Bridging the Digital Divide:Best Practices
at the Balik Pulau Telecenter

Azizah Ahmad, Abdul Razak Rahmat, Rafidah Abd Razak, Zulkhairi Md Dahalin

Applied Science, College of Arts and Sciences,
Universiti Utara Malaysia
06010 UUM Sintok, Kedah, Malaysia
{azie,arazak,rafidah,zul}@uum.edu.my

ABSTRACT

In today's competitive era, knowledge is one of the most important assets in the development of nations. Digital divide can hinder the advancement of knowledge in society. Digital divide is complex as it intertwines with social, culture, economics, politics and other factors which are unique to particular communities. Bridging the digital divide among the different communities is a challenging task. An example of an organization that has excelled in bridging the digital divide among its community is the Balik Pulau Telecenter (PID). The center has successfully reduced the digital gap between its rural and urban communities, provided information and communications technology (ICT) knowledge especially to the underserved communities, created e-communities environment in order to spread information to the local communities, and created awareness of the importance of using ICTs among local communities in this borderless world. The center has also moved one level higher by successfully transforming their initial objectives to reduce the digital gap to the generation of economic and social development through ICT. The structures and processes used by the Balik Pulau Telecenter for bridging the digital divide represent best practices for other telecenters to follow. For researchers, the experience at the Balik Pulau Telecenter support and add to the body of knowledge about bridging the digital divide.

Keywords
Bridging digital divide, Telecenter, Malaysia

1.0 INTRODUCTION

The digital divide that separates predominantly rural and urban society has attracted the attention of both policy makers and social scientists, is undoubtedly one of the most important social equity issues facing the information society (Benton Foundation, 1999; Hoffman, Novak, & Slosser, 2000), and is international in scope (Van Dijk & Hacker, 2000). Digital divide exists everywhere in the world, not only in developing countries but also in the developed countries. For example, in the USA there is a digital divide between races i.e. white, black, Hispanic and Asian etc. In Malaysia, digital divide still exists and this called for a serious effort to overcome this problem (Zaiton & Crump, 2005). In order to bridge the gap that exists within the communities, the Malaysian Government is making a large investment in setting up IT-based telecenter. This article presents an example of efforts that has been carried out to bridge the digital divide in Malaysia.

The paper is organized as follows. In section 2, bridging the digital divide is described. In section 3, we describe the Balik Pulau Telecenter and its efforts. Then in section 4 discussion on lessons learned will be presented. Finally in the last section, the conclusion for the best practices is drawn.

2.0 BRIDGING THE DIGITAL DIVIDE

The term digital divide has typically been used to describe decreased access to information technologies, particularly the Internet, for racial and ethnics minorities, persons with disabilities, rural populations and those with low socio-economic status (Chang et. al, 2004). The digital divide also has been conceptualized primarily in terms of patterns of race and class discrimination that are reflected in unequal access to computers and the Internet.

The digital divide affects many nations of the world. But by dramatically increasing access to pertinent information through ICT, nations stand to experience many potential benefits. However although the Internet access is increasing at all income levels, it continuous to be significantly higher for those with higher income than those with lowers income (Chang et. al, 2004). The same phenomenon is observed in Malaysia (MCMC, 2008). In addition, urban use of Internet also continues to be higher than that in rural areas.

These gaps in digital divide have severe implications on nations, if not addressed properly. Several positive measures are being taken in India, for example, to bridge digital divide. India has

commissioned IT Task Force, IT Action Plan from Planning Commission and Ministry of Information Technology as major policy initiatives towards this end to transform India into a Knowledge Society (Rao, 2005). A study conducted in Uganda in 2002/2003 to investigate and assess the strategies of bridging the digital divide. The study suggests that the National Library and other information centres are valuable in bridging the digital divide in Sub-Saharan Africa (Kasusse, 2005).

There is a potential for using Internet technologies, not only for improving the efficiency in government offices, but also for enhancing education. Remarkably, countries may see a sharp increase in the overall quality of education in their schools and universities through increased access to the latest information. The benefits from having a better educated population can often include the development of a more highly skilled workforce and an improved economy overall.

In the following section, we will provide an excellent example of bridging the digital divide among its community. The Balik Pulau telecenter has successfully reduced the digital gap between its rural and urban communities, provided ICTs knowledge especially to the retired communities, created e-communities environment in order to spread information to the local communities, and created awareness of the importance of using ICTs among local communities.

3.0 THE BALIK PULAU TELECENTER

3.1 Background

The Balik Pulau Telecenter was established in 2000. The objective of the center was intially to reduce the digital gap between the rural and urban area of Balik Pulau, Penang. Up to 2006, there are 42 similar telecenter throughout Malaysia, which covers all states except Federal Territory. Telecenters are part of a program initiated by the Ministry of Energy, Water and Communication in collobration with POS Malaysia Berhad, Multimedia Development Corporation Berhad (MDEC) and Telekom Malaysia Berhad. In the state of Penang, there are only 2 telecenter, which situated in Balik Pulau and Tasek Gelugor.

Postal Office building was chosen as the location for center based on previous research by Japan International Cooperation Agency (JICA) in 2002 which finds that the postal office is the most suitable location for communities gathering.

3.2 The Objectives of the Center

The initial objectives of the center are as the following: (1) To reduce the digital gap between rural and urban communities; (2) To provide ICTs knowledge to all, mainly to retired communities; (3) To create e-communities environment with the development of Balik Pulau Website in order to spread information to the local communities; and (4) To create awareness of the importance of using ICTs among local communities in this borderless world.

As of 2008, there has been a transformation of the center's objectives from mechanism to reduce digital gap to the generation of economic and social development through ICT. Currently the focus of the center is to involve the communities with non-governmental organizations in order to strengthen their economics as well as social. A Social Entrepreneurship Club was formed to cater for the needs. The club joins forces with the small business around Balik Pulau and at the same time activates the communities' entrepreneurship skills.

3.3 The Operations of the Center

The center is manned by two supervisors appointed by the ministry. The manager, who is a Balik Pulau local born, female of 30 years old and married with 2 children. She graduated with Information Technology degree from local university. She has been with the center since July 2006. She has other ICT qualifications such as certification in Majlis Latihan Vokasional Kebangsaan (MLVK), I-Positive Facilitator Course, Penang E-Communities Workshop, Penang Open E-Creative Challenge, National ICT Seminar, PID Program - the Way Forward, PID Development Program etc. The assistant manager is also local born and earned her diploma in Computer Science from local college. She joined the center in April 2009.

The Balik Pulau communities are directly involved with the operations of the center. The committee members whom are responsible for the administrative of the centre are headed by State Assembly Representative of Pulau Betong. He is supported by the adviser is the District Officer and the rest of the organizational members comprises of leaders from various background within the community. The two operators of the center are also part of the committee members.

The running of the center is closely control by the ministry. An appointed officer in the ministry office is responsible for monitoring the progress of the centre. The monitoring process takes place by having a monthly report sent to the ministry by the center. The center also established a Smart Partnership Program where the centre is working together with various government and non-government agencies.

3.4 Services Offered by the Center

The center provides free Internet and computers usage to their registered members, but starting from 2010 the centre will start charging its users. As of December 2009, the center provides more than ten basic computer training for its local communities. The introductory to computer hardware and software course provides the participants with knowledge on basic computer components, and basic typing skills. Apart from that, basic courses on Microsoft Windows, Word, Excell, Powerpoint and the Internet are also being offered. There is also high-demand for social network services such as e-mails, chatting, blogs and instant messengers. All the courses are conducted daily but the volume increases during school holidays. At the end of each course, participants will be awarded certificates for the completion of the courses. As of first half of 2009 (January – June), it was reported that a total of 2296 participants have attended the training. Other services provided by the center include printing, document scanning, photocopying, laminating, faxing, typing and CD burning. The center also extends their services by giving consultation on the purchase of computer peripherals.

As proof that the digital divide issues has been addressed, the volumes of services made available by the center are observed to be considerably high. For the six month period of January to June 2009, the whole volume is 15,610. These services include 2,679 basic computer trainings, 300 printing, and 5000 photocopying.

The utilizations of the facilities at the center are closely monitored by the operators. The rules and regulations of the facilities usage are clearly been informed to the users. There are posters posted on the walls inside the center to ensure that all users are aware of the rules. Users are strongly prohibited over accessing immoral websites such as phonographic. Even u-tube is not encouraged to be used here. However, chatting facilities such as Yahoo Messenger is permitted depending on the purpose of use.

3.5 Financial Implication

The initial set-up of the Balik Pulau telecenter was funded by government as well as non-government agencies through a smart partnership program. POS Malaysia Berhad provided its venue to conduct the whole center operations and also responsible for the payment of all the utilities including electricity and water consumption used at the premise. While the ICT peripherals needed by the operations such as personal computers, laptops and printers are funded by several private ICT companies and individuals in Balik Pulau community. Network connectivity inside and outside the center is sponsored by Telekom Malaysia. The company is responsible for the initial set-up of the network and the monthly payment of the utilizations of the Internet via Streamyx. The payroll of the two operators is taken care by the Ministry of Information, Communications and Culture (KPKK) as they are the contract staff of the ministry.

The source of income for the center is mainly from the fees charged to the users. Other income includes photocopying and printing services. Since the fees charged is very minimal, the profit margin is understandably also very minimal. Since its operations back in the year 2003, the profit/loss figures of the center are considered in a low range.

Based on the observation of the center's financial performance throughout the entire operations, it can be concluded that the center's performance is consistent although the profit is very minimal.

3.6 Center Accessibility

Balik Pulau by definition is not seen as a rural area since it is surrounded by modern development. But geographically, it is a secluded part of the island of Penang, the metropolitan city of Malaysia. Hence, it is considered rural by the Penang community. In terms of accessibility, the center is within the community reach since it is located in the center of Balik Pulau town. The center can be easily reached by bus and taxi and even walking by local folks. Currently, there are quite a number of similar services offered by other centers within the Balik Pulau vicinity. These include nine other tele-centers, cyber cafes and village libraries. These centers are actually complementing each other instead of competing since the volume of demand for the services are quite high within the community.

3.7 Users of the Center

Based on information provided by the operator of the center, among the users that most frequently utilized the center are the youngsters, which age range is between 21 years to 40 years old. This is followed by the adults (41 years to 60 years old), teenagers (12 – 20 years old), and senior citizens (more than 60 years old). The least group of the list is children (less than 12 years old). School children, graduates, business persons and students from local higher institutions are considered the most regular users of the center.

In terms of user satisfaction, overall users are satisfied with the facilities provided by the center. However, few users had expressed some of their concern over the services provided by the center with rooms for improvement. Apart from the limited space, other concerns include slow Internet connection, insufficient operating hours and lack of personnel to operate the center. The space in the

center is limited to only about 10 concurrent users and the users expressed the need to have a bigger place to cater for their needs. They also feel that the current operating hours is not sufficient and hope for the center to open in the evening as well as weekends. The operators are actually willing to operate beyond those hours, but the center operation's is subject to the Post Office, which only opens during office hours. There are also some concerns in insufficient number of operators who are manning the center. The current tasks including trainings and other ICT-related programs as well as handling the administrations of the center are done by only two personnel.

3.8 Operations and Management of the Center

The operations and management of the center are being closely monitored by the KPKK. The success of the center depends on the monitoring mechanism imposed to the center. The ministry has appointed a consultant to act on behalf of them in accomplishing the tasks. These involve scheduled meeting to get the latest progress on the project, monthly report on the details of activities organized by the center and the actual profit and loss account. When asked about whether the center can be sustained on its own without depending on the government, the operators had indicated their awareness towards self-sustainability and plans are under way to make the center achieve this objective by adopting a social entrepreneurship approach. This is evidence through the formation of the Youth Entrepreneurship Club (Kelab Usahawan Muda).

3.9 Leaders of the Center

In order to understand the impact of leaders' involvement in the telecenter, we conducted interview with local leaders. The interview was conducted with few community leaders who were directly involved with PID Balik Pulau. Among them are Chairman of Koperasi Usahawan Muda Pulau Pinang Bhd (KUMUDA) and the founder for Social Entrepreneurs Club, Balik Pulau.

Balik Pulau has a unique landscape in term of political scenario. It comprises of both the ruling party and opposition party representing the respective area. For Parliamentary seat, a member of the state ruling party represented the constituency, while the other two State Legislative members, Pulau Betong and Telok Bahang, are represented by the state oppositions. The PID effort is strongly supported by both Federal Government and also Penang State Government. The strong supports provide a conducive environment for communities to be involved in PID activities. Hence, this scenario gives major impacts on PID overall success.

3.10 Smart Partnership Program

One unique effort in the Balik Pulau telecenter is its Smart Partnership Program. In this program the centre collaborated with various government and non-government agencies. The program involves the participation of local community in Balik Pulau. PID Balik Pulau gives a positive impact to the local community. Based on the interviews, we found that the Balik Pulau telecenter has change the communities' way of thinking and work culture in terms of communication and collaboration. Many tasks are now conducted using ICT's such as preparing minutes of meetings, reports, financial report and others. Announcement notices are also send out via email and other social networking websites such as blogs, Facebook, Friendster etc. The IT literacy rate among the locals has also increase since the center was first established.

3.10 Sustainability of the Center

For sustainability of the centre, the Balik Pulau telecenter establishes a young entrepreneurship society called Koperasi Usahawan Muda (KUMUDA). It is based on the concept of cooperation among members in the society in terms of business venture. Members will share profits generated by KUMUDA. KUMUDA was registered on the 30th May 2009 and since then they have already collected around twelve thousand ringgit (RM12, 000) from its registered members. Three months later, in August 2009 Youth Entrepreneurship Club was established. As of December 2009, they have two hundred and thirty members and pay a membership fee of RM10 a year. Members have the options of buying the share of KUMUDA with a minimum of one hundred ringgit (RM 100). Their effort is strongly supported by the Penang Malay Chamber of Commerce (DPMPP), Federal Government and also Penang State Government.

To further enhance its sustainability, the center is well advance in its strategy to serve the community in general and at the same time to cater for their ICT needs. Plans are under way to charge minimal fees for services. With the current registered members of more than 2000 and with the number keep on increasing daily and based on the volume of the services provided, the PID is confident that they will be able to make profit to sustain its operations.

4.0 BEST PRACTICES

The experiences at the Balik Pulau Telecenter provide rich insights into efforts of bridging digital divide in the communities. In the following paragraph we presented and discussed best

practices that can be emulated by other telecenter's implementation.

4.1 Lesson #1: Active participation is necessary but not sufficient – all parties involved (operator, local leader, and communities members) need to be passionately involved and supportive

Even though the telecenter program was initially a top-town initiative by the ministry where they are responsible for setting the strategic direction for the telecenter, the success of the program depends heavily on active communities' participation. Cross-functional participation is important, but active participation is what is really needed. The whole community members especially operators, community leaders need to be passionate in the management and operation of the center, whilst the members need to give strong support in telecenter' activities.

4.2 Lesson #2: Management and monitoring the telecenter is a strategic issue

It is easy and tempting to treat management and monitoring as tactical issues. But in actual scenario, these are the strategic tasks. When the telecenter becomes the strategic importance to the nations in general and local community in specific, monitoring and management of the telecenter becomes more of a strategic issue. Consequently, monitoring of a telecenter should draw the serious attention and support from policy makers. Resources must also be devoted to improve the telecenter and everyone in the community must be more cognizant of the importance of telecenter management.

4.3 Lesson #3: Multiple committees are needed, some with business focus, some with social focus and others with technical focus.

Initially at Balik Pulau Telecenter, there were fewer committee members, where most of the members were more on social-focused. With the current arrangements, the telecenter deals with multiple committees. Some of the members such as KUMUDA deal primarily with business issues, while the Youth Entrepreneurship Club works on social issues and the rest works with vendors on technical matters. However, these issues are shared with all of the committee members. Agendas, minutes, documents and actions associated with the various committee meetings are posted on the telecenter website. It has been the telecenter experience that without aggressive communications, important issues relating to telecenter are not adequately addressed and shared.

4.4 Lesson #4: Building a "Smart Partnership" program with government agencies, NGO, and private sectors.

Smart partnership program is indeed a success factor for the Balik Pulau Telecenter in achieving its mission in enhancing their community's ICT adoption. The center seems to go beyond the initial objective of bridging the digital divide into Telecenter 2.0 (TC 2.0). This requires all implementations to fall under a form of multi-stakeholder participation that includes government, NGOs, civil society organizations, the business sector, academia and practitioners. In addition, the telecenter is funded and sustained by a mix of investment, subsidy and its own revenue. The telecenter's effort in involving participation of local public and private agencies as well as non-governmental organizations has indicated that it is now moving towards TC 2.0.

4.5 Lesson #5: Continuous efforts needed to educate committees and operators of telecenter

It is important for the committee of the telecenter to recognize that many committee members do not fully understand the needs of the whole community, especially with the growing needs in the knowledge era. A good understanding of telecenter's operation and management and the current issues in ICT development is critical to creating realistic expectations of what can be done, the timeframe for doing it, and resources that are needed. Part of each committee meetings should be spent on educating committee members about the management of telecenter and its sustainability.

5.0 CONCLUSION

The Balik Pulau Telecenter has become not only a place to learn about computers, but it also has transform itself into a mediating unit for NGO, private sectors and government agencies to reach the local communities. The center has achieved great success in bridging the digital divide in its communities. A major reason for the success is a strong support the communities themselves. Evidence of this can be found from findings from this study that shows considerable increase on demands for services provided by the center as well as requests of extended operating hours. In addition, bridging the digital divide requires good governance from leadership at all levels coupled with the vision that technology empowered people to meet their needs.

REFERENCES

Chang, B.L., Bakken, S., Brown, S.,Houston, T.K., Kreps, G.L., Kukafka, R., Safran, G. & Stavri, P.Z. (2004). Bridging the Digital Divide: Reaching Vulnerable Populations. *Journal American Medical Informatics Assoc. 2004 Nov–Dec; 11*(6), 448–457.

Hoffman, D.L, Novak,T.P., & Schlosser, A. (2000). The Evolution of the Digital Divide: How Gaps in Internet Access May Impact Electronic Commerce. *Journal of Computer-Mediated Communication, 5*(3).

Kasusse , M. (2005). Bridging the digital divide in Sub-Saharan Africa: The rural challenge in Uganda. *The International Information & Library Review, 37*, 147–158.

MCMC. (2008). *Communications and Multimedia Selected Facts and Figure.* MCMC Report 2008.

Rao, S. S. (2005). Bridging digital divide: Efforts in India. *Telematics and Informatics, 22*, 361–375.

Van Dijk, J. (2006). *The Network Society. Social Aspects of New Media*(2nd ed.): SAGE-London.

Zaitun A. B & B. Crump. (2005). Overcoming the Digital Divide – A Proposal on How Institutions of Higher Education Can Play a Role. Malaysian. *Online Journal of Instructional Technology, 2* (1).