Digital Inclusion Society in Malaysia Felda Agricultural Area

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Abstract: - This paper discusses the impact of the implementation of a computer project, JENii, to residents of Federal Land Development Authority (FELDA) Chini Timur cluster settlement in the State of Pahang, Malaysia. JENii computer is a product at trial stage at public level design by Malaysian Institute of Microelectronic Systems (MIMOS). The JENii project aims to reduce the digital gap among rural residents. JENii uses touch screen with built-in wireless broadband. The first part of this paper discusses literature review and theory of digital inclusion. The second part discusses issues and methodology of the research. The third part discusses impact of JENii on improving computer usage skills among the housewives and senior citizens. This study uses empirical methods based on quantitative and qualitative data. The study found that the technology helped to eliminate techno-fear among the samples. The use of the applications in the device and internet access among the samples was at a moderate level.

Keywords: - Agricultural Society; Digital Inclusion Society; Techno-fear; Bridging Digital Divide

1 Introduction

The government's mission in striving to achieve Vision 2020 has prompted the Malaysian government to place importance on human resource development as a vehicle towards realizing the goals of the Vision. However, in the process, Malaysia is confronted with the challenge to narrow the digital divide between the urban and rural areas and those at the urban poor areas. The challenges face by Malaysia reflect those face by many other developing and developed countries in the world where rapid and uneven economic growth has brought about digital divide. It is a common knowledge that coverage of Internet is sometimes slow and not available in some marginalized areas in Malaysia. In addressing the digital divide between urban and rural communities, the Malaysian government together with the private sectors have undertaken a concerted effort to ensure that the rural segment of its population is provided with access to ICT services that have already become the norm among its urban population. In the effort to do so the techno-fear among first timers of computer usage must be reduced. This is to ensure the digital culture can be embraced and the use of Internet will add positive values among the rural citizens.

2 Literature Review

2.1 Agricultural Society

Agricultural society or agrarian society is one that is based on agriculture as its prime means for support and sustenance. The society acknowledges other means of livelihood and work habits but stresses on agriculture and farming, which was the main form of socio-economic organization for most of recorded human history. From the historical civilization, agricultural society moved to industrial society. Industrial society refers to a society driven by the use of technology to enable mass production, supporting a large population with a high capacity for division of labour. Such a structure was developed in the west in the period of time following the industrial revolution, and replaced the agrarian societies. Industrial societies are generally mass societies, and may be succeeded by an information society [1].

Malaysia has a settled agricultural community called the Federal Land Development Authority (Felda) Settlement. Although these agricultural communities are located in rural areas, they have facilities in the city. Basic amenities and facilities available in FELDA include 24-hour electricity,

water supply, community halls, sports facilities, schools and telecenters. Settlements such as Felda Chini Timur have access to telecenter. The telecenter is provided free of charge by Package One (P1), a private company that provides wireless broadband services.

2.2 Digital Inclusion Society

From information society, digital inclusion society is committed to building a people-centered, inclusive and development-oriented information society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and people to achieve their full potential. However there are several issues such as *access, skills* and *confidence* that act as drawback. There is a need to create a culture of self-belief, where everyone, regardless of their background, income or level of educational achievement, feels happy about making their first mouse clicks in the virtual world [2].

Digital inclusion or e-Inclusion, written *eInclusion* when referring to specific policies, is the term used within the European Union to encompass activities related to the achievement of an inclusive information society. In this vein, new developments in technology turns the risk of a digital divide into "digital cohesion" and opportunity, bringing the benefit of the Internet and related technology into all segments of the population, including people who are disadvantaged due to education (a specific subset called *e-Competences*), age (called *e-Ageing*), gender, disabilities (called *e-Accessibility*), ethnicity, and/or those living in remote regions (subject to the *geographical digital divide*). E-inclusion covers mainly the development of appropriate policies, maintenance of a knowledge base, research & technology development and deployment, & best practices dissemination. At EU level e-Inclusion is part of the third pillar of the 2010 policy initiative, managed by Directorate-General for Information Society and Media of the European Commission.

Next to these formal activities within the context of the EU, many people are and have been using the Internet to try to earn a living with all kinds of activities, while working at home. Known examples are the large group of "work-at-home-moms" across the Globe. Other groups that are often excluded are people that have been laid off after re-organisations or that are over 50.

E-Accessibility includes computer accessibility; approaches are essentially based on inclusion and the social model of disability as it applies to information technology goods and services; the Design For All principle, also called universal design or inclusive development in other fora, means availability of adequate assistive technology. E-Competency is a new term covering skills, knowledge and attitude relevant to education in the context of an inclusive information society; see also e-Learning and inclusive classroom in this area of accessibility to the differently-able individuals.

2.3 The development of digital inclusion society

A report by FreshMinds Research into the e*conomic benefits of digital inclusion* was published in May 2008 by UK Online Centres. The report outlines three key benefits of digital inclusion:

1. Digital inclusion is capable of enhancing opportunity for both individuals and organisations.

ICT-assisted learning has been shown not only to stimulate learning but can also be demonstrably related to academic achievement at GCSE level. Customer choice is also greatly enhanced through digital inclusion, which secures better deals for users while stimulating competition in the market. Commercial organisations also benefit hugely from digital inclusion in reaching out to more customers and attracting higher spending, in addition to the obvious internal benefits related to higher efficiencies.

2. Digital inclusion has immense potential in cutting the cost of public service delivery.

Examples of such savings include efficiencies stemming from new electronic processes replacing traditional services, which make customer interactions a lot cheaper. Such schemes are increasingly rolled out across different public sector services, ranging from health to vehicle licensing, and their full potential is likely to be much wider. In addition, there are potentially significant impacts for the wider economy – the Government anticipates public spending on e-government and digital literacy programmes to yield returns of between 1.1 and 1.5% of GDP increase in 2008-10.

3. There are multiple indications of digital inclusion's ability to improve society.

Expanding access to ICT for marginalised groups is likely to reduce their social exclusion simply through facilitating access and participation, while the potential of the internet as a vehicle for

expression and easier communication often translates to individuals who are more involved and communities that are more integrated. In addition, extended digital inclusion can mean a more flexible workforce, lower paper consumption, and reduced travel to work, all of which have the potential to foster happier workforce and a better natural environment.

The effort taken in the setting up of broadband has answered many unexplainable issues related to unimaginable networks of 26 million Malaysian Citizen; furthermore its fruitful technology has opened new opportunity not only for social usage but for the strength of Malaysia's economy. Internet connection should be affordable to all communities in order to get benefit out of it; either in the suburb or rural areas but there needs to be a balance in terms of infrastructure and mind set of the citizens. However, the statistics for the past 3 years published by Malaysia Communication and Multimedia Commission (MCMC) showed that there is evidence of digital divide. Up to today only 18% of the marginal group from rural areas is able to enjoy the benefit of Internet and this is clearly a big gap if compared to those at the suburb areas where 82% of the communities in these areas can access the Internet. The ratio of computer ownership in this country is 24 out of 100 household while Internet access is at 10.4 out of 100 household [3]. Although the percentages of computer ownership and Internet users have increased over the years, there is still a gap among the younger and older people.

A number of studies in developed and developing countries indicate that there are considerable gaps in computer use and access between sub groups of the society. For example, a study by the National Telecommunication and Information Administration, U.S. Department of Commerce, reported that people who reside in rural areas and inner-city communities have less access to the Internet than households located in the more affluent metropolitan areas. Senior rural citizens also recorded lowest rate in computer penetration compared to younger citizens. A survey in Finland on 1555 elderly in 2007 cited three main reasons for computer non-usage among elderly which are motivation, access and skills [4]. A study by Rahmah Hashim et al found that in Malaysia, the computer and Internet are known to be a metropolis phenomenon where many dwellers in the metropolis own computers and access to the Internet. Their study also shows that most early adopters of Internet are male, in their mid-twenties and mid-thirties and have higher or tertiary education qualification [5].

Another study by Sharifah Norazizan Syed Abd Rashid et al among elderly agro-based entrepreneurs also revealed that the respondents did not use ICT because they did not know the benefits, did not have skills in using ICT, difficulties in using ICT and were afraid to use it [6]. Although the percentages of computer ownership and Internet users have increased over the years, there is still a gap among the younger and older people. Studies by Norizan Abdul Razak et al found favors related to time, low literacy and low needs on the application of ICT among women affect the patterns of use among Malaysian women aged 35 and above [7].

3 Digital Inclusion Theory

These ideas resonate with the work of Heeley & Damodaran (2009) who propose a broader concept of digital inclusion: empower citizens to go beyond being 'users and choosers' of technology to become 'makers and shapers of the technologies available to them and the rest of society. In a truly inclusive digital society, citizens need to be "actively engaged in the creation of sociotechnical systems" [8].

These ideas suggest a hierachical framework for progress in 'Digital Inclusion' (akin to Maslow's hierarchy of needs) which might comprise the following stages: Level 1: the technical infrastructure as the essential and fundamental foundation for inclusion which provides access to ICTs; Level 2: digital awareness programmes and campaigns to increase awareness of what is available and to improve take up; Level 3: development of 'know how'', understanding and basic IT skills training for citizens; Level 4: Digital opportunity - access to ICTs and the ability to influence their design; Level 5: Digital Empowerment - enabling people to tailor technology to meet their needs and aspirations, to innovate and to participate in planning and design decisions.

Referring to Figure 1, the identity development of knowledge communities in Malaysia as in the nation's development goals are met by the Malaysian Outline Perspective Plan 3(OPP3) process of e-development and e-inclusion. The process is based on evolutionary changes and there was a time not to pursue the technology changes so quickly, especially ICT, because until now the impact of e-development and e-inclusion on the knowledge society in Malaysia is through the accommodation, adaptation, assimilation, diffusion and innovation. In general, the process of e-

development and e-inclusion at the top has been through four stages.

The first phase of the development of ICT as the basic needs of e-development programs and e-inclusion focuses on infrastructure and infostructure. The main purpose of the facility is to improve the performance and usability to reduce the gap in access phenomenon. At this stage the question of the digital divide is the main problem to be solved. Therefore, the digital bridge program (bridging the digital divide) was held to further reduce the digital divide.

The second phase of e-development and e-inclusion is to focus on the process of social engineering and human capabilities. Its main purpose is to enhance the skills, learning and knowledge society to use ICT. Basic ICT skills should be used for the benefit of life. Therefore, there exists such a system like e-government, e-commerce, e-learning etc. for people who need the skills to use it. At this stage the question of adaptation of the gap (gap adoption) to the subject matter is crucial. To fill the gaps in earlier adaptations there is e-learning program to improve ICT skills and knowledge society.
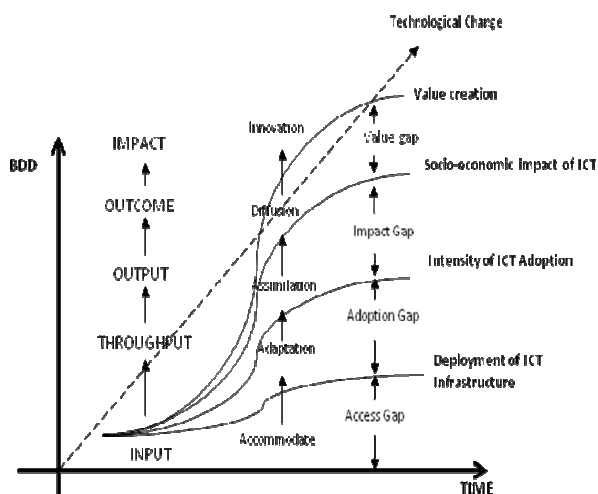

Figure 1: Development Process of Digital Inclusion Society

Actions to evaluate the process of digital inclusion for community development based on performance measurement process [9]. The process involves an assessment of the performance measurement of input, throughput, output, outcome and impact (Figure 1).

1. Input – these measures reflect the resources that feed into the digital inclusion society development process.

2. Throughput - These measures reflect the level of activity or workload involved in regular ongoing operation.

3. Output – these measures reflect the immediate products of the programme or process reflected in the activities measured above.

4. Outcome – these measures reflect the impacts or results of the outputs of the programme activity. They occur on an ongoing basis and may be identified as initial, intermediate or long term measures.

5. Impact – the two aspects will be measured under impact. First, efficiency. These measures reflect the cost-efficiency of the outputs or outcomes of the programme activity, typically involving a ratio of inputs to outputs or outcomes. Second, quality. These measures reflect the qualitative aspects of programme activities, outputs and outcomes and are often measured using society feedback and satisfaction.

Based on the five processes of the development of e-inclusion, digital inclusion society not only excel in terms of e-development, but also are excellent to be able to reduce the access gap, the gap adaptation, good impact gaps, and gaps due to be able to use the digital value of ICT. From the point of socio-technology, digital inclusion is acting as a consumer society, donors and developers of advanced techniques and ICT technologies.

The rural communities should be developed as a digital inclusion society so that they can contribute to technological progress in the country as do the urban communities. But the question of whether it will be achieved or not depends on the wishes and attitudes of rural communities' acceptance of technology. They have to have the nature of passion and open to new technology in our lives. Rural communities should be sensitive to changes in ICT technology which is constantly changing. Action awareness campaigns, persuasion, training, providing guidance and coaching will not succeed if there is no cooperation and enthusiasm of rural communities to become a successful digital inclusion society.

4 Felda Chini Timur and JENii Project

The Federal Land Development Authority or in short known as FELDA is a Malaysian government agency handling the resettlement of the rural poor to newly developed areas to improve their economic status. These agencies focus on the opening of smallholder farms for cash crops. FELDA schemes are mostly inhabited by the indigenous Malays who make up the majority of the population. By 2000, FELDA had cultivated 9.000 square kilometers of land, mostly oil palm plantations.

FELDA was established on July 1, 1956 when the Land Development Act (1956) came into force. [2] The initial capital of RM10 million, and the first settlement of 16.2 square kilometers of rubber trees in Ayer Lanas opened in 1957. In 1958, five similar schemes opened. [3] It is administered by a Board responsible to the Deputy Prime Minister under the Prime Minister's office. FELDA's role is to develop a new land to make farms productive through effective agricultural management among the settlers as well as encourage the growth of a progressive and disciplined society. In the 1960s and 1970s, government policy began to emphasize crop diversification to avoid large price drop. In 1961, the settlement of the inaugural Felda oil palm is opened, with 3.75 km² of land. By 2000, a total of 6,855.2 km² of land under Felda was palm focused. [3] FELDA is concentrated in Peninsular Malaysia.

FELDA is also more open in the Regional Development Authority under the Ministry of Rural and Regional Development. FELDA has many areas such as South Johor Development Authority (KEJORA), South Kelantan Development Authority (KESEDAR), Central Terengganu Development Authority (KETENGAH), Jengka Regional Development Authority (Jengka) (already closed) and the Pahang Tenggara Regional Development Authority (DARA) (already closed).

4.1 Felda Chini Timur

Felda Chini Timur cluster consists of three residential areas of Felda Chini Timur 1, Felda Chini Timur 2 and Felda Chini Timur 3. Felda Chini clusters are located in the Eastern District of Pekan, Pahang Darul Makmur (Map 1). Originally Felda Chini Timur cluster is located in the Pahang Tenggara Regional Development Authority (DARA) which has been closed.

Map 1 : Pahang State and Felda Chini Timur Area

Felda Chini Timur cluster is located near the tourist attraction of Lake Chini, a famous legend, about 90 kilometers from Kuantan town. Kuantan is the capital of the state of Pahang. The main farming activities for Felda settlers in the East Chini clusters is oil palm plantation. There are settlers who are involved in small business, small and medium industries, contractors, cattle and goats farmers and plop down in the cultivation of herbal plants. So with digital accession programs through the use of computers the FELDA settlers can master JENii. The settlers are hoped to use computers to market their products in the future.

4.2 JENii Project

At the core of national ICT agenda is the goal to provide 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 senior citizens and women. This gadget is affordable for the purpose of reaching out to those who are ICT illiterate and could reduce the technofear. 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 news, information on health, retail price, and many others within simple navigation controlled by icon with easy user interface, touch screen function which eases complexity of usage, lightweight and built-in broadband connectivity via a gadget called WiWi. These features certainly make it the right technological gadget in order to reach citizens who are considered ICT illiterate.

JENii is a machine that is user-friendly gadget. The JENii computer in the form of I-PAD is designed for users who do not know how to use computers. The language used is Malay, which is the national language of Malaysia. The elderly or the consumers do not speak English so they cannot use JENii as they can use ordinary computers. From the point of argonomy, JEN-ii is designed to suit the skill levels of users who have no computer skills.

The instructions available on JENii are quite easy to understand. The home interface symbols display the introduction, calendar, prayer times, prices, SMS and so on. Graphical symbols and signs of the Malaysian ringgit means MyBiz the screen to see stock quotes, e-banking, bill payment and the like. Symbols that indicate television means MyInfo, newspapers, access to websites, information on weather forecasts, entertainment and movies. Similarly, there are other symbols that are easily understood by users (Photo 1). The interface design of JEN-ii basically met the motto 'your window of information'.

Photo 1: JENii Gadget

JENii was created for the purpose of bridging the digital divide, particularly among the elderly and adults. In this regard JENii is targeted at those who can not use the information technology (IT) such as housewives and the elderly. JENii is a technology that opens the first step to stakeholders in the information technology. In the long run, those who are adept at using JENii can be at ease with ICT. In addition, JENii fills the ICT market opportunities as it is cheap and affordable. To date there is no any computer as JENii which can help the ICT illiterate to become computer literate, especially rural residents (Photo 2).

Photo 2: FELDA's Old Generation Used JENii

The JENii computer is also a gadget that can be transported anywhere and it is light weighing less than one kilogram. It has a flexible view which can be brought forward if you want to see the displayed object in the screen to see more clearly (Photo 3). To get a larger screen view, JENii can be connected to the television. However JEN-ii has not been able to send and read e-mail. Internet content is still limited in the Malay language and content will be increased from time to time.

Access to information through JEN-ii has opened a new world view of the importance of ICT, especially the importance of computers and the Internet to consumers. Users can obtain the latest recipes, current retail prices of daily essentials, can connect online, find out about religion, particularly Islam, and to explore the web site information based on user interest.

Photo 3: JENii Friendly to Human

Jenii is ergonomically appropriate based on the concept with consumers, the main motto of JEN-ii products are:

1. User friendly - internet access with just one button. Connection to eight channels to-date information formatted for easy to understand.

2. IPv6 - Internet Protocol added to ensure continued rapid and uninterrupted.

3. WiWi aka WiFi - wireless Internet connections make friends JEN-ii the latest mobile information.

4. Seven -inch touch screen - big screen easy to view and order information clearly easier access to information.

5. Two screen display - outgoing connections allows information displayed on the screen larger and more conspicuous if connected to a TV or SVGA monitor.

6. Outlet to the TV - Adjustable output signal for television because almost all the houses in Malaysia have a TV that can be a second screen for JEN-ii at no extra cost.

The 1st true hybrid wireless access router that offers a true experience of instant multi-user Internet access over a Wi-Fi connection while at the same time enjoying consistent WiMAX last mile connectivity, which allows Internet connectivity at a significantly greater coverage area. hybrid WiFi and WiMAX solution which operates on 2.3 GHz frequency designed as an alternative for last mile broadband connectivity to accelerate Malaysia's broadband ecosystem (Photo 4).

Photo 4: Teknologi Hybrid WiWi

MIMOS WiWi Technology Platform can be further developed into applications for enabling broadband Internet connectivity in a community-type environment or rural area. With Internet Protocol version 6 (IPv6) data access, it can provide cheaper calls via Voice over IP (VoIP) between users; and with patented multicasting capability it can provide efficient and high quality IPTV without the need for investments in bigger transmission links. MIMOS WiWi technology platform has a high capacity access network architecture which offers a hybrid network approach to support any compatible off-the-shelf WiMAX or even any other technologies such as Asymmetric digital subscriber line (ADSL), WiFi, High-Speed Downlink Packet Access (HSDPA) as the backhaul and WiFi (access) module.

MIMOS WiWi Technology Platform is expected to be part of the national roll-out of the Broadband for General Population (BBGP) initiative which is in line with the national broadband target of 50% household penetration by 2010. Designed as an alternative for last mile connectivity, MIMOS WiWi is an environmentally-friendly plug-and-play instant broadband hotspot technology platform which is the ideal solution for cheaper and more affordable connectivity per user. WiWi can provides multiple PC connections using existing WiFi connectivity. With WiWi broadband speed it can provide fixed, portable and mobile wireless broadband available to all Malaysians.

For instant at Felda Chini Timur, JEN-ii is connects with a wireless broadband signal services by the Company Package-One (P1). The company P1 is one of the broadband operators who are appointed by the Malaysian government to develop

the backbone of the infostructure and communications services.

4 Problem Statements
Problems that need investigation for the discussion are related to the followings:

1. To what extent the bridging digital divide program with the use of simplified technology and friendly user interface JENii is successful?

2. To what extent the changes brought by the e-inclusion initiatives such as JENii affect the research samples?

E-development and e-inclusion may change the structures, institutions, and human life. Change can be subjective or objective. Changes affect economic, physical, infrastructure and basic amenities. Subjective changes include social, cultural and political structures. This study focuses on the subjective change focusing on how e-development and e-inclusion affect the identity of the people who use ICT.

5 Methodology
Both quantitative and qualitative approaches were used 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 evaluation we proposed 3 months for data collection and the total duration of the research was 10 months beginning September 2009 to June 2010. About 44 respondents were selected mainly housewives 35 years and above and senior citizens 55 years and above.

The components and indicators of this study include:-

1. The demographic profile of the respondents in terms of race, age and education background.

2. The socio economic status - employment, economic activity, e-inclusion activities such as e-government, e-filing, e-report (online services).

3. Information and communication technologies literacy and penetration-infrastructure, dial up and broadband connectivity, internet access points, e-community centers, hand phones, and fixed telephone line.

4. The ability to use JENii after training has been provided.

6 Findings of Digital Inclusion Initiative for Felda Community

6.1 Demographic
All respondents are Malays with 27% males and 73% females. From the 44 respondents about 64% are Felda settlers and the other respondents are housewives and Felda staff. For the age category, majority of the respondents are 46-50 years old (40%), and 32% of the respondents are between 41-45 years with monthly household income above the national poverty level of RM500. From the survey 14% of the respondents have income below RM1,000 and 32% have monthly income of RM1,000 to RM2,000 while 46% have monthly income of RM2,000 above. Majority of the respondents (48%) have Middle Certificate Education (MCE/SPM), 26% with Lower Certificate Education (LCE/PMR) and 4% with High School Certificate (HCE/STPM).

6.2 Analysis
The study found that 75 % or majority of the respondents who use JENii gained computer skills remarkably after training given by MIMOS. There were 27.3% respondents who used JENii with the help and guidance from their children, husbands or wives. More than 50% of the respondents understood the 8 operating icons on JENii, while those who did not understand the icons felt they could understand better if the training was longer.

Regarding the broadband wireless device (WiWi) which connects JENii to the Internet, the study found that 31.8% had a clear signal, while 34.1% had signals sometimes. Lack of clear signals affected the usage patterns of JENii by the respondents. Yet the existence of WiWi, the children and neighbors can use the Internet by connecting their computers to WiWi. After 3 months of use of JENii, 65.9% of the respondents felt confident to use a desktop or laptop computer. Despite this moderate achievement, JENii had made a big impact on reducing technofear and the digital

divide phenomenon among housewives and senior citizens of Felda, thereby developing the Felda community clusters from agriculture society to digital inclusion society.

Other effects were that 38.6% of the respondents admitted to using cost-effective JENii daily information such as news and recipes and therefore do not need to buy newspapers or magazines. This is congruent to the findings by Mohd Safar Hasim et al (2008) on purposes of usage of internet [9]. Similarly, 47.7% of the respondents admitted that using JENii keeps families together because they use along with their husbands or wives and children. The highest impact of JENii on the respondents is that 56.8% of respondents said using JENii has helped fulfill their leisure time.

Implications of the use of JENii and the improvement of services and technologies in the future JENii are: -

1. Bigger screen for easier reading among the senior citizens.

2. The choice of respondents must be those who are with no or low ICT literacy.

3. The duration of use should not be longer that 3 months as the limited content will lead to boredom for those active users.

4. The significance and the benefit of being online must be emphasized to users so that their attitude and motivation is more of personal and intrinsic and not easily destroyed by the technical problems faced.

5. Training session must be held in coaching mode at home where the JENii will be placed. This is due to the fact the recipients are housewives and senior citizens they will remember better if they have personalized tutor.

6. Online assistance via phone must be made available and service center must not be physical but mobile. Regular visits to the respondents' home should be part of the program to motivate and to assist any technicalities.

7. New items and attractive contents must be made known to users.

8. JENii is effective as bridging the digital divide if offered to the following groups:

   a. Indigenous groups (orang asli).

   b. Senior citizens at welfare homes.

   c. The physically disable who are able to use their fingers and undergoing rehabilitation and training. For example those at the disable centre.

   d. Housewives who are motivated and with positive attitude to learn on their own.

   e. JENii for use in remote communities such as people living at mountainous and island areas.

6.3 Challenge: The Way Forward in Bridging the Gap

Although the introduction of JENii has managed to achieve its objective to a certain extent, there are several issues if addressed effectively will assist the bridging process. The study found users need continuous technical support from technology vendors. Training for device handling and usage could be offered more regularly firstly prior to use, and secondly at individual's home and conducted in easy to follow steps. This will enable the trainers to detect any problems and address the individual needs of the respondents. In addition, the training should also included teaching manual in various languages and JENii should also be battery operated for mobility.

7 Conclusion

In conclusion the study found that JEN-ii project has helped to improve the computer skills among the Felda community of the study. However, computer skills gained by the people are still moderate. This is because the people used JENii for a relatively short period of time and would like to access a more sophisticated and higher capacity computer. We also found that the migration to actual computer period of participants under study is within 2- 3 months. Thus we conclude that JEN-ii is effective in its objective to bride the digital divide and improve confidence level of the target group and thus reduce the technofear for more effective uses of actual computer. From the findings, JEN-ii has somehow

helped in the transformation of the respondents from agrarian to digital inclusion society.

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