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Bridging digital divide in Bangladesh: study on community information centers

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Abstract

Purpose – The purpose of this paper is to discuss different attempts that have been made to bridge the digital divide in Bangladesh, with special focus on the Community Information Centers (CICs), which are playing a unique and innovative role in reducing the digital gap.

Design/methodology/approach – The paper is a case study and is based on a survey method for collecting information through telephone (outbound call center). Besides these, internet, personal visits (as a project member) and other secondary sources such as research reports, Grameenphone internal reports, articles are used.

Findings – This paper highlights the existing initiatives which are bridging the break to build digital Bangladesh and focuses on how CIC is bridging the divide.

Research limitations/implications – This study will usher a new era for its internal values and the findings can be used by the advisory committees. The outcome of this study may, however, empower policy makers to make a decision and it is suggested that discussion and further writings are needed to bridge the digital divide in Bangladesh.

Originality/value – This paper is one of the very few studies which focus on the prospects of Community Information Centers in Bangladesh, particularly breaking the digital discrimination between rural and urban areas.

Keywords Information centres, Digital Bangladesh, Internet, Digital divide, Rural areas

Paper type Case study

Introduction

These days "Digital Bangladesh" and "Vision 2021" are catch phrases in Bangladesh. These buzzwords are no longer confined to the lexicon of information and communication technology (ICT) enthusiasts, but have entered the vocabulary of the educated section of the population. It has become the most discussed issue and people have shown their interests in this subject. It is a good news for the country that nowadays different steps are taking shape and interest groups are coming up with their own interpretations and agendas. Broadly speaking a digital society ensures an ICT driven knowledge-based society and in order to build a digital society it needs to reduce the gap between information rich and poor in the community. It needs to build a system where information will be readily available online and people from different parts of the country will avail themselves of the information through different

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channels. To bridge the digital divide, it needs to establish technology driven e-governance which includes e-administration, e-commerce, e-production, e-agriculture, e-health etc. (Kabir, 2009). The restrictions for the development of information technology is financial limitations. The countries that suffer the most financial hardships are third World countries. The ability to access technological and scientific information does not just give a nation power, but it enables that nation to lead a better life in all aspects. The digital divide is what makes these opportunities impossible for Third World countries to access. If you cannot access the technology then you cannot access the information and this puts these developing countries at a disadvantage (DiBello, 2005).

Background of the study

Bangladesh is one of the least developed and overpopulated nations in the world with 153,546,896 (July 2008 est.) people (*The World Factbook*, 2008) living in an area of 1,47,570 km^2 (Bangladesh Bureau of Statistics, 2006). The country has been struggling to meet the basic needs of its people, with respect to food, clothing, shelter, health, education and the like. But the country is facing various social problems like population explosion, natural disasters, gradual increase of unemployment, malnutrition, mass illiteracy, unhygienic environment, poor medical facilities, over exploitation of existing natural resources, communication difficulties, etc. These problems are highly pronounced in the rural areas where 76 per cent of the population lives (Bangladesh Bureau of Statistics, 2001).

Information and communication activities are a fundamental element of any rural development activity. The country will become digital if the country reduces the gap by taking different initiatives for providing information communication technologies (ICT) facilities. The internet is the most effective tool for bridging the gap and internet facilities are the pre-condition for bridging the digital divide. In this case, the position of Bangladesh is the worst one among the sub-continental countries. The latest statistics (ITU, 2007) has revealed that the internet penetration in Bangladesh is only 0.3 per cent whereas for Pakistan and India, these rates are 7.3 per cent and 5.3 per cent respectively. In Bangladesh, where less than 1 per cent of the people have internet access and where the broadband connection is prohibitively expensive, bridging the digital divide may require new approaches (Wagstaff, 2008). That is why Grameenphone internet has appeared with Global System for Mobile (GSM) technology. Grameenphone established Community Information Centers across the country for providing major ICT services for the community people. As in Bangladesh, 76 per cent of population lives in village or rural areas, it needless to say that development of this country largely depends on development of these people (Bangladesh Bureau of Statistics, 2001).

ICT greatly facilitates the quick and easy access to information and knowledge which offers the socially-marginalized and unaware community unprecedented opportunities to attain their own entitlements (Akbar, 2004). In recent days, various initiatives from different stakeholders, mainly Non Government Organizations (NGOs) and private sectors have been taken to establish of telecenters, Rural information centers or ICT center in Bangladesh. At this point in time, a partnership has emerged between Society for Economic and Basic Advancement (SEBA) and Grameenphone to established community information centers (CICs) in rural areas of Bangladesh to

bring the benefit of ICT to the rural people. GP's country wide connectivity with the vision to reduce the gap, the newly developed CIC model is now being implemented. It is expected that the CIC will decrease the digital divide among the rural communities in upcoming days (Islam and Mezbah-ul-Islam, 2008).

Objectives and methodology of the study

The overall objective of this study was to investigate the bridging digital divide initiatives in Bangladesh and specially focused on:

- Highlighting the inventiveness of digitization activities in Bangladesh which is offered by public and private organizations.
- Identifying the different ICT centers which are now providing ICT services in rural areas of Bangladesh.
- Illustrating the different services which are provided by Community Information Centers (CICs) and different initiatives of CICs which are bridging the digital divide in Bangladesh.
- Tracing the problems and prospects of CICs in Bangladesh and making recommendations for the development of CICs in Bangladesh.

This paper is based on a case study and the related literature was collected through personal visits, internal reports and respective web site of Grameenphone Community Information Center (gpcic).

Digital divide and ICT status in Bangladesh

Various instruments or tools are available that can be used to measure the breadth and extent of the digital divide, only the e-readiness assessment tools were developed specifically for this purpose. However, tools such as Digital Opportunity Index (DOI), Information Society Index (ISI) and eGovernment Index (EGI) can effectively be used to measure the extent of digital divide especially between countries (Mutula, 2008). The notion "Digital Divide" is a very common term in today's world. The digital divide is usually measured in terms of people's access to ICTs. It has been applied to the gap that exists in most countries between those with ready access to the tools of ICTs, and those without such access or skills (de Munster, 2004). The digital divide cuts through various socio-economic factors and affects academic achievement (Huang and Russell, 2006). People living in developed countries have the best access to the fastest use of ICT and in developing countries have limited access or no access at all to these technologies. The real gap between these two groups of people are called the "digital divide" (Giri, 2002). Digital divide is the gap between those who have access and the ability to use ICT, and those who do not – remains vast access (Legard, 2001). More than 80 per cent of the people in the world have never been heard a dial tone. The richest 20 per cent of the world's people accounted for 93.3 per cent of world internet users, while the poorest 20 per cent accounted for 0.2 per cent of internet users (Rajjora, 2002). The divide that shows up is not merely between countries: developed and developing, rich and poor. It also exists within countries: between one area to another area. And there are always proposals for solutions (Mutula, 2005).

In case of Bangladesh, there has not been any attempt in the country to undertake a comprehensive survey to collect information on the use of ICT at the household and

individual levels. Household Income and Expenditure Survey (HIES) (Bangladesh Bureau of Statistics, 2005) sought information on the use of ICT and final result of the survey is yet to be published. However preliminary results are shown in the Table I.

It is clear from Table I that telephone and mobile phone facilities in Bangladesh especially in urban areas are higher and on the contrary, in rural areas it is lower as 0.33 and 6.05 per cent. There has been substantial growth of mobile phone use. The use of the ICT facilities is much higher in urban areas compared to rural areas. However in many countries, the developed communities from developed areas have gone into intricate networks and information superhighways; the indigenous communities of under-developed areas have not been heard of computers and internet (Rajjora, 2002).

ICT plays a significant role for the development of a society. Sein and Harindranath (2004) in their model analyzing the role of information and communications technology (ICT) in national development tried to understand how ICT affects national development. They pointed out that ICT can be broken down into four aspects with regard to development namely: ICT as:

(1) commodity;

(2) supporting development activity;

(3) driver of the economy; and

(4) directed at specific development projects.

The ICT status of Bangladesh is not remarkable without some favorable initiatives by the Government and by private entrepreneurs. The Internet came in Bangladesh in 1993 and IP connectivity in 1996. In April 2000, the Government withdrew taxes on VSAT after that, the use of internet scenario of the country changed rapidly. South East Asia-Middle East-West Europe (SEA-ME-WE-4) is a submarine cable consortium and Bangladesh joined in the consortium (Rahman, 2008). According to the ICT Development Index 2009 published by International Telecommunication Union, mobile cellular subscription per 100 inhabitants has increased from 0.8 in 2002 to 21.7 in 2007, which is the significant most improvement area as much as of ICT access is concerned. Conversely fixed telephone lines per 100 inhabitants has increased from 0.5 in 2002 to 0.8 in 2007, the proportion of households with computers has increased from 0.8 in 2002 to 1.9 in 2007 and the proportion of households with internet has increased from 0.1 in 2002 to 1.3 in 2007. International Internet bandwidth per internet user moreover, has increased from 211 bit/s to 1,284 bit/sec in these five years (ITU, 2009).

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

Type of facilities	National (%)	Rural (%)	Urban (%)
Telephone	2.87	0.33	10.36
Mobile phone	11.29	6.05	26.73
Computer	1.36	0.17	4.88
e-mail	0.20	–	0.81

Source: Bangladesh Bureau of Statistics (2005)

Table I.
Percentage of households having ICT facilities

The Bangladesh Telephone and Telegraph Board (BTTB), a government-owned telecom provider, has provided conventional Public Switched Telephone Network (PSTN) access to 64 districts and 465 upazillas (Sub-districts); Internet Service Provider (ISP) services to all 64 headquarters and 165 upazillas; an the Digital Data Network (DDN) access to 41 districts through it own infrastructure (Islam and Mezbah-ul-Islam, 2008). However, the present cellular phone subscribers are increasing comparatively faster than land phone subscriber.

Table II shows how cellular phone subscribers are increasing in Bangladesh over the period of years. The table reveals that mobile phone and land phone subscribers in Bangladesh reached 47.97 million and 1461.56 respectively at the end of July 2009.

Bridging the digital divide in Bangladesh through different initiatives

In Bangladesh, initiatives for reducing the digital divide have already been taken and a number of institutions have established their network to work on it. It must also be mentioned that at the end of the year 2009, WiMax technology was introduced in the country which is enabling fast, secure and dedicated internet connection for all and is also breaking the barrier of not reaching the unreached (Wahed, 2009). However, all the ministries and divisions in Bangladesh are on their way to provide information services electronically under "Quick Win" initiatives through ICTs. A total of 12 ministries and divisions of Bangladesh government have already started to provide at least one e-service each and circulate the information in national daily newspapers (Special Brochure, 2009). Services include the following:

- *Community-based e-center*. A Union Information Center (UIC), Agriculture Information Center (AIC) and Fisheries Information Center (FIC) are being set up in various remote areas, which aim at providing easy and low-cost access to critical livelihood information.
- *Utility bill payment through electronic system, PDB and Titas gas*. People now can pay their bills in an easy way through Point of sales (POS)/mobile without going to a bill pay center. As of December 2009, one million bills have already been paid through this system.
- *Polling center information*. Voters can obtain polling station information over SMS. During the national election of 2008, more than 60 millions of citizens received information through this system.
- *Public examination result*. SSC and HSC students can get their exam results by using internet. Education ministry designs a particular web portal where the student can find their result putting their roll numbers in the system.
- *Railway information through mobile*. Now one can know the information on train, fare and seat availability through SMS.
- *Disaster forecasting system*. Aiming to reduce risks of calamities, people living in the coastal belts of the country will soon get disaster warning message through mobile phones.

Recently developed or updated web sites and web portals contributing to informing people of government initiatives. Some of the prominent web sites are National Web Portal (www.bangladesh.gov.bd/), Automation of Chittagang customs house (www.nbr.ctg.com), Ministry of Establishment (www.moestab.gov.bd) and so on.

Name	2001	2002	2003	2004	2005	2006	2007	2009
Cellular	662,000	1,140,000	1,907,000	4,151,000	9,278,000	21,760,000	31,420,000	47.97(Million)
Fixed	564,000	682,000	716,000	831,000	871,000	1,145,000	1,120,000	1461.56 (Thousands)

Source: www.btrc.gov.bd (accessed 13 November 2009)

Table II.
Subscriber growth rate

Community internet access points in rural areas of Bangladesh

Community people of rural areas in Bangladesh are not getting the ICT facilities as in urban areas and most of the government initiatives are city-based. However, some of the high-flying private initiatives that have been playing a vital role across the country to reduce the gaps are:

- *The Dhaka Ahsania Mission (DAM).* Dhaka Ahsania Mission is a leading non-government organization of Bangladesh and DAM launched the first community-learning center, locally known as Gonokendra, in 1987. Now there are more than 100 Gonokendras across the country. Each center functions as community based information center and few centers started using internet for interactive information communication (www.ahsaniamission.org).
- *Development Research Network (D.Net).* D-Net established four Pallitathya Kendra (rural information centers) as pilot projects in 2005 in remote villages of Bangladesh and each of the centers have three computers two or three mobile phones, a digital camera, soil test kits, and a nebuliser that local doctors can rent, and a weighing machine. (www.dnet.org.bd).
- *Relief International.* Relief International Schools Online division initiated ILC (internet learning centers) programme in 2003 and they are working on community information system. In some places, ILCs are equipped with broadband Internet connectivity and others have dial-up connectivity (www.ri.org).
- *Katalyst.* Katalyst is a private sector development project funded by a donor consortium and it envisages promoting commercially sustainable rural ICT initiatives in Bangladesh. Catalyst establishes Rural ICT centers (RIC) which is branded as AlokitoGram and GHAT. (www.katalystbd.com).
- *Amader Gram Learning Center (AGLC): Community Database for Development.* Amader Gram Learning Project has established a village communication, information and learning center in April 2001 in the Bagerhat district on a pilot basis. AGLC has been showcased in DFID (Knowledge Bank) as a successful ICT initiative at the grassroots level. (www.amadergram.org).
- *RTC (Rural Technology Center).* As an innovative intervention in rural appropriate technology transfer, "Practical Action Bangladesh" established some Rural technology centers (RTC) which provides information and technology services for farmers, traders, entrepreneurs and other clients.
- *GHAT: Rural ICT center (RIC).* The RIC is run by Digital Equity Network (DEN) with its own investment and support from KATALYST, a multi-donor consortium working in Bangladesh. The centers have basic ICT facilities (phone, computers, printer, scanner, internet connectivity, digital camera etc.). (www.ghatbd.com).
- *Bangladesh Telecenters Network.* Bangladesh Telecenter Network (BTN) is a coalition of organizations working together for fostering telecenters movement in Bangladesh. (www.telecenterbd.mission2011.net).
- *Bangladesh NGOs Network for Radio and Communication (BNNRC).* BNNRC is a national networking body working for building a democratic society based on the principles of free flow of information, equitable and affordable access to information and communication technology (ICT) for remote and marginalized population. (www.bnnrc.net).

- *BRAC Bdmail Network Ltd.* BBN (bracnet), an affiliation of BRAC, was launched in April 2006 with the aim of establishing 200 e-huts by the end of 2008. It has already established 32 e-huts and people living in rural areas of the country are getting access to the internet at affordable price through e-huts. (www.bracnet.net).
- *Digital Knowledge Foundation (DKF).* DKF has been established to harness the power of ICT for knowledge and information sharing. DKF has launched five Cyber Palli (village) (Grameen Tathya Kendra) in collaboration with Bangladesh Women Chamber of Commerce and Industries and Bangladesh Enterprise Institute. This initiative is supported by Commonwealth Secretariat (www.digitalknowledge.org).
- *Tathyo Tori (Information boat).* Grameenphone limited in association with CARE Bangladesh launched information boat and the main objective of this project is to break the digital divide by both educating and empowering the river based people with the necessary information. Information boats are equipped with digital content, and contains computers, internet and e-mail facilities, photocopiers, printers, TV cameras and video machines, scanners and more depending on the needs of the community (Grameenphone, 2009).

Besides these, several attempts have been taken to reduce the digital divide for rural people such as Youth Community Multimedia Center (YCMC), Rural Information Resource Center (RIRC) under Community Development Library (CDL), Digital Equality Network (DEN), Digital Knowledge Foundation (DKF), Grameen Telecom, International Rice Research Institute (IRRI), School Net Foundation Bangladesh, Sustainable Development Networking Foundation (SDNF), WIN Incorporate, Young Power in Social Action (YPSA) etc. are mentionable. These initiatives always indicate an increment of the usage of ICT Services in Bangladesh.

Concept and global status of community information centers

The planning and development of community information centers is expected to increase the penetration rate of the internet and also the use of ICT for development of community people life. Community is "a group of people who have something common. This can be their age, education, religion, interest, political affiliation, activities, work, possession or a combination of two or more of these" (Giggey, 1988). Community Information (CI) is the information for the survival and growth of the community or it is that information which is required by the member of the community to make effective use of the available resources around them. The information center through which community information (CI) is provided to communities is called community information center (CIC). CIC has become a popular approach in many developing countries and different countries of the world have established a number of information center (for example Thailand-Thai Rural Net, Brazil-Telecentre, Indonesia-Warnet, Albama-Public Information Center etc. (Micael and Colin, 2001). The Malaysian National Strategic Framework of Bridging Digital Divide listed three main issues on the applications of ICT which relates to the access, the adoption and the value of using ICT among Malaysian community (Razak and Malek, 2008).

Islam and Hasan (2008) had carried out a study on "Multipurpose community telecenters in Bangladesh: problems and prospects" The purpose of this paper was to

discuss multipurpose community information and knowledge centers (MCTs) and then describes and assesses the telecommunication. The paper then highlights problems and prospects, in rural areas of Bangladesh, of information access through the telecenters. (Islam and Uddin, 2005) 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 Bangladesh. (Sudip, 2007) made a proposal on "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. Bhattacharjee (2002) pointed out in his article "Community Information Center Project in India: connecting the far flung" different initiatives that have been taken by the National Informatics Centre (NIC) in India. A similar study was done earlier on Community Information Service centers introduced by public libraries in Malaysia (Ali Anwar, 1996).

Grameenphone community information centers in Bangladesh

Grameenphone is the largest telecom operator in Bangladesh and they are now a family of more than 20 millions subscribers. Grameenphone internet is another step which promises to enlighten the lives of 20 million people by providing easier and faster access to information than ever before. Grameenphone (GP), Bangladesh, has launched a pilot project named "Community information center" through its nationwide Enhanced Data Rates for Global Evolution (EDGE) to provide internet access and the other communication services to the rural people (see Figure 1). The pilot project which started in February 2006 with 16 CIC's, has now become a massive operation with over 500 CIC's running in around 450 Upazilas. At present there are almost 561 CIC's operating in 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 four adjacent villages. CIC entrepreneur is the CIC business owner and Grameenphone does not own the CIC's. However, Grameenphone does have a responsibility to support their CIC entrepreneur customers. Setting up a support network for the entrepreneurs, using the GPSD (Grameenphone Service Desk)

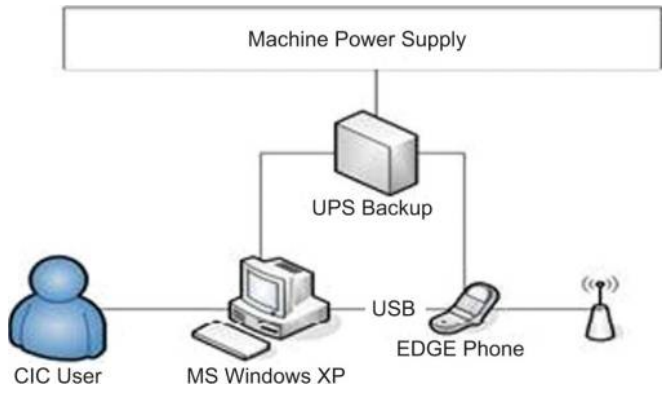

Figure 1.
Full set-up of a Community Information Center

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 (Waverman, 2005).

A typical CIC is equipped with an EDGE modem, SIM (Subscriber Identification Module), computer, digital camera, printer, web camera and other necessary tools which vary from place to place.

Role of community information centers to bridging the digital divide

As Sullivan (2006) has identified, the CICs' real value comes from the applications that it can enable for citizen services and government interactions, making it an e-governance touch-point for the villagers. Such applications include:

- *Community*: CIC helps the community people to meet and interact virtually, based on their areas of work or interest. Community web-blogs are an excellent platform for the community people.
- *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. With the help of the CICs, fishermen, farmers, etc. get the required information and market prices from the designated portals.
- *Community information center web site*: the official web site of GPCIC has been developed with both in Bengali and English interface and provides necessary links. The home page of "Grameenphone community information center" (www.gpcic.org) was launched in August 2006. In September 2007, the web site crossed an important milestone with a hit count of over 1 million. (Yahia and Sultanur, 2006). This vouches for the popularity as well as of the importance of the CIC initiative. Figure 2 portrays the user interface of GPCIC web site and it is also available in Bengali language.
- *Information services*: In information services section of the GPCIC web site, the user can find their desired link and community contents. CICs provide a platform for aspirants to surf the net, visit job employment sites and locate promising careers any where in the country or the world without leaving their homes. Commodity prices, weather information, crop planning, literacy programs, exam results, health information, school curriculum, government notifications, downloadable forms etc. could be printed or filled online.
- *Communications*: major internet-based services like e-mail, instant messaging, etc. could be used from the CICs. The GPCIC web site has information on the above services and links to web sites that will guide users for availing themselves of these services.
- *Access to government information*: access to government information have become very easy by using CIC and people can easily avail government information like information on birth and death registration, voter lists, passport and other government's form.
- *Common platform for knowledge sharing*: CICs provide a forum for people from various communities operating from far-flung locations to come together to exchange knowledge and information that can be of greater utility to them to build a knowledge-driven society.

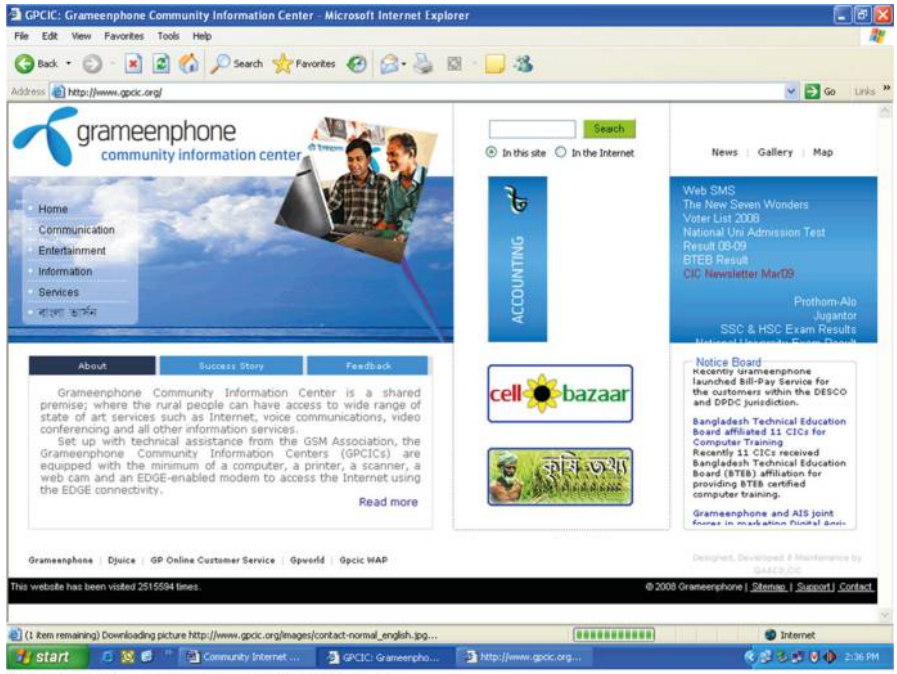

Figure 2.
GPCIC web site

Source: www.gpcic.org (accessed 24.07.2009)

- *Working as a telecenter*: as stated in the GPCIC web site, the mission of GPCIC is to provide e-mail address, a phone number and provide complete communication facilities through mobile phone for the villagers. Visitor can enjoy phone facilities and also enjoy video conference and tele-consult doctors for medical help.
- *Agriculture Information Service (AIS)*: on February 5, 2009 a caravan activation program was launched to promote digital agriculture information services through the CICs. This is a joint effort between Grameenphone and Agriculture Information Service (AIS) under the Agriculture Ministry.
- *Initiating e-governance*: E-Governance concept is adopted by most of the developed countries for efficient and good governance. E- governance may get the supreme priority for a developing country to enhance transparency, alleviate poverty, empowering citizens and create business opportunities. Government is taking different initiatives to introduce e-governance. Already national web portal has been designed and people are getting different citizen services through this portal from different parts of the country. In this aspect in rural areas CIC can play a vital role to implement the e-governance activities.

User perception about CICs

In mid July, 2009 Outbound Calling Center (Part of a call center of GP) conducted a survey on different issues through phone in conversation by asking several questions. One question was why do they visit CIC and what facilities are they enjoy in CIC. The answers to these questions are discussed below with some parameters.

Table III shows that 79.40 per cent of the respondents use the internet to enjoy the facilities like e-mail, chatting, surfing, browsing, web searching etc. 64.18 per cent are interested to know about local commodity price, health information through health line (789), agricultural information, cell bazar (shopping through mobile phone) and other contents which are relevant to their daily life. A good number of users 53.13 per cent response the academic and knowledge updating information like exam results, admission dates and times, current events through news paper, jobs and employment guidance etc. However, the last purpose of information access (indicated by 46.57 per cent of respondent) is devoted to information on recreation of the mind such as entertainment programme, music, games etc.

Problems of using CIC

It is really challenging in the perspective of Bangladesh to operate more than 550 CICs across the county particularly in remote areas. Several problems such as insufficient infrastructural facilities, shortage of trained manpower, interrupted power supply and other relevant issues are always the hectic barrier for the CIC organizer.

Table IV shows what types of problems are facing community people to using CIC. From this present study it is evident that out of total respondents 30 per cent of users are not satisfied about the internet speed of CIC. As now different modern technologies are used to using internet like as broadband, WiFi, WiMax, NGN. The Grameenphone

Sl. No.	Purpose of information access	Respondents Facilities enjoyed by users	*n*	%
1	To access internet	E-mail, chatting, surfing, browsing, etc.	266	79.40
2	To know about commodity prices, agriculture information, health information etc.	Cell bazaar, 789 (Health line) and others local contents	215	64.18
3	For academic and updating knowledge	Exam results, admission time and date, current events etc.	178	53.13
4	For recreation of mind	Entertainment, listening, music, video-games	156	46.57

Notes: $n = 815$; percentage is more than 100 because of multiple choices
Source: INFOCUBE (Internal link for CIC team), Log of daily update and survey report of CIC team. Data collected (5 August 2009)

Table III.
Information access and facilities enjoyed by users

Sl. No.	Types of problem	Percentage of respondents[a]
1	Low internet speed	30
2	Shortage of manpower, machine and other tools	10
3	Absence of local digital contents	15
4	Power supply failure	40
5	Browsing charge	5

Note: [a]$n = 100$
Source: Outbound calling center and INFOCUBE (5 August 2009)

Table IV.
Problems of using CIC by user community

internet modem speed is 236.8 kbps which is comparatively slower than other suppliers' technology. The highest number of users (40 per cent) complain about the electricity shortage which is a severe problem in Bangladesh. Bangladesh is having a huge power shortage since 2005/2006 and now the shortage is estimated at around 45 per cent (2500MW) of our generation (Haider, 2007). Next follows the shortage of local digital content, web portal and other content management (15 per cent) and the remainder comprises shortage of manpower in CIC, computer and internet browsing charge.

User satisfaction of CIC

Another attempt was made to measure how much the CIC users are satisfied with the service provided by community information centers. As it is observed through survey and other internal reports that different obstacles are facing the CIC entrepreneurs to operate the center in their respective regions. It is very rational that the satisfaction will not be absolute. A study of user satisfaction of the CIC indicates that about 28 per cent of 100 users are completely satisfied about the services what they are getting from centers and another 55 per cent are mostly satisfied, followed by 18 per cent who are partially satisfied. It is noted that some 5 per cent are not aware of the community information centers and the resources available in the centers.

Problems of CIC in Bangladesh

As it is a countrywide initiative, CICs in Bangladesh are facing different problems, including the following:

- Poor literacy rate: low literacy is a big problem in rural areas and creates another problem to run any ICT centers.
- Language barrier: as the national language of Bangladesh is Bengali, most people cannot understand the language (English) which is predominantly used in the internet world. Some local content providers are creating Bengali web pages and sites for the community people, but it is not sufficient for the masses.
- Lack of ICT skills: computer operating skills and internet navigation is still low in rural Bangladesh. Thus rural people feel awkward to go to information centers.
- Unawareness of modern technology: the majority of the rural population of Bangladesh is lacks awareness of new technology and information systems. That is why it has come out that some people are indifferent about the information centers.
- Absence of national policy: it is not possible to make the programme successful without supporting Grameenphone, a private telecommunication company and that is why the government should come forward and provide all facilities to run the project.
- Insufficient bandwidth: it is really challenging to run the CIC with GSM technology as it becomes old. Insufficient bandwidth is hampering the provision of faster and effective services to the user community.
- Lack of power supply: it is an indispensable problem to building a digital Bangladesh as the country is facing huge electricity problems. An unreliable supply of electric power is another barrier of providing ICT-based services to the community people.

- Financial constraints: initially it needs money, land, and educated and trained manpower to build a CIC, and sometimes entrepreneur feel reluctant to invest. Besides these, internet browsing charges and other service charge seems too expensive to the CIC users.
- Lack of government initiatives: in the part of government, there are a lot of responsibilities. CICs can't sustain without guardianship and help of the government. Local governments of Bangladesh did not take any initiatives to establish CICs due to low budgets. Information provision is one of the lowest priorities to the local government.

Conclusion and recommendations

The right to information has become one of the basic needs of all the people of the community. For building digital Bangladesh and access to information, community information centers are a major potential platform for the rural masses. They have opened a new vista for the community people and help villagers to access the digital world. CICs aim to make maximum usage of ICT and to reap the results for the rural community. As the present governemnt declared the vision "Digital Bangladesh by 2020" it is very rational that the government has to give high priority for the rural masses. In this aspect, CICs will play a leading role in rural areas. This study will certainly create another avenue for bridging the digital gap and digital Bangladesh could well reshape in the future. Dreams, plans and willingness are in our hand to build a digital Bangladesh. Some measures can be mentioned for upgrading CICs in Bangladesh to reduce digital gap:

- *Promoting awareness*. Grameenphone should arrange more seminars, conference, workshops and more campaign to promote awareness of CICs. This awareness programme should focus on the role of CICs in reducing the digital gap. Different public and private organizations should come forward and support the CIC's activities to reach the ultimate goal. These organizations can also focus on the different initiatives of CICs and can incorporate different programs.
- *Need to use modern network technology*. Grameenphone has built the largest cellular network in the country with over 10,000 base stations in more than 5,700 locations. Presently, nearly 98 per cent of the country's population is within the coverage area of the Grameenphone network (Wikipedia, 2009). Now it needs to give more emphasis to strengthen the network by adopting advanced technology such as WiFi, WiMax, NGN, 3G and others.
- *Focus on content management*. As most of the CICs are situated in rural areas, it needs to design community portal, digital content which covers health, agriculture and other related issues which are frequently used by the community people. CIC services should expand so that it can cover all spheres of community people life.
- *Standardization of Bengali language*. Currently, there is no standardization for use of Bangla in the electronic format. CIC management should adopt some software and UNICOD, onscreen Bangla keyboard so that native people can understand and operate the internet in their own language. Individually it is not possible for CICs. As a result others ICT centers should come forward and help to build a sustainable and convenient programming language for the community people.

- *Government patronization*. It is very important to run CICs smoothly across the country. The Government needs to take responsibilities to monitor, give logistic support, policy formulation to coordinate with ICT ministry's and so on. ICT ministry should come forward and regular subsidy is essential at the government end. Existing ICT centers are needed to expand their information services.
- *Co-operation between government and NGOs*. NGOs in Bangladesh are playing a vital role in providing rural information thorough telecenters, CICs and other information centers. Governemnt has to give high priority to integrate these activities from both sides.
- *Village CICs*. Grameenphone has a plan to establish village CICs at the village level. In order to bridging the digital divide, the Government has to patronize the individuals and organizations who would like to establish such CICs.
- *Collaboration*. Besides CICs, in Bangladesh there are lots of organizations who are working to bridge the digital divide by different names. Their efforts and activities should come under one umbrella so that not only can they collaborate with each other more easily but also money and resources can be used more effectively.
- *Information literacy*. The Governemnt should enact a State Information Literacy Policy where information should reach to all the section of the society. Besides these, it is suggested that all the CICs should assess the needs and requirements of the user community with the help of different assessment methods.

Although different recent research has found that traditional "have-nots" have rapidly increased their presence online (largely attributed to network externalities and decreases in costs) (Landler, 2000; Romero, 2000) there are of course still gulfs between levels of internet use. However, there have not yet been sufficient and ongoing embedded evaluations of the impacts of – or real needs or uses for – the new ICT's in different communities. A clearer understanding of each is necessary to understand the nature of this latest technological divide, and to determine appropriate responses. If the CICs in Bangladesh successfully overcome the constraints discussed in the article, it will certainly bring new opportunities for the rural people to enrich their lives as well as create revolutionary changes in rural society's. As a result, CICs will reduce the digital divide between urban and rural areas in Bangladesh by improving information access.

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Further reading

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