Community Information and Technology Centres:

Focus on South-East Asia

Contents

Foreword

Towards building inclusive knowledge societies, UNESCO accords high priority to providing and strengthening communication and information facilities at the level of local communities. As urban middle class families prefer to have convenient access at home to a wealth of information offered by new technologies, a large rural population is facing not only infrastructure constraints but also insufficient financial resources to buy necessary equipment for home use. As an alternative, UNESCO as well as other organizations and agencies, recommends shared community access points which should prove more economical as well as more effective in communities where literacy, especially ICT literacy, is yet to be attained. Such facilities also offer basic tools for introducing and managing community-centred development and change.

By the same token, Governments and development agencies in some Asian countries have implemented projects to establish community telecentres, community resource centres, and community information centres. Regardless of the name and the sponsor, these community centres have one thing in common: they bring new learning opportunities to those who are otherwise left to lag behind in the increasingly wired world. Some became successful while many others failed; they were either left to struggle on their own or to eventually close.

UNESCO commissioned this study by Nick Moore to take stock of the development of various types of community centres with a view to setting the path for future action. The recommendations submitted by the author should help those planning to embark on similar projects to take into consideration what might or might not work.

Sheldon Shaeffer
Director

Summary

Access to information is important. People need information to develop their potential through education and training, to succeed in business, to enrich their cultural experience, and to take control of their daily lives. Information is a key contributor to the development of individuals and communities.

Over the last 30 or 40 years, a large number of initiatives and projects has been launched in an attempt to overcome the problem of unequal access to information.

The specific aim of this study was to provide an analytical comparison of the different types of community centres, telecentres and multimedia centres, and to distil the lessons that can be learned from them. Within this broad aim, the study focused on eight specific issues:

▶ Policy environment
▶ Organisational structure
▶ Management of the operation and its staff
▶ Programmes and services
▶ Financing, particularly costs and revenues
▶ Outputs, outcomes and their impact on the communities and their development
▶ Factors that determine success and failure
▶ Sustainability of policy, programmes and finances

A Common Purpose

The common purpose that underlies all the centres is to achieve equality of access to information; or, at least, to reduce levels of inequality. The importance of information has grown in recent years with the transition to information- and knowledge-based communities.

The Evolution of the Centres

The first attempts to improve access to information involved establishing collections of books and printed material – *community libraries*.

In the early 1970s, *community information centres* began to appear. Their focus was on acquiring, processing, storing and disseminating the information that was needed by the community that they served. They were, therefore, less passive than the community libraries.

During the 1980s, the nature of community information centres began to reflect the growing importance of information and communication technology in creating, storing, transmitting and communicating information. *Telecentres and community IT centres* became the new buzz-words.

As the 1990s came to an end, a new designation began to be used – ***multipurpose community telecentres***. It reflected the way that technological change, particularly the development of the internet, had greatly extended the range of activities that could be undertaken by telecentres. This is now the most common type of centre, and examples can be found in South America, Africa, and in the Asia-Pacific region, as well as in more developed European and North American countries.

Since 2000, a further function has been added – community broadcasting. A ***community multimedia centre*** "combines local radio by local people in local languages with a public telecentre facility offering access to internet, e-mail, computer training and a range of services and activities that meet development needs" (UNESCO, 2005).

In recent years, with the growth of the internet and the transition to information- and knowledge-based societies, we have become more and more conscious of the importance of learning and knowledge as a basis for individual, community, economic and social development. ***Community learning centres*** have been established to meet this need with the specific purpose of providing a variety of learning opportunities that can empower people within a community and improve their quality of life. While these centres are mainly concerned with education, they have some characteristics in common with the other centres that are considered by this report.

The Future Pattern of Provision

Community-based information and technology centres have come a long way since the early community libraries of the 1960s. In the years to come, we are likely to see a continuing process of evolution.

The centres of the future are likely to place an even greater emphasis on learning and skills development. The dramatic growth of information on the internet will continue. Furthermore, the information content will be more sophisticated and interactive. The development of e-government and e-commerce could have a profound impact on the lives of people in remote communities.

Digital technology will become not just more sophisticated, but cheaper and easier to use. People and communities will want to use the technology for more than just accessing information from the internet. The question is: Will they do so collectively through the development of community centres?

The experience in developed countries tends to suggest that they may not. As people become more prosperous, and as the equipment and telecommunications become cheaper, they tend to use the equipment in their homes rather than in a community centre. The second factor that influences the answer to this question is the fragility of the centres. Many centres have been established in the last forty years, but very few of them seem to be sustainable in the long term. Unless it becomes possible to develop a model of provision that is self-sustaining in the long term, or it becomes possible to provide long-term support from public funds, a question-mark must remain over the future prospects of community information and technology centres.

Lessons from Experience

The Policy Environment

Community information and technology centres do not exist in a vacuum. They are shaped and constrained by the policies of the communities within which they operate and by the policies of the organisations that support them.

Organisational Structure

The organisational structure of the centres is immensely varied. They do, however, share a common characteristic: they are generally very small organisations, and so, typically, they have a very flat structure.

Management

The style of, and systems for, management are determined by the nature of the centre. Most are directed by a management or steering committee consisting of community representatives, with day-to-day management undertaken by the lead worker. Some, however, are managed as part of the management structure of the parent organisation or sponsor.

Programmes and Services

There is a wide diversity of programmes and services, and the range is steadily increasing. The main reason for this is that information and communication technology can be put to many different purposes and, as a consequence, community centres are able to offer many different services.

Success Factors

The experience of the past and present centres suggests that there are four main success factors:

▶ Strong leadership
▶ Strong community support
▶ The ability to be flexible in responding to community needs
▶ Finally, and most importantly, the existence of long-term and adequate funding

Sustainability

Much depends on the long-term commitment of key staff, the long-term stability of finance, and the ability to remain relevant to community needs. Of these, financial stability is the most important. This is the biggest challenge facing any organisation wanting to support the development of community information and technology centres. How can they ensure that the centres they are proposing will receive adequate funding in the long term?

Conclusion

Community information and technology centres continue to be established in response to needs within the communities that they serve. They share an underlying purpose, which is to achieve equality of access to information; or, at least, to reduce levels of inequality. The nature and scope of the centres has changed over time as they have responded to changing needs and to changes in the technology of information.

The centres that work most effectively are those where there is a union of three things: charismatic leadership, strong support from the community and adequate finance, which is usually provided from outside the community. The centres are, however, fragile. Few last for more than ten years.

Nonetheless, when they are operating effectively, the centres make a valued contribution to the economic, social and cultural life of the communities that they serve. The value of that contribution will undoubtedly increase as the transition to information-based societies becomes more entrenched.

The challenge for the future is to persuade local, regional and national government bodies to accept responsibility for funding these services long term. They have to recognise that providing communities with an acceptable level of access to information and ICT is as important as providing them with access to schools, clinics, the road network and the transport system. Certainly, they have to back that recognition with a commitment to fund the services.

Recommendations and Actions

The main recommendation of this report is that development agencies   should begin the process of convincing national and local governments that funding effective community-based information and technology centres is as important as providing other essential infrastructure and services.

As a first step in this process, a study should be undertaken to establish the true capital and running costs for a range of different centres, as well as to assess the short-, medium- and long-term impacts of the centres on the communities that they serve.

Once this evidence has been collected, national governments should be persuaded that they have a responsibility to provide long-term funding for centres and agencies to provide 1) access to information that will benefit the community, and 2) access to technology to acquire, process, store and disseminate this information.
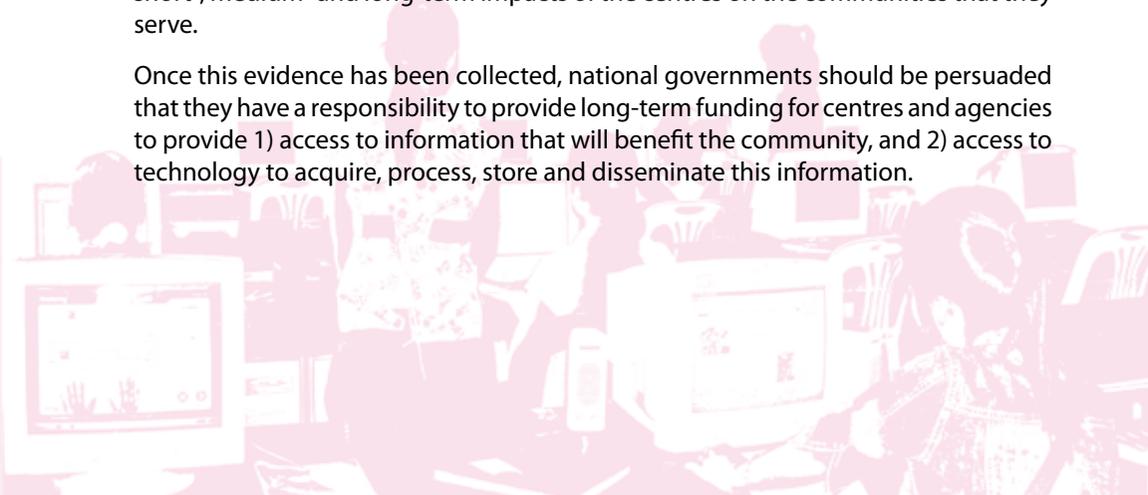
Introduction

Access to information is important. People need information to develop their potential through education and training, to succeed in business, to enrich their cultural experience, and to take control of their daily lives. Information is a key contributor to the development of individuals and communities.

Yet access to information is not equal. Some people, particularly those living in affluent urban centres, can choose from abundant sources of information. In contrast, people who live in poor communities are frequently denied access to the information that they need to improve their lives. The position is particularly severe in many rural areas in developing countries.

Over the last 30 or 40 years, a large number of initiatives and projects has been launched in an attempt to overcome this problem of unequal access to information. More recently, in the last 10 to 15 years, attention has focused not just on information, but on the technologies that are now associated with its access, and use.

There has been a steady progression of community libraries, community information services, community resource centres, telecentres, community IT centres, multipurpose community telecentres, community learning centres and community multimedia centres. We have now reached a point where the profusion of different models is the cause of some confusion.

The general purpose of this study is to dispel some of that confusion and to identify the lessons that can be learned from nearly half a century of development.

Aim and Objectives

The specific aim of the project was to provide an analytical comparison of the different types of community centres, telecentres and multimedia centres and to distil the lessons that can be learned from them. Within this broad aim, the study focused on eight specific issues:

▶ Policy environment
▶ Organisational structure
▶ Management of the operation and its staff
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Approach

The study began with field trips in Thailand and the Lao People's Democratic Republic to six centres of different kinds. This experience was supplemented by an extensive literature search, which identified a large number of information sources. Many were descriptive, some were analytical, but all together they provided a rich picture of a dynamic process of development.

Acknowledgements

Many people have helped with this study, some knowingly. I would first like to acknowledge my debt to Elaine Kempson whose early work for UNESCO reviewing the literature on community information services provided an excellent starting point (Kempson, 1990). In the same vein, the recent report by Kingo Mchombu and Nicola Cadbury for Book Aid International (Mchombu and Cadbury, 2006) gave me a more up-to-date picture of recent developments.

I would like to thank the people in the six centres I visited in Thailand and Lao. Each of them gave freely of their time and answered my questions thoughtfully – I suspect they were the same questions that many other visitors had asked, and so I am particularly grateful.

The Evolution of the Centres

The evolution of the types of centres that are covered by this report began about half a century ago as national governments and multi-lateral development agencies began to address the need for some form of library provision in disadvantaged, predominantly rural, communities.

Since then, a great deal has happened. The nature and scope of provision has changed, as have the societies in which the centres operate. We are now much more aware of the importance of information and the role that it can play in the development of individuals and communities.

The evolutionary process has been greatly influenced by developments in the technology associated with information and its communication to the point where now the technology is often perceived to be more important than the information. The rationale for the centres, however, remains unchanged.

A Common Underlying Purpose

The common purpose that underlies all the centres is to achieve equality of access to information or, at least, to reduce levels of inequality.

This purpose has always been important. As we have noted, lack of access to information can severely constrain personal development through education. It can impair the efficiency and competitiveness of businesses, whether those of subsistence farmers or more ambitious entrepreneurs. It can limit a community's cultural life, leading to poverty of experience and narrowness of vision. Perhaps most significant of all, it can prevent individuals from taking control of their daily lives, their health and their well-being, as well as from exercising their rights as citizens.

The importance of information has grown in recent years with the transition to information- and knowledge-based communities. This is a phenomenon that can be seen all over the world. The development of these information-based societies holds out the prospect of economic growth and social improvement but, all too often, it produces within the overall population disadvantaged groups who are excluded because they lack access to information. Societies are becoming polarised into those who have access to information – the information-haves – and those who do not – the have-nots.

This situation is usually compounded by a digital divide where people lack access to the technology that, increasingly, is required in order to obtain and use information. The more individuals, communities and whole societies depend on information and

the associated technologies, the greater is the social exclusion that is experienced by those who do not have access to the technology and the wherewithal to use it.

As if this were not bad enough, matters are made worse by the tendency for educated people and those with skills to leave the disadvantaged communities and move to the cities. In effect, this increases the social and technological exclusion for those who remain.

There is, therefore, a great deal to be said for any attempt to reduce the level of inequality in people's access to information. One response has been the creation of community-based centres that are designed to provide people with access to information. Such centres have been established in disadvantaged communities all over the world – they are a global phenomenon.

The main focus in the development of the centres covered by this study is on disadvantaged urban areas and rural communities. Urban areas are easier to serve, not least because their populations tend to be greater and the infrastructure, particularly the telecommunication network, is more accessible. Generally speaking, it is more cost-effective to provide services to densely populated communities.

Arguably, however, the rural communities have greater needs. They usually have smaller populations and so there is less scope for economies of scale. It is also usually more difficult to gain access to the telecommunications infrastructure. The population tends to be dispersed over a wider area with the consequence that the cost per head of providing any kind of service is greater than it is in urban areas.

It is not now possible to divorce access to information from access to information and communication technology. The rapid development of the internet, in particular, has irrevocably changed the information landscape. The nature of the centres has evolved accordingly in response both to technological change and the increased sophistication of information provision. The early centres were little more than static collections of printed material. Then came a more dynamic approach towards the provision of information to those who needed it. This was followed by centres that consisted of collections of equipment that could be used to access, process and store information. Recent developments have emphasised the importance of learning and the use of multimedia technology to broadcast information.

The sections that follow chart the way that thinking about community-based access to information has changed.

Community Libraries

The first attempts to improve access to information involved establishing collections of books and printed material – community libraries. Outside the developed countries, the first examples of this type of centre were found in Africa in the 1960s. They were usually initiated and funded by development agencies, working in conjunction with national or public library systems that were, themselves, part of a colonial legacy. Community-based library services are still operating, mostly in Africa, and they continue to meet a need (Mchombu and Cadbury, 2006).

The basic aims of community libraries were to support the development of literacy skills and to supplement the formal education provision. Their focus was, therefore, usually on children and young people. Increasingly, however, they also played an important role in maintaining literacy skills among adults.

The services were essentially passive: they relied on people coming to them to use the collections of information. Most, however, undertook some form of outreach and promotional activities, but these were aimed at attracting potential users to come to the collection. The building was, therefore, of considerable importance.

The services were capital-intensive. A considerable amount had to be invested in the initial collection of books and other materials and in the building to house the collection. Running costs also tended to be high as staff were required to manage and, in some case, to safeguard the collection. Further, the initial value of the collection deteriorated quite quickly if new material was not acquired to refresh the stock and to replace material that became worn out.

If, however, the building was attractive, and the quality of the book stock was good, the services tended to be heavily used, particularly by children and young people, and to play an important role in the community. Further, the existence of community libraries often served as a catalyst for more wide-ranging information-based activities. In Peru, for example, the network of community libraries, *bibliotecas rurales*, has developed into an educational and cultural movement that incorporates literacy activities, local language publications, reading and learning (Ortiz, 1996).

Perhaps because of the relatively high capital costs involved, the provision of community libraries was usually made by a government agency, such as a national or public library service, and often with assistance from an aid agency. As such, many of the centres were managed as part of the management structure of the sponsoring agency. In a relatively small number of cases, notably *biblitecas rurales* in Peru, the library collections have been developed by the communities, themselves, by individuals pooling resources that are then supplemented by external funding. In such cases, the management and control of the services remains with the community.

Multi-lateral aid agencies did much to support the development of community libraries. In the past, agencies such as UNESCO, the British Council and SIDA (the Swedish International Development Agency) have played an important role, although most now choose to fund centres that place greater emphasis on the use of technology.

Community Information Centres

In common with developments in mainstream library services, there was a shift towards more dynamic centres that were concerned with the collection and provision of information, rather than simply with the management of collections of books.

These community information centres began to emerge in the early 1970s and a number are still providing valuable services today. Their focus was on acquiring,

processing, storing and disseminating the information that was needed by the community that they served. They were, therefore, less passive than the community libraries: the emphasis was on taking the information to the people who needed it most. There was a corresponding need to identify and satisfy information needs within the community.

This rather more dynamic role implied the need for trained information staff. This was particularly true in the 1970s, 1980s and early 1990s, when many of the available information systems were difficult to use. The analysis and interpretation of information was an important function of services of this kind, and also required a high level of skill.

Some of the services emphasised the importance of collecting, analysing, recording and storing oral information. This reflected a recognition of the importance of oral information and an oral culture in rural communities.

Initially the focus of these centres was firmly on the needs of local businesses, particularly agriculture. The aim was to provide individuals and communities with access to national and international information sources. The services were often, therefore, developed in partnership between an international organisation, such as the Food and Agricultural Organisation of the United Nations, or the International Rice Research Institute, and a country's Ministry of Agriculture.

In the 1980s and 1990s, attention began to shift towards the need to meet the daily information requirements of individuals. This was especially true in areas like health, and organisations such as Healthlink (formerly the Appropriate Health Resources and Technologies Action Group, better known as AHRTAG) supported the development of a number of community-based health information services.

There are now few examples of the kind of community information centres that were envisaged in the late 1970s and early 1980s – most have developed into telecentres (which are discussed below). One good example, however, is the network of Lllubabor community library and information centres in rural Ethiopia. They seek to enhance development and reduce poverty in the region through providing much-needed information, particularly in the areas of agriculture and health (Tadesse and Genesse, 2002). The network was supported by Oxfam Canada, and revitalised 12 rather dilapidated government reading rooms. An important product of the network is the publication of materials in Oromifa, the local language.

Telecentres and Community IT Centres

During the 1980s, the nature of community information centres began to reflect the growing importance of information and communication technology in creating, storing, transmitting and communicating information.

"Telecentres" and "community IT centres" became the new buzz-words. The technology, however, was still mainly analogue, consisting of telephones and fax machines, photocopiers, duplicators and printers. Many communities lacked these basic resources, and strenuous efforts were made to establish resource centres in

disadvantaged urban and rural communities. Computers really only began to make an appearance in the late 1980s and 1990s.

As with community libraries, community IT centres and telecentres were capital-intensive. In addition to the machinery, some form of building was required to house the equipment. This capital requirement meant that very few centres were established and maintained by communities working alone: most depended upon some form of external financial support.

Many of the early telecentres were built onto or around existing community information centres. They were seen as part of the natural development of the service. The main focus was still on meeting the information needs of the local business community, particularly subsistence farmers. As time moved on, however, there was an emerging recognition of the need to develop IT-handling skills, particularly among children and young people.

The nature of the centres also changed. Initially they were places where professionals, or people trained in basic information skills, used the technology to acquire, process and store information on behalf of the community and its members. Gradually a self-service style of operation began to emerge: people went to the centres to use the technology to satisfy their own information needs. This shift to self-service was to become more and more significant.

In many cases, the development of telecentres was initiated by a government agency of some kind, often working in collaboration with an international organisation. The International Telecommunications Union, for example, has been very active. Increasingly, however, the services are initiated by community-based organisations, although they continue to need external support, which can come from a wide range of national, regional and local government agencies.

The Indian Government, for example, has done much to support the development of telecentres in rural areas. In 2000 it launched a programme for establishing nearly 500 centres in the northeastern region of the country. Each was equipped with computers, printers, a generator and a satellite link for internet access. The centres are staffed by two trained operators and have the potential to be used for a very wide range of activities (Harris and Rajora, 2006).

Another example of a community IT centre or telecentre is the E-Way Centre in Luang Prabang in Lao PDR (see Case Studies, pp. 37-39). This centre was initiated by the Luang Prabang office of the Science, Technology and Environment Agency (STEA). They obtained funding from IDRC (the Canadian International Development Research Centre). The centre is managed by PADETC (the Participatory Development Training Centre). It was originally intended as a multipurpose community telecentre (see below). However, resource limitations and other constraints, such as the time and cost involved in maintaining equipment, meant that the centre concentrated on basic training in computing. In this it was quite successful, training about 200 people each year. The funding from IDRC came to an end, however, and the future of the centre is now uncertain. (For further information, see: *http://www.idrc.ca/en/ev-9675-201-1-DO_TOPIC.html*).

Multipurpose Community Telecentres

As the 1990s concluded, a new designation began to be used – multipurpose community telecentres. It reflected the way that technological change, particularly the development of the internet, had greatly extended the range of activities that could be undertaken by telecentres. The concept was promoted particularly vigorously by the International Telecommunications Union (see, for example, *http://www.itu.int/ITU-D/univ_access/telecentres*). It is now the most common type of centre, and examples can be found in South America, Africa, and the Asia-Pacific region, as well as in more developed European and North American countries.

The primary driver was to provide opportunities for the community to use ICT for a wide range of purposes, not just as a means of acquiring, processing and storing information. The centres were often built around training in the use of the internet, computers and associated technology. Some seek to provide services to the whole community (see, for example Proenza et al., 2001); others have focused on particular groups within the community, such as women (International Telecommunication Union, 2004).

The centres were increasingly initiated by community-based organisations and supported by a wide range of national, regional and local government agencies, along with sponsorship from private sector companies and charitable donations. One such centre in Ban Samkha (Lampang Province, Thailand), was studied for this project (see Case Studies, pp. 34-36). The centre was based in a primary school and, initially, had been intended as a means of educating the children in the use of computers and the internet. From that modest start in 1999, it has grown into a flourishing telecentre that meets a variety of different needs within the whole community: it is truly multipurpose. The primary school children continue to provide the core of the service and have developed an advanced understanding of, and familiarity with, the technology (*Ban Samkha: Community that Learns*, 2005).

A similar, although rather less extensive, multipurpose telecentre has been established in Ban Limthong, Buriram Province, Thailand (see Case Studies, pp. 32-33). The inspiration and motivation for this centre came largely from a single individual, Na Noi, while the impetus behind the Ban Samkha centre came more generally from a relatively small number of individuals within the community who drove the development forward.

In other cases, the centres have been established by an outside agency that has sponsored the development in order to benefit a community. Good examples of this are the centres that have been established by the Population and Community Development Association (PDA) of Thailand (see Case Studies, pp. 40-42). The centres are equipped with computers, printers and so on, along with an internet connection. The main purpose of the centres is to provide training in computing and the use of ICT. They offer a range of courses for the community and for local organisations. The centres also, however, serve as a community facility, and members of the community are encouraged to use the equipment.

At an international level, the International Telecommunication Union and UNESCO have played an important role in promoting the concept of multipurpose community telecentres. UNESCO has produced a useful, practical guide to their establishment and operation (UNESCO, 2003).

Community Multi-media Centres

As discussed, the functions of community information and technology centres have changed over time: from community libraries, with their emphasis on building collections of books, to the multipurpose community telecentres, where information and communication technology is used for a wide variety of purposes. Since 2000, a further function has been added – community broadcasting.

A community multimedia centre "combines local radio by local people in local languages with a public telecentre facility offering access to internet, e-mail, computer training and a range of services and activities that meet development needs" (UNESCO, 2005). UNESCO has been very active in promoting this extended form of centre and, since 2001, has established over 40 pilot community multimedia centres in three continents. These were created by adding new components to existing community facilities. In some cases, telecentres were added to community radio stations; in others, radio was added to existing telecentres. UNESCO has brought together the lessons learned from these centres into a very useful, practical handbook (*UNESCO,*2006b).

This development reflects the emergence of new opportunities to use digital information and associated media to disseminate information. Digital technology enables local people in small, remote communities to take control of the local, regional, national and even international information that they receive, customising it to meet their particular requirements. Content of all types can be relayed in local languages to meet local needs.

Community Learning Centres

In recent years, with the growth of the internet and the transition to information- and knowledge-based societies, we have become more and more conscious of the importance of learning and knowledge as a basis for individual, community, economic and social development. Community information and technology centres have always contributed, in one way or another, to this process. In recent years, however, a number of community learning centres have been established with the specific purpose of providing a variety of learning opportunities that can empower people within a community and improve their quality of life (*UNESCO,* 2006a). While these centres are mainly concerned with education, they have some characteristics in common with the other centres that are considered by this report.

UNESCO has done much to foster the development of community learning centres under its Asia-Pacific Programme of Education for All. The centres reflect a recognition of the importance of non-formal, lifelong learning and the development of skills.

The centres provide support for children and young people moving through the formal education system, but they also make significant provision for adult and continuing learners.

Community learning centres are increasingly initiated by community-based organisations and supported by a wide range of national, regional and local government agencies, particularly education ministries, and by UNESCO.

The Future Pattern of Provision

Community-based information and technology centres have come a long way since the early community libraries of the 1960s. They have evolved in response to technological change and to developments in our perceptions of communities' information needs. In the years to come, we are likely to see a continuing process of evolution.

The centres of the future are likely to place an even greater emphasis on learning and skills development. An important skill is information literacy, or the ability not just to be able to read and to use information and communication technology, but also to comprehend, analyse, evaluate and act on information (Correia, 2002). The focus of the centres is, therefore, on learning in the widest sense, making use of information and communication technology. More and more formal and non-formal courses will be delivered over the internet, and centres in disadvantaged communities will play an important role in providing individuals of all ages with an opportunity to access this material.

The dramatic growth of information on the internet will continue. Furthermore, the information content will be more sophisticated and interactive. Governments in nearly every country have plans to deliver more and more of their services over the internet. At the same time, the private sector will make greater use of the internet to communicate with their customers and suppliers. In the early 20th century, mail-order retailing transformed the lives of people living in remote communities on the American prairies: internet shopping is having much the same impact a century or so later. The development of e-government and e-commerce could, thus, have a profound impact on the lives of people in remote communities.

Digital technology will become not just more sophisticated, but cheaper and easier to use. Primary school children in Ban Samkha are already using hand-held GPS devices to map water courses and to identify the optimum sites for check dams, while their parents are using spreadsheets and accounting packages to manage their family budgets (see Case Studies, pp. 34-36). Who knows what applications will be possible ten years from now. What is certain is that people and communities will want to use the technology for more than just accessing information from the internet.
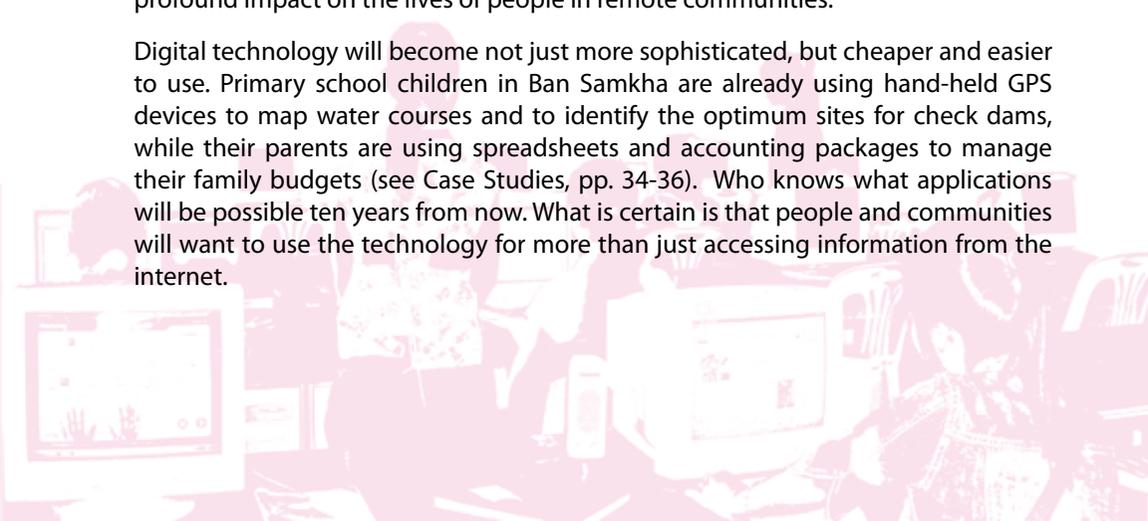
These trends suggest that there will continue to be a need for individuals and communities to use information, and the associated technologies to solve their problems and to enrich their lives. The question is: Will they do so collectively through the development of community centres?

The experience in developed countries tends to suggest that they may not. As people become more prosperous, and as the equipment and telecommunications become cheaper, they tend to use the equipment in their homes, rather than in a community centre. They satisfy their information and other needs by themselves – and the increasing user-friendliness of the equipment makes it easier for them to do so.

The second factor influences the answer to the question is the fragility of the centres. Many centres have been established in the last forty years, but only a few seem to be able to carry on after the initial period of funding comes to an end. The centre in Luang Prabang provides a good example of the problems that arise when the initial funding runs out (see Case Studies, pp. 37-39). Put simply, very few of them seem to be sustainable in the long term – an issue that we will cover in the next section of this report. Unless it becomes possible to develop a model of provision that is self-sustaining in the long term, or it becomes possible to provide long term support from public funds, a question mark must remain over the future prospects of community information and technology centres.

Lessons from Experience

During the last 30 or 40 years, many hundreds of information and technology centres have been established in different parts of the world, seeking to meet the needs of widely differing communities. What lessons can we learn from the experience embodied in these centres?

Anyone trying to answer that question faces a problem. Put simply, there is not much evidence to draw on. There are many articles, papers and reports that describe the centres. There are also a good number of publications offering advice and support for communities that are trying to develop centres of their own. There are, however, only a relatively small number of reports that evaluate the work of the centres, analysing objectively why some are more successful than others. There is almost no analysis of the centres that have failed or that simply cease to exist. And yet, many centres exist for only a relatively short period of time. They come and go – usually when the money runs out. Few last for as long as ten years. There is a need for rigorous, empirical research into the causes of failure.

That being said, based on relevant literature and the case studies featured in this work, a number of important factors can be identified within the scope of the eight areas investigated for this research.

Policy Environment

Community information and technology centres do not exist in a vacuum. They are shaped and constrained by the policies of the communities within which they operate and by the policies of the organisations that support them.

It would be difficult to sustain a centre for long if the aims and objectives were not aligned with the policies of the local community. These policies need not necessarily be articulated formally. They may be embodied in belief systems, aspirations, plans and financial commitments. They are, however, no less real for that.

If the centre's aims and objectives fit in with the policies of the community, the centre can expect to receive support from the community, but that support will not be automatic. In many cases, it has been necessary for the supporters of a centre to persuade local community leaders that the centre would be a valuable asset. This process of persuasion can be a lengthy affair, and in some cases it has been necessary to proceed in stages, gradually expanding the remit of the centre. The centre in Ban Samkha, for example, developed over a number of years (see Case Studies, pp. 34-36).

Clearly, it will be easier to persuade community leaders if the case is being made by members of the community, itself. If, however, the centre is being advocated by an outside agency, there is greater scope for suspicion and caution. Furthermore, an outside agency is less able to undertake a lengthy campaign to persuade a reluctant community.

Beyond the immediate local community, the overall national information policy defines the boundaries of what is possible. Here, the current position is very positive. The information policies of a number of countries emphasise the need for equality of access to information and ICT, along with lifelong learning and the development of information literacy (Moore, 2006). In Sri Lanka, for example, the Information and Communication Technology Agency has a programme to develop 1000 telecentres, called *nanasalas*, in rural areas to provide access to ICT. They have identified four different models, depending on the nature of the community to be served (see: *http://www.icta.lk/Insidepages/Nanasalas/EstablishmentOfNanasala. asp*). Meanwhile, in Viet Nam, the "Internet for Community" project plans to develop the present cultural centres into multipurpose community telecentres to provide information to individuals and communities and to narrow the digital divide (see: *http://www.jtec.or.jp/e-report06.html*). The existence of policies and programmes like these clearly makes it easier to argue the case for a centre.

The national information policies are also reflected in the policies of governmental departments and agencies. In Ban Samkha, Thailand, for example, the Hydro and Agro Informatics Institute of the Ministry of Science and Technology played an important role in expanding and sustaining the multipurpose telecentre (Case Studies, pp. 34-36 and *Ban Samkha: Community that Learns*, 2005).

The policies of multi-lateral agencies are also important drivers of development. The International Telecommunication Union and UNESCO, in particular, have been instrumental in stimulating the development of telecentres. In Luang Prabang, Lao PDR, the International Development Research Centre financed the development of the community telecentre, along with the Science, Technology and Environment Agency (see Case Studies, pp. 37-39).

Corporate social responsibility policies in the private sector also have a bearing. Microsoft, for example, provides financial support for the multipurpose community telecentres established by the Population and Community Development Association in Thailand (Case Studies, pp. 40-42).

The policies of a wide range of organisations are, therefore, important. A favourable policy environment can facilitate developments: It is much easier for a small fish to swim downstream in a fast-flowing river than it is to battle against the current.

Organisational Structure

The organisational structure of the centres is immensely varied. They do, however, share a common characteristic: They are generally very small organisations, and so, typically, they have a very flat structure.

Management

The style of, and systems for, management are determined by the nature of the centre. Many of the centres are community-based organisations that are staffed by one or more community activists who may well work unpaid. In such circumstances the day-to-day management responsibility rests with the leader of the centre who usually exercises that responsibility in a flexible, low-key way. Overall direction is provided by a management or steering committee consisting of representatives of the community. This is the case in Ban Limthong where Na Noi, the centre's originator, assumes direct responsibility of all aspects of day-to-day management, while also consulting a group of community leaders (see Case Studies, pp. 32-33).

This structure works well when the community is firmly involved. In Ban Samkha, for example, the overall direction and strategy for the centre is determined by meetings of community representatives (*Ban Samkha: Community that Learns*, 2005 and Case Studies, pp. 34-36). In marked contrast, the telecentre in Ban Fon, not far from Ban Samkha, is poorly managed. The centre was established by the local community with a significant amount of external assistance. The centre was located in the local school and, initially, the community leader provided a firm sense of management and accountability. When the community leader changed, this management input was lost and, as a consequence, the centre lacks drive and a sense of direction. The centre worker is doing her best but without any formal support (see Case Studies, pp. 29-31).

Other centres operate as part of a bigger organisation, with staff appointed and employed by the organisation and not necessarily part of the community. Here, much depends on the quality of management in the parent organisation. An example of where this works well is the small network of multipurpose community telecentres that has been established by the Population and Community Development Association in Thailand. There are well-established lines of responsibility and accountability, along with a clear sense of direction. The difficulty with this style of management is accommodating the commitment of the local community (Case Studies, pp. 40-42).

In the long-term, it is desirable for the centre to be managed as part of the local community or local government system. Only in this way is it likely to be possible to secure stable long-term financial support. This is an issue that is discussed more fully below.

Programmes and Services

There is a wide diversity of programmes and services, and the range is steadily increasing. In the early days, the range of services that was offered by the community libraries and community information centres was quite limited. Now, however, information and communication technology can be put to many different purposes and, as a consequence, community centres are able to offer many different services.

The important thing is to ensure that the centre responds to the needs of the community. This implies an ability to identify what those needs are and be willing to respond to them. This, however, needs to be balanced by enterprise and a pro-active approach on the part of the centre workers and the management. It is frequently necessary to anticipate needs and develop services or activities to meet them in advance of the need being recognised or articulated within the community. The centres in Ban Limthong, Ban Samkha and Nakhon Ratchasima (Case Studies pp. 32-33, 34-36 and 40-42) illustrate this process of anticipating community needs.

Finance

The community information and technology centres, on the whole, provide very cost-effective services. The cost of providing computer training, for example, in a community centre is generally much lower than in the cost in the private sector or even in a local college. The main reason for this seems to be that the running costs of the centres is much lower than elsewhere. The costs of running the centres are frequently subsidised by individuals who work unpaid. In Ban Samkha, for example the centre is managed by a primary school teacher as part of her duties (Case Studies, pp. 34-36), while in Ban Limthong, the service is provided by Na Noi who works unpaid (Case Studies, pp. 32-33).

Despite this, past experiences from different kinds of community centres confirm that it is impossible to cover the full economic costs of a centre from the communities alone. By definition, the communities lack a high level of resources: they are poor and disadvantaged. There is, therefore, a continuing need for some form of outside subsidy.

Here it is necessary to draw a distinction between the two main potential sources of external funds. On the one hand, there are the official local, regional or national bodies that provide long-term, stable funding for basic services such as education, healthcare, policing and transport. On the other hand, there is a very wide range of local, regional, national and international organisations that can be persuaded to support the development of community information and technology centres. The problem with these sources is that very few of them are prepared to provide long-term support.

It is also possible to draw a distinction between two types of expenditure: recurrent and capital. It is clear from past experience that it is easier to obtain support for capital expenditure than it is for recurrent. Organisations are often willing to provide start-up funds or a grant to purchase equipment. They are much less willing to give a commitment to cover staff salaries or the running costs of a centre.

It should be possible to develop a funding strategy in which recurrent costs are covered by official bodies, while some capital costs are met from one-off grants and awards. For such a strategy to succeed, however, would require local, regional and national government bodies to accept a responsibility to fund the services. They would have to recognise that providing communities with an acceptable level of access to information and ICT is as important as providing them with access to

schools, clinics or the road network and the transport system. That recognition seems to be a long way off.

Multi-lateral organisations have done a very great deal to support the development of community information and technology centres. Yet they have not really tackled the most important barrier, which is the failure of governments, local or national, to accept the responsibility to provide long-term funding for the centres. Until this barrier is overcome, development will always be fragmented, and the centres that are established will have a relatively short shelf-life.

Outputs, Outcomes and Impact

It is not easy to measure the performance of the centres. In part, this is because many of the outputs, outcomes and impacts are intangible. How does one measure the impact of information literacy on a young person? It may change the course of his or her whole life. Which raises the second difficulty: the outcomes and impacts involve long time-scales and few studies have been able to measure them for more than a year or two. Finally, any outcome or impact will be affected by a very wide range of societal variables. For example, a community information centre may be able to equip a subsistence farmer with a much better understanding of modern farming practices, but two or three years of severe drought may negate the value of that understanding.

Of one thing there is little doubt: The centres and the use of technology have opened up a world of possibilities for the people most closely involved. In Ban Limthong and Ban Samkha, in particular (Case Studies, pp. 32-33, 34-36), the existence of the technology, and the information that it processes, has changed the mindset of people in the communities, enabling them to solve previously intractable problems and to exercise greater control over their lives.

It is possible to measure some outputs. Training in the use of computers, for example, can be measured by counting the number of students and assessing the scope and level of the training courses. The activity can even be costed. The centre in Luang Prabang is, for example, able to demonstrate the cost-effectiveness of the training that it has provided (Case Studies, pp. 37-39). But the long-term outcome of the training and its impact on the individual and the community is impossible to determine. Anecdotal evidence suggests that the impact can be great, especially where services meet recognised needs. But it is difficult to go very far beyond that bald statement.

The conceptual and methodological problems associated with measuring outcomes and impact need to be more widely recognised, particularly by funding bodies, which often seek some evidence of the value of their support and, in so doing, place undue burdens on the recipients of their funding.
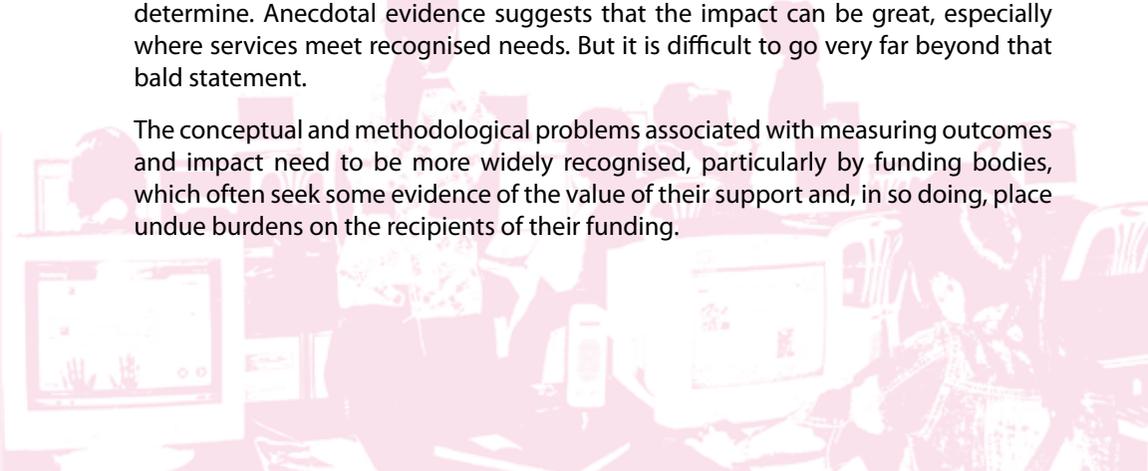
Success Factors

The experiences of past and present centres suggest that there are four main success factors.

First, successful centres need strong leadership. The best are led by charismatic individuals who have made a significant commitment to do something for their community. Good examples are Na Noi in Ban Limthong (Case Studies, pp. 32-33) and Mrs Srinuan Wongtrakul in Ban Samkha (Case Studies, pp. 34-36). These individuals come in many shapes and sizes. They share a desire to make the world a better place, along with an ability to persuade others to follow them. They are rare beings, and it would be unrealistic to assume that they can be found in every disadvantaged community.

Secondly, successful centres need strong community support. This is easiest to achieve when the motivation for the centre arises from within the community itself. In such circumstances, it becomes easy for the community to develop a strong sense of ownership. Where the idea for the centre comes from outside the community, it is much more difficult to generate this sense of ownership and commitment. The centre in Ban Fon provides a case in point – it is suffering through lack of support from the local community (Case Studies, pp. 29-31).

The third success factor is the ability to be flexible in responding to community needs. The needs will change over time as the community changes, and a centre needs to be able to respond accordingly by establishing new activities and services, by modifying others and, most difficult of all, by stopping activities for which there is no longer a demand. Again, the centres in Ban Limthong and Ban Samkha provide good examples of this kind of flexibility Flexibility of this kind, however, requires a high level of management skill.

Finally, the most important success factor is the existence of long-term and adequate funding. In the short term, a great deal can be achieved by enthusiasm, voluntary effort and a willingness to make do with outdated equipment. But, in the long term, centres need stable and adequate funding. As we can see in Luang Prabang, without proper funding, activities will always be constrained and the future will remain uncertain (Case Studies, pp. 37-39).

Sustainability

This brings us to the critical issue of sustainability. Much depends on the long-term commitment of key staff, the ability to remain relevant to community needs, and the long-term stability of finance.

Many of the centres have been set up and managed by charismatic individuals who have taken the initiative and created something that brings real benefits to the community. The centres established by Mrs Srinuan and her colleagues in Ban Samkha and by Na Noi and her family in Ban Limthong provide very good examples. However, in such circumstances, the individual bears a heavy responsibility, and

there is a real risk that the centre will run down if the individual is no longer able to give it their full support.

Centres that are established by organisations, rather than individuals, are more likely to be sustainable. In Thailand, the Population and Community Development Association has established community information and technology centres in conjunction with their rural economic and employment development initiatives. These are much more likely to survive changes in personnel (Case Studies, pp. 40-42).

Remaining relevant to the needs of the community is also essential for sustainability. This emphasises the need for the members, or representatives, of the community to be closely involved in setting the strategy for the centre. Successful centres, such as the one in Ban Samkha, have taken care to ensure that the community was fully consulted and closely involved at every stage in the development of the centre and its services.

Of all the factors that determine sustainability, however, financial stability is the most important. The biggest challenge facing any organisation wanting to support the development of community information and technology centres is how to ensure that the centres they propose will receive adequate funding in the long term?

Surprisingly, it is a question that is seldom asked.

Conclusions

Community information and technology centres have been around for a long time. They continue to be established in response to needs within the communities that they serve. They share an underlying purpose, which is to achieve equality of access to information; or, at least, to reduce levels of inequality. The nature and scope of the centres has changed over time as they have responded to changing needs and to changes in the technology of information.

It is not possible to specify a model form of community information and technology centre. The essential characteristic of successful centres is that they reflect the needs of the communities that they serve. As each community is unique, it follows that it is not sensible to adopt a "one size fits all" approach. Indeed, where this has been attempted, the approach has been less than successful (Harris and Rajora, 2006).

Some centres, such as the PDA centres in Thailand and the centre in Luang Prabang, emphasise training in the use of computers. In others, notably Ban Samkha, training is provided but there is an equal, if not greater, emphasis, on applying the technology to solve problems faced by the community.

Just like other community-based information, multimedia and learning centres, the information and technology centres that work most effectively are those where there is a union of three things: charismatic leadership by one or more individuals, strong support from the community and adequate finance, which is usually provided from outside the community.

The centres are, however, fragile. Few last for more than ten years. The charismatic leader often becomes worn out, the priorities of the community change or, most common, the source of external finance dries up.

Nonetheless, when they are operating effectively, the centres make a valued contribution to the economic, social and cultural life of the communities that they serve. The value of that contribution will undoubtedly increase as the transition to information-based societies becomes more entrenched.

The challenge for the future is to persuade local, regional and national governmental bodies to accept a responsibility to fund the services. They have to recognise that providing communities with an acceptable level of access to information and ICT is as important as providing them with access to schools, clinics, the road network and the transport system. Importantly too, they have to back that recognition with a commitment to fund the services.

Recommendations and Actions

International organizations such as UNESCO and ITU, as well as development agencies, have done much to promote the concept of community information and technology centres. They have provided initial funding for many centres and have supported numerous experimental services that were designed to test different models of service in different types of communities. They have reinforced this by publishing sets of guidance that will help others who wish to develop their own centres (see UNESCO, 2006b).

Despite this good work, the main challenge remains: to convince public bodies to take responsibility for the long-term funding of the centres. The main recommendation of this study, therefore, is that they should begin the process of convincing national and local governments that funding effective community-based information and technology centres is as important as providing other essential services and infrastructure.

As a first step in this process, a study should be launched to establish the true capital and running costs for a range of different centres. A recent UNESCO evaluation of community multimedia centres (Creech et al., 2007) did not address the issue of costs. Likewise, in the present study, it has proven to be very difficult to gather reliable information about costs.

An assessment of the short-, medium- and long-term impacts of the centres on the communities that they serve should be undertaken. As this study recognizes, measuring the impact of community-based information and technology centres in quantitative terms is very difficult. This should not, however, be a cause for inaction. Much can be learned from qualitative studies and from objective assessments by impartial observers.

Once the evidence has been collected, the organizations and agencies concerned (in association with other similar organisations and working through established channels) should lobby and persuade national governments that they have a responsibility to provide long-term funding for centres and agencies that are best placed to provide access to information for all.

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Useful organisations

Book Aid International
http://www.bookaid.org/cms.cgi/site/index.htm

Digital Opportunity Channel
http://www.digitalopportunity.org/article/frontpage/296/1061

Healthlink Worldwide (formerly the Appropriate Health Resources and Technologies Action Group) *http://www.healthlink.org.uk/index.html*

International Institute for Communication and Development *http://www.iicd.org/*

International Telecommunications Union *http://www.itu.int/ITU-D/index.asp*

Practical Action (formerly the Intermediate Technology Development Group) *http://www.itdg.org/*

UNDP *http://www.undp.org/*

UNESCO *http://portal.unesco.org/ci/en/ev.php-URL_ID=1657&URL_DO=DO_TOPIC&URL_SECTION=201.html*

World Bank *http://www.worldbank.org/*

Ban Fon, Thailand

The centre in Ban Fon is a community IT centre, located in a school. It was established in 2002 by NECTEC (National Electronics and Computer Technology Center) as one of four pilot centres. Initially it had support from the village committee but this group seems to have lost interest and the centre has lost impetus and direction.

Ban Fon is a large rural-urban community with a population of 6,000. The centre was established by NECTEC with the cooperation of the school and the village committee. The school was part of the SchoolNet programme, another NECTEC initiative. NECTEC does not now seem to play any part in the centre.

Originally intended as a dual use, school and community centre, it has now become little more than a computer centre for the school with some out-of-hours use by, predominantly, school children.

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The centre was originally equipped with second-hand computers from NECTEC. These have now been replaced by computers supplied by the Social Welfare Foundation and the Coca Cola Foundation. Maintaining and repairing the equipment is, however, a major problem.

The range of work is very limited. The secondary school's computer classes are held in the centre and some of the pupils also use the centre at weekends and after school. Some former pupils also use it in this way.

The centre used to maintain a community website but this has fallen into disuse.

There is little apparent use by the community nor are there any activities or programmes designed with the community's needs in mind. The centre itself is located within the school grounds and its existence is not apparent from outside. Any potential users from the community would need to enter the school grounds and this may well be a deterrent.

The centre worker would like to see much more community involvement, but feels that the responsibility for initiating this rests with the head teacher who does not seem to be interested. In view of this, she feels that the school should play a more active role in the management of the centre.

The centre was originally established as a joint venture between the school and the village committee. It has now become absorbed into the school. Initially the centre and its sole worker were jointly managed by the head teacher and the village head. The village leader has moved on and his replacement is not interested, so responsibility has devolved to the head teacher. He does not seem to play an active role and the centre worker liaises with the teacher who has responsibility for IT.

The centre is staffed by one paid worker. She is relatively young and inexperienced. It is hard to believe that she would carry any significant weight in negotiations with the head teacher and the village leader, both of whom are probably older men.

She is in an invidious position. She has no-one to report to. As a consequence, she receives no direction and is concerned that there is no-one to whom she can account for the activity of the centre (previously the village leader used to receive a monthly report and accounts from her). She has no contract of employment. She works from 0800 to 1700 six days a week, taking Tuesdays off. She does not have an annual leave allowance. Her pay is poor (Baht 5,000 or US$140 per month) and has not been increased for some time but she does not know who she should approach to rectify this.

The main output of the centre is the provision of opportunities for school children to develop their ICT skills. The impact on the school children is probably quite significant but the impact on the community is negligible.

The monthly cost is between Baht10,000 and 20,000 ($285-570). This mainly consists of the worker's salary (Baht 5,000 or US$140 per month), the internet connection (Baht 800, or $23), electricity and the cost of repairing the equipment. The cost of electricity is covered by the school.

Against this, the centre generates about Baht 20,000 per month from user charges. It charges Baht 12 per hour for internet and computer use and makes additional charges for printing.

The centre is, therefore, just about covering its costs. The main beneficiary, however, appears to be the school which is receiving the benefit from an IT centre while only having to meet the cost of electricity.

The centre is sustainable but at the expense of the centre worker's employment conditions.

The centre in Ban Fon provides an example of what can go wrong when a development of this kind is not fully integrated into the community. The initial enthusiasm has gone and the centre worker has been left holding the baby.

Much more thought should have been given to structural and organisational issues when the centre was established.
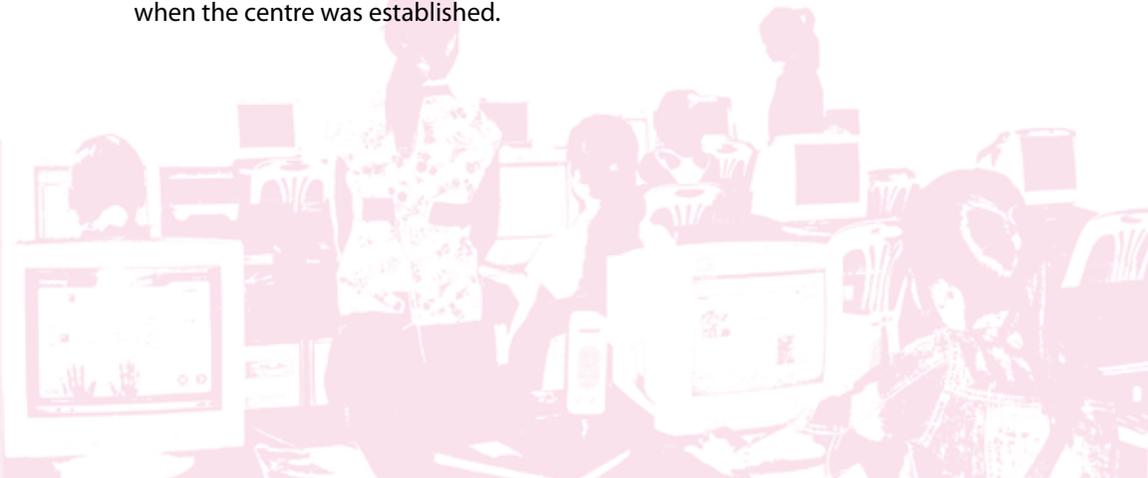
Ban Limthong, Thailand

Ban Limthong is a small rural community in Buriram Province of Thailand. The population of the village is 450 and the main economic activity is farming. In recent years, personal debt has become a common problem.

The Learning Centre, a multipurpose community telecentre was established, and is still run by one of the villagers, Mrs Sanit Thipnarong, more commonly known as Na Noi.

In recent years, personal debt became a common problem in the village. Villagers borrowed at the beginning of the season to by seeds and fertilizer but did not make enough money at the end of the season to pay back the loans.

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To tackle her own family's problem with debt, Na Noi sought help from the Community Learning Programme and was referred by them to the Suksapattana Foundation's Lighthouse Project which was experimenting with a new approach to learning based upon constructionist theory. She learned to keep records of her crops and her income and expenditure and, in this way, to take control over her expenditure, even though her income depended on market conditions.

In due course the records were entered onto computers and Na Noi began to learn how to use the technology. The Foundation provided financial support for the first introduction of a small number of computers into the village. From that beginning has grown the present multipurpose community telecentre.

The main focus of the centre is on training in the use of information and communication technology and currently about 330 young people, monks, villagers and local government officials are trained each year in a series of different courses. In addition about 200 school children receive basic training at the centre.

The driving force behind the Learning Centre is Na Noi. She was the person who responded to the initial suggestions from the Suksapattana Foundation and who has led the development of the centre, even to the point of housing it in her own home. Throughout, however, she has consulted and worked with the local community.

The main output from her work is an increased level of computer skill and information literacy within the village and the neighbouring communities. The centre has also become a catalyst for a range of activities and technology applications. The centre has, for example, run courses in subjects like mathematics, English language, arts and crafts and agriculture to support the local community school.

In 2001 the centre organised a programme on water management, as a result of which water resources are now used much more effectively.

The initial costs of the Learning Centre were covered by the Suksapattana Foundation and the Foundation continues to provide some financial support. In addition, the Thaikom Foundation has endowed the centre with internet access. A wide range of other public bodies and private companies have provided support and sponsorship in cash or in kind.

The centre charges fees for the training course and makes a small surplus which is used in the village for welfare payments and for small scholarships for students.

The centre has achieved the very difficult balance between income and expenditure. Admittedly it is still dependent upon donations from organisations that are unlikely to provide long-term finance, but a growing proportion of the costs are covered by income generated from course fees.

The Learning Centre in Ban Limthong demonstrates what can be achieved by initial support and encouragement from a donor, coupled with energy and commitment from an individual who has some standing within the community.

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Ban Samkha, Thailand

The centre that has evolved in Ban Samkha uses information and communications technology in a variety of ways and for different purposes to support the social, economic and cultural life of the community.
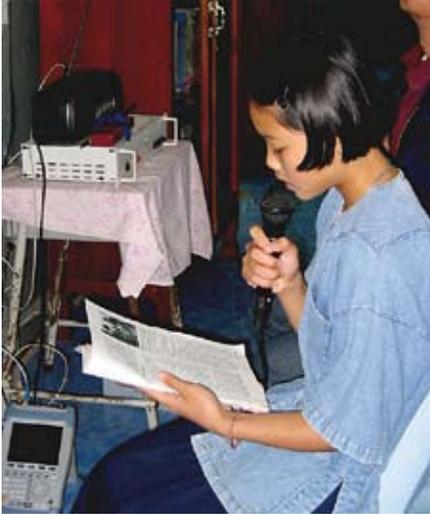
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Ban Samkha is a small village, with a population of 650. It is located in Lampang Province in the north of Thailand. The main economic activity is farming. Ban Samkha is clearly an active community with a strong sense of purpose. In the mid 1990s the community identified and analysed the problems that they faced and worked out how to solve them. In 1996, for example, they began to tackle the problem of drug abuse and by 2003 they were able to say that the community was free of drug traffickers and drug users. In 1997 they started to tackle the problem of indebtedness. They established a credit union and a community shop. In 2000 they surveyed families and found a high level of debt and, in recognition of this, in 2002, the Thailand Research Council awarded the community a grant to undertake a debt relief programme.

The information and technology centre itself is located in the Ban Samkha primary school and, initially at least, the main beneficiaries were the school children. From this base, the centre has extended its activities into the wider community. It began with the donation of a single personal computer in 1998. By 2001 the number of computers had grown and the community agreed to establish an internet connection.

The development of the centre has been supported by the Education Department and the Department of Non-Formal Education, the Suksapattana Foundation, the Thaikom Foundation and the Hydro and Agro Informatics Institute Board. A large number of organisations have also provided financial and other support to the community and the centre.

The basic purpose of the centre is to provide opportunities for the school children to learn how to use information and communications technology. The community has also used the centre to support the various community development activities that take place.

The centre is used as part of the basic school curriculum. In addition the school organises a range of specialist camps for children in Ban Samkha and neighbouring villages.

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The centre has also made a significant contribution to the following:

▶ ICT training for adults
▶ Data collection for a water resource management project
▶ Household budgeting
▶ Financial management of the shop
▶ Preservation of the local Lanna dialect
▶ Community broadcasting
▶ Collecting and storing local information

The centre is an integral part of the school and it is managed by school staff but it also has very close links with the community and members of the community are clearly seen as important stakeholders.

Day-to-day management is undertaken by Mrs Srinuan Wongtrakul, a teacher at the school. She holds *ad hoc* community meetings to discuss specific issues and problems. The consultation is real, for example, the community discussed the pros and cons of internet access and whether or not children should be allowed to play computer games.

The main output is a high level of ICT – and information-literacy among the school children and among the youths and adults in the community. Other outputs relate to the specific programmes, such as the Lanna dialect project which is transcribing local cultural material into Thai and storing the results on the computer.

The main impact was claimed to be a change in the people locally. They were no longer sceptical about, or frightened of technology. Discussions about the use of the centre have revealed deep-seated problems within the community and they have led to the development of solutions using the technology.

It has also changed the relationship between adults and the children – children are now seen as bringing about change and as having skills that adults can also learn

It is hard to establish what the actual costs of the centre are as many of the major cost items are hidden or covered by donors. Visible costs are for electricity (US $28 per month), which is covered by the power company, and the internet connection (US$86 per month), which is covered by the Education Department. In addition the staff costs are covered by the teacher's normal salary. The Education Department is also about to pay for an up-grade of the computers. The children undertake most of the routine maintenance of the computers. The capital cost of the equipment has been covered by a variety of donors.

The centre charges non-school users and this generates about $850 a year. In addition they receive fees for some of the courses that they provide: the Non-Formal Education Department, for example, pays for some basic computer skills courses and other government departments pay for specific courses.

The centre appears to be sustainable but is not self-sustaining. That is to say: it has grown quite quickly and it is meeting real needs within the school and in the wider community. Because of this it has attracted considerable attention and financial support from a wide range of organisations, some such like the Education Department, providing long-term support while others provide one-off donations.

The development has been driven by a charismatic individual – Mrs Srinuan Wongtrakul – and she seems capable of sustaining the pace of development, retaining the support and active involvement of the community and building long-term relationships with sponsors

The centre does not, however, generate sufficient income to cover its costs from user fees or other charges. It will always, therefore, be dependent upon support from outside agencies.

Ban Samkha provides a very positive example of the impact that an information and technology centre can make on a small community. Its success seems to depend on two critical factors. First Ban Samkha itself appears to be a dynamic community that is innovative and imaginative. Secondly, in Mrs Srinuan Wongtrakul, the centre has a leader who has strong roots in the community, an open mind, an enterprising approach to life and an engaging personality.

Without both of those critical factors, it is difficult to see that the centre would have developed as extensively as it has.

A full description of the centre and its evolution can be found in: *Ban Samkha: community that learns*, (2005) Hydro and Agro Informatics Institute, Thailand.

E-Way Centre, Luang Prabang, Lao PDR

The city of Luang Prabang is located at the confluence of the Mekong and Nam Khane rivers in the Province of Luang Prabang in the northern part of Lao PDR. The mountainous province has a population of 337,000. Ninety percent of the workforce are farmers. There is no university or equivalent in the province, and government institutions have little information technology infrastructure or internet connectivity.

The centre was established by the Participatory Development Training Centre (PADETC), which is part of Luang Prabang Office of the Science Technology and Environment Agency. Initial funding was provided by the Canadian International Development Research Centre (IDRC).

The centre is located in a two-storey building in a prominent position in the centre of Luang Prabang. It was originally established in 2002 as a two-year project. An increase in IDRC funding was granted for a further year but, since the end of 2005, the centre has been struggling with minimal levels of income.

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The demand for ICT and English language training in Luang Prabang is extremely high, and current training centres are almost overwhelmed with enrolments and charge high rates which are outside the means of the majority of people. In this context the project aims to increase ICT accessibility and improve basic ICT skills for development in both rural and urban areas of Lao PDR.

The centre supports training to increase the number of people in the community with basic computer skills and English language competence. Initially, the centre concentrated on preparing people with basic skills as a first step towards information and communication literacy. As the project developed, however, the level of computer training increased and students were using fairly sophisticated applications packages.

Local people were also able to use the centre to access the internet.

In the first phase of the project, PADETC put a full time assistant manager on site. It also hired 13 young people to work as full time trainers. The centre is effectively managed by a member of staff at the Science Technology and Environment Office.

The training effort has been successful. At its peak, the centre trained nearly 600 people a year, although this dropped back to only 140 students in 2005.

The Science Technology and Environment Office estimates that the full annual running costs amount to US$ 15-20,000. At full capacity, this represents a cost per student of between $30 and $35. This seems to represent very good value for money. Staff felt, however, that the most they could charge students was $13, leaving a considerable shortfall to be met from elsewhere.

A further application has been submitted to IDRC but it is unlikely that any such organisation could provide long-term financial support. Various schemes for generating income, such as an internet café, have also been considered.

The financial uncertainty means that the centre is not currently sustainable.

The centre was established to meet a real need within the community. It conformed to overall government policy and had the potential to become a valuable public asset. The management and organisational infrastructure is sound, with the Science Technology and Environment Office prepared and willing to provide support. The over-riding problem is financial. Without sustainable funding the centre will be unable to survive.

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PDA Centre in Nakhon Ratchasima, Thailand

The Population and Community Development Association of Thailand (PDA) operates a wide variety of programs designed to serve and assist the rural poor of Thailand. These programs cover such diverse activities as income generation programmes at village level, industry relocation into rural areas, mobile health clinics, environmental education programs, and a democracy project. At the rural industry centre in Nakhon Ratchasima Province, the gateway to the northeastern region of Thailand, they have also established a multipurpose telecentre.

One of the goals of the PDA is to stimulate economic development and job creation in rural Thailand. To achieve this, they have established a number of industrial campuses in rural areas where companies can rent premises and create employment of local people.

The centre in Nakhon Ratchasima provides employment for more than 2,000 people who are drawn from over 60 villages in the surrounding area. As part of the centre, the PDA set up a telecentre to provide a wide range of course to train local people in the use of information and communication technology and to stimulate the use of technology by local businesses in the villages.

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The main function is training. The training courses offered by the centre are attended by students, workers and government employees. Over 3,000 people have been trained so far and 700-800 pass through the courses each year.

In addition, the centre provides access to the internet for workers at the centre and for young people. Staff at the centre support and encourage the use of information and technology within neighbouring villages and encourage the use of computers by local businesses.

The centre and the staff, who are employed to run it, are managed as part of the PDA organisation. The centre now employs one full-time manager and five part-time staff.

While the PDA places a great deal of emphasis on community involvement, the ICT training centre seems to have relatively little policy or strategic input from the local community.

The main activity is training in the use of information and communication technology. The centre began in 2002-03 and in the following four years over 3,000 people have been trained – over four per cent of the population served by the industrial centre.

The PDA as a whole pays for staff, premises and for the maintenance of the equipment. It also attracts sponsorship and financial support from a number of public bodies and private companies. The course fees that are charged by the centre provide a substantial income stream.

The centre is closer than most to being sustainable. It has a reliable income stream and long-term support from a parent organisation: The PDA. It has sufficient momentum to attract additional financial assistance from a range of donors. Further, the fact that it is not dependent on a single individual, or even a small group of community activists, means that it is relatively stable.

The telecentre that operates in the PDA centre at Nakhon Ratchasima is a professional operation that seems to be making a significant impact on the local community by raising the level of information literacy and by supporting the use of information and communication technology in a variety of different environments.

It is stable and close to being sustainable. Further, it provides a solid foundation upon which it will be possible to build a range of developments.