old and all of them possessed low or zero knowledge on computer applications.

Although every respondent appear to have different interests in surfing the available websites in JENii, there are certain websites that are accessed by almost all respondents. The women respondents were interested in accessing information on *petua or* recipe, landscape and family health. Some of them read the available online newspapers. However, all male respondents indicated that they read newspapers. Several respondents accessed information on retail prices, information about teenagers and government related information. Some respondents searched for information on tourism.

The respondents also expressed their satisfaction in that they can access information easily without leaving their home. Information gained from the content in JENii make them more aware of current issues and skills. This will in turn helped them to be more knowledgeable, more confident in interacting with others socially and be a more informed citizens of the country. This finding indicates that the desire to use JENii to seek information will spur interest to use ICT as one of the information sources among the elderly. This result fits well with the objectives of national agenda of ICT development in Malaysia.

Despite the benefits gained by the respondents, they feel that the content of websites available in JENii should be updated regularly. They feel bored reading the same information again and again. The women said that they would like to learn and try out more recipes, but when they assessed the recipe website, they found that it has not been updated. The same goes for the tourism website. Information about other states in Malaysia is still not available. These experiences affect their interest and motivation to use JENii.

Majority of the respondents, in particular, those who did not experience any technical problem with JENii reported that they are confident in handling JENii. As evidence, they can switch on and switched off the device as well as recognized when there is connection to the Internet or not. Since these respondents do not have any technical problem with JENii, the usage of JENii has become a routine for them, and hence, they found that the steps in operating JENii can be easily understood. In fact, this is one of the main aims when JENii was invented. The device was meant for people with low ICT literacy level or with no ICT knowledge at all. Therefore, a device which is simple to operate should be designed for such group of people. It appears that this particular aim has been achieved.

Based on the users' perceptions and experiences using JENii, it can be said that the introduction of JENii has impacted their lives. They expressed gratitude as how JENii has created more confident to use computer related application, their relationship with family members become closer because their children helped them to use JENii and they sometimes assessed some websites together with their family members.

It can be concluded that the introduction of JENii and WiWi has managed to reduce the respondents' fear of technology. Majority of them agreed that they have been empowered to use technology to access information. As a result their level of knowledge and awareness about issues and events that are happening around them has been increased.

## **Conclusion**

The introduction of JENii is a right step by the government to encourage wider usage of ICT and to address the issue of digital divide among the society, especially the marginalized group. JENii is a simplified device in terms of its technological features and user interface, to cater especially for the ICT illiterate group and technophobia group. The results of the study revealed that respondents found the device easy to use, and hence, helped in reducing their fear of technology. Their knowledge of computer terms or terminology has also been developed. The device has also changed the respondents' perception towards technology as a tool to search for information, as they are now aware of its importance in their life. The adoption of ICT will help the development of information society, which is in line with the nation's ICT agenda.

To conclude, Malaysia's efforts in bridging the digital divide have been laudable as reflected in the continuous work and pro-active role shown by the appointed Ministries and its agencies in achieving its goal to ensure ICT access to all Malaysian citizens. Besides providing connectivity, the government has also conducted many and various training programme to ensure that the rural community not only has a connection to the Internet but also the capacity to benefit from that connection as ICT development is a vehicle for wider economic prosperity.

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