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Rural Community Development Strategy beyond the Access to Information

The Role of Tele-Centers in Bangladesh

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RURAL COMMUNITY DEVELOPMENT STRATEGY BEYOND THE ACCESS TO INFORMATION: THE ROLE OF TELE-CENTERS IN BANGLADESH

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ABSTRACT

Telecenters is one of the promising models recognized by the United Nations (UN) to achieve the global access of ICTs. This paper provides insight in the role and usages of Information and Communication Technology for Development (ICT4D) projects with a specific focus of telecenters in developing country Bangladesh. This study covers four aspects of the functioning of telecenters grounded in social, economical and action resources: 'situated success', 'information culture and tradition', 'typology of resources' and 'functioning'. The study contributes to the theory and practice of ICT for development with impact analysis of ICT4D project. The understanding of community capability building is addressed by identifying core capabilities of ICT for the rural community, and highlighting the relationship between the ICT and development. The study also demonstrates how ICT may bridge the gap between the policy and actual practices of rural community with respect of ICT development.

1. INTRODUCTION

Telecenters are considered as major catalysts for information and knowledge that can stimulate many development opportunities and services in rural areas. Under certain conditions it can help the rural livelihood through sustainable strategies (UN, 2004). It is also bringing the benefits of new communication technologies to rural people who do not have access to technology at their home or through their work place or at an educational institution. There are different discussions in literature regarding sustainability of telecenters in rural perspectives especially in developing country (World Bank, 2005). Literature on ICT for Development covers both optimistic and pessimistic thinking regarding the potential of telecenters (Heeks, 2005; Heeks, 2008; James, 2005; Kumar and Best, 2006; Harris et al., 2003). From the optimistic perspective, ICT is considered as a catalyst for development and a tool for faster information exchange and transmission which is reducing costs of information and communication practices. The pessimistic position concerns the viability of projects. Researchers identified deep-seated issues in developing country such as poverty, illiteracy,lack of ICT skills, and lack of ICT investment (Heeks, 2003; Heeks, 2008; Kumar and Best, 2006; Maitrayee, 2008; Sein et al., 2008). The sustainability of donor funded ICT projects in developing countries has been a major concern for the donors as most of the projects terminates after the fund finishes. Hence, the donor agencies are concerned to identify the reasons for the non-sustainability of these ICT4D projects in developing countries. (Development Gateway, 2003). The literature on ICT for international development has paid little attention to the participants of this latter community, and this issue is being considered as 'empirical vacuum' in ICT for development impact research areas (Keniston, 2002; Huerta & Sandoval-Almazan, 2007).

This underlying reason shapes this paper's motivation to work on the social impact of one of the ICT4D projects in Bangladesh and addresses the strength and weakness of this rural ICT initiative. It also aims to explore the resources to access the ICT and ICT driven capabilities in rural community context. This paper considers resources that are directly and indirectly connected with human capability. A lot of ICT

investments and diffusion have been made in rural areas in Bangladesh aiming the success of ICT4D and digital Bangladesh. But it is still not clear how these ICT diffusions and adoption processes could work effectively for actual rural community development. The following two research questions are addressed:

1. What resources are needed for the capability building of the rural marginalized community in the context of this 21st Century e-Society?
2. How can the community based ICT4D program make an impact on the strengthening resources and capabilities of rural community of Bangladesh in context of their social and economical realities?

Based on some empirical study in the Youth Community Multimedia Center (YCMC), at ICT center in rural Sitakunda area in Bangladesh, this research is aimed to investigate the role and impact of telecenter by using the theoretical lens of Sen's Capability approach (Sen, 1989) and Heeks' resource perspective view (Heeks, 2005), and investigate the relationship of resources, rural community capability building and actual telecenters driven information practices.

This paper is organized into four sections. The first section presents a short review on recent ICT initiatives in Bangladesh. The following two sections include the theoretical basis of the work and the research setting and methodology. The next section presents the findings and impact analysis of the project considering the four key perspective of 'situated success', 'information culture and tradition', 'typology of resources', and 'functioning ' followed by the final section of discussion and conclusion

2. ICT AND BANGLADESH

The Information and Communication Technology sector is currently the fastest growing sector in Bangladesh. Among other things, the government has declared a national ICT policy in 2008 with the aim of creating 'Digital Bangladesh' (Ministry of Science and Information & Communication Technology, 2011). Bangladesh govt. prioritizes the policy for pursuing ICT for development (ICT4D) that is focused on the issues such as the access and better delivery of government services to citizens, citizen empowerment through access to information.

Bangladesh is one of the most world's densely populated countries in the world. The economy of Bangladesh is based on agriculture, and 74% of the population lives in rural areas. In the rural areas, people live in poverty and suffer from illiteracy, ill health, unemployment, and lack of ability to access government - or others agencies' services. However, academics and development agencies define poverty not only by economical and social deprivation indicators but also by lack of information and access to information (Heeks, 2003; Sein et al., 2008; UNDP Bangladesh, 2010). In this context, Bangladesh government, International aid agencies and Non-Government Organizations have taken several initiatives in supporting of a telecenters strategy in Bangladesh, one of them being the Bangladesh Telecentre Network (BTN) which is a coalition of organizations for fostering telecenters movement in Bangladesh (BTN 2011). Presently more than 2300 telecenters are in operation all over Bangladesh to provide a range of information and services to rural communities.

A number of large and ground breaking ICT initiatives have been taken by Bangladesh government recently, among them the development of digital National ID is the most significant initiative. The digital National ID card project was completed during 2007-2008 with the help of United Nations around 80 million peoples' basic information with digital photo under a single database. One of the other significant initiatives is the development of National E-Information cell (www.infokosh.bangladesh.gov.bd/), an online store of databases that contains information related to people's life and livelihood in various sectors of Bangladesh including agriculture, education, health, law and human rights, tourism, employment, citizen services, non-agriculture initiatives, industries and commerce, science and technology, environment and disaster management.

The current government strongly believes that the success of Digital Bangladesh lies in mainstreaming the marginalized population into the development goals and set of actions with ICT as the enabling tool. This vision of the government is the driving force behind the establishment of 4501 Union Based Information and Service Centres (UISCs) in every 'Union Parishad' (last tire of administrative unit) to serve the rural citizens. Upholding these ICT enhanced services to door steps of poor and marginalized people, UISCs are going to

play a vital role on the greater transparency, accountability of local govt. and trying to ensure the livelihood information access through ICTs (UNDP Bangladesh, 2011).

3. THEORETICAL BASIS

ICT is considered as an extremely potential enabler in bringing sustainable development to developing countries and ICT driven information and knowledge can bring social and economical development (Bailur, 2007b; Duncombe and Heeks, 2002 ; UNDP, 2005). However, in developing country it has been quite difficult to understand the connectivity with development of rural community. Thus, research has employed a new view of this development approaches considering the developing country (Heeks , 2008; Heeks, 2005; Gigler, 2004). Heeks in his work gives much more focus on information above information driven technologies (Heeks 2005). He considers the technology a dead box, as long as if it does not support information processes. From the social resource perspective, Gigler (2004) gave important approach in this regard, stating that the technological factors such as infrastructures, computer ownership and access to technology cannot solve the major challenge of ICT development in developing country. He considers the major challenge to be transferring data access from internet or telecommunications into meaningful information and availability of social resources to implement the information into the practices in the communities. Other researches has argued that the Sen's (1989) capability approach can derive potential findings at micro level focusing on its non-income variables (Comim, 2001; Gigler, 2011; Gigler, 2004). The link between Sen's capability approach and ICT has been synthesized in Robeyns' work (Robeyns, I. 2005b). According to Sen (Sen, 1989) development should be conceptualized in terms of
-   People's capabilities to function
-   Effective opportunities to undertake the action
-   The activities that they want to engage in and
-   Be whom the people want to be

Heeks (2005) information chain model provides a method on achieving successful ICT implementation in developing context, and he also mention that the technology must be understood in its context of economic, social, and action resources, which can help to transform the data resources into information to achieve the actual outcome from ICT4D projects at community level. Heeks' information chain model (Figure 1) illustrates how raw data needs to be *accessed*, *assessed* and *applied* by the users, before *actions* can take place.
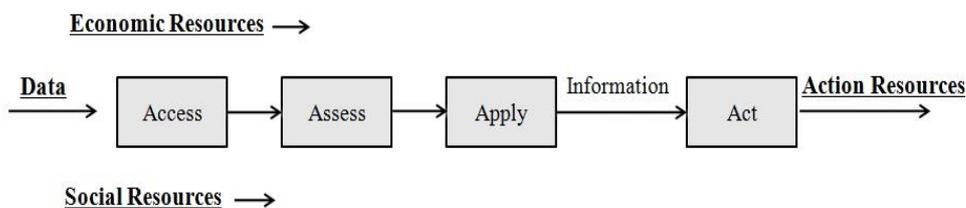
Figure 1. The Information Chain Model (Heeks, 2005)

Considering my case ICT4D project I could identify what kind of resources offer this community ICT initiative and how these resources function in the ICT centers in rural community. I could also identify how rural community participants assume that capability development is key driving force to maintain the ICT sustainability beyond the funding period. The capability approach provides a framework, which has strong connections with the resources demonstrated by Heeks (2005) to make successful access to ICT-enhanced information in rural context. Hence, the capability approach and resource understanding are used explore the functionality of ICT means in rural area in developing country.

4. RESEARCH SETTING AND METHODOLOGY

An empirical study was carried out at the site of the tele-center Youth Community Multimedia Centre (YCMC) in Sitakunda sub-district of Chittagong, Bangladesh during September to November 2010. YCMC, established by Non-Government Organization named Young Power in Social Action (YPSA), developed out of a UNESCO supported project on ICT Innovations for Poverty Reduction in 2004. It was established with a combination of traditional technology like radio, TV and newspapers and new technologies such as computers, Internet, photocopiers and digital devices like video camera, scanner and printers.

Sitakunda sub-district is surrounded by the hills to the east and the Bay of Bengal to the west. In 2001, around 300,000 people lived in this administrative unit. With only very low employment degree in the industry, a large number of the local people work in agriculture, and as many as 25,000 semi-skilled and un-skilled workers find employment in the largest ship breaking industry in Asia, which is situated in Sitakunda. Only very few indigenous people own their own land, and the area has limited facilities for communication, primary education and health.

A qualitative research approach was used in this study to address the research questions while the qualitative data were collected and analyzed using an interpretative method. The qualitative approach was chosen to support an ethnographic approach that aims to establish a better understanding of the motivation of the users, the operators of the center and the capability building trajectories of the individuals as well as the rural community level. Data collection was done using interviews, site observation, group discussion and informal conversations with users of this centre. In total eleven interviews were carried out with users and trainees in the center. The informants were questioned regarding the issues relating with their motivation and mainly what had inspired and hindered them in their learning from the telecenters. Two extensive interviews with two key-informant provided deep background knowledge about the center, its history and activities. One of the key informants was the program officer of YCMC and the other was the telecenter's operator. Instead of focusing on the direct impact of the ICT, the data collection and analysis was designed to find out the indirect impact of the ICT intervention among the target group.   Analysis of documents such as YCMC's records and annual reports has provided insight into the wide range of activities undertaken at the centre. Observations were done for the purposes of gaining additional data and to provide enough background knowledge that was used for both interviews and informal conversation with local users of the facility.

5. FINDINGS AND IMPACT ANALYSIS

The concept of this multimedia center YCMC is to improve the human capacity building by providing information accessibility to people and groups who are unfamiliar with ICT. This center has taken a comprehensive approach to include diffusion, which involves a systematic program of activities designed to spread the ICT message in rural areas. According to the program officer of YCMC, the ICT diffusion is time-consuming and resource-intensive. Sustainability of this type of program largely depends on long term funding for smooth operation and equipment availability. The current status of YCMC has been changed to an independently running center and is being operated by self-generated income. Following are some of the pilot ICT initiatives and activities taken by the center in the last few years:

- Volunteer groups were organized and trained to develop audio and video contents on various social development issues.
- Information disseminated through local cable operators to reach the civil society. The participants were asked to develop need-based contents on various issues such as human rights specially on women and child rights, public health and hygiene, AIDS, drugs, and environmental issues.
- Prepared content packages aimed at even completely illiterate people. This provides information to grassroot levels in an attractive form and promotes the general interest in ICT.
- Published newspapers and distributed locally.

In what follows I present the indirect impact of the ICT project on capacity building process derived from the data collected from the case project. The analysis is based on the issues related to resources, capability building which are constituted by this center's ICT access and other economical and social aspects.

During a group discussion with center's operator, users and community people, the operator expressed very optimistic opinion regarding the center considering his previous experiences. The operator found the

center to be a potential ICT access point for the local people as the operator himself is an example in this regard. He took computer training and video editing training during 2004-05 from this center. Around 180 village adolescents were given the opportunity for free basic computer training with some of the most popular ICT programs during that time. After the initial training program, around 30 participants received further training and they were later engaged in digital content development work. They developed audio, video and multimedia programs on local community concerns and needs mainly in local language. Because of the language the content could be understood even by illiterate people of the community. The video content was prepared with the participation of local people based on the local cultural contexts and issues. Around 18 participants then agreed to form a team of volunteers. They voluntarily collected raw data from the remote area on various issues relating to the villagers daily life and occupation, and produced various video and audio materials highlighting those practical problems. They also produced various interactive, but traditional stage shows and activities such as *Forum theatre* and *folk music* considering the social tradition and context of learning. YCMC disseminated those media contents and theatre in different remote and hilly areas in Sitakunda, using the cable TV casting through the local cable operator and VCD player. Community people were very much interested to follow this type of programs. As a result, both the producers and viewers of the materials participated in capability building process through the resources of the tele-center. Local people started to improve their livelihood and become aware about various social issues and at the same time YCMC became increasingly popular in those village areas in that period. But, due to the shortage of available financial resources it has been very difficult for the center to continue this kind of activities after the funding period. It was also difficult to prepare the local digital content and maintain the social learning programs with forum theatre.

YCMC has been operated independently for last three years without any external funding. At the moment, the center has to finance all activity from the income generated by an internal computer training program and the provision of internet access for users charging a small fee. Also, data entry tasks undertaken for the local authorities sometimes provide a source of income for both the center and the users who are hired to do the job. Although the center has a poorly equipped computer lab with old configuration computers, the lab needs supporting tools such as IPS and an oil generator in case of power failure in the area, something which is very common in Bangladesh. The operator also mentioned that it is only possible to survive on a self-generated income if fees are not subsidized for the poor and marginalized students or rural users. Despite of a feeling of pride for their overall past achievement, YCMC is still concerned about the future of the big marginalized community who actually needs various practical information in easy and convenient way.

However, considering these different turnover and challenges of this YCMC, the following sections explain the impact of this center in terms of these four standpoints '*situated success*', '*information culture and tradition*'**,** '*typology of resources*' and '*functioning* '. These four perspectives of impact analysis reflect a spectrum of understanding of the effect of ICT projects in rural developing countries.

5.1 Impact in terms of 'situated success'

In this section, I summarize the key activities, opportunities and obstacles (see in figure 2) of the ICT program considering a three stages of time frame from establishment to till date. The activities of the ICT center has high potential which can contribute to the success of this project in different stages, but it also visible that the center has faced a lot of challenges over the period of time.

During the center's inception the objectives were to include the whole community by transmitting ICT handling information transmission/dissemination, as well as providing ICT skill and training to the community youth group to help them develop knowledge on community information need, and adoption practice following a participatory approach. Each stage of its operation, the ICT center continues to succeed as a result of the situational demands. For example, even at the 'Self-operated' stage this center has a lot of opportunity because of the state's policy of digital vision of Bangladesh. Besides, people have in general become more aware about the benefit of technology and are eager to know, how they can exchange and share their information through ICT. Hence, evidence from this empirical study suggests that the success of this center is situated which is bound to social, cultural, political and environmental contexts. Hence, I could say that the apparent success of this center is '*situated success',* because this center has been bounded to the particular combination of local contexts and good timing opportunity of digital Bangladesh vision.

	Funding period	Transition Period	Self-operated period
Activities	- Capability building through ICT training - Organizing volunteer groups - Disseminating information - Demonstration of the need based information and awareness building with the help of forum theater	- Capability building through ICT training among village youth groups at a subsidized price - Disseminating information in rural areas through different ICT equipments with the help of organized volunteer groups	- Capability building through commercial training on basic computer programs - Providing Internet facility for rural peoples
Identified Opportunities	- Talent and enthusiasms of youth groups to cope with new technology easily - Feeling of self esteem of Youth groups by involving themselves in this kind of social work - Use of ICT tools in participatory Forum theater	- Commercial Training on basic computers can be a good source of generating income - Low cost Internet service is another source of income to sustain the ICT center. - The potentiality of the Volunteers to work independently for more challenging ICT venture	- The commitment of trained Volunteers to sustain this ICT center - Enthusiasm of young and educated rural people to learn computer and internet technology - On line services by public and private enterprises
Identified Obstacles	- The requirement of diversified information for the marginalized people - Persistent challenge to work in an unfavorable social and cultural environment	- Insufficient financial capability to carry on the operating cost - High rate of volunteers drop out because of better job opportunity - Additional cost for training new volunteers	- Requirement of additional investment for generator or power backup - A big portion of marginalized and elderly people are not included within the reach of YMCA services

Figure 2. Summary of the activities, opportunities and obstacles of YCMC

5.2 Impact in terms of 'information culture and tradition'

If I look at the ICT initiatives in terms of this perspective then it is evident that this center took '*Forum theater*' and '*folk music*' approaches to disseminate the social need based information and knowledge development purposes. According to the rural community people and the program officer of this center, this Forum Theater was a very popular to local people because it was a blended show with ICT and traditional entertainment approaches. This center has moved to commercial strategy to provide ICT access to rural people, but still people acknowledge their service valuable to them. With this observation, I would say that the ICT motivation depends also on the information culture and tradition, and it is also recognized that social exclusion from ICT development is not only related to inequalities in social-economic status issue but also a issue of institutional arrangements and discrepancies of traditional norms of social life (Trauth et al., 2006).

5.3 Impact in terms of 'typology of resources'

The three stages of this ICT4D project as mentioned above, have some significant relation with economical, social and, data and action resources. With respect to resources, Heeks (2005) points to the importance of four sets of resources, and to understand the sustainability of the tele-center, I have discussed with the help of these four resources.

1. *Data resources*: The digital contents on various issues such as health; reproductive rights; human rights focused on women and child rights issues; government forms and information; instructions/manuals for computer programs; job announcements; etc.
2. *Economic resources*: The facilities of the centre (computers, printer, scanner, etc.); the funding to allow subsidization of cost for the marginalized people; the knowledge and skills of the centre operator, instructors and the volunteers gained.
3. *Social* resources: The form of motivation, confidence and knowledge found in the users, community people and operator. The credibility and trust gained by the centre staff and volunteers among members of the local community. The presence of peers in the centre also serves as a pivotal social resource for the users/learners.
4. *Action resources*: A little harder to identify these resources in the study. Some examples I can include here such as the improved employment opportunities for users who have undertaken the formal training; get better opportunity in ICT environment and the enrolment as volunteer into the centre or other NGO's. The notice board can be seen as action resources. The operator is arranged the notice board with transformed data resources considering the rural peoples' information need and understanding level and this could consider as an outcome of his skills and motivation.

It is observed from the study that the ICT center has been using different types of resources to adopt ICT and ICT-enhanced community development activities in rural areas, but it is also visible that capability development can be evolved in every stages of its operation. One significant assertion from one of the volunteers can be explained in terms of resources. He admitted that he had taken training from the center without any cost and did work for the centre by collecting data and preparing participatory video content to demonstrate the rural community. Although he has now moved to city for his further study and job purposes but he still visits this centre to meet his previous friends. He has sent his younger sister to take ICT training from this centre. From this assertion I could extract following three kinds of resources to this ICT initiative; social resources (motivation, skills, knowledge of ICT), action resources (able to take new job) and economical (supporting sister for ICT training). I can find another resource aspects from the program officer's appreciation, he stated that 'During our transition period many skilled volunteers left this center because of their financial need and their family responsibility, and they got good jobs in different national media organization' Hence, it is apparent that ICT4D project can contribute to ensure resources and ensure the use of the resources effectively under certain conditions if it wants to include more marginalized community into these development initiative. Therefore, if we look into the different strength of these ICT4D activities we can see that during the funding period they have economical resources (funding), social resources (such as youth motivation and collaborative works). When they used these resources to understand and transmit the data resources into information resources to motivate big community then it worked. Currently one of the major strengths of the YCMC is its training activities. In the early stage, the centre became a significant rural poor community capability building force in this sub-district Shitakund. The transformation of data into information and knowledge requires capability, which was accomplished by the motivation and skills of young generations as well as by their in-depth understanding of the rural community's information need.

5.4 Impact in terms of 'functioning'

One trainee, who received ICT training from this center without any cost earlier, now works as an operator in the center. He has motivation and passion for this center as well as for rural marginalized community. These streams were created into him, when he was involved in '*Forum Theater*' activities as a social worker and circulated news in remote areas with the help of new technology. It shows that ICT evolutions can build rural marginalized youth's future with new technology as well as play vital role to motivate them to work for community development. If I consider the capability building approach with resource perspective then social and economical resources are strongly associated with the human capability building process. The data analysis shows that this ICT center has played a potential role for enlarging a person's 'functioning'. Sen (1989) defined human development as the process of enlarging a person's 'functioning', and capabilities to

function, the range of things that a person could do and be in her / his life. He also defines a functioning is an achievement, where a capability is the ability to achieve. Functioning is more directly related to living conditions where capabilities are notions of freedom, the real opportunities regarding the life one people may lead.

The multimedia center's activities can be seen as links between the resources and capability building e.g. the skills and values of the community peoples. These centers made strong role to create capabilities of rural youth groups through the social, economical, action and data resources vice versa. I can say that these capabilities of youth groups are producing the new social, economical, data and action resources for their family and community. Here I can draw a relationship (see in figure. 3) between the different resources and capability building based on this ICT4D project in rural community in developing country.
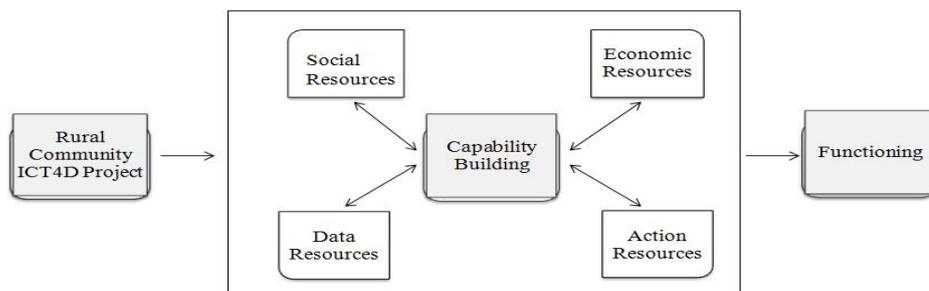

Figure 3. Relationship between recourses and capability building in ICT4D project in rural community

Based on this study, I would say that this center is functioning for rural marginalized community during the funding and transition stages. In those periods of time it included very remote marginalized group who are usually excluded from any ICT facility for their socio-economical realities. Therefore the capability has been recognized as a central point for functioning of ICT4D project for rural marginalized community in developing country.

6. CONCLUSION

The above findings indicate that this ICT4D project is an initiative with broader outcomes and implications than as simply an approach to ICT-enhanced information access. Besides, this center can be used as a medium to community capability building despite of different economical and social issues. The ICT-enhanced community capability building also actively promotes the formation of resources which could support the sustainability of ICT4D project beyond its funding period. In a country like Bangladesh, economically it is impossible to provide full ICT access to individual households, especially in rural areas. The hard work of many development organizations to disseminate information suffers from this reality. By addressing these challenge, Youth Community Multimedia Centre (YCMC) have been actively working to overcome some of the challenges of the digital divide in village areas of Sitakunda. Although this ICT4D project had lack of long term commitment and short of financial capability to run its activities for long period of time for marginalized group but it certainly made a good example for that village area and community people. Still it has potential resources in human capability building processes in spite of having dilemma to include the mass community into their digital literacy activities.

From institutional point of view YCMC cannot sustain financially without external funding from other development organizations, when it wants to include the rural poor community. On the other hand, it became a powerful vehicle to promote ICT enabled change processes in development activities when there was a strategic plan and support from other development organizations. It is evident that the movement of this centre to self-operated stage compelled them to exclude the rural poor people from this development activities, hence it could be said here that institutional policy as well as government regulation on ICT based initiatives may sideline the poor in rural developing country.

This article provides four aspects 'situated success, 'information culture and tradition', 'typology of resources' and 'functioning' to understand the role and impact of tele-center in rural area of Bangladesh.

These four aspects, grounded on theoretical framework of capability approach and resource bounded information flow, represent specially the core capabilities of community telecenters in rural community development. There is need to further develop these four aspects applying in different context of rural community development process, and that can also explore new perspectives. These strategies can make deeper and broaden our understanding on ICT4D project sustainability issues.

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