Community Information Centers: A Step to Bring Connectivity of the Rural Communities in Bangladesh

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Abstract

Improved communication and easy information access are directly related to the social and economic development of a country. Access to telephony and ICTs world, development has become more widespread in developing countries like Bangladesh. This study aims to identify the information facilities of rural communities in Bangladesh and understand the challenges and opportunities. It also explores how CIC can be strap up to promote development rural communities in Bangladesh. Questionnaire, documentary sources and observations are the major methods of this study. The study identifies that CIC will make easier community peoples life to enter information arena with an easy environment and help them to increase their skills, expertization in their respective fields. Different problems are also appears for establishing CIC and it also suggests some suitable suggestions for further improvement of CIC in Bangladesh.

Keywords: Community Information Center (CIC), Grameen Phone (GP), Rural development, Rural community, Information Communication Technology (ICT).

Preamble

The development of a society largely depends on the access to information. At present age, information is a power and a piece of information is not any individual's, but a national resource. It becomes common property resulting in an increased usage of information. More the utilization more is the production of information. The Information and Communication Technology (ICT) greatly facilitate the flow of information and knowledge offering the socially marginalized and unaware community unprecedented opportunities to attain their own entitlements. ICT is a critical tool to tackle development issues in developing countries [1]. Despite ICTs massive potential, the world is becoming increasingly divided into the information-rich and the information-poor, the haves and have-nots of the digital age. In rapidly changing society, difficulty in obtaining and exploiting information is increasing. It is true that the information gap between the source of information and the recipient has been widened [2]. At one end is the complex universe of information and the other end is the population of users various needs and, requirements. These two elements are to be bridged and interlinked. Bangladesh is one such country rolling within the vicious circle of deprivation and obstacles of getting ICT facilities. Hence, a center which acquires, organizes and distributes information to the user community and brings the benefits of ICT to the rural people is very much needed.

Bangladesh is situated in the northeast corner of the South Asian subcontinent. Bangladesh remains the bottom in South Asia in the UN's ICT diffusion index, with a rank of 164 in 1997 and 171 in 2001

and 2004. Nevertheless, the enactment of the National Telecommunication policy in Marchn1998 [3] and the Bangladesh Telecommunication Act in 2001 (ITU, 2001); the establishment of Bangladesh Telecommunication Regulatory Commission in January 2002; the introduction of the National ICT policy in October 2002 (MSICT, 2002) and the ICT Act in 2003; and very recently legalization of Voice Over Internet Protocol (VOIP) telephony, are several milestones the country can be proud of [4].

1. Review of Literature

Several studies on the topics were made before which are listed below to support the background of the study. [5]. "Beep Knowledge System and case owners, 2002-2005: Social Inclusion Cases" In this project conducted a study on "Village Information Centres, Pondicherry (India)" This study shows how to use ICT for regional development in poor rural regions in India. The main outputs of the Information Village Project are general living conditions of the local population have been improved. [6] "Exploring the ICT and Rural Poverty Reduction Link: Community Telecenters and Rural Livelihoods in Wu'an, China" Applying the 'Rural Livelihoods' framework of analysis, this study explores the link between information and communication technologies (ICTs) and rural poverty reduction by analyzing the role of community telecenters in enhancing the livelihood strategies of rural poor households. [7] With assistance from BRAC University and Local Government Engineering Department (LGED), the Advanced Research Institute (ARI) of Virginia Tech, USA organized a workshop entitled "Nationwide Internet Access and Online Applications" in Dhaka. US National Science Foundation (NSF), United Nations Development Programme (UNDP), Job Opportunities and Business Support (JOBS-USAID) and Grameen Cyber Society co-sponsored the workshop. This workshop brought together stakeholders from the ICT industry, non-government organizations, government agencies, donor agencies and universities in Bangladesh, United States, India, Thailand, Nepal and Singapore. Discussions focused on how a sustainable and affordable "last-mile" Internet access can be provided in Bangladesh. [8] had carried out a study on "Information support services of the rural development libraries in Bangladesh" where the author shows different major information systems and services for rural development in Dhaka, Comilla and Bogra districts in Bangladesh. [9] Pointed out in his article "Community Information Center Project in India: connecting the far flung" discusses different initiatives that has been taken by the National Informatics Centre (NIC) under the auspices of the Ministry of Communications and Information Technology (MCIT), Government of India. [10] explores on his article "Promoting development through information technology: the IT artifact, artfulness and articulation" how Information Technology (IT) can be attach to promote the socioeconomic growth of developing nations. [11] also conducted a study on "Community Information Services in Malaysia: a study of information-seeking behavior of community based organizations in the Klang Valley" where the author shows another Community Information Services (CIS) center that was introduced by public libraries. Library services in south East Asia which do not cover most of the rural people, venture into CIS is appropriate to find out if there is a real need. [12] "Rural transformation by the establishment of community information centers in the rural areas of Nepal: a pilot project"

This proposal has been prepared for the rural transformation by the establishment of community information centers (CIC) in remote villages of Nepal and the basic motivation behind the development of this framework is to exhibit how the power if ICT can be used for the betterment of the society. [13] Conducting a study on "The economic impact of telecommunications on rural livelihoods and poverty reduction: a study on rural communities in India, Mozambika and Tanzania" where author explain the telephone impacts on the lives of the rural poor in developing countries. [14] pointed out in his study entitled "Multipurpose community Telecenter's for rural development in Pakistan" where the author describes the effectiveness of different community Telecenter's in Pakistan and the author assesses the situation of rural population in Pakistan and information facilities available to them, propose a model for the establishment of MCTs in Pakistan in terms of policy formulation and sustainability. The paper also discusses how MCTs can be an alternative to rural public libraries.

2. Earlier Initiatives for Providing Information in Rural Areas

ICTs are no longer a luxury for many remote villages in Bangladesh, thanks to a handful of initiatives following different Rural Information Centers (RIC) models. However, followings are some attempts that taken different times to access ICT world for the rural people of Bangladesh [15].

2.1 The Dhaka Ahsania Mission (DAM): Dhaka Ahsania Mission (DAM) launched the first community-learning center, locally known as Gonokendra, in 1987. Now there are more than 100 Gonokendras across the country. Some of the centers are providing ICT facilities and few centers started using computer for interactive information communication. (www.ahsaniamission.org)

2.2 Development Research Network (D.Net): D.Net is a premier research organization in Bangladesh. Established in 2001, it established four Pallitathya Kendra (Rural Information Center's)) as pilot projects in 2005 in remote villages of Bangladesh: Nilphamri, Netrokona, Noakhali and Bagerhat. (www.dnet.org.bd)

2.3 Relief International: Relief International Schools Online division initiated ILC (Internet Learning Centers) programme in 2003. The programme was launched in 2005 and currently 27 ILCs are in operation across Bangladesh with the majority (sixteen) located in Chittagang. (www.ri.org)

2.4 Katalyst: Katalyst envisages promoting commercially sustainable rural ICT initiatives in Bangladesh and piloted an entrepreneurship-driven model in partnership with two private sector players for establishing Rural ICT Center (RIC) branded as AlokitoGram and GHAT. www.katalystbd.com

2.5 Practical Action Bangladesh: Practical Action was founded in 1966 with commitment to poverty reduction. Later it established two Rural Technology Centers (RTC) in 2006. Besides

these, several attempts have been taken to spread ICT facilities to the door place of rural people such as Bangladesh Telecentre Network (BTN). Amader Gram Learning Center (AGLC), Youth Community Multimedia Center (YCMC), Rural Information Resource Center (RIRC), Bangladesh NGOs Network for Radio and Communication (BNNRC), BRAC Bdmail Network Ltd (brac Net), Digital Equality Network (DEN), Digital Knowledge Foundation (DKF) and so on.

3. Present Situation of ICT and in Bangladesh

The country is progressing in terms of ICT penetration especially as per cellular penetration is concerned. Currently, six cellular phone operators have covered 64 districts and over 90% of the population, comprising a subscriber platform of more than 40 millions.

The Bangladesh Telephone and Telegraph Board (BTTB), the lone government-owned telecom provider, has provided conventional Public Switched Telephone Network (PSTN) access to all 64 districts and to 465 Upazilas (Sub-districts); Internet Service Provider (ISP) services to all 64-district headquarters and 165 Upazilas; and the Digital Data Network (DDN) access to 41 districts through it own infrastructure.

Table 1: Basic ICT indicator

Year	**Population density** (Per sq. km)	**GDP Per capita**(USD)	**Total telephone subscribers**(per 100 inhabitants)
2002	925	346	1.26
2003	938	354	1.56
2004	952	382	2.63
2005	985	-	2.63

Table 2: Main Telephone lines

Year	**Main telephone lines(**000s)	**CAGR*** (0%)	**Main telephone lines(**000s)(per 100 inhabitants)	**CAGR**(0%)
2002	605.9	10.5 (1997-2002)	0.46	8.9 (1997-2002)
2003	742.0	12.5 (1998-2003)	0.55	10.8 (1998-2003)
2004	831.0	13.9 (1999-2004)	0.61	12.3 (1999-2004)
2005	831.0	14.0 (2000-2005)	0.61	12.4 (2000-2005)

Year	Table 3: Cellular subscribers			
	Cellular mobile subscribers			
	(000s)	CAGR (%)	Per 100 inhabitants	As % of total telephone subscribers
2002	1,075.0	110.5	0.81	64.0
2003	1,365.0	78.7	1.01	64.8
2004	2,781.6	79.6	2.03	77.0
2005	9,000.0	100.3	6.35	91.5

Table 4:Information technology parameters

Year	Internet		PC per 100 inhabitants
	Hosts	Users per 100 inhabitants	
2002	-	015	0.34
2203	-	0.18	0.78
2004	13	0.22	1.20

Source: International Telecommunication Union

Table 1 shows the country's basic ICT indicators, while table 2 shows the figures for main telephone lines in Bangladesh. table 3 shows the cellular subscriber growth in the country between 2002 and 2005, and table 4 shows the information technology parameters between 2002 and 2004 (UNPAN 1998).

4. Objectives of the Study

The purpose of this study is to examine the present scenario of Community Information Center's in Bangladesh. However, the specific objectives of the study are stated as follows:

1. Identify the ICT access points for the community people and ICT situation in Bangladesh.
2. Assess how Community Information Center (CIC) creates awareness and giving information services to the community people in Bangladesh.
3. Measure the benefit of using CIC and using friendliness of the respective website.
4. Suggests some effective measures and to provide certain future directions for further improvement for the Community Information Center (CIC).

5. Methodology

In order to carrying out this study, different methods were adopted. All data were collected by formal interview through questionnaire, participant observation and literature search. The fieldwork was undertaken from January to June 208. Questionnaires were constructed and circulated to the CIC users for gathering primary data regarding the CIC. Different website is used in this study, was located by means of search engines and databases of different NGO's, telecommunication agencies. The sample size of 500 was sufficiently large to permit statistically significant. However, random samples of the following 5 districts were drawn for study. These are

I. Nilphamary
II. Thakurgaon
III. Panchagarh
IV. Dinajpur
V. Lalmonirhat

6. Community Information Center in Bangladesh

CIC has become a popular approach in many developing countries. Consisting the CIC model, different countries of the world has been established a number of information center (For example Thailand-Thai Rural Net, Brazil-Telecentre, Indonesia-Warnet, Albama-Public Information Center etc.) [16].

Grameen Phone (GP), Bangladesh, has launched a pilot project titled 'Community Information Center' through its nationwide EDGE (Enhanced Data Rates for Global Evolution) to provide Internet access and the other communication services to the rural people. Grameen Phone has worked with a number of project partners are Grameen Telecommunication (GTC), SEBA, Noakhali Web, UNDP, UNESCO, UNICEF and others. The pilot project in February 2006, which started with 16 CIC's, has become a massive operation with over 500 CIC's running in around 450 Upazilas. At present there is almost 561 CIC's operating across Bangladesh. The short-term plan of this initiative is to establish CIC's in all the 462 Upazilas. The establishment of the CIC's constitutes tremendously challenging tasks in view of the remoteness of the area. In the long run Grameenphone plans to increase the number of CIC's substantially so that every CIC can support the information needs to 4 adjacent villages. It is important that CIC entrepreneur is the CIC business owner. Grameen Phone does not own the CIC's. However, Grameen phone does have a responsibility to support their CIC entrepreneur customers. Setting up a support network for the entrepreneurs, using the GPSD (Grameen Phone Service Desk) as the first point of call and providing ongoing training to the entrepreneurs to ensure they are kept up to date with any technological advances that affect the services they provide to their customers [17].

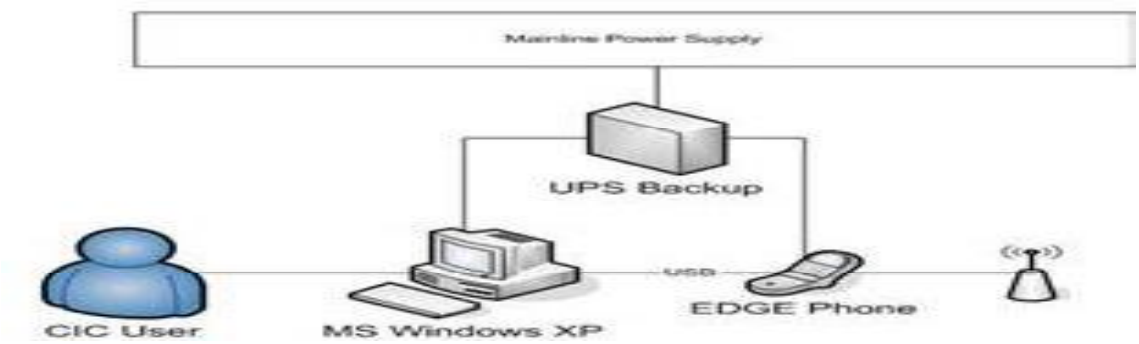

Figure 1: Full set up of a Community Information Center

Figure 1 shows that each CIC is provided with one computer, printer, Edge modem and others equipment that's might vary from region to region. Each CIC is manned by three CIC operators who operate equipment, provide services to visitors and sometimes conduct a training programme for naïve people.

7. Benefits of Community Information Centers in Bangladesh

Over the past one year, each CIC is providing services to the community with computers, Internet access and e-mail facilities. CIC provide Bangladeshi citizen's greater access to news and information on a range of topics relevant to their daily lives and developments. A huge number of people have visited the CIC's and CIC staffs have trained approximately 25,000 Bangladeshi citizens from all sectors to utilize e-mail, Internet search engines and various software packages to communicate with colleagues in their fields. CIC's have become a significant force in the information landscape of several communities across Bangladesh. CIC making it an e-governance touch-point for the villagers [18].

The experience form the pilot project has been very encouraging. Many of the CIC's receive over a 100 visitors every week who uses e-mail facilities, word processing applications, browse the web and generally improve their familiarity with computers and awareness of IT.

7. 1 Community: CIC is making community people more closer virtually as they all stay different places due to distance. Thus, farmers could form an online community, and teachers could do the same. Community web-blogs are an excellent platform to amplify the flow of ideas without the constraints of time and geography.

7. 2 Market access and e-commerce: Greater exchange of market information is necessary for trade to flourish. A successful seller must be fully informed about domestic as well as global trends. The enable sellers to learn about new product in the market, to anticipate demand for existing and new products; and to understand pricing strategies. They are

getting the required information and market prices from the designated portals and websites with the help of entrepreneurs.

7.3 Community Information Center Website: As many of the users are very new to the Internet, they do not feel comfortable to browse for their everyday necessities with search engines or visit other websites. With this in mind, the Official GPCIC website was developed with both a Bengali and English interface and provided with all the necessary links and useful information portals, so that new users will not need to browse any other website, all they potentially need can be found on the GPCIC website itself.

Figure 2: Official Website of GPCIC

Source: www.gpcic.org' 2007

The homepage acts as a base in establishing links to those sites from where one can easily retrieve wealth of information on any of the categories defined above. This site is an attempt to introduce the Bangladeshi general people to the world of information communication technology. Though this web site was initially developed exclusively for the use of CIC operators and users, its services are now open to all. Here the user can get access to other informational, communication and entertainment websites.

Coinciding with the celebrations of 1 million hits, on the 20th September, the new re-engineered version of the website was launched at another important event for CIC - a workshop with Grameenphone Community Information Center partners GTC, SEBA, KDKS. The new version of the website is;

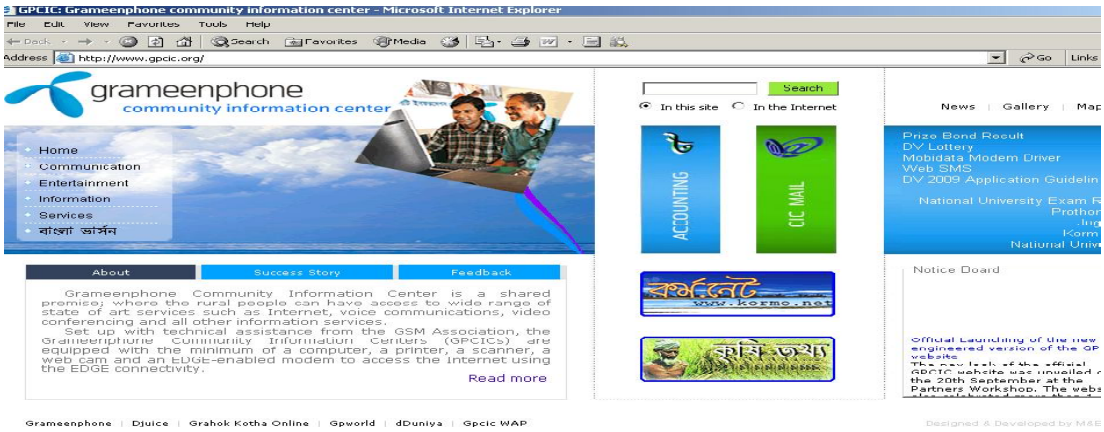

Figure 3: New version of GPCIC website

Source: www.gpcic.org'2008

7.4 Information Services: Since the advent of the Internet, its popularity of being an unlimited source of information has grown exponentially. Now a day any one can search the Internet for any kind of information ranging from news government/non-government, educational institutions etc. Finding any kind of information using a search engine is both popular and very easy. Now someone can search all kind of information that need one anything from nearest CIC. In information services section of the GPCIC website can find links to various information based websites. Important tasks such as money transfer, applying for jobs or even an every day tasks shopping are now a days carried out online.

7.5 Communications: In case of communication, the latest Internet based services such as e-mail, instant messaging etc are now possible right from the nearest CIC. In this section of the website, someone will get find information about websites and links to websites that will guide someone through the use of such communication methods as e-mail, internet browsing and instant messaging.

7.6 Access to Government Information: People need information in the public domain from time to time for various purposes and in this regard, they need to access to government information banks. CIC is now offering different services such as birth and death registration, voter lists, passport and other government's form. Villagers are now buying printouts of documents like passport forms or license form.

7.7 Common Platform for Knowledge Sharing: CIC provides a forum for people for various communities operating from far-flung locations to come together to exchange knowledge and information that can be of greater utility to the people of Bangladesh. This is a win-win situation for both receiver and provider of knowledge and results in grater benefit of society at large.

7.8 Bridging the Digital Divide: Now people, in general, do not have to travel over 30-35 kms to districts headquarters to get information on education, health, jobs, government services etc. It has saved their time and money thereby reducing risk of travel as well. As the centers are closure to the community, it has created new possibilities for them. CIC has created an emotional impact on the society

7.9 Working as a Telecentre: The mission of GPCIC is to provide most of the people of Bangladesh those who are living in rural areas with e-mail address, a phone number and provide complete communication facilities through mobile phone. People now can easily and cheaply communicate with their relatives and other countries in the world within few seconds through mobile phone with nominal expenses.

8. Data Analysis and Findings

February'2006 a landmark year for the people of Bangladesh, Community Information Centers (CIC'S) set up by the Grameen Phone were launched and dedicate to the people of remote rural areas. The number of visitors varies between 20 to 50 in a day for each center depending on the location of the CIC. However, many CIC's report over 50 visitors in a day. The below Table 6 shows sum up of some CIC in a particular day.

Table 5: CIC dealing across the country per day (Random basis sample)

Dealing CIC in a particular day							
Sl.	DIVISION	TC	HW	SW	INC	TU	OTHERS
1	Dhaka	10	2	1	2	200	2
2	Khulna	08	1	0	1	150	0
3	Chittagong	16	1	1	4	320	2
4	Rajshahi	20	5	0	5	350	0
5	Sylhet	09	2	0	6	200	0
6	Barisal	12	2	0	2	250	0
GRAND TOTAL		**75**	**13**	**2**	**20**	**1470**	**4**

TC: Total CIC dealt, **HW:** Hardware problem, **SW:** Software problem, **INC:** Internet connectivity problem, **INS:** Internet speed problem, **TU:** Total User deal (Source: Daily CIC activity report)

The above table shows that in a particular day number of 75 CIC's dealt across the country where 1470 peoples visit these CIC. In case of using they face some problems such as hardware, software and Internet connectivity problem.

Reason	Percent of Respondents					
Unsure why	Panchagarh	Thakurgaon	Nilphamary	Lalmanirhat	Dinajpur	Overall
Curious	34.7	15.7	39.7	29.4	25.0	28.2
Needed information	74.9	81.9	61.8	73.5	67.4	72.7
Some one suggested	29.7	12.4	19.8	22.3	9.8	19.0
Staff encouraged visit	56.5	43.3	35.1	43.3	26.3	41.7
Wanted to learn	80.3	52.9	39.7	55.0	74.6	62.7
Other reason	2.5	0.5	25.2	0.0	0.4	3.9
Total	278.6	206.8	221.3	223.9	203.1	229.1

Table: 6 Reasons for using Community Information Center

Types of service	Percent of Respondents					
	Panchagarh	Thakurgaon	Nilphamary	Lalmanirhat	Dinajpur	Overall
Price info. Provided	63.6	57.6	64.1	75.1	73.2	67.1
Agric tech info provided	90.4	94.8	84.0	92.4	86.2	90.0
Health info provided	74.5	40.0	58.8	27.4	36.2	46.6
Jib info provided	35.6	48.6	38.2	30.0	8.9	31.5
News provided	54.8	30.0	41.2	37.1	32.6	39.3
Entertainment provided	33.1	9.0	27.5	10.1	7.1	16.7
Other provided	1.7	0.0	3.1	1.3	0.4	1.2
Total	353.7	280	316.9	273.4	244.6	292.4

Table: 7 Types of information provided by the CIC to Villagers

People were asked what type of information they are getting from CIC. Table 8 shows that 90 percent says for agricultural, market prices 67 percent, health information 47 percent, news 39 percent, job information 32 percent and 17 percent of them express for gaining entertainment information.

8.1 User satisfaction of CIC

User is the center of all measures of evaluation. A CIC's efficiency isn't measured in term of its environment or its size. But the utilization of its available resources, how much it is benefited for the rural people in case of ICT based services and other information services. Therefore, graphical studies of user satisfaction of the CIC used by their users are given below.

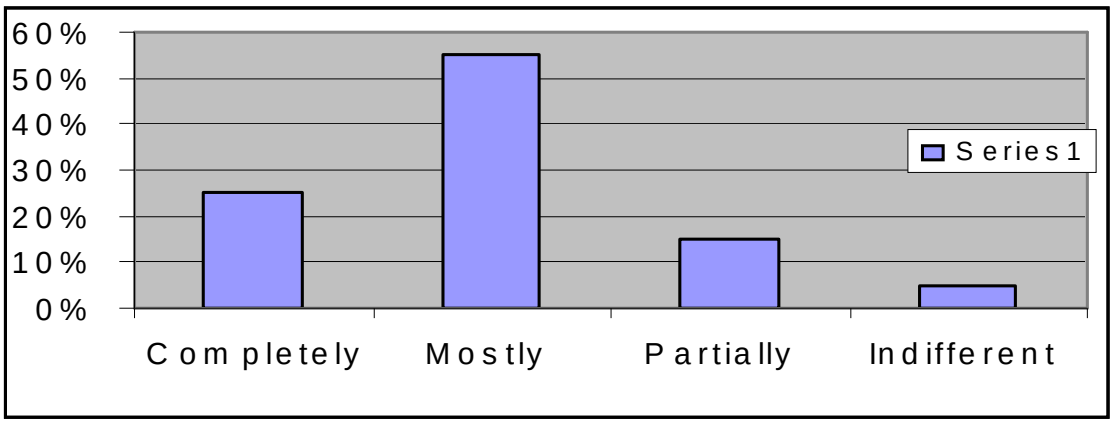

Figure 5: User satisfaction of CIC

Satisfaction rate of user information needs by the facilities of the CIC is shown in figure 3. The above figure shows that 25% of users are completely satisfied about the services they are getting. Another 55% of users are mostly satisfied followed by 15% are partially satisfied. The complete satisfaction ratio is below than others because of shortage PC in CIC, slow speeds and so on. It is noted that 5% are not aware of the Community Information Centers and its resources available in the center. It seemed due lack of awareness among the rural people, high rate of illiteracy and economically backwards in those rural areas.

The discussed table and figure yielded the results with one major surprise concerning that the awareness and uses of latest ICT facilities how gradually spread out in the third world country like Bangladesh. The initiatives that taken by the Grameen Phone successfully is being implemented and definitely they deserve special credit here. Otherwise, the overall results showed a positive response to the rural villagers in community. It was encouraging that respondents generally had a favorable or very favorable impression of the utility of the centers.

9. Discussion and Recommendations

Lack of Regulation and Framework: The regulatory framework in Bangladesh has not yet been modernized to accommodate the growing needs of the electronic world. Still, in government offices, an e-mail has no official value and cannot be legally considered an acceptable mode of communication. As CIC is establishing across the country, it is the time to give emphasis on public and private offices for ICT based services so that people avail their desire services easily.

Regarding Services: Findings arrived that services and facilities of CIC are extremely essential to the rural people in Bangladesh, but they are also expressing their opinions for improving services. Therefore, it is essential to improve services of centers.

To Arranges Training Programmes: As most of the CIC is situated in rural areas and people of these areas are not familiar with the ICT, So authority should arrange some training programme. From Table12 shows that 76% suggests for arranging training programme. This will help naïve people acquit with new technology and create more awareness of using the CICs.

National Policy: Grameen Phone, a private telecommunication company along with other partners is trying to spread out Internet facilities in most rural areas in Bangladesh. Government should come forward and provide all facilities to run the project. Besides these, government should build national policy to spreads ICT facilities in the rural areas.

Submarine Cable Surplus Bandwidth: When SEA-ME-WE-4 is complete logically, Bangladesh will have at least 20 times as much capacity as it currently uses. In case of running present CIC, many CIC entrepreneurs are facing connectivity problem and this latest technology will help to them tremendously.

Fostering Rural Development Projects: ICT development pilot projects CIC, Amader Gram need to be fostered and to follow different business models for sustainability.

Lack of Bangla standardization: Currently, there is no standardization for use of Bangla in the electronic format. Therefore, the CIC management should give more emphasis on these issues as most of the people in rural areas are not well educated.

Governing Using the Internet: Bring governance to the people via the Internet, and enhance transparency in the decision making process so the fruits of democracy can be enjoyed by the masses.

Supply of Electricity Across the Nation: With about 30% of the population of Bangladesh, having access to electricity. The issue of electricity has to be solved before a widespread dissemination of CIC.

High-cost, Low-Reliability of Internet Access: In these issues, CIC offers edge modem wireless connection which speed capacity is 128kbps, but most of the time user faces slow network experiences that hampered daily activities. So speeds have to be up and other broad band facilities have to open with low cost.

Project Sustainability: In order to sustainability of this project, it needs joint collaboration of government and Grameen phone. In earlier many projects fails and these things will never happens ensures the CIC management members. If the Bangladeshi policy makers extend the GPCIC project to more remote and poorer rural areas, the result could be more striking.

Patronization of Government: In the part of government, there are a lot of responsibilities. CICs can't sustain without guardianship and help of the government. First, government of the country has to come forward and make a policy with joint collaboration to further implementation of CIC.

10. Conclusion

From the above discussion it appears Community Information Center has opened a new vista for the rural people in Bangladesh. Effective utilization of ICT has the potential to make the rural communities in Bangladesh prosperous. Further, no single agency can deliver all these critical inputs. Besides the private sector, the need for a proactive participation by the government sector, NGOs, government agencies and other civil society organization is also important. The project CIC aims to make maximum usage of ICT and the latest technology available in the most developed countries to reap the results into the rural community. The idea of having network of CIC in every village connected together into a Village Community web-portal, and complemented by Intelligent, Real-Time Governance will lead to reduced information asymmetry between administration and the citizens. No nation can progress leaving behind more than two-thirds of its population. The tools and technology in the forms of CICs, the Community web-portals, intelligent and Real-Time e-Governance are at hand. The choice of transforming or ignoring Rural Bangladesh is in our hands.

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