TELECENTRE SUSTAINABILITY: THREE CASE STUDIES IN THAILAND
RESEARCH REPORT

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SYNTHESIS

Introduction

This cross case-study research aimed to examine and compare different forms of telecentre activities in Thailand. The objectives of the study were:

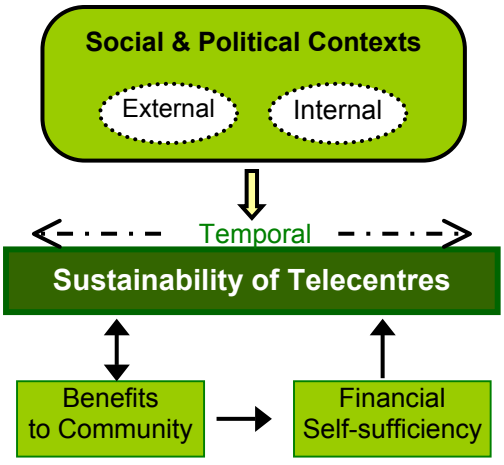
- To examine factors that support or limit the development and sustainability of telecentres in Thailand; and
- To compare lessons learned from different models of telecentre activities under different contexts.

The definition of 'telecentre' in this research was a place, which provided information and ICT services to community members and/or the public, with an intention to support community development and to improve people's quality of lives. As a result, Internet cafes were not considered for this study.

Three telecentres with different forms of ownership and operation were examined. Bannok.com Computer Centre was owned and operated by an NGO; Pong Telecentre was under the care of a non-formal education centre (government unit); and Ban Sam Kha School Computer Centre was community-based. The field research was taken place in three northern provinces: Chiang Rai, Phayao and Lumpang, during August to October 2003 (see Map 1).

Methodology

The research framework emphasized on both social and financial sustainability of telecentres over a period of time. All telecentres in this study were relatively new, established during 2001-2002. Therefore, it was possible to trace back from the time of their inceptions and progresses made to the field study period. In this research, social sustainability referred to what and how the telecentres and their services benefited the locals and rural communities. The financial focus was on whether they could be self-sufficient in covering their operational costs and incurred expenses from providing services, and how they could keep the business or activity running in the long run. In analyzing these elements, social and political influences from outside the communities and local contexts were taken into account.



The research employed case study and field research methods and applied different data collection techniques that suited the local conditions at the time. The main research techniques used were individual and group interview, participating observation, casual conversation, and

participatory focus group with the use of visual tools (Venn diagram, Matrix, Fish and boulder, Force fields, etc.). Questionnaire interview was also used in Pong community.

Main Findings and Analysis

There were some similarities and differences among all the three case studies and the differences were highly contextual-based. The motive behind the establishment of a telecentre was the first that contributed to those differences. Other causes such as locally geo-demographic conditions, immediate client needs, and owner organizations' and their staff's expertise had influenced on the service foci and targeted clients of the telecentres.

Contextual Differences

Founding Rationale

- The Bannok.com Computer Centre was purposed to better support development projects within the owner organization; hence the service revolved around the staff and projects' communication and management needs.
- Pong Telecentre was initially a pilot site of Thailand-Canada Telecentre Project aimed to find and test a financially self-sufficient telecentre model in Thailand. The Non-formal Education Centre in Pong took the operation and ownership roles with an attempt to provide equal ICT opportunity (skills and access) to local people.
- Ban Sam Kha School Computer Centre was born out of the enthusiasm of school students who were keen to learn and use the computer and later the Internet. Therefore, the focus was perceived by the community as a learning tool for the young although villagers were welcome and encouraged to learn and make use of the facility.

Expertise of Owner Organizations

Working under different local conditions such as ethnicity, local lifestyles and beliefs, and institutional structure, each telecentre had developed and furthered its own expertise and network.

- As an NGO worked with hill-tribe communities and one of the earliest Thai NGO integrated ICT into their daily development practices, the Mirror Art Group (Bannok.com) was able to market its IT-related services to other NGOs and independent organizations through its networks. ICT had been a powerful tool for their development activities while the IT unit could self-support sufficiently.
- NFE Pong, as a government organization provided adult education and promoted life-long learning, was efficient in coordinating with local organizations especially government departments and local governments. It employed training and knowledge-transfer activities for rural community development. As a result, the Telecentre emphasized on computer and Internet training and promoted its services mainly through public institutions and government units.
- Ban Sam Kha Village had a grassroots identity and a reputation of strong community. It had experiences in conducting research in poverty elimination within, for and by the community. The good reputation helped it build up networks in grassroots, government, private and public sectors. Many supportive individuals and organizations had meshed and formed an alliance relationship and brought in pilot projects that might further promote the self-sufficiency of the community. ICTs could become a supportive tool of various community projects. The Computer Centre had attempted to play an assistant role in some of the community development activities.

Based on the organizational backgrounds and experiences, the telecentres all came up with their own operational and managerial styles. An overview on the operation of all three telecentres is summarized in Table 1 and 2.

Operation and Financial Management

Each case study in this research had employed certain different management strategies although all of them had combined both charity and business elements within their service provision.

- Bannok.com Computer Centre had adopted a more private-enterprise strategy in its resource management and operation as the NGO had been steering towards this direction in order to promote self-sufficiency in all of its development projects. The Centre covered the cost of satellite Internet connection by collecting monthly contribution from all the in-house projects with a rough estimation of each project's usage. The available resources (hardware, software, skilled staff and organizational structure) made it be able to sell services such as web design, ready-to-use application and server space rental, which required more advanced skills, to other organizations and to fully cover its operational costs and possibly new investments. The charity part came from free computer and Internet service for local youth on weekends, free training and supportive IT activities to other organizations on occasions.
- Pong Telecentre employed a not-for-profit approach, a combination of business and partial subsidy in order to provide reasonable services to local people. NFE Pong had subsidized the electricity cost and had provided space and partial full-time staff for the Telecentre. As a result, the Telecentre could keep its operating cost low and in return, it felt obliged to provide more reasonable hourly charge of computer-and-Internet use and training to the community. Because the Telecentre and NFE Pong, as well as NFE Pong and other local organizations, had an interdependent relationship, the Telecentre had provided services to NFE Pong and training to other local government organizations mostly for free. Although games were limited to a minimum, it remained the flexibility in order to make at least a break-even to its expenses.
- Ban Sam Kha School Computer Centre was similar to Pong Telecentre; however, it was in a transition-stage from solely subsidized to self-sufficient. As it received one-year subsidy of Internet connection, full-time staff salary and partial utility cost, a big portion of 2003 revenue was saved in the form of funds and would be used to pay for the expenses after those financial supports ended. Because of the poverty situation of the community, the Computer Centre charged for the service fee at low prices, which was seen affordable for community members. Coupling with its more charitable service approach, free services for the School students during school hours and free for the villagers′ learning, as a result, the service charge and revenue was way lower than what it should have been in order to break even or to cover the operating cost. Nevertheless, part-time young volunteers comprising of the school students and village youth, and the contribution from 20% of the profit made by the Yaowachon.com (a student-owned shop within the School) might continue to ease the financial burden of the Centre.

The Bannok.com Computer Centre applied a more private business approach in its financial and marketing management while still remained certain level of charity service especially for the local community. The Ban Sam Kha School Computer Centre was still much in a charity and subsidy scheme and involved lower level of for-a-fee approach. The Pong Telecentre was somewhere in the middle between the former two cases; it employed a not-for-profit operation style, partial market-based approach while remained some charitable services. The common similarity in all cases was they all strategized the pricing scheme and financial management in consonance to local economy and situations.

Similarities as Part of Imbedded Rural Conditions

The similarities of all three cases were mostly outputs of socio-economic conditions in rural and remote areas and of the spontaneous interaction of the telecentres to those conditions.

Community Development Enthusiasm

All the telecentres and owner organizations had great wills and missions in helping and improving the quality of life of local people. The Bannok.com tapped onto different facets of communities' problems such as literacy, educational funds, society's attitude toward and awareness on problems faced by hill tribe communities, loss of local culture and wisdom, careers and occupations, citizenship, drugs and local content. Using ICTs as facilitation and communication tools to carry out their development activities became an organizational culture and daily routine of its staff.

On the surface NFE's main task appealed to provide adult literacy and education, but at the core its mission was to help community members improve their own livelihood through learning and education. It was fortunate for NFE Pong to have staff, who dedicated and enthusiastic to help and serve the communities in its catchment area, as mentioned by the NFE Pong director. IT and the telecentre had started to provide the staff an additional tool and service in serving and helping the community in terms of information and skills, as well as entertainment. Many NFE teachers in the lowland area became trainers and information mediators. However, constantly maintaining a balance between work responsibility – taking care of benefits and interests of local community and NFE's, and staff's own personal lives and interests was a challenge for some staff.

As mentioned earlier, the operating and management body of the Ban Sam Kha School Computer Centre comprised mostly village youth between 11-20 years of age. Being involved in various development activities within the village, the team members were motivated to help improve the lives of villagers and their families by using capacities and skills they had. The free service offered to villagers by the Centre was one attempt among others.

ICT and Telecentre Uses: Contextual Based

The ways communities made use of ICT and telecentre services in the case studies were based on community contexts and the interaction of communities and their circumstances.

1. Entertainment

Unsurprisingly young people, except in the Bannok.com case study, were the ones who enjoyed the use of computer and the Internet the most and generally for entertainment purposes because most of them were familiar with the technology and had obtained some basic computer skills from schools. While male users most likely played games at Internet cafes, chatting with friends and other people residing in other cities or countries on the Internet was the most common entertaining usage for female users in two of the case studies. Many local adults perceived chatting as a non-useful and unproductive use of the technology. However, online chitchatting might provide teenagers especially in rural area a way to escape their boredom[1] and to learn about worlds outside their communities through virtual conversation. In the case studies, online chatting was also use for organizational communication as at Bannok.com and for language skills improvement as in the other two case studies.

[1] Research findings by Valentine, G. and Holloway, S. L. (2001). A Window on the Wider World? Rural Children's Use of Information and Communication Technologies. *Journal of Rural Studies* 17, 383-394.

2. News

Most local adults in the case studies obtained daily news through broadcast media and obtained government and community announcement from village chiefs through loudspeakers. Local channels and media broadcast local content by using local dialects had been received a lot of interest and attention from community members in the Bannok.com case study. Many local people in the case study of Pong Telecentre obtained family updates and news from their friends and relatives through cell phone. A number of young people in the communities of Pong and Ban Sam Kha surfed the Internet for entertainment news related to such as TV programs, celebrities and sports.

3. Acquisition of Specific Information

In all three case studies, community members both telecentre users and non-users sought information related to their professions and local issues that had impacts on the quality of their lives. As young people were major users of telecentres, information that most users sought was related to their learning subjects for reports and assignments, and related to continuing education at higher levels. This phenomenon was more obvious in the case of Pong Telecentre and Ban Sam Kha School Computer Centre. Because the Pong Telecentre was located in a district versus the Ban Sam Kha School Computer Centre which was located in a village, the former serviced people in more diverse sectors of professions than the latter did. A number of government employees in Pong sometimes obtained updated information from web sites of the government units that they worked for through the Internet service provided at the Pong Telecentre.

Mostly, local people did not obtain information from the Internet on their own, but often through others such as their children, telecentre staff and their acquainted. The practice was more common in the Ban Sam Kha case since the Computer Centre was community-based and the village young tried to deliver the online information to the village adults through its community radio. In addition, because the village was relatively small, all community members were aware of the in-place facility. The information sought by the majority of local people in all three communities was highly related to the problems they faced such as markets for selling their produces, central and local market produce prices, alternative or additional career choices, agricultural land, water for agriculture, market trends and so on. For most local people, the information they needed was normally locally specific and was often neither available in the mainstream media nor on the Internet, while cell phone was used by few individuals to obtain needed local information.

4. Communication

Among the three case studies, the Bannok.com relied on the Internet for communication the most while the other two used it much less for this purpose. The Bannok.com was able to communicate with its project clients, supportive organizations, friends and networks, as well as among its staff via email and chatting applications. It used web board application to seek support and advice, to exchange ideas and to post unjust issues. The organization also used the web site to promote and market its activities.

Nonetheless, the Internet played a very small role in fulfilling the communication needs of local community members in all the case studies. In Ban Sam Kha, a small number of young people used email to communicate with, seek advice from and provide updated news of the village to their friends and relatives living outside the community. For Pong community, users used the technology for communication with others at the minimum; other than the lack of computer and Internet skills, this was because of higher penetration of cell phone use in the area. The penetration of the use and ownership of

cell phone was lower among villagers in the other two case studies due to the affordability issue.

5. Education & Learning

IT Training and Skills: In all the case studies, providing IT training was part of the telecentre's or computer centre's services. The Pong Telecentre had put computer and Internet training at the forefront of its service provision. The Ban Sam Kha School Computer Centre had been trying to increase the utilization of the technology by providing informal training for both the villagers and young people from other villages. While the Bannok.com was not explicit in providing training, it had aimed to provide support to improve IT skills of its clients and did provide some training for local young people and school students occasionally.

Research: For the majority of young people and a number of adults, the Internet had become an additional or alternative resource to libraries for researching information and knowledge, particularly in Pong and Ban Sam Kha communities. The Bannok.com had also attempted to create local content and to make local knowledge and traditional practice available on the Internet.

Teaching and Leaning Tools: In addition, the staff of NFE Pong had demonstrated that entertainment on the computer such as karaoke could be used as a teaching and learning assisted tool to provide local-language lessons to young people.

6. Office Tasks

The computer applications were commonly used for bookkeeping, document, and presentation tasks. Other than the owner organizations, community stakeholders had also started to be benefited from the service offered by the telecentres or computer centres.

7. Others

The Bannok.com also used the computer to assist in the production of TV programs of community TV. Local young people used digital video camera to film and create stories and the project staff edited the content on the computer. In addition, its staff had made use of those tools in helping them collect and storage data in multimedia format for its virtual museum project, as well as many others.

Cultivating from Strengths

All the case studies had tried to make use of its strength in providing IT services and in overcoming difficulties faced although each of the case studies had its own uniqueness. For example, the Ban Sam Kha School Computer Centre was located in a community that had a high level of social capital and it was a truly local-need-driven and grassroots-based computer centre. As a result, it had obtained a more self-motivated participation from the local community members and this could help contribute to the sustainable of the computer centre as the locals realized the benefit and tried to make use of the technology and to keep the service running.

The Pong Telecentre had tried to integrate into and be part of the services provided by its owner organization, NFE Pong, to local communities in the catch-area. It had tried to utilized and had been benefited from NFE Pong's available resources and networks for its operation and management. Due to the support from NFE Pong, the telecentre could offer low cost training and service to local people.

The Bannok.com Computer Centre had made use of its advantage as an early adopter of ICTs in private (NGO) sector to market itself and to obtain better financial self-sufficiency. It also utilized the Bannok.com's organizational structure in drawing wide variety of expertise

from many places. Hence, volunteers had been its sufficient manpower in performing routine and specific tasks.

One of the similarities among all the three was having supportive networks that each had built over years and all had maintained their relationships with others in a give-and-take and collaboration approach.

Technological Barriers

During the field study period, all the case studies were found to experience technical problems on hardware and/or software in one way or another. Partially, the problem was related to the harsh condition of rural areas where accessing to IT was difficult due to the unavailability of certain infrastructure, the nonviable and unaffordable equipment or technology, the geographical difficulty and the local climate condition. In addition to the above, the lack of ICT skillful and knowledgeable manpower in the local areas had contributed to technical and technological matters. While the Bannok.com could better cope with its constraint with a mixture of internal and external human resources, the other two case studies, the Ban Sam Kha School Computer Centre in particular, relied more heavily on the outside technical expertise.

Moreover, most local community members were not familiar with and did not have the skills to make use of the computer and Internet yet especially adults. The limitation of skills, the low level of ICT awareness and the subsistent economy limited many local people the chance to exploit the potential benefit of IT facility offered by the telecentre or computer centres. There had been attempts to involve young people in mediating useful and needed information to adult generations such as in the case of Ban Sam Kha School Computer Centre though it was still in a small scale and lacked continuation. Pong Telecentre had a plan to use other forms of media to transfer information to its local communities; however, it had not yet materialized the idea. Similarly, the Bannok.com had not considered mediating the needed information to the local communities it worked with explicitly: even though it piloted a community TV project.

Concluding Observations and Recommendations

Factors Influencing Sustainability

The factorial elements that would have impacts on the sustainability of the telecentre/computer-centre case studies are briefly explained as the follows.

- Skills and Capacity of Staff

  The continuation in improving the skills and capacity of staff would be vital in terms of technical maintenance, service provision and operation management. Firstly, the increase of technical skills for staff in technical maintenance would save the operating cost that they sometime heavily relied on other parties and would help them be able to provide service without much disruption. Secondly, with deeper and broader skills of staff, the telecentre/computer-centre could possibly differentiate, diversify and provide more up-to-date and/or advanced services to clients according to their information and communication needs. Public relations, marketing, researching and strategic planning skills would also help the staff better manage and operate the service to make it financially sufficient and useful for the locals.

- Enthusiasm in Providing Services

  The three case studies showed that the enthusiasm of staff to serve the communities and to help local people be able to gain benefits from the use of IT had made the technology start to work for local people such as in the form of information mediator. The information

mediator helped ease the alienation that local people had towards the technology. The friendliness and willingness to service of staff also created trust and loyalty that often drew clients to come back and use the service again. The enthusiasm could include more than just 'what we have to offer, but what you need and how we can help fulfill your needs through our services.'

- Understanding and Fulfilling Community's ICT Needs

  In order to make service offered useful for local people, the telecentre/computer-centre had to be able to understand what information and communication that community members actually needed and how they wanted to obtain the information or how the service to be delivered. Neither staff and community leaders' assumption nor generalization of local needs could represent the true needs of individuals. The willingness to continually consult and listen to local community members by using suitable approach would provide the telecentre/computer-centre a better understanding and ways to deliver its services. Methods and techniques on needs assessment and evaluation might provide the telecentre/computer-centre tools to do so. The telecentre/computer-centre could also consider including traditional forms of communication and media channels in information mediation.

- Integrating ICTs into Problem-Solving and Community Development

  Because the information and communication needs of local people were greatly associated with constraints and problems they faced, the telecentre/computer-centre might explore how its services could be tools that help the communities and people to solve their own problems. As one of the case studies had shown, ICT could be a part of tools in assisting in the implementation of development activities. Telecentres/computer-centres could possibly further integrate the use of the technology into community development especially at grassroots level. The telecentre/computer-centre could consider exploring ways that could, for example:

  - Help rural people be able to access market information through a combination of communication techniques and tools;
  - Assist in the research of niche market and value-added product-lines and productions;
  - Promote life long learning activities within communities and among local people;
  - Provide channels or linkages for rural communities to useful information sources; and so forth.

- Leadership, Local Values and Practices

  From the case studies, the ability of leaders to incorporate diverse interests of community members could help the establishment, resource allocation, operation and management of the telecentre/computer-centre proceed smoothly. Leaders that realized the benefit and embraced the use of IT within organizations and communities could help promote the use of and create a culture in utilizing the technology. The leader and community/organization that valued and tried to achieve self-reliance and self-sufficiency could provide a better chance for a telecentre to sustain its services and activities in a longer run.

- Grassroots/Community Participation

  When the local community such the case of Ban Sam Kha was involved as a major player in the telecentre activities since its inception, the members felt the telecentre was a part of the community and would try to help maintain the activity even when outside financial support ends. The Pong Telecentre had tried to involved representatives from local communities but might seek greater participation from the communities it served. While the Bannok.com had consulted with local grassroots for many of its activities, could open for greater and

encourage more active participation of local community members in the actual planning and decision-making process.

- Community Awareness, Utilization and Potential Benefit of ICTs

  The awareness of communities included the existence of telecentre/computer-centre, the available service and facility, and the use and potential benefit of services and facilities for fulfilling in particular their own information and communication needs. In the case studies, the precondition for the awareness to occur was that local people had to realize what their needs were. Once they had experienced and found that they could benefit from using the technology, they might try to utilize it either on their own or through others although they did not have IT skills. Hence, helping the locals realize their information and communication needs and develop information literacy would partially increase the utilization of ICTs and services of telecentre/computer-centre. The telecentre/computer-centre could include some awareness-raising activities into its marketing strategies.

- Supportive Networks: Learning and Exchanging

  The telecentre and computer centres in this study might have a lot to learn from each other in terms of technological aspect and beyond. Since all the communities had some similar conditions and development projects, they could learn from each other's experiences and lessons and could apply whichever that would be useful to them. For example, the Bannok.com had operated eco-tourism business with and in a few hill tribe communities; the hill tribe community at Pong could possibly learn and exchange ideas with the Bannok.com since it too had eco-tourism project. The Ban Sam Kha could learn from the former two as its eco-tourism project was still in a planning stage. Other areas that they could all learn from each other were such as community database and local content, marketing strategy, mediating information to local people, local culture preservation, community management and administration, and so forth. They could make use of the technology to facilitate learning among communities they served.

  Moreover, it was also important that the telecentre/computer-centre's supportive networks, including individuals, groups and organizations at local, provincial, regional, national and international levels learn from experiences of each other and of local communities. One case study showed that the supportive partners could learn together with and from the grassroots community and they could also work together to facilitate or support the learning process of local communities in solving their own problems through acquiring additional information, skills and knowledge.

Lessons Learned from the Thai Case Studies

- The demand in using telecentre/computer-centre for information and communication had not been substantial enough; without entertaining services, telecentres could hardly generate incomes for a profit or break-even without subsidies. The telecentres in this study offered services at a more affordable price for the rural and remote poor and emphasized more on learning rather than entertainment especially games. Therefore, they would not make much money to cover the cost as general Internet cafes. Many Internet cafes generate profits from providing games (via LAN), typing and other services rather than from providing Internet services for information and communication: Internet services tended to provide a diversity-look for their business. Nevertheless, telecentres earned an image or reputation of doing 'good' for community development and learning, as well as a reliable place for information, knowledge and training.
- Regulated wave frequencies and bureaucratic rules were still unsurprisingly part of the barriers to local innovative initiatives and cooperative practices. Inexpensive technology such as wireless and WiFi technology that could be used for connecting rural and remote

communities to the Internet and for creating community network would hardly be possible without the cooperation of government departments and deregulation of wave frequencies for local community use. Similarly, inflexibly bureaucratic rules became limitation for local civil servants from different departments to co-invest in activities and programs such as ICTs and information diffusion for the better off of local communities; certainly, mechanism and practice that assure the transparency and accountability should be in-place.

- Without technical skills or dedicated supports from other sectors such as business, NGO and government, it was difficult for local people to maintain, promote and create an efficient and sufficient telecentre or Internet network.
- Solving the problem of rural communities was not only rural people's business, urban or semi-urban communities could take some responsibility in order to create a win-win situation. As a metaphor cited by one rural villager, in preserving a sufficient water source, those lived upstream had to forgo some practices which were important to sustain their subsistent livelihoods; since water was a shared resource, people in the city or downstream should have realized and provided support to people living upstream for them to be able to maintain the good practice for the benefit of whole and still be able to make a living. ICT tools could play a role in helping to create awareness and in linking the rural, semi-urban and urban to collaboratively solve the problems and to share benefits as one of the case studies (Bannok.com) had tried to achieve.
- The information and ICT tools would be useful for community development and solving community's problems when at community level people realized their information or technology needs that might help them manage their own resources better. Assisting local people in a learning process to know about 'selves', to realize their potential capacity and to find the underlying causes and solutions of their problems could be an option. Supportive individuals and organizations could possibly help the locals to solve their problems by:
  - Examining if any gaps that ICTs could bridge;
  - Demonstrating how ICTs could work for the locals if at all;
  - Providing space and time for people to experience, learn and adapt the way they saw suitable, without making decisions or doing things that they could do for themselves, but staying close and providing help when they need;
  - Building human capital and targeting the young;
  - Involving the young in community development by enhancing their creativity and providing them the autonomy of responsible activities;
  - Facilitating networks of learning and sharing knowledge, experiences and lessons learned.

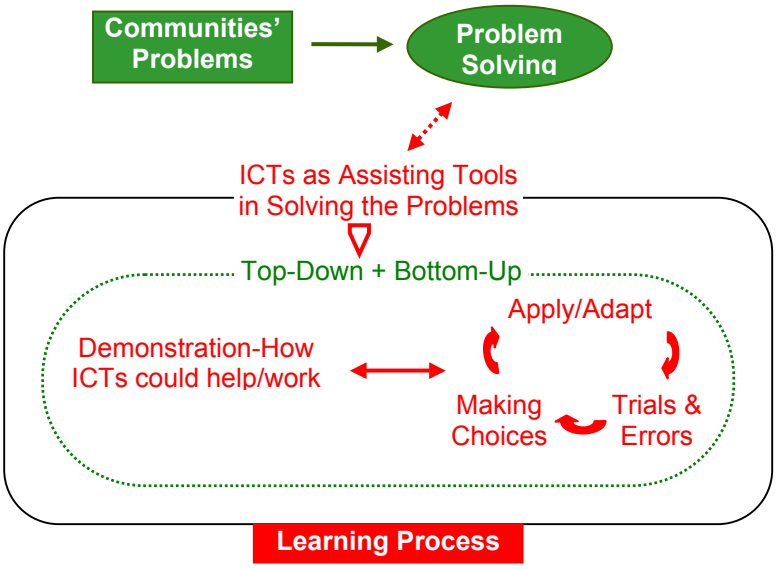


Table 1: An Overview of the Case-study Telecentres

	Bannok.com Computer Centre	Pong Telecentre	Ban Sam Kha School Computer Centre
Owners	The Mirror Art Group (Thai NGO)	Pong District Non-Formal Education (NFE) Centre (government unit)	Ban Sam Kha Village (the youth and villagers)
Est. Motive (year)	Organizational Needs (2002)	Supported by TCTP[2] (Feb 2002)	Community (youth) needs (Nov 2001)
Initial capital supports	By AOL and Fundraising Activities: - Building - Computer sets (10) - Printer (1) - Fax (1) - Others	By TCTP, Pong Municipality, Phayao Provincial Administrative Office: - Computer sets (7) - Dial-up Internet connection (1st year) - Staff training (one time) - Building renovation	By its ally organizations and individuals[3] as an overtime effort: - Second-hand computers (20) - Satellite Internet connection (one year) - Training - Operator Salary (one year – 2003) - Utility costs (by the School) - Others
On-going / overtime supports	From its clients (revenues)	Pong District NFE Centre, Other funding organizations (time-to-time): - Staff - Utility expenses - Stationery & etc.	
Managerial staff	IT team/project leader	Manager (NFE Pong Director)	A teacher of Ban Sam Kha School
Operational staff	Full-time staff & full-time volunteers	NFE staff (full-time & part-time)	Full-time operator (1), village youth, & teacher
Service foci	IT (communication) supports for staff and projects within the NGO	Computer & Internet training for local communities	Computer & Internet services to the Sam Kha community

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[2] TCTP is Thailand-Canada Telecentre Project, partially funded by CIDA and implemented by Hickling Corporation (Canada), Loxley Public Company Limited (Thailand), and the TeleCommons Development Group (Canada). For more information, see www.t-centre.com.

[3] Such as Northern NFE Centre, Suksapatana Foundation, Thaicom Foundation, NECTEC (National Electronic and Computer Technology Center), the Siam Cement Group, CP Public Co., Ltd, ThaiCom Foundation, etc.

Table 2: Facilities Available at and Services Offered by the Telecentres

	Bannok.com Computer Centre	Pong Telecentre	Ban Sam Kha School Computer Centre
Facilities			
Internet Connection	Satellite (package 1.5Gb/mth = USD 75); normally used USD 200	Dial-up through modem (both free and private ISPs)	Past: Dial-up (radio wave telephone) Present: Satellite (limit 750Mb/mth ≈ USD 70)
LAN System	✓ (Connected every computer in the NGO)	✓ (All computers within the Telecentre)	✓ (Some computers within the Centre)
Telephone	✓	✓	✓ (Public phone at the School)
Fax	✓	✓	
CD-ROM	✓ (Both reader & writer)	✓ (Both reader & writer on server computer)	✓ (Reader on server, but out of order)
Digital Camera	✓ (Plenty within the NGO)	✓ (One with 2Mpxl)	✓ (An older model using 3.5” diskette)
Video Camera	✓ (A few)		
Services			
Hours	8-24, 7 days	9-19.30, 7 days	8-20, 7 days
Internet & Computer	✓ (Internet subscribing fee collected from other projects)	✓ (15 baht ≈ USD 0.38 per hour)	✓ (12 baht ≈ USD 0.30 per hour)
Printing	✓ (Free)	✓ (B&W: ≈ USD 0.13 per page; Colour: ≈ USD 0.20+ per page)	✓ (B&W: 5 baht ≈ USD 0.13 per page)
Typing		✓	✓
Fax	✓	✓	
Phone		✓	
Training & Advice	✓ (Free)	✓ (Free & For a fee)	✓ (Free for villagers)
Basic Graphic Design		✓ (Business card, logo, product label)	
Others (such as)	Web site services, maintenance, server space, ready-to-use program & application	Digital photo	Village’s research data input (Free)

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Map 1: Research Sites of Three Case Studies

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