Rural Internet Centre (RIC) as a Mean for Bridging the Digital Gap in Rural Communities: Assessment of Current Situations

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ABSTRACT

Rural Internet Centre (RIC) project by the Malaysian government offers opportunity to bridge the digital gap between the rural and urban communities in Malaysia. The RIC provides IT skills training and IT awareness programs to all groups of people including women, the elderly, and children. In order to assess the current RIC operations and usage, a survey was conducted in four selected RICs in Kedah and Perlis. Questionnaires were developed to measure the level of RIC usage and the RIC operations in the specific community. The findings show that role of partners, role of administrators, services/activities and functions, objectives, local infrastructures, financial support for sustainability, and users' trainings and support are critical in the RIC operations. However, this study has identified that applications and content development are also important.

Keywords: Rural Internet Centre (RIC), rural communities, community informatics, digital divide.

1.0 INTRODUCTION

The 8th Malaysia Plan, which covered the period of 2001-2005 was primarily aimed at sustaining economic growth and competitiveness in the face of growing globalization and liberalization (Dewan Rakyat, 2001). One of the thrusts was to shift the growth strategy from input-driven to knowledge-driven and productivity-driven. The primary challenge during the Plan period was to implement the National Vision 2020 Policy to strengthen the nation's capacity, capability and resolve in meeting future challenges (Anon, 2001). Nine key strategies have been addressed to meet the challenge. Two of the strategies are (i) enhancing productivity-driven growth and (ii) enhancing the usage of IT or information communication technology (ICT). For these purposes, about RM1 billion has been allocated under the Plan to carry out ICT programs and projects to increase the usage of ICT among communities in rural areas. Table 1 shows the detail of the allocation to support those programs.

The diffusion and usage of ICT within and across sectors is further expanded as ICT has a strategic role in accelerating economic growth. Accordingly, the ICT infrastructure is upgraded through several initiatives including increasing the capacity of the transmission backbone up to 10 gigabits per second and introducing the Network Management System for better service availability. The ICT infrastructure is also unrolled to the rural areas to reduce the digital divide and to achieve a balanced development. Among the programs implemented include the project of Rural Internet Centre (RIC), which was set up to bring the Internet to small towns and rural communities in Malaysia. The Ministry of Energy, Water and Communications (MEWC), Malaysia Post Berhad and Maju Sedunia Digital (MSD) are responsible for the project. The Malaysian government aim to set up 240 centres by the year 2010 which will eventually reaching an estimated 2.8 million members of the rural communities.

Table 1. Amount allocated for the development of ICT related programs and projects 2001-2005 (RM millions) Source: Laporan Rancangan Malaysia ke 8 (2001)

Program / Project	Allocation	%
Prime Application	**1,824.9**	**35.4**
Electronic Government	434.8	
Smart School	401.1	
Telemedicine	400.0	
Multipurpose Smart Card	418.1	
P&P Aggegation	1.9	
Application Integration	169.0	
Computing	**1,641.8**	**31.8**
Research & Development	**300.0**	**5.8**
Bridging Digital Divide	**1,098.0**	**21.3**
'Infodesa'	30.2	
Internet Center	3.0	
Global Service Provision	119.8	
Computer Infrastructure for Rural Area Schools	945.0	
Content Development	**10.0**	**0.2**
Others	**284.4**	**5.5**
Total	**5,159.1**	**100.0**

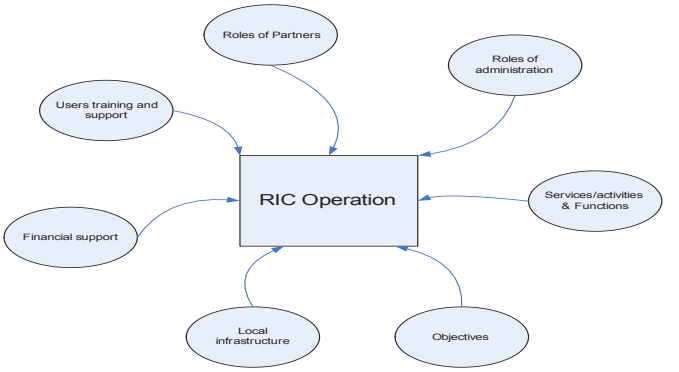
2.0 RURAL INTERNET CENTRE (RIC)

RIC was launched in March 2000 with two centers: Sungai Ayer Tawar in Selangor and Kanowit in Sarawak. By 2006, 42 Rural Internet Centres (RICs) have been

Table 2. Role of the partners in the MEWC's RIP steering committee (Adapted from: Guidebook on Developing Community E-Centres in Rural Areas: Based on Malaysian Experience)

Partners	Role/Resposibility
MEWC	RIC programme coordinator
Post Malaysia Berhad	Provided the space for RICs
Telekom Malaysia	Provided the telecommunication services
INTEL	Provided 2 PCs for each RIC
MAXIS Bhd.	Provided the local content i.e the Website for RIC
MNCC	Contributed to implementation concept
INTAN as governmenr site	Provide basic training in ICT at each site of RIC

Figure 1. Critical factors of RIC operations



implemented in thirteen states in the country (KTAK, 2006). RIC provides IT skills training and knowledge acquisition programs to the rural community in Malaysia, including women, the elderly, and children. Information about the existence of the RICs, the committees in the RICs, and the activities and services provided by and through the RICs are described in a specific website (http://www.idesa.net.my/). The number of RICs in each state and the types of facilities, activities and services provided in each centre are dependent on the size of states.

Noor Bathi (2005) reported that the initial MEWC's RIC model of partnership is made up of Malaysian National Computer Confederation (MNCC), Pos Malaysia Bhd, Telekom Malaysia, Intel, MAXIS, National Institute of Public Administration Training Centre (INTAN) and community representatives. Table 2 illustrates the roles and responsibilities of each partner.

A study on RICs in Selangor showed that the implementation of the centres in that state has been well accepted by the local communities (Mohd Nizam, 2005). The centres do not only give the communities an access to the Internet, but also improve their knowledge and skills in ICT. The numbers of RIC users and visitors have increased every day. The centres, however, do not have enough ICT resources, for example, PCs, printers, and other peripheral devices. Each centre is only equipped with between five to seven PCs. The centres also have a limited number of staff to administer the RICs. Mohd Nizam's (2005) study finally concluded that RICs in Selangor and other states should be given more spaces and resources in order to achieve the RICs' objectives.

This study intends to find out how RIC is currently being used in the community. The objective of this paper is to describe the initial findings of our research regarding the usage of four RICs in the states of Kedah and Perlis in Northern Malaysia. Specifically, the description focuses on the activities, users and the management of RIC. The financial aspect of RIC operations is not included but will be looked at in the future. Based on the results of this study, an initial RIC framework to effectively bridge the digital divide is proposed.

3.0 RESEARCH APPROACH

Based on the role and responsibilities defined in the partnership framework (Noor Baiti, 2005), seven components have been identified as critical factors to contribute to the operation of an RIC. These include role of partners, role of administrators, services/activities and functions, objectives, local infrastructures, financial support, and users' trainings and support as shown in Figure 1. These factors are then used to form the research variables in the survey instruments.

In order to assess the current RIC operations and usage, a survey was conducted in four selected RICs in Kedah and Perlis. The survey was carried out in September 2006. Data and fact-findings were done through questionnaires. Two sets of questionnaires were constructed which made up the survey instruments given to personnel responsible for administrating and maintaining the RICs and users of the RICs. Both instruments are developed to measure the level of RIC usage and the RIC operations in the specific community. Both sets of instruments were hand-delivered to their corresponding respondents.

The first set of questionnaire (Set A) which was distributed to eleven RICs' administrators consists of four sections: Profile of Respondents, RIC Users, RIC operations and RIC Website Information. Profile of Respondents section attempts to gather data on the respondent's background information. This includes the respondent's age, sex, marital status, race, qualifications, type of organization and position, roles in RIC, and the amount of time allocated for administrating the RIC. This information would give a general feel of the type of respondents and also to verify that the information captured from the right source. It also intends to identify the demographic factors that may influence the management and administration of the RICs.

The second section of the questionnaire, RIC Users, deals with the respondent's personal opinion regarding the RIC users. Among the information sought were users' categories that frequently visit the RICs. There are reasons to believe that users' categories may also influence on the RICs' operations and activities.

The third section of the questionnaire, RIC Operations, identifies the kind of activities, services, and facilities offered in the RICs. Opinion on how the RIC operations can be improved is also sought. The last section, RIC Website Information, gathers information pertaining to website development.

The second set of questionnaire (Set B) was distributed to seventy RICs' users consists of two sections: Profile of Respondents and Activities in RIC. The Profile of Respondents section attempts to gather data on the respondent's background information. This includes the respondent's age, sex, marital status, race, qualifications, type of organization and position, and IT courses or training taken. This information would give an overview of the type of respondents. It also intends to identify the demographic factors that may influence the usage of the RICs.

The second section of the questionnaire, Activities in RIC, will gather information about the frequency of RIC visits, activities carried out in RIC, benefits, problems and level of satisfaction with regards to RICs services and activities offered. Finally, opinions on how the services and activities of the RIC could be improved are sought.

The purpose of these two sets of questionnaire is to gather information about the RIC operations and services from the perspective of administrators and users. This information helps to confirm the relevancy of the questionnaire and also to complement the responses. Thus, this study is a pilot survey to test the validity and reliability of the questionnaires. Revision on the questionnaires will be done accordingly for future research.

4.0 RESULTS

The response rate is 100% for both sets of questionnaires. Hundred percent returned is achieved due to the fact that the questionnaire were hand-delivered and -collected. The major analytical treatment applied was descriptive techniques. Section 4.1 presents the demographic characteristics of the respondents. Since there are two groups of respondents in this survey, the results are presented accordingly. While, section 4.2 describes about the responses of administrators, Section 4.3 deals with users' responses.

4.1 Profile of Respondents

Table 3 presents the distribution of respondents (administrators and users of RICs) by demographic characteristics.

Table 3. Demographic characteristics

Variable	Administrators		Users	
	Frequency	Percentage	Frequency	Percentage
Age (years):				
Less than 21	0	0.0	21	30.0
21-30	8	72.7	32	45.7
31- 40	1	9.1	11	15.7
41-50	2	18.2	5	7.1
Above 50	0	0.0	1	1.4
Gender:				
Male	6	54.5	35	50.0
Female	5	45.5	35	50.0
Marital Status:				
Single	5	45.5	47	67.1
Married	6	54.5	21	30.0
Divorced	0	0.0	1	1.5
Race:				
Malay	11	100	62	88.6
Chinese	0	0.0	6	8.6
Indian	0	0.0	0	0.0
Others	0	0.0	1	1.4
Level of Qualification:				
Certificate	3	27.3	29	41.4
Diploma	5	45.5	5	7.1
Bachelor Degree	2	18.2	7	10.0
Masters Degree	1	9.1	4	5.7
Others	0	0.0	14	20.0

Of the eleven administrators, 72.7% aged between 21-30 years old. The rest are above 31 years of age. On contrast, the age of users are mostly below 30 (75.7%). It shows that the RICs have attracted the interest of the youth compared to the other age category. This could be another reason that indicates unmarried users are the majority visitors of the RICs.

In terms of gender category, the number of male and female administrators, as well as users, is almost equivalent. Malays outlay the other races as the RICs' administrators (100%) and users (88.6%). This is due to the fact that the communities surrounding the RICs are mainly the Malays. 45.5% of the administrators are Diploma holders, 27.3% has certificates and the rest hold Bachelor and Masters degree.

4.2 Responses of Administrators

Among the information sought from the administrators revolves around the IT courses and training taken, opinions about the users of RICs, the RICs' operations and activities, and the local RICs' webpage.

4.2.1 IT Courses and Training

As shown in Table 4, 90.0% of the administrators have undergone training on using Microsoft Office, operating systems (63.6%), computer maintenance (54.5%), and internet (63.6%). Other courses attended are Adobe Photoshop and Illustrator, and graphics and multimedia.

4.2.2 Operations of RIC

Most of the RICs operate between 8.30 a.m. to 5.30 p.m. on weekdays. All RICs have the basic ICT facilities such as printers, scanners, and internet access. Apart from that, many RICs are equipped also with photocopy and fax machine, LCD projector, digital camera, and reference books.

The services provided by the RICs include computer classes, advice on computer purchase, computer selling and servicing, card printing and writing official letter services, and internet access. Other services offered are webpage development, e-procurement services, and posting advertisement in webpage.

According to the administrators, users of the RICs are from the following categories: students, graduates, housewives, farmers, businessmen, government servants,

Table 4. IT courses and training

	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Microsoft Office	10	90.9	1	9.1
Operating Systems	7	63.6	4	36.4
Computer Maintenance	6	54.5	5	45.5
Internet	7	63.6	4	36.4
Adobe Photoshop & Illustrator*	1	9.1		
Graphic & Multimedia*	1	9.1		

**open-ended questions, i.e additional courses attended by certain respondents*

private sectors employees, and pensioners. Among these categories, the most frequent users are from the students and graduates categories. Reasons for their frequent visits could be, to complete their assignments, search for information, look for job or study opportunity, and improve their IT knowledge. On the other hand, farmers, and pensioners do the least visits. This could be due to various reasons such as, have no interest in computer technology, have computer phobia, incompetence in using computers, and lack of ICT awareness.

RICs' activities focus on IT literacy programs, selling telecommunication product, Independence Day and festivals celebrations, and examination workshops. To attract more participation from the surrounding communities, the respondents suggested varieties of activities and services such as free workshops during the weekend, free photocopy services, e-procurement, online payment services and educational trip. In general, it seems that the idea of having a one-stop-centre is desirable.

4.2.3 Local RICs' Webpage

The administrators develop the webpage themselves by using Microsoft FrontPage and DreamWeaver. The common content include local information, webpage information, background of specific RIC, lists of RIC's activities, and information about the community. Some also include linkages to search engines and online applications.

4.3 Users' Responses

In general, most of the RICs' users are aware of the RICs existence through their friends (55.7%). Among the information gathered from the users are the IT courses and training taken, the services offered by the RICs, frequency of their visits, and their overall satisfactions. Suggestion on how to improve the RICs' services and activities, and the benefits acquired from the use of RICs are also presented.

4.3.1 IT Courses and Training Attended

Table 5 depicts the IT courses and training attended by the users. Most of them (72.1%) have the basic training in ICT, Internet and Microsoft Office. Other courses and training undertaken by the users are also shown in the table.

4.3.2 RICs Services and Activities

In the questionnaire, five services that are usually provided by the RICs are listed. These include computer classes (1), consultation on computer purchase (2), computer selling and servicing (3), card printing and writing official letter services (4), and internet access (5). Fifty-nine respondents (84.3%) agree that internet access services (5) are the common offered services by RICs, followed by computer classes (71.4%). Based on the common services offered the two activities that are popular among users are internet surfing (71.4%) and IT literacy workshops (41.4%). Internet surfing captures the users attention probably because it is interesting, fun and informative, while workshops are conducted to equip users with necessary ICT knowledge.

In terms of frequency of visits to RICs (refer Table 6), out of the 70 respondents, 44 (62.9%) visit the RIC when necessary. Of the 44, 20 respondents are from the 21-30 years age category, 15 from less than 21 years of age and 7 from 31-40 years. Almost 14.3% uses the RIC once a week. The rest visits the RIC once a month. The number of male and female users that visits the RICs is equivalent. This indicates that the most frequent visitors of RICs are aged below 30 years old regardless of their gender. Thus, this result confirms the administrators' responses on frequent RICs' visitors namely the students and university graduates. The fact that they only visit the RICs when necessary implies that the visits are made when they have assignments to complete, or the needs to search for relevant information on jobs or studies opportunities.

4.4 Users' Satisfaction

Most of the users described in Table 7, come from all age categories are satisfied with the services, activities and facilities provided or offered by the RICs. Despite the high level of satisfaction among the users, there are a few problems that have been highlighted by the respondents. The major problems stated by the respondents are insufficient number of computers, and inappropriate operation hours. The reason is that the most of the RICs in each community are only equipped with between five to seven PCs. This finding tallied with Mohd Nizam's study in 2005 regarding RICs in Selangor. With regards to the inappropriate operation hours, they would like the operation hours (currently 9 a.m. to 5 p.m) of the RICs to be extended since some of the users are working.

The respondents also provided their suggestions towards improving RICs services, activities and facilities. These include improving RIC promotions and activities, and equip the RICs with more PCs. In addition, the benefits acquired from the RICs' operations are shown in Table 8. Other benefits as stated by the users include free internet usage and printing services.

5.0 CONCLUSION AND RECOMMENDATIONS

This paper has successfully described the initial findings on RICs current situations in Northern Malaysia. It can be argued that the government intention to bridge the digital divide among the rural communities through RICs is not entirely

Table 5. IT courses and training

Courses and Training	Frequency	Percentage
Basic ICT &Internet	19	44.2
Microsoft Office	12	27.9
Autocad, & CorelDraw	3	7.0
Web Page Development	3	7.0
Chatting	1	2.3
Multimedia	1	2.3
Database	1	2.3
e-mail	1	2.3
never	2	4.7

**some do not write their responses*

Table 6. Visit to RIC by gender

	Gender (%)	
Frequency of Visits	Male	Female
Everyday	4 (11.4)	1 (2.9)
Once a week	6 (17.1)	11 (32.4)
Once a month	1 (3.90)	2 (5.9)
When necessary	24 (68.6)	20 (58.8)
TOTAL	**35 (50.0)**	**35 (50.0)**

Table 7. Category of users satisfactions towards RIC operations

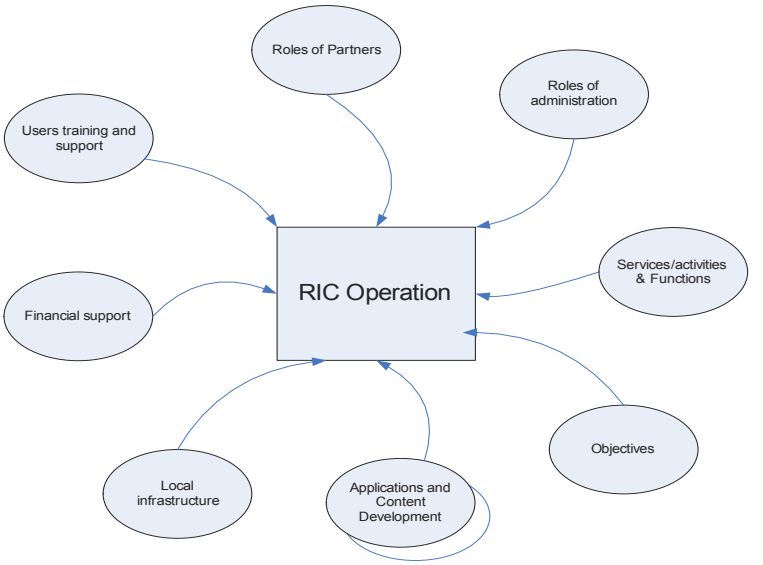
	Frequency (%)		
Age	Very Satisfy	Satisfy	Do Not Care
Less than 21 years	7 (22.6)	13 (38.2)	1 (33.3)
21-30 years	12 (38.7)	16 (47.1)	2 (66.7)
31-40 years	8 (25.8)	3 (8.8)	0 (0.0)
41-50 years	3 (9.7)	2 (5.9)	0 (0.0)
More than 50 years	1 (3.2)	0 (0.0)	0 (0.0)

**some do not write their responses*

Table 8. Benefits of RIC

Benefits	Frequency
Increase the ICT awareness	50
Increase the knowledge relating to ICT	56
Increase skills in using computer	55
Increase quality of work	32
Increase quality of life	29

Figure 2. A theoretical framework for RIC operation



achieved. Nevertheless, the centres do contribute to the local rural communities' development indirectly, for instance IT literacy and awareness are improved. Hence, further research on RIC will be carried out to increase the usefulness of the RIC to the rural communities, and to identify applications that will help the communities' development in the long run. Maybe if the community can see the need for the IT, the number of users may increase as well as the inclusion of older users and among the farming sector. This implies that more applications and content development are needed to attract and make the community realize the value of IT in improving their quality of life as well as their economy.

The findings of this study suggest that the role of partners, role of administrators, services/activities and functions, objectives, local infrastructures, financial support for sustainability, and users' trainings and support are critical for the RIC operations. In addition, applications and content development has been identified as another important factor. Hence, this study proposes an initial theoretical RIC framework to illustrate the contribution of these factors towards RIC operation. This framework is shown in Figure 2. In order to ensure the reliability of the framework, further research will be conducted.

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