

THE ASSESSMENT REPORT OF 'BUILDING RURAL-URBAN DIGITAL LINKS IN LAOS'

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Background

The 'Building Rural-Urban Digital Links in Laos' project aimed to increase the access, knowledge and skills of the information and communication technologies (ICTs) at four levels of Lao PDR: the national government, District/provincial government, university and community. The Science, Technology and Environment Agency (STEA) has been the coordinator of the project.

One component of the project was the establishment of a community-based telecentre, which was later named e-Way Centre, in Luang Prabang province. The telecentre activity was started in March 2002 with the initial financial support from the International Development Research Centre (IDRC), Canada. STEA has assigned the Science, Technology and Environment Office (STEO) in Luang Prabang to be the coordinator of the telecentre project. STEA also contacted the Participatory Development Training Centre (PADETC), a not-for-profit organization in Laos to help manage and implement the telecentre.

The objective of the telecentre project was to bridge the digital gaps between major cities like Vientiane (the capital city) and other areas. The e-Way Centre project intended to improve the computer and the Internet access and IT skills, as well as the livelihood, of local community, school teachers and students, government units and businesses in Luang Prabang.

The support of IDRC to the project ended in 2004; however, the project team would like to continue the project for one more year without additional financial support in order to accomplish the set objectives. There was some delay due to the development of Lao fonts during the two-year implementation of the telecentre. As a result, the team proposed to have an assessment on the e-Way Centre. The assessment may help the team better synthesize its experiences and lessons from the past two years and come up with an action plan for the additional year of the project.

As a result, the proposed elements for this assessment are:

1. To document and assess the implementation of telecentre project to date in terms of;
 - i. its accomplishment against the set objectives and reasons/factors for any discrepancies;
 - ii. to what extent the accomplished work prepared the situation in Luang Prabang or possibly the Lao PDR so that it may now take advantage of and/or participate in the ICT4D; and
2. To make recommendations and to provide general framework for future strategies on reducing the digital divide to be implemented and managed by PADETC. This includes the followings:
 - i. To develop a long-term goal and strategy for using ICT for education (at primary

- and secondary school levels linking rural and urban schools/students) and for the promotion of small enterprises (linking urban and rural areas, Lao language database system on promotion of SMEs);
- ii. To suggest formats for knowledge/information presentation and management in a learning centre.
 - iii. To identify appropriate content from open sources which would be translated into Lao language;
 - iv. To propose a possible set of software, preferably open source software, to facilitate PADETC's general strategy of using computers as teaching and learning tools in setting up learning centers; and
 - v. To work together with PADETC staff to propose a strategy for strengthening the capacity of PADETC for ICT4D.

Evaluation Methods

The evaluation included reviews of documents such as project proposal, memorandum of agreement (MOU) and technical progress reports, and field study. The field visit took place during 9th-15th June 2005 (see Annex I). The techniques applied during the field study were observation, informal conversation and formal individual interview with semi-structured questions.

The Findings and Analysis

In order to assess the implementation of the e-Way Telecentre against the set objectives and how the accomplishments prepare the Luang Prabang district or Lao PDR in participating in ICT4D, the following elements are taken into the analysis:

1. increase access to information and communication technologies (ICTs); and
2. improve basic ICT skills.

The analysis of these two elements is looking at four sectors. Those sectors are the:

- a) local government in Luang Prabang;
- b) local business in Luang Prabang;
- c) school teachers and students in Luang Prabang; and
- d) local community or general public in Luang Prabang.

a) The Local Government in Luang Prabang

A brief overview of ICT situation in local government sector is important for the analysis. In terms of ICT access and use, through interviews I found that there are two main factors influenced the access and use of ICT. The first is connection and hardware, and the second is content.

The Internet infrastructure, telecommunication facilities and computer sets are available at and for the Luang Prabang District Office. Although not every staff has a personal computer at his/her desk, the number of computer sets are sufficient for the demand at the moment.

Facsimile and telephone machines are available for government staff to communicate with their central units in Vientiane, as well as with other units and organizations at local and national levels. The access and use of the Internet is related to the cost-benefit issue.

In general, the local government can connect to the Internet through Lao Telecom, which has fiber optic and provides Internet access through leased line. However, the local government office has to pay for the rent of the line. Although the leased line is expensive, because both local provincial office and Lao Telecom are government units, the price is negotiable or can be subsidized. Currently, the Luang Prabang District Office does not connect to Internet via leased line. Nevertheless, some local government units use the dial-up connection for contacting the central offices, but at a minimal scale.

The low usage of the Internet is due to the lack of needed content. Paying the Internet connection is considered wasteful because there is not any needed Lao content available on-line for the government staff. Searching foreign information is wasting their time. Hence the Internet does not provide much advantage to the staff for accomplishing the required tasks.

Hence, when look at whether the e-Way telecentre increase the access to ICTs of the local Luang Prabang government, the answer is 'No'. However, the telecentre has actually increased the access to computer training among government staff.

Several government staff received training from the e-Way are using computers for document and accounting tasks. According to an interview, over 100 of government staff at the District Office got training from the e-Way Centre. Several of those never had computer training before and did not have computer skills prior to enrolling in the basic computer courses provided by the e-Way. Even though several of those staff already knew how to use the computer before attending the course, they learned more techniques from training at the e-Way Centre.

A staff from the welfare department, who was participating in a basic computer course at the e-Way during my visit, commented “My colleagues recommended me to come and learn computer here [the e-Way]. They said at the e-Way the instructor pays attention to students and teaches well.” She also mentioned that there were computers at the office, but she didn't know how to use it, unlike some of her colleagues. She had to use computer for some office tasks, so decided to learn how to use the computer at the e-Way Centre.

b) The Local Business in Luang Prabang

“We were going to involve the business sector, but at the end we didn't” (Somphone, interview, 9 Jun 2005).

All the parties involved in the development of the project agreed that one of the weaknesses of the implementation of the e-Way Telecentre was the lack of involvement of and improvement of ICT access and skills in the business sector. To my understanding, PADETC has had experiences and expertise in working in rural community development and education field, but with the business sector. Similarly, STEO is a government unit and is more comfortable dealing with other government units in Luang Prabang. Both parties implemented the project towards their specialized realms. As a result, local SMEs and

businesses were untapped.

In 2003 when PADETC realized this shortfall, it had tried to conduct a survey on the ICT needs of private enterprise (mainly in tourism industry). The result from the survey showed that many companies did not need the Internet access and web site services offered by the e-Way Centre because they had already connected to the Internet via ISPs and/or had created their own web sites.

“There [is] no clear indication of interest by the business group on the use [of the] Internet. We feel that their lack of English skill is the main reason for reluctance. Also we did not aggressively search out the potential participants” (3rd Interim Report, submitted to IDRC by PADETC, p.2).

However, a survey conducted by STEA and the Hotel Association from another angle provided different interpretation on the ICT needs of local SMEs. This survey found that every day more Internet cafes were established. Many small guest houses and local tour guides used the Internet at these cafes to contact their potential clients. Local handicraft makers also used the Internet quite a lot because their clients ordered goods via the Internet.

Around 2004, the World Bank has support the development of a web portal for the hotel/guest-house group. The Hotel Association helped implement this project. The Association collected a directory of hotels and guest houses and provided those businesses free advertisement on the web site at the initial phase. The web portal also provided them free email accounts. Recently, the Association started to provide pre-booking services. It hires staff to check hotel/guest-house booking emails and then the staff informs and coordinates with the hotel/guest house via telephone.

The e-Way Centre, nonetheless, did support the local business sector in an indirect way. It helped develop of computer-literate human resources for the private and public sector through its computer training for students and the general public, as well as training for trainers program.

“Things I gained from e-Way are leadership, PR and teaching skills, and experiences. I used Excel and set up formula for accounting tasks when I first worked at the Electricity of Lao. At the time they didn't have their own program yet” (former computer trainer at the e-Way Centre, interview, 10 June 2005).

c) School Teachers and Students in Luang Prabang

The e-Way Centre has provided teachers and students the access to computers and the Internet, basic computer training and electronic-assisted learning materials. The demand for the basic computer training has been overwhelmed especially from school and college students although the number of teachers enrolled in the training has not been significant. Students, including novice monks, are indeed the prominent users of the Centre. The e-Way Telecentre provides fee-based (100,000-150,000 kips, or ~ USD 10-15 per 75-hour course) computer training from 8am-8pm daily.

Different groups rotate to come and learn computer. Each group gets two-hour training everyday. At the time of field visit, not every class was full due to it was the end of courses and the Centre was about to start a new round of courses. The e-Way Centre also allows its in-the-class and former students to practice using computers at the Centre any time with free of charge if there were computers available.

Through observation, the age range of school and college students coming for computer training is quite wide, from early teen to late 30 or over. The majority of students are at upper secondary to undergraduate level. Interestingly, several students were enrolling in business and financial or English schools. Most of the interviewees mentioned that accounting, English and computer knowledge and skills were almost the prerequisites for getting a job nowadays.

Few students accepted that their colleges offered them basic computer courses, but they still took computer courses at the e-Way Centre.

“I take a computer course at the university, but don't have chances to practice at the school. There are around 20 computers” (female university student, interview, 10 June 2005).

Most students including novice monks, who came for the computer training, said that they wanted to know how to use the computer and learned about the computer course from posters and their friends. Several mentioned that they needed to enroll in computer course and to get a computer certificate because it is one of the requirements for their graduation. Their colleges or schools did not have computer facility and did not provide computer training.

Several students expressed that they did not know English and it was one of the difficulties for them to learn and use computers. Few said they had to practice more often in order to memorize keys and commands on computer. The instructor said some students who did not have basic English skills took five classes more than the ones who did to learn one computer lesson. Therefore, English is one of the obstacles for learning computer programs and using the Internet.

The e-Way Telecentre had supplied CDs for learning English programs and offered English classes on weekends. The PADETC project team in Vientiane had acquired and assessed several electronic-assisted learning CDs. They found two programs that were more appropriate to the learning context in Laos. Those two CDs, named Jumpstart and Go-Go, were applied and distributed to schools and communities. Go-Go was well accepted at the e-Way Centre by its users. However, the Centre discontinued selling the CDs and teaching English.

“CD Go-Go sold very well. Children liked to learn and the classroom was completely full, but since we finished teaching the whole set of six Go-Go CDs and no new set came out, children stopped coming because they felt bored to learn the same stuff. Parents bought the CDs for their kids to learn at home. So we stopped teaching English. Also from then we haven't got more copies of Go-Go CDs yet. Very well sold. We got 100% profit from the CDs. I'd like to have this kind of learning CDs for adults as well” (e-Way staff, interview, 11 June 2005).

A few interviewees mentioned to me that they liked to learn more about the Internet when

they were ready. They explained that they had to be good at using computer first before getting into the Internet. They felt that they were not fluent enough in using computers; hence, they could not learn how to use the Internet. This is a completely misunderstanding among students. One does not need to be proficient in using computer in order to use the Internet and in fact, using the Internet requires very little basic computer skills. English might be a barrier for Lao people doing online research, but not computer skills. I find raising awareness in this area is something the e-Way Centre has to work hard on.

The e-Way Centre used to provide Internet-related training and services. The Centre found that there was not enough content in Lao language for people to search. Most information online is in foreign languages. It started working on content in Lao language. After overcome problems with Lao character set, which also delayed the progress of the project in content development, the team uploaded the content in three web sites: www.declao.com, **Error! Hyperlink reference not valid.**, and www.mahasan.com. However, in 2004 the managing team of e-Way decided to temporary disconnect to the Internet in order to cut cost and to achieve the financial self-sufficiency, which is one of the project goals.

d) The Local Community or General Public in Luang Prabang

The e-Way centre definitely has provided benefits to the local community although the service offered to the public has been indirect and subtle. Two examples are belows.

“I learned English from CDs, then I disseminate that further to kids in my neighbourhood. I also sold some CDs to kids and they played it on TV” (former e-Way employee, interview, 10 June 2005).

“Benefit to the public at large is that our trainees and former employees now work at other places, but still call us and ask for solutions when they've got computer or program problems” (the e-Way staff, interview, 11 June 2005).

Because the majority of of the Centre's clients are students, computer training for the general public has been rear. Also, people who are not in the business, government and education sectors might not be aware and see the benefit or necessity of getting computer training. In addition, the e-Way Centre did not provide any information service to the public and did not market its service towards other groups outside the above mentioned groups yet. Therefore, it is reasonable to say that the e-Way Telecentre has not achieved the objectives in working with this sector.

However, the project team attempts to accomplish the objectives. The e-Way project has created web sites and uploaded information on those sites, but the information has not been sufficient to fulfill the local information needs. The domain name of declao.com has been discontinued and taken by a person living overseas. The project and web design team are considering using another domain name like declao.net or declao.org.

The web design team continues to work on the content of the web site and once the proposed content is completed, the team will upload the information on the Internet. The declao web site focuses on providing education-related content for students. The web site creation team provided by PADETC has accomplished ~40% of the content in the areas such as culture,

environment, health and life skills (emotions and psychological issues at various age ranges). Other areas that the team is working on are such as knowledge on foreign countries, sports, school subjects, educational games and so on.

The tourlaos.com web site is still up and running; however it targets tourists and people living overseas. As a result, the content is in English, same as links provided in the web site. Unlike the tourlaos.com, the mahasan.com is in Lao Language. It was initially intended to provide information such as health, sports, etc. to the public. When the financial support of the project ended, the web design team needed to find a job and sustain their lives and families. As a result, team members co-invested in a web-related business and mahasan.com became a private enterprise.

The Mahasan.com team runs the business completely on its own and still provides information to the public in Lao language. The content is diverse, but the main focus is entertainment, followed by education, health, news and events and sports. Its target groups are youth and working force. The Mahasan.com is in fact a living case study and an unexpected successful outcome of the e-Way project.

The Mahasan.com is one of the answers to the question 'to what extent the accomplishment of the e-Way project prepare Lao PDR participating in ICT4D.' The project built and put together a group of valuable IT human resources. The case of Mahasan.com provides a demo on privatizing government or international supported projects into a self-sufficient enterprise. It shows that government or international funded projects can be sustainable in long run: expands the local economy (new business and more employment). In addition, the Mahasan.com can share its experiences, lessons and strategies on how to involve other enterprises and organizations into the use of ICT and e-commerce.

Coming back to the local community level, the e-Way project realized its weaknesses in this sector and now has tried to address the ICT needs of local communities. The plan for the telecentre in the next one to three years down the road is to become financially self-sufficient while providing information services to the general public via various media and channels and computer training to students or the public in a more populated suburban area of Luang Prabang.

How Has the e-Way Project Prepared Luang Prabang and Lao PDR into ICT4D?

The e-Way project was one of the four components in the 'Building Rural-Urban Digital Links in Laos' project. Therefore, the combination and coordination among these four components (central government, local government, university and community) is vital to prepare the district and country to utilize and benefit from ICTs for the social and economic development. Because this assessment focuses only on the e-Way Telecentre in Luang Prabang, the analysis will look at the impacts of the Centre as a pilot project.

Raising ICT Awareness

The government, education and business sectors have been well aware of the necessity to use and the benefit of at least the computer and Internet. The demand for computer and

Internet training at the e-Way Centre expresses that people are aware of the on-going change in how they get work done. People especially in the education, government and public sectors are aware of the facilities and services provided by the Telecentre.

However, apparently a large number of people especially students in Luang Prabang, who have some basic English knowledge and skills are not very enthusiastic in using the Internet even at Internet cafes. The cost of using the Internet at many Internet cafes are considered affordable, 1,000 kips (USD 0.10) per 10 minutes. It is not clear that the e-Way Centre has raised awareness of public at large on the benefit of ICTs and how they can apply the use of ICTs to help improve their day-to-day lives, other than using computer for typing or obtaining a job.

Significantly, the e-Way Telecentre has raised awareness of schools, teachers, students and parents on the use of assisted-learning English CDs. Also, the Telecentre helps people understand that they do not need a computer in order to use the computerized educational CDs. They can made the CD in different formats and so people can play the CD and learn English from a TV screen rather than a computer screen.

In addition, the e-Way project helped the local (Luang Prabang District Office) and national governments, educators, content providers and web designers aware that it is important to create substantive on-line content in Lao Language. One of the hindrances for local Lao people to learn computer is the lack of Lao version of computer programs and the barrier for them use the Internet is the lack of needed content in Lao language.

Creating Electronic Formats of Local Needed Information in Local Lao Language

The e-Way project has spent good efforts in creating on-line information in Lao language. PADETC coordinates with STEO and STEA staff in obtaining information from many government units in order to repackage the information and upload it onto the Internet. While STEA has tried to put its e-government policy into practice, the e-Way project has tried to implement that at the Luang Prabang district level.

The project experiment the use of the declao.com and mahasan.com as informative web sites for youth, although the work has not yet been completed due to changes and unexpected barriers mentioned earlier. The e-Way project is continually collecting basic information on services provided by each government unit and guidelines of the service procedures. The attempt is also to provide data or information sources to the public, so local people know where to find more information according to their needs. The project team expects to be able to provide on-line information to the public around the end of 2005. Nonetheless, the mahasan.com has already been an example of web site providing information in Lao language.

Improving the Access to ICT and Information Dissemination

The e-Way project has certainly helped improve the access to ICT of the public, especially students, in the Luang Prabang city. As mentioned earlier, they have more opportunities to access to computer training and learning materials on CDs. However, the information

dissemination activity has not been significant and is still an on-going effort. The past experiences and lessons from the e-Way Centre may provide more thoughts to the implementing team on how to improve the service. Also, the project team may share those lessons and insights with other organizations that may consider establishing similar type of initiatives in the near future.

Building Local Capacity

The e-Way Telecentre Project has improved the basic computer skills of public through end-user training. The number of people who live, work and study in Luang Prabang city and are able to use the computer for document and basic bookkeeping tasks has increased. The training provision has definitely helped build a bigger market and demand for using computer and the Internet.

In addition, the e-Way project has developed a group of trainers although it is a relatively small group and several of those trainers have left the project and moved on to other jobs. Those trained individuals have acquired not just computer and/or ICT skills, but also teaching, leadership, management, PR, marketing, planning, administration, bookkeeping, language and people skills. They are ready to share their knowledge, skills and experiences with others. As a result, more individuals would be trained and more trainers help keep the momentum of knowledge transfer going.

The e-Way Centre may consider doing a larger scale of training for trainers in order to create a larger, so-called, 'snowball effect'. It should also pay attention to providing training on other not-yet-touched topics of both technical ICT skills (e.g., software development, hardware maintenance, network, web management, information management, etc) and non ICT skills such as e-business, content development, cost analysis, marketing research, needs assessment, evaluation, etc.

Having said that, it is important to realize that human resource development takes a long time. For example, the staff working in the e-Way project are still continually learning through doing and making mistakes. It is crucial that the advisory committees of the project provide time, space and opportunity for the staff to learn and to develop their skills. A sincere and respectful reviews among staff and between advisory committees and staff may be useful in improving the learning curves of both parties, as well as trainees of the Centre.

Recommendations on Future Strategies for Reducing Digital Divide

Before getting into recommendations, let us look at what are the plans of and for the e-Way project at the moment. According to the initial intention of the project, the e-Way Telecentre should eventually become a community-based telecentre or a private entity. However, up to this moment, it is not clear how, what and where the telecentre will be in the future. What are the proposed possibilities?

The Telecentre staff and PADETC would like to make the e-Way Centre become a not-for-profit organization that can stand on its own without subsidy from either PADETC or the government. It would operate as a learning centre that provides fee-based computer training

to students and general public and that offers information needed by local people in various paper-based and audio-visual formats for free. The staff intends to move the Centre to a suburban area of Luang Prabang, where computer and Internet services are not available to the community yet. Also the Centre would co-invest with a Vocational Law College, which serves students from all northern districts of Laos, for new computer stations and labs while the Centre still has the sole management authority of the facility. Having conducted a cost-analysis, the Centre needs at least 561 students per year to enroll in its training courses in order to make the Centre become fully self-sufficient.

The STEO Luang Prabang perceives that the Telecentre staff have been inefficient in increasing more services (especially the Internet) to more diverse groups of people and in offering training to the public. The STEO Luang Prabang would like to transfer the management of the Centre to STEO, but still waits for the decision of STEA. STEA staff views that the Centre should aim to serve the public at large and provide service for free because the project fund would subsidize the operating cost. Nevertheless, the STEO Luang Prabang did not have a solid plan for the Centre when the field study took place. Also, STEA had not decided how and where the Telecentre should be and had been waiting for proposals from both the STEO Luang Prabang and PADETC on the future action plans for the Telecentre.

Having given the overview background of where the e-Way Centre might be going, I intend to provide recommending questions for the e-Way Centre, PADETC, STEA, and/or STEO Luang Prabang to think further, as well as some recommendations.

A Long-term Goal and Strategy for Using ICT for Education and for the Promotion of SMEs

Because this subtitle is very broad, I will put the recommendations under two contexts: the e-Way Telecentre in Luang Prabang and the broad-general in Lao PDR.

The e-Way Centre's Long-term Goal and Strategy for Using ICT for Education

One of the long-term goals that the e-Way Centre's should continue to work on is providing ICT training to the public in Luang Prabang. ICT human resources at all levels are vital to the country's development and participation in ICT4D. In addition, it is crucial to have various levels of skillful ICT manpower available in other districts and suburban areas of Laos, rather than only available in Vientiane. The Centre may consider diversifying its training programs and coordinating with other organizations and individuals in providing more advanced ICT (computer and Internet related) training to interested youth. The follows are some additional training programs that the Centre could possibly offer.

1. Basic Internet

This can be a one-day training. The Centre can purchase ISP hours and provide the Internet connection only in the Internet training class or when teaching how to use email and register for an email account. This way the Centre would not spend a large amount of money on the Internet connection. Since basic Internet training will be a short training, the Centre could charge a nominal fee to cover its costs. It could use offline method in teaching how to search for information on the Internet. The staff or trainers could download information from the

Internet and copy onto CDs or the server. They can use free or demo software such as Grab-A-Site or Teleport Pro to download a whole web site or web page onto the computer for training purposes.

2. Computerized Accounting

Often, the Centre staff have gone through certain level of English, accounting and computer training and many of them can be trained to be instructors for teaching computerized accounting. As one of the Centre staff suggested, “Many people are interested in this because students graduated from grade 11 or 12 would most likely continue their education in English and accounting. There is only one accounting school. After study accounting, they have to learn computer. If we taught computerized accounting, then they got both and could work right after they finish the course.” The Centre could either coordinate with the accounting school in sending their students to the computerized accounting course at the Centre once the students finish their basic accounting courses at the college, or provide a more complete curriculum on computerized accounting.

3. Internet Publishing and Internet Site Design

The provision of Internet publishing training (basic web development skills) and Internet site design training (graphic web design skills, tools for complex elements in web sites and how to manage a remote site) will help develop and increase human resources in creating more local needed content in Lao language in digital formats and on the Internet. The Centre can coordinate with PADETC and the Mahasan.com in providing knowledgeable and experienced instructors. Also, the Centre may cooperate with PADETC, the Mahasan.com and government departments, as well as private companies in providing intern positions to Centre's web design graduates, so they can gain more hands-on practice and experiences on designing web sites and at the same time contribute to content creation in Lao Language.

4. E-Commerce

The Centre may consider providing e-commerce training to private companies, newly graduates from colleges and universities (young entrepreneurs). It may provide this training course to its trainees who finish more advanced ICT courses like web design and others as an complement or added-on training. The Centre could invite instructors or business people who already in the e-commerce and/or successful in doing e-commerce.

5. Programing (Visual Basic, Java)

The Centre could consider coordinating and cooperating with the National University and STEA in this advanced training. STEA has its experienced IT team in this area and also provides ICT technical and academic support to the National University. The e-Way Centre could either send interested students for training at the university or STEA IT lab, or inviting instructors from those institutes to come and provide training at the Centre if there were enough number of interested students. These trained skillful ICT workers will be the basis for the development of IT-based and computerized system in many industries and service sectors.

6. Access, Oracle or Database-related Programs

The Telecentre should start to train some in-house trainers or hire outside instructors to provide training on Access, Oracle or other database programs. Database is one of the important component in information management, knowledge transfer and information dissemination. Having human resources in this areas would also greatly help the project and

the country in developing digitized local content and data in local language. The Centre and PADETC in cooperation with other government units may use the trained youth to create and maintain database in different sectors and fields e.g., agricultural inputs and yields of each crop or agricultural method in a village or community, employment rate of newly graduate in each field, transaction cycle of a business sector, local business (suppliers, manufacturers, wholesalers, retailers, self-employed individuals, home-based business, a directory of local handicraft artisans, etc), and household expenditure and income of families in Luang Prabang. The project could try to propose the Statistics Lao in using the trainees for developing some database in Lao language and develop a searchable database on the Internet.

7. Network System

The Centre could try to explore the possibility of providing network courses by incorporating with other organizations or institutes. Also, it could try to reach out to and cooperate with organizations that are in the business of networking services. Those organizations might be able to provide hands-on practices and experiences to the Centre's trainees.

8. Hardware Maintenance

As number of organizations, companies and individuals that own a computer or computers will increase every day, hardware maintenance service would be in a high demand in the very near future. The Centre may experiment with low or no cost maintenance services provided by its students. This way will help the students get some hands-on experiences.

The Centre and PADETC should consider cooperating with other organizations in providing the above mentioned training. The e-Way Telecentre should consult with STEA, Ministry of Education and the National University of Laos Luang Prabang Campus in standardizing the IT training curricula and quality. It could also consult with STEA or the Ministry of Education on certifying the training programs and courses.

The Telecentre may cooperate with the Ministry of Education and consult with school teachers in providing interested teachers some certain level of program development training, so the teachers would be capable in developing digital-assisted learning materials for their students.

The Telecentre should also help local communities develop information literacy and information management skills, not only computer-literacy. In the near future, Lao people will be exposed to vast information from various sources especially from mainstream media and the Internet. Local people should be able to identify their information needs, sources for information, and accuracy and reliability of the information. They should also be able to systematize their information and share it with others.

Another long-term goal of the e-Way Telecentre could be make life-long learning materials, electronic and non-electronic database and research resources available at the Centre for students, teachers, government staff, businesses and community members. The Telecentre could try the following strategies.

1. Coordinate with government departments (e.g., education, health, agriculture, commerce, etc) in providing informative and educational materials both in electronic and non-electronic formats to the Telecentre.

2. Incorporate with government departments, universities, private businesses and not-for-profit organizations in developing useful information and educational materials in both electronic and non-electronic formats and making those materials available at the Centre.

3. Make diverse reference materials in both electronic and non-electronic formats available at the Telecentre. Reference materials are such as dictionaries (English-Lao, Lao-English), Encyclopedia, pictorial dictionaries and encyclopedias for children at various age range. One example of digital dictionary is LEXitron, which is an English-Thai and Thai-English digital dictionary available free online. However, using the English-Thai-English dictionary for young Lao may not be a good idea. The Lao program developers may look at and study the program structure and apply elements where appropriate.

Many of these materials are in foreign languages. The Telecentre could contact English teachers (from local schools) who will to volunteer at the Centre for a brief period of time like one hour a day, so they may provide some guidance to students.

4. Download learning subject materials from the Internet onto the server or CDs for school students. These materials could be exercises from countries around the world. Exercises of some subjects do not need a lot of descriptive content, but more equations and pictures or diagrams. Those subjects are such as mathematics, chemistry, physics, biology, and so on. This way the local students would be exposed to more diverse exercises in their learning subjects and deepened their understand and skills in those subjects. The staff may try to contact school and teacher networks on the Internet.

The Centre staff could also download learning language materials from the Internet like English and French. There are web sites and on-line dictionaries that provide pronunciation lessons for free. Some of the language institutes located worldwide may be able to provide some language learning materials such as video and cassette tapes or CDs as donation for education. Many of those institutes have a branch in Bangkok, where is more accessible and inexpensive to make a contact.

5. Coordinate with other expertise organizations that are working on translation programs.

6. Seek support from international organizations for available educational information and materials for various population groups. For example, FAO, UNESCO and WHO have a vast information databases on food and agricultural issues, culture, science and education issues, and health information. FAO and Kasetsart University of Thailand are currently working on agricultural information and knowledge index and database. The Centre staff could contact these institutes to provide available materials that are applicable in Lao context and repackage the materials to suit local Lao people.

7. Collaborate with other organizations, groups and individuals that work closely with communities in suburban and rural areas in disseminating useful and needed information and educational materials.

The e-Way Telecentre needs good coordination and collaboration with government department, private entities, international organizations and other not-for-profit organizations in order to achieve its long-term goals. From assessing the experiences of the e-Way project from the past few years, one question came up to me? Can government departments,

community-based and not-for-profit organizations in Laos really work well together and make telecentre and ICT benefit the development and well being of local community in Lao PDR?

Many international development organizations prefer to support projects in countries where those projects involve multi-stakeholders (community representatives at grassroots level, government units, businesses, not-for-profit organizations) of the target community or issue. These organizations often assess the local development conditions and risks from the experiences of past and current projects. The result of how the e-Way Telecentre project being implemented could be one of case studies for making decision on future ICT projects.

Hence it is necessity to create a real partnership among not-for-profit organizations, businesses, community-based organizations and government units. Also it is important to:

- ☞ Set up a shared goal in a project among project partners;
- ☞ Set up work and communication rules among partners and stick to the rules;
- ☞ Work as a real team. Make everyone accountable for the outcome (either success and failure) of the project: no one should be blamed for the failure; turn the mistakes into lessons learned and no one should take all the credit;
- ☞ Build a shared understanding on what, where and how to proceed forwards and all work towards the same goal;
- ☞ Develop open and straight forward (with sincerity and respect) conversation, discussion and comments among the project partners: start to use '*Wao-Xeu-Xeu*' and get rid of '*Keng-Jai*';
- ☞ Share knowledge and information among the project partners throughout the project life cycle and beyond; and
- ☞ Open to criticisms, disagreement and new ideas.

The following sub-section is the recommending questions for developing a long-term goal and strategy for using ICT for education in a general broad context in Lao PDR.

Goals in Education

1. What were the educational situation in the past? What were the educational problems in the past?
2. What are the existing short-term (one year), medium-term (three years) and long-term (five years and beyond) goals in education?
3. Whose goals are those: PADETC's, the Ministry of Education's, the local and central government's, the workforce market's, the local community's, or the public at large?
4. What are the current education development and action plans to achieve those goals?
5. What is the education situation at the present?
6. What have been done in order to achieve those goals?
7. What resources are available and would support related educational stakeholders to achieve those goals?
8. What could be the barriers for achieving those goals?

9. What are the problems/needs in education field at the present time? Whose problems/needs are those and who do perceive those as problems/needs: teachers, school administrators, students, parents, PADETC staff, or the Ministry of Education?
10. What improvement PADETC would like to see in education realm in the future?
11. What can be done in order to solve those problems or to fulfill those needs?

Strategy for Using ICT for Education

12. Could the use of ICT help solve those problems or fulfill the needs? Could those problems be solved and needs be fulfilled without the use of ICT? If yes, why and how? If no, how could ICT help resolve those issues and how should ICT be used?
13. In which specific areas of educational problems and needs PADETC would like to address and work on: school administration, curriculum development, extra-curriculum activities, educational equipment, enhanced/assisted learning materials, research/library materials, etc?
14. What levels of educational institutes PADETC would like to work with: kindergarten, elementary, lower secondary, upper secondary, vocational, diploma, undergraduate, or adult literacy?
15. Which parts of the country or which districts of Lao PADETC would like to work with? What are the difference of educational needs in those areas and what are the same?
16. What are the available basic infrastructure, ICT hardware, software and peopleware in those geographic areas?
17. What are the available financial resource, hardware, software, peopleware and networks that PADETC has and can use to work with the target group to address their needs?
18. What are the constraints and how can PADETC overcome them?
19. What formats or channels of ICT tools would be best suit the target group?
20. How do the target group perceive ICT and what is the awareness and understanding of the target group towards ICT for education: none, a good typing appliance, a must-have modern device, a communication tool, a learning assisted tool, a research tool, a teaching and presentation tool, an all inclusive CD, VCD and DVD player, a digital library, a teaching-material creation tool, etc?
21. Are there any organizations (government, international, local community group, not-for-profit) or individuals working on those issues with the target group? How do they do? Do they use ICT tools? If yes, how? If not, would they consider using ICT tools in the near future? Could PADETC work with those organizations and individuals?
22. Are there any organizations or individuals that work in the similar problem areas, but with educational communities in other geographic locations? Would it be possible that PADETC work with them in terms of exchange lessons learned, experiences and resources?
23. Who should invest in the ICT facilities; who would be the owners of the ICT device; and who would be the one managing the use of the device?
24. What and how should be the management format and structure of the ICT resources at the target location and who should be involved in making this decision?

A Long-Term Goal and Strategy to Promote SMEs

A long-term goal for promoting SMEs should be set and come from the SME sector. The Telecentre and PADETC should collaborate with local or national organizations or departments that already working with businesses and SMEs. Hence, there would be less repetitive and all parties can collaboratively improve and build on what have already been done. The strategies that PADETC might use to promote with SMEs are as follows.

1. Explore and identify organizations, groups or individuals that have been working with business sector and in particular SMEs. Some of those organizations could be like the Hotel Association of Laos, the Ministry of Commerce, and the International Trade Department.
2. Identify SMEs in Luang Prabang and in other districts in rural, suburban and urban areas. Who are they? What sectors of business they are involve in: supply, wholesale, manufacture, retail, direct sale, transporter? What are their products and services: rice mill, tea grower, package design, business identity design, printer, flier maker, tailor, shoe repair, therapeutic massage, silk worm nursery, fabric dyeing, canned food, photocopy, dry-cleaning, travel booking, etc? Where are they: street, village, district, semi-urban, rural, city? How long they have been in the business? How big are they: number of employees, capital? What is the structure of the business: company, partners, sole proprietor?
3. Categorize SMEs by industry and nature of business.
4. Figure out local SMEs transactions. Who and where are their suppliers? Who and where are their clients: in the same village, same district, etc? Who and where are their competitors? Where do they bank? How do they collect money from their clients and pay their suppliers? How long does it take them to finish each transaction?
5. Find out their financial and business situation? Do they have a loan, if yes, with whom? Where do they get the initial investment? How long does it take them to make a break even on the initial investment? What are their expenses and how much they cost monthly? What are their monthly revenue? How much profit are they making? What are their daily, weekly, monthly, quarterly, bi-annual or annual business cycles?
6. Explore the communication pattern or flow of local SMEs. Who do they contact with daily, monthly or annually? How do they find out their clients, suppliers, distributors, transporters, wholesalers, manufacturers and so on and how and how often do they contact their business associates? How do their clients learn about them? How do they receive business information and news? What communication methods and tools have they had and been using: face-to-face, post service (EMS, registered, normal, etc), facsimile, telegraph, telephone, mobile phone, email, Internet (at the office, home, Internet cafe)? What type of Internet connection do they have if at all? What and how do they use those communication devices or tools (sending involves,

informing new products, posting orders, etc)? What is their monthly communication cost? Are there any communication service that they want to subscribe? What communication obstacles or problems do they experience if any? How much they can afford or are willing to pay for better communication? What could be the solutions to their communication problems or barriers, in their opinions?

7. Explore their difficulties or problems in doing business or running their business.

8. Conduct an information needs assessment of SMEs

What information do they receive at the moment and how do they get those information? How and how often do they receive or obtain information on such as prices, markets, regulations and economic trend, if at all? What additional information or data would they like to receive, if at all? How do they want to receive the information or data? Do they want to participate in any workshop, training, seminar, meeting, trade events? If yes, what, when, where and from whom?

9. Develop a database of SMEs based on the above research findings and develop a SME/business directory and facility that helps create links among these businesses and to businesses outside Lao PDR.

10. Develop appropriate information resources and materials needed by SMEs and make those recourses available to and easily accessed by SMEs. Also, consult with SMEs on what and how could be the solutions for their difficulties or problems in doing business and whether information and data developed for them could help. If not, what and how those issues should be dealt with? PADETC may pass their needs or requests to organizations or departments that could address their needs.

Formats for Knowledge/Information Presentation and Management in a Learning Centre

The formats of information presentation and learning centre management should be developed according to the local needs and circumstances. There is not a single specific set of presentation and management for a learning centre. Also, the presentation and management should be adjusted and reflect the changing needs and conditions of local people in each particular community. A general framework will be presented below.

Before setting up a learning centre in a community, PADETC staff should be able to answer the following questions:

- ☞ Who do invite me into this community? Why should I work in this community?
- ☞ What is the demographic data (population, age groups, occupations, income levels) and economic-geographic condition (natural resources, land cultivation, types of crops, yields) of this community? Who are the stakeholders in this community?
- ☞ What is the daily routine of local people in the community?
- ☞ How do local people feel about their community? What are the good things they like about their community? Is there anything they do not like? Do they have any concern about their community or in their personal lives? Are there anything they think that have been or could be the problems in the community?
- ☞ What and how local people think when mention the word 'learning centre'?

☞ Is there a learning centre or similar kind of service centre (e.g., library, reading kiosk, vocational training centre, etc) located in the community? If yes, what have been the services and resources available to local people? Are there any organizations, groups or individuals that have tried to or have been providing those services? How and how often do they use the facilities? If no, would they like to have one and why?

The above questions would help the development workers prepare their mind and understand the general picture of a community. How can one find out the answers of the above questions? Often, having been in the field of development for a long period of time, many development workers feel that they are the expertise and use their assumptions or common senses to answer these questions and design a project. The answers of the questions should come of the mouths of local people in different population groups (from various age ranges, genders, occupation, educational status, social and economic status), not only from the representatives of community stakeholders. Also, a development worker could often obtain quality answers through asking open-ended questions.

The next is finding out local people's knowledge and information needs. Often, focus group and individual interview through the application of some visual data-collecting tools, PRA (participatory rural appraisal) techniques or PM&E (participatory monitoring and evaluation) tools could help the development workers obtain detailed and valuable information. Some of the research questions could be:

- ☞ What type of information do local people receive and through what means?
- ☞ What information related to education, health, their current career and occupation, and entertainment do they receive and how?
- ☞ What are or have been their problems related to education, health, career and occupation, income generation, communication and so forth, if at all?
- ☞ What type of knowledge, data or information would they like to receive and they can not obtain on their own?
- ☞ What are the communication means do local people use and which of those means are available in the community? How far is it; how long does it take; and how much it cost for local people to use other communication means that are not available in the community?

In order to find out the formats for presenting information and for learning-centre management, the development workers should first consult local people or stakeholders on the following issues:

- ☞ How local people think a learning centre should be in terms of services, management, resources?
- ☞ What should be the goal and objectives of the learning centre?
- ☞ Where should the learning centre be located?
- ☞ What resources, services and facilities do local people think should be available in a learning centre?
- ☞ Where and how do they obtain those early mentioned resources, location and facilities?
- ☞ Who should be in charge of finding those resources and facilities?
- ☞ Who should look after the day-to-day operation and management of the learning centre?
- ☞ How could the learning centre be operated, managed and sustained?

The development workers can ask local people to brainstorm and come up with an action plan and strategy on the issues they discussed above.

Once PADETC staff and the community could find out the answers for question posed, the formats for information presentation and learning-centre management would be clear to them. The followings are a general set of formats that have been used at telecentres, information centres or learning centres in other countries and that a learning centre could use.

Information Presentation

The information and knowledge presentation can be in various formats depending on local circumstances such as literacy rate, available media and communication means, basic infrastructure, people's daily routine and people's preference. The presentation formats can be text and non-text, and electronic and non-electronic. Often we use the combination of them. What can be the media and channels for presenting information and knowledge at a learning centre?

Paper-Based and Text-Based:

The language should be simple and community friendly, avoiding technical terms. Pictures and diagrams can help explain complicate topics. The media could be small books, pictorial books or references, comic books, posters/fliers, games, pamphlets, local/community newsletter, local/community magazines or newspaper and paintings. The learning centre can transform materials in these forms into electronic format either through scanning, photographing or creating a digital formats through various computer programs.

Oral and Voice-Based:

The information and knowledge can be presented in the forms of song, drama (voice), announcement, story telling, news reading, talks, and book reading. This kind of knowledge sharing and transferring can be done through face-to-face, group activity, loud speaker, community radio and cassette tape. The learning centre staff can also record the live activities such as group reading, community radio and loud speaker into cassette tapes or digital recorder, so this information are preserved and used by people who did not have a chance to listen the live version or who want to hear again.

Visual-Based:

Examples of this form of presentation are such as drawings and paintings, photos, images, exhibits, samples, models and replicas of objects and things, theatre, dance, video, etc. This type of learning tools can also be recorded or transformed into a digital format.

Audio-Visual-Based:

The information can also be presented in the form of movie, cartoon, documentary, discussion, teaching video, demonstration video and drama. These materials can also be transform into digital and analog systems and copied onto a DVD, VCD, CD, or VHS tape. Other tools can be computerized interactive-educational games and quizzes.

Activity-Based:

This type of information and knowledge presentation is usually good for helping people learn by doing. The activities can be playing toys, games, exercises, demonstration and hands-on practice, and field visits.

Management of a Learning Centre

There are many aspects in managing a learning centre. Some aspects that should be considered are such as ownership, location, organization and management structure, decision making authority, and finance and investment.

Ownership: Who should own the learning centre?

The options could be:

1. government unit such as community clinic, primary school, secondary school, community library, etc.
2. an individual or a group of individuals own it like a women's group, a saving group, a local entrepreneur, a co-operation, a not-for-profit organization, a private company or a local Internet cafe.
3. the whole community or village.

Location: It should be a place that community members feel comfortable to go to and accessible by foot or common and frequent local transportation. It should be close to central places that people often go to or hang out, and should be visible. The options could be to:

1. use the available space that the owner of learning centre has;
2. find a hosting organization;
3. receive donated or lent space;
4. rent and lease office or work space, or building; or
5. construct a new building on community property if permitted.

Organization and Management Structure:

Who should manage the learning centre: the owner, an individual, a team of individuals, a sector of the community? The organization or management structure of a learning centre or telecentre is often comprised of:

1. Steering or advisory committee which comes from various sectors of the community.
The member of the committee should be the representative of all stakeholders or all beneficiary groups of the learning centre. Hence each group's information needs and concerns will be taken into account. The steering/advisory committee may provide directions for the learning centre and advice on making decision on big and important issues.
2. Managing committee, management team, or manager.
The managing committee, management team or manager could be a group or an individual selected by community members or the steering committee, or could be the owner of the learning centre, as well as the host of learning centre. Either it is a team or an individual, the management staff has to divide tasks and take certain responsibilities such as business planning, marketing, PR, coordinating, recruitment or human resource allocation, financing, service design, reporting, etc. In certain cases, the manager would be the person who looks after everything at the centre including cleaning, teaching, maintenance, repairs, etc.
3. accountant
The learning centre could recruit an accountant to keep tracks of records on use, expenses and revenues. Often this is a person who is responsible for bookkeeping and providing financial report on a monthly basis.
4. Technical staff
The centre might hire a technical staff to help maintain the equipment and network. Sometime those tasks were taken care by the manager or other staff who have the skills and knowledge. In many cases, a learning centre may contact or use maintenance service

from outside whenever needed.

5. Other staff

A learning centre might have other staff such as instructor, operator or receptionist depending on its services offered.

Decision Making:

The authority of decision making on issues regarding day-to-day operation could be done by the manager, management team, or operation staff as a team. However, when an issue is too big, the manager or team may consult the matter with the steering committee. Those issues could be such as reinvesting on expensive equipment, relocating the centre, etc. The manager or management team may also obtain the steering committee's opinions on issues that affect user groups' benefit. For example, the learning centre may be having a new service and would like to get an initial feedback from each beneficiary group before proceed forwards. It may also ask the committee to help promote the new service among members of each group.

Finance and Investment:

How a learning centre should finance its investment and operation depends on the situation and decision of the committee. A learning centre may obtain its initial investment from organization outside the community. It could be a form of partnership between outside organization and the owner of a learning centre. The owner of a learning centre may decide to provide all the capital on its own. The initial investment could come from a group of investors within the community; each investor/shareholder buys a share or shares, then the investors/shareholders will receive dividends from revenues made by a learning centre. It could also be that the community as whole put some money together and establish a learning centre. A learning centre could also use these funding-acquiring methods when it wants to invest in new services or new equipment. If this is the case, then the learning centre has to make sure that part of the revenues gained from those services would go back to the service investors.

The steering committee and management team of a learning centre have to discuss whether the services provided would be fee-based or free-of-charge, and which ones should be fee-based or free-of-charge. The team has to keep in mind that there would be costs or overhead emerging from services with free-of-charge. How is the learning centre going to cover those costs or overheads? The team should also have a clear idea that at the end of each month how a learning centre can pay off all the expenses and bills and make a break-even or profit in order to keep the services running. There are several ways to finance the operation of a learning centre. For example:

1. the owner of a learning centre, an outside organization, or a group of organizations and individuals may be able to fully subsidize the operation and reinvestment of the learning centre as a social service or donation.
2. a learning centre obtain partial subsidy to sustain the operation and generate incomes from services to cover the rest of expenses.
3. the community or a learning centre may invest in other businesses or activities that could generate enough profits to cover the cost of learning centre and its services.
4. a learning centre may run on a membership-based format that all users of the centre have to be a member and pay a membership fee by monthly or annually, and the members can

get the services for free or at a very low cost.

5.a learning centre may also runs as a co-op, so its members pay an annually membership fee, purchase a share, use the service for free or for a fee, and receive dividend at the end of each year. The centre may also provide its members a cash-back bonus or a number of free services at the end of each fiscal year according to the amount of service they used in that year.

6.a learning centre could run as a solely business and be able to fully cover all its expenses, to generate enough income for saving as a reserve, to make a profit and to reinvest in new services or improve the existing services.

Appropriate Content from Open Information Sources to be translated into Lao Language

Most of the content or learning materials on the Internet should be available for PADETC to used and repackaged into Lao Language because Internet is considered a public domain. Nevertheless, it is a courteous practice to give credit to the person, group or organization that creates or reserves the rights of content or materials. It is also appropriate to inform or ask for permission from the copy-right owner or developer to cite or convert the content into Lao version for educational purposes.

PADETC may explore the following web sites:

☞ Schoolnet web sites around the world such as www.schoolnet.ca/home/e/resources/, www.eun.org/portal/index.htm, www.globalschoolnet.org/index.html, www.spartacus.schoolnet.co.uk, www.schoolnet africa.net, www.schoolnet.na, www.school.net.th, etc.

☞ edHelper.com (www.edhelper.com)

☞ www.itrainonline.org, or

☞ APC (www.apc.org/english/capacity/training/index.shtml), also providing open source information on software and content

☞ Open Content (www.opencontent.org)

☞ Creative Commons (<http://creativecommons.org>)

☞ Food and Agriculture Organization of the United Nations (www.fao.org)

☞ World Health Organization (www.who.org)

PADETC should also coordinate with STEA and the Ministry of Education on available learning materials that could possibly be used for e-learning.

Open Source Software to Facilitate PADETC's Strategy in Setting up Learning Centres

PADETC should consider finding the answers of following questions before getting into the use of open source software (OSS):

☞ What does it mean by 'using computer as teaching and learning tools in setting up learning centres'? Would it be possible to set up a learning centre or learning centres without using

computers? Would it be necessary to have a computer as a teaching and learning tool in a learning centre?

- ☞ What is PADETC's general strategy in using computers as teaching and learning tools? And what is PADETC's general strategy in setting up learning centers?
- ☞ Why PADETC would like to use open source software for using computers as teaching and learning tools, and why in setting up learning centers? What would be the benefit and shortfall in using OSS versus others?
- ☞ What is PADETC's general strategy in promoting the use of OSS within PADETC, learning centres, local communities that PADETC working with, and Lao society?
- ☞ What is the teaching and learning within learning centres: computer training, extra-curriculum, life-long or self-directed learning, or others?
- ☞ What would OSS do for learning centres or their services?
- ☞ What type of teaching and learning OSS do learning centres need?
- ☞ What is the trend or market for OSS in different sectors of the society in Lao PDR?
- ☞ Who can PADETC or learning centres consult with when experiencing problems with OSS? Or which organizations/groups/individuals can PADETC and learning centres cooperate in using OSS as teaching and learning tools? How can PADETC and learning centres obtain more allied organizations in using OSS as teaching and learning tools?

PADETC and learning centres have to bare in mind that OSS usage in Laos is very limited and very few people (few STEA technical staff, and few large businesses and public enterprise) are interested in and use OSS. Two areas of OSS will be provided; however, PADETC team should be the one who assess the programs for the suitability by taking into account the culture and the OSS situation and usage in Laos.

OSS For Teaching and Learning Computer Applications and Programs

While waiting for a user-friendly Lao version of Linux operating system and Lao OpenOffice (Xangdao), PADETC or learning centres can try out OpenOffice and Linux OS in other languages such as Thai and English versions. Various versions of Linux-based operating system can be found at: www.linux.org, www.redhat.com, www.debian.org, www.novell.com/linux/suse, <http://linux.thai.net>, www.knoppix.org, and www.xandros.com. Different version of OpenOffice can be found at: <http://opentle.org>, www.openoffice.org, and www.sunsource.net which is one of the informative links.

PADETC may contact LaoNux project initiated by Mr Anousak Souphavanh or Jhai Foundation on the update of Lao Linux localization, and also coordinate with STEA and QUES college for open source programs and training that have been used and offered to the public.

Software for Learning-assisted Programs or Tools

- ☞ LEXiTRON, Thai-English and English Thai Dictionary (<http://lexitron.nectec.or.th>)
- ☞ Grab-A-Site, download a web site of web page for offline use (free trial version www.bluesquirrel.com/grabaside/)

- ☞ Teleport Pro, offline browser like Grab-A-Site (free demo version www.tenmax.com/teleport/pro/home.htm)
- ☞ koha open source library system (www.koha.org)
- ☞ UNESCO's Open Source Software Portal (www.unesco.org/webworld/portal_freesoft/index.shtml), or http://portal.unesco.org/ci/en/ev.php-URL_ID=12034&URL_DO=DO_TOPIC&URL_SECTION=201.html)
- ☞ David Wheeler's article and assessment on mature and safe OSS, a list of software is provided (<http://www.dwheeler.com/gram.html>)
- ☞ Source Forge.net providing OSS and code in various categories (<http://sourceforge.net>)

A Strategy for Strengthening the Capacity of PADETC for ICT4D

Making PADETC staff aware of ICT's potentials in community development and the possible ways in applying the use of ICT in development work could be an aim for strengthening the capacity of PADETC in ICT4D. Most units at the head office of PADETC have a computer. All staff at PADETC head office have access to a computer and the Internet. One-half of the computers at PADETC are connected to LAN. Many staff can access LAN through the server, but hardly anyone makes use of the LAN system.

Almost all the staff at the head office have received computer training from the IT Unit. However, most of them use computer for document tasks, chat, email and other entertaining purposes. Several staff do not know how to search for information and resources online or rarely use the Internet for research. In addition, most staff working in the field closely with rural communities have not acquired any computer training or do not have any computer and Internet skills yet. Computer training and knowledge network within PADETC may help increase the capacity of staff in utilizing ICT tools for development.

The organizational practices that PADETC could apply to strengthen the staff's capacity in utilizing ICT (or at least the computer and Internet) for development are the following.

1. Provide the centre staff with information and knowledge on what ICTs are.
2. On a continual basis, have a group or team of staff researched on what roles ICTs have played in the development field, how development workers in other places apply the use of ICT in development and strategies they have used in those applications, projects and results of projects that have incorporated the use of ICT, the lessons learned, successes and failures from projects using ICT4D.
3. Ask the ICT4D research team continually search for projects, with similar nature to PADETC's from other places, that apply ICT as a tool for development work.
4. Provide the researched information on ICT4D to the centre staff on a regular basis through various means such as centre's brief newsletter on ICT4D, PADETC web board through Intranet, weekly meeting, weekly tea/coffee break, weekly colloquium, weekly knowledge sharing session, weekly information exchange session, information or poster board, email, common space for internal news update on LAN system, etc.
5. Create a common space and application on LAN for news update and announcement within

PADETC, so everyone start to use the LAN system and possibly Intranet and can share and exchange his/her experiences and opinions. Encourage the staff to use the LAN and Intranet facilities as well as participating in internal knowledge-exchange events (mentioned in 4).

6. Provide training to staff at the head office and in the field on: computer applications in both MS Office and OSS, applying basic computer applications in doing development work, using basic computer applications to create educational content or training materials, and how to transfer the knowledge staff have to the community and encourage local community to use ICT as tools for development.
7. Create an information and knowledge network on the application of ICT on their development work among PADETC staff.

Conclusion

The e-Way Telecentre was one of the four components of 'Building Rural-Urban Digital Links in Laos' project, which aimed to increase ICT access and improve basic ICT skills of local people. The Telecentre project was implemented in 2002-2004 and was granted a one-year extension. This study was to assess the accomplishment of the Telecentre against its set objectives and how the accomplished work preparing the Luang Prabang society in participating in ICT4D.

The objectives of the e-Way Telecentre project were to improve the ICT access and basic ICT skills of local people (government staff, business people, school teachers and students, and the general public) in Luang Prabang, to create educational content in local Lao language, to assist SMEs in doing e-commerce and to develop the Telecentre becoming a community-based or community-oriented self-sufficient organization. I employed field research method in assessing the e-Way Telecentre. The research techniques used were observation, informal conversation, individual interview and group interview, as well as reviews of project documents and reports.

The study found that the e-Way Telecentre had improved the basic ICT skills mainly in the education sector or school and college students and to certain extent in the local government sector. The Telecentre was not able to increase and improve the ICT access and skills of the local business sector and of the general public during the initial project implementing time frame. It did provide the Internet service, but for a short period of time due to financial constraint and the lack of local needed content in Lao language.

The Telecentre project team has been developing education, health and tourist related content, and collecting information relating to government services and local business data. Although the local web sites have not completed yet due to the complexity in coordinating and obtaining government-related information, the team has planned to upload the information on the Internet by the end of 2005. It also aims to work more closely with SMEs and local business during the extension period. The Telecentre team, in addition, plans to provide information services to local community members with free of charge through various communication means.

The Telecentre partially achieve its financial self-sufficient objective. For the extension

period, it plans to obtain more students for the computer training, which is fee-based, in order to make a break-even or possibly a profit. The issue of ownership and becoming independence of the e-Way telecentre was under discussion among STEO, STEA and PADETC during the time of this study. The proposals were to make the Telecentre become an independent not-for-profit entity or to transfer it to STEO. Therefore, the objective of developing the Telecentre to be a community-based or a not-for-profit private entity has not been achieved.

The main recommendations for the Telecentre are to focus on human resource development and to develop a better collaboration and partnerships with central and local government units, schools and colleges, businesses and local community. ICT human resources at all levels are vital and urgently needed for Lao PDR to participating in e-economy and ICT4D. Also, providing local needed information and knowledge in Lao language via suitable communication means could raise the awareness of the public on how ICT may improve their quality of life. The e-Way Telecentre should collaborate with other organizations, which already work in the similar areas and have available useful resources and experiences, in order to achieve the set objectives and goals.

Annex I

Schedule of Field Study for the Assessment of e-Way Telecentre in Lao PDR, 9th-15th 2005

Dates	Time	Activities
09/06/2005	Morning	Arrived Vientiane, Lao PDR
	Morning	Interviewed Mr Sombath Somphone, Director of PADETC
	5pm.	Traveled to Luang Prabang
10/06/2005	9am	Visited STEO Luang Prabang; Met Mr Boonchan
	Morning	Observed the e-Way Centre; Conversed with Centre's users
	Afternoon	Visited the Law Vocational College in Luang Prabang
	Evening	Continued interviewed users, employees, former employee of e-Way Centre
11/06/2005	Whole day	Visited the e-Way Centre; interviewed project and centre staff
	5pm	Traveled back to Vientiane
12/06/2005	Free day	Worked on field notes
13/06/2005	Morning	Visited the Mahasan.com Office; interviewed its staff
	2pm	Meeting with a UNDP's IT staff
14/06/2005	Morning	Visited STEA Office and Interviewed Mr Phonphasit
	Afternoon	Visited PADETC's IT Unit and interviewed PADETC's IT staff; Toured PADETC Office and conversed with PADETC's staff
15/06/2005	Morning	Worked on field notes
	Afternoon	Continued on field notes; obtained additional information and clarification from PADETC Director.
16/06/2005	Morning	Left Vientiane, Lao PDR.