

Breaking ground: library systems implementation in Vietnam

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Abstract:

With few exceptions most Vietnamese libraries are underdeveloped and struggling to provide adequate resources, although there are some notable exceptions such as the National Library of Vietnam, NACESTID (National Centre for Science and Technology Information and Documentation) and some academic libraries. In this environment, RMIT International University Vietnam's work in developing a number of Learning Resource Centres (LRCs) on behalf of local universities is making a major contribution to the educational infrastructure of the country. The purpose of this paper is to look at the current state of automation in Vietnam and, largely drawing on the experience of these projects, to highlight a number of issues that have arisen. In particular, it will consider the issue of sustainability and some of the factors that contribute to it. To do this, it will first provide some background to the projects being undertaken, followed by an overview of the market for integrated library management systems.

Introduction

Vietnam, one of the poorest countries in South-East Asia, is currently undergoing a period of rapid economic growth and development as a result of the economic and social reforms that commenced in 1985. While libraries are one of the targets of these reforms, with few exceptions most Vietnamese libraries are underdeveloped and struggling to provide adequate resources (Nguyen & Hoang 1998). Indeed, the sector as a whole suffers from a distinct lack of resources and funding, typical of the situation in the poorer third world countries.

In 1995, there were approximately 20,000 libraries in Vietnam, divided into a number of systems including the public, education, technology and science, and military (Lan 1999). These typically run on a Soviet-style closed stack operation using the BBK (Bibliotech Bibliography Classification) system, and while libraries are considered important for the development of the nation, particularly in regards to literacy skills, there is a considerable lack of depth in most existing collections. There has been some experimentation with automation, for example using the CDS/ISIS system freely available to developing countries from UNESCO, but many libraries still rely on card catalogues and the like. As a consequence, although there are some 23,000 librarians in the country, few have any but the most basic experience of modern library services and there is little professional infrastructure and support to help them obtain it (Lan & Gorman 1999).

There are some notable exceptions to this, including the National Library of Vietnam within the public library system (LAP 2003) and NACESTID (National Centre for Science and Technology Information and Documentation) within the technology and science system (LAN 1999). These are reasonably advanced and lead by example, but neither has the infrastructure nor the resources required for the development of rest of the sector. There are also a number of academic libraries, such as those of Can Tho University (Diep & Huynh 1998) and Vietnam National University Hanoi (Nguyen & Ton 1998) that have been actively developing new services for several years and have now built up a reasonable body of experience.

In this environment, RMIT International University Vietnam's work in developing a number of Learning Resource Centres (LRCs) on behalf of local universities is making a major contribution to the educational infrastructure of the country. The purpose of this paper is to look at the current state of automation in Vietnam and, largely drawing on the experience of these projects, to highlight a number of issues that have arisen. In particular, it will consider the issue of sustainability and some of the factors that contribute to it. To do this, it will first provide some background to the projects being undertaken, followed by an overview of the market for integrated library management systems (ILMS).

RMIT Vietnam Learning Resource Centre Projects

At present, RMIT Vietnam is actively engaged in four Learning Resource Centre (LRC) projects, at the universities of Hue, Da Nang, Can Tho and Thai Nguyen. These are all regional multi-campus universities with large (20,000+) enrolments. Of these, the project at Hue University is furthest advanced, work having commenced in January 2001. The Hue Learning Resource

Centre will consist of a four storey building of approximately 7000 square metres, and include a range of facilities such as networked PC workstations, group study and audiovisual facilities, a range of print and electronic resources, and a training, seminar and conference facility. The overall project cost is USD \$5.4 million, and is expected to be completed and handed over to the University in December 2003. The Learning Resource Centre at Da Nang is being developed on the College of Engineering campus approximately 9 kilometres west of the city centre and will network the existing Da Nang University Information Resource Centre (built through an earlier, non-RMIT project) to create an integrated information service for the whole University. Completion is expected in December 2004. Work has only just commenced on the project at Can Tho, which will build on the existing library service to provide a multi-disciplinary service for the whole staff and student community. As mentioned previously, Can Tho is rather exceptional in its level of development: it has a comparatively large centralised library in addition to several branches, has had some form of automation for almost ten years, and has operated as a western-style lending library for almost two years. The project at Thai Nguyen is the least advanced, having just had its feasibility study completed.

The objective of each LRC project is the design and construction of a modern library facility based on western models and standards of information service, together with the provision of state of the art technology, high quality teaching and learning facilities and a range of up-to-date print and electronic information resources. In each project, there is a strong focus on building organisational capacity in the client university to ensure that an effective service can be provided and maintained once the LRC is operational. Part of this program entails the development of information literacy skills competencies in students and academic staff, to encourage optimum independent use of information resources and to stimulate change in the teaching and learning processes of the University.

On completion, each LRC will contain:

- Vietnamese and English language print and electronic information resources;
- a range of individual and group study environments;
- reference services and structured information literacy programs;
- circulation, audiovisual and reserve services; and,
- conference, seminar and PC-based training facilities.

By way of example, the Hue University LRC will have:

- 7000 m2, four levels
- 200 networked PC workstations
- Two training laboratories with 30 PCs each
- 350 individual study places
- 110 group discussion places
- 250 places in seminar rooms
- 100,000 Monograph volumes
- 15,000 Reference volumes
- Full-text electronic resources

The Vietnamese ILMS market

Just as the development of library services in Vietnam is underdeveloped, the overall market for ILMS in Vietnam must be characterised as immature. This is from all points of view: the vendors and their offerings; their market penetration; and the knowledge and experience of librarians. The vendors are typically large (by Vietnamese standards) local companies, being software houses or systems integrators who have identified a need and are targeting it. No significant inroads have been made by international vendors, largely due to factors related to cost and support issues. At this stage they offer standard ILMS systems with some recognition of and capability of handling electronic resources, but nothing to facilitate linking to documents within an aggregated electronic resource, the need for which has not yet been recognised.

Vendors

There are three main Vietnamese library system vendors.

- CMC Co., Ltd (Vietnam)

CMC is the market leader with its iLib system. A large systems integrator that has recently started developing software in a variety of areas, it has approximately 400 staff, based principally in Hanoi and Ho Chi Minh City. Established in 1995, CMC has been developing its library system since 1998 as part of a broader strategy to target the areas of knowledge management and document management. The initial release of iLib was in 1999 and its clients now include the National Library of Vietnam, Hanoi University of Technology, Can Tho University, Foreign Trade University, Vinh University and a number of provincial libraries, the latter operating on a distinct version of their software. The system currently includes all standard ILMS modules (cataloguing, OPAC, circulation, acquisitions and serials control) and there is an ILL module under development. In addition to being Unicode-compliant, CMC has shown a strong commitment to conforming to international standards, supporting UNIMARC, MARC 21, AACR2, ISBD, Z39.50 and ISO 10161. CMC recognises the growing importance of electronic resources and the digital library environment and has made some tentative steps in this direction by providing a rudimentary website as part of the system, with provision for a forum, news and basic link management. It also supports access to full text materials and databases with material in a variety of multimedia formats. All interfaces are in Vietnamese, and the Web OPAC also has an English language version.

- LAC VIET Computing Corp (Vietnam)

Lac Viet Computing Corporation is a large software house that engages in activities such as designing and building computer networks, provision of support services and software development. It has received ISO 9001 certification from BVQI-London and targets both internal and foreign clients, such as Citibank and the Harvard Institute of Development in Ho Chi Minh City. It has approximately 200 staff based in Hanoi, Ho Chi Minh City and Da Nang. In addition to its library system – VeBrary - it has a number of existing products including MTD (online bi-lingual dictionaries) and enterprise management software. Prior to its involvement in the earlier Da Nang Information Resource Centre

project in 2000, it does not appear to have had any experience in developing library systems specifically, but it has subsequently acquired a reasonable level of expertise. The Lac Viet system could be said to be on a par with that of CMC, although it has been developed specifically as a library system, not as part of a broader information management strategy. The Lac Viet system comprises the following modules: cataloguing (including serials control), Web OPAC, Circulation including inventory control, Acquisitions, ILL, VeBook (electronic book support) and System Administration. As well as being Unicode-compliant, it supports standards such as UNIMARC, MARC 21, AACR2, ISBD, Z39.50 and ISO 10161. The system includes both Vietnamese and English language versions of all interfaces and supports a wide range of foreign-language character sets. The Lac Viet system is currently used by Hue University LRC, Da Nang University Information Resource Centre, and two separate faculties of Da Nang University.

- TINH VAN Informatic Technology Co (Vietnam)

Tinh Van is the smallest of the three main vendors in Vietnam and is much more focused on its library system product – Libol. With approximately 40 staff, all of whom are based in Hanoi, it has more limited capabilities than either CMC or Lac Viet, in that it cannot provide network / LAN support. At the time of writing it had 13 sites throughout Vietnam including Hanoi National University, Hanoi Law University, and Hanoi National Economic University. The current release, Libol 5.0, includes Cataloguing, OPAC, Circulation, Reserve, ILL, Acquisitions, Serials control, administration, and some support for electronic resources. As well as being Unicode-compliant, it supports standards such as UNIMARC, MARC 21, AACR2, ISBD, Z39.50 and ISO 10161.

The CMC, Lac Viet and Tin Vanh systems are fairly similar in most regards, with CMC and Lac Viet having the advantages that: they are larger companies with offices around the country; they can provide LAN and network support as part of an overall package; and they have been used by live libraries for a number of years, so that many of the workflow issues have been identified and dealt with. Having said that, none of the systems have been thoroughly tested in practice – because there are no libraries working at a level that would test them - and they may have gaps in terms of being adaptable to workflow requirements. To a greater or lesser degree all of these vendors are good at the technical aspects of software design and implementation, but are weak on developing systems to facilitate process (as are the librarians in this environment because the style of operation is new to them and they don't have the necessary experience to inform the design of systems). And while technically good at meeting specifications, there are some general areas of weakness, for example formats other than monographs, because once again they don't have the experience or the immediate need (due to lack of resources).

In practice this means that while the systems offer all standard modules, the range of functionality available within those modules is fairly basic and targeted to the needs and specific processes of their main clients. These systems are all undergoing rapid development with those companies that are working closest with librarians making the most progress, both in terms of the functionality and flexibility through parameterisation. While still a long way short of the sophistication available in international systems, it is clear that the 25 years of development on western systems will be greatly reduced as these systems improve.

Another common feature is the lack of experience with organised (automated) access to collections and resources, and the data structures and sophisticated retrieval systems required to support it. This leads to difficulty in both applying relevant cataloguing standards and developing OPACs. All systems opt for an Internet search engine style of interface, but without fully understanding the importance of the various search algorithms behind them and the way these might be replicated in terms of library systems and the users' ability to construct searches within those systems. In other words, at first glance they often look the part, but they do not have the necessary sophistication, because either the data structure is not in place or the mix of search functionality is not sufficient. While Payne (2000) noted the benefits of extra-library systems and the ways in which they may in some ways supersede current OPACs, it is also clear that current OPACs work off a structure (often present in Web-based applications but hidden from the user) that actually facilitates retrieval – this environment reinforces the importance of that and provides a warning not to throw the baby out with the bathwater.

Despite the lack of resources and the limited access currently available, the growing importance of electronic resources is obvious to all concerned – librarians and systems developers – and some effort is being put into this area. At the most basic level, all systems allow electronic resources to be catalogued and to include hyperlinks, making them accessible from the OPACs. Lac Viet also provides VeBook, which allows the creation of and access to full text material in XML format, and CMC is developing a much broader vision for a fully digitised and integrated digital library and document management system.

Apart from the three main vendors, there are other parties that should be mentioned. These include book suppliers such as Thanh Long, which is making tentative steps to support automated systems, e.g. through the supply of booklists in machine readable form and, less successfully, catalogue records in MARC format, and international players such as iGroup (Asia Pacific) Ltd. iGroup is an international concern with subsidiary companies in a number of countries in the region. It primarily supplies library materials (including electronic resources) but also provides library management software. In Vietnam, iGroup are trying to break into the market as agents for the VTLS Virtua system, which has successfully established a customer base in Thailand. Although a proven system with basic local support, and one of the more affordable international systems available, it has so far proven too expensive to gain a foothold in the Vietnamese market.

This rather limited description of the state of Vietnamese libraries and the ILMS market should be sufficient to demonstrate that there is a wide range of issues relating to the automation of library services in this environment. The following discussion will explore these in more depth, drawing on the experience gained through the LRC projects.

Availability of trained staff and professional support

A major problem that the LRC projects have met is that there is a severe shortage of professional staff with which to operate them, and even where those professional staff exist, they often do not have any experience in the type of western library services now being developed. This is most noticeable in regional areas, that is, anywhere outside of Hanoi and Ho Chi Minh City, but even in those cities can be a problem. It causes problems in leadership and problems in the day-to-day operations of library services. For example, the Hue University LRC was able to hire two trained managers from the ranks of the existing Hue University branch libraries, but all other staff have had to be trained in even the most basic of library services. The fact that these managers have also had to have training in some areas means that occasionally they are only a little more knowledgeable than their staff, and this can cause additional problems.

The shortage of trained staff is not surprising given that there are only three library schools and although there are some small regional groups, there is no professional library association. These problems are gradually being addressed for example there have been some initial discussions on establishing a nationwide professional association and informal networks are developing amongst senior staff of the most advanced libraries. However, the long-term solution is to provide for the sorts of professional training that we take for granted and to create active networks of professionals that can provide mutual support through sharing experiences and providing a springboard for ideas. For projects such as the creation of the LRCs, the only current option is to implement a comprehensive training programme as part of the overall project. In Hue, this was achieved by contracting the Victoria University of Wellington (NZ) to provide training in basic library skills and management, while NACESTID, RMIT Vietnam and commercial companies have been used to provide various aspects of the IT training.

It should be noted that in addition to its work in the establishment of the LRCs, RMIT Vietnam is also active at a national level in assisting the development of essential infrastructure for the practice of librarianship in Vietnam. One such area of development concerns the establishment of a standardised approach to the cataloguing of Vietnamese language material, to promote the potential creation of a Vietnamese national bibliography and the possibility of sharing and exchanging cataloguing records. To progress this, RMIT Vietnam is currently working in collaboration with the National Library of Vietnam on a project to translate into Vietnamese key bibliographic tools, such as the Dewey Decimal Classification and the Anglo-American Cataloguing Rules, and to introduce training of these standards into the library and information services education curriculum.

National infrastructure and support

There is a shortage of trained staff, and the fact that the whole nation is in effect switching to a new style of library service contributes to a number of problems in areas that we take for granted. One example of this is in the availability of cataloguing copy. Given that the nation is broadly moving to a new style of library, that it has its own language for which there are only a small number of pockets around the world (Melbourne being one) and that the adoption of western standards has only been fairly recent, one of the significant problems is the lack of copy cataloguing. This has proved a problem in the development of the LRCs in that they are trying to build up large collections in a short timeframe and while it is possible to buy in significant collections of both English language and Vietnamese language materials, it is really only possible to buy in copy for English language records. This has been a problem in Hue where 60,000 Vietnamese language books were purchased. Copy cataloguing was sourced, but from a company whose staff had to create the original records at the time of the request and had limited experience, resulting in poor quality records that required further manipulation.

In the light of their knowledge of the environment and their own long experience in cataloguing and creating MARC records, Can Tho University has opted to undertake original cataloguing of all new material. This will be at the expense of the rapid availability of the new stock as a staggered approach will be required, but it will ensure a higher quality catalogue and hopefully provide a base of quality records within the country. NLV and NACESTID may well have quality records available, but there are limited options for accessing these and in any case their coverage is limited. Alternative sources, such as OCLC world service, have been explored, but coverage is limited, and the service expensive in Vietnamese terms. This situation will improve as the general standard of library services improves: that is, as staff trained in the new standards become the norm rather than the exception, as a greater volume of material is acquired and catalogued and as resource sharing becomes more common. For the next few years, however, it will be a problem.

Legacy systems

One of the benefits of having such a limited existing base of automation is that legacy systems are not usually a problem. There are a number of libraries using CDS/ISIS systems but both the size of the collections and the relative simplicity of the data mean that they can be readily converted into an acceptable form, despite the fact that past adherence to cataloguing standards has been variable. The one exception to this are serials records, which are generally entered in quite a cumbersome format and are not easily converted, because the systems vendors have not given sufficient thought to the functionality of their serials control modules nor the display of serials records.

Standards

Both the need for automation and the necessity of adhering to relevant standards are widely recognized: not always recognised are the interrelationships between standards and the consequences of using them. For example, the relationship between cataloguing standards, the maintenance of MARC records and the consequences for the quality of the OPAC is not always well understood.

Systems need to adhere to standards for three main reasons:

- to provide a consistent conceptual framework enabling organised access to the collection and any additional resources;
- to facilitate data sharing and co-operation with other institutions both in Vietnam and internationally; and
- to ensure that migration to any future system preserves as much of the current data as possible.

Perhaps the most important standard in this respect is the MARC standard, because it is central to all three of the above. The standard that has been adopted is Vietnamese MARC, which is still in development, but which will essentially be MARC21 with a few variations to cater for specific Vietnamese needs. This is a comparatively recent development and for a while there was significant interest in adopting UNIMARC as the national standard, as this is the standard applied in CDS/ISIS and so the most familiar. As most of the available automated systems can import in either format, and convert to MARC21 as necessary, the structure is not an issue. What is more of a problem is the cataloguing content of the MARC records, as not only are the cataloguing standards new in the Vietnamese context but, as is discussed in more detail elsewhere in this paper there are few staff with adequate training in these standards; standards such as AACR2, Dewey and LCSH have not yet been translated or adapted to Vietnamese conditions; access to tools is limited; and there is little in the way of quality copy cataloguing. There must also be some question as to the appropriateness of some of the tools in their current state, for example, the Hue University LRC has decided to use a combination of English language LCSH and Vietnamese keywords for subject access to all materials. While possibly the best available solution, it is clearly less than ideal. Thus, the quality of cataloguing suffers and the quality of the MARC records suffers, as does the quality and effectiveness of the OPAC.

Two other standards are illustrative of the sorts of issues that arise. The first of these is Unicode compliance. There are basically two ways of representing Vietnamese: using a pre-composed as mandated by the Government; or a post-composed code as supported by the large software companies that supply many of the basic components and tools from which the systems are built – for example Oracle and Microsoft. Post-composed codes take full advantage of Unicode with a code for each letter/diacritic combination, while pre-composed codes have separate letters and diacritics, building the relevant character at the time of display. There is a basic conflict between these two approaches that needs resolution and that has obvious implications for data sharing. While the problems are being created now, given the current levels of cooperation, they are semi-hidden. They will become more apparent over time. The second is Z39.50, the client/server protocol that enables local systems to search other library catalogues and other library systems to

search the local catalogue. This is obviously important for sharing resources with other institutions and this is widely recognised. However, because of a lack of experience, its importance in the context of local library services is often overstated. An example of this is when the local OPAC used by undergraduate students prominently displays access to a wide variety of overseas university catalogues, even though there are no cooperative arrangements in place and the institutions have irrelevant specialisations. Although inappropriate and of relatively minor concern, it is illustrative of the ways in which a lack of experience can lead to misjudgements on the relative importance of various standards.

Library cooperation and interlibrary loans

Within academic libraries, there is significant interest in interlibrary loans, as it is seen as one way of supplementing the limited resources currently available. However, that is also a major stumbling block to implementing an interlibrary loans network – most libraries do not have sufficient resources to meet their own needs and so are reluctant to dilute their collections by lending material to others. The extent of this problem is perhaps best illustrated by the case of the existing Da Nang Information Resource Centre, which does not permit undergraduates to borrow books because the collection is so small that the library managers are reluctant to let such scarce resources out of the library. There is definite interest in sharing photocopied material, but as yet the issues relating to that have not been worked through. The loose network that has been established among university librarians is now beginning to consider the issues, and while the principles are still being thought through, the implications are starting to filter through to the relevant software, the ILL modules available in CMC and Lac Viet provide the core functionality to control the movement of material, but need to be upgraded in terms of their administrative and accounting functionality.

In other areas there are activities undertaken by both the National Library of Vietnam (NLV) and NACESTID which will both add to the available information infrastructure and could possibly form the basis of further cooperative services. For example, the NLV is creating a Vietnamese National Bibliography and is required to help develop the public library network. NACESTID, under MOSTE (the Ministry of Science, Technology and the Environment), is responsible for the nationwide network of scientific and technical information and supports the Scientific and Technical Information Network (SCITEC) database, which describes Vietnamese documents and articles in the area. While progress has been made, there are still significant gaps in basic information resources that need to be dealt with. One such need that has been identified as a high priority among university librarians at least is the need for an index to Vietnamese language periodicals, and this may well offer scope for some form of co-operative action by academic and research libraries.

Costs

The costs associated with an automated library management system can be broken down into the following areas:

- Initial software license costs
- Recurrent software licensing and support costs
- Hardware / network costs
- Hardware / network maintenance costs
- Costs associated with migration from legacy systems
- Staff time

Of these, the two that will vary most in this environment are and will vary most between vendors are the initial software licensing costs and the recurrent software costs. While the initial cost is a significant hurdle for most libraries, this can often be provided through some sort of grant (or can be discounted by the vendor) and the cost most likely to have an impact on the ongoing operations is the recurrent software (maintenance and support) cost, because this will not be funded through any grant. It is this cost – the cost of ongoing support - that rules most international vendors out of the Vietnamese market. Even if Vietnamese libraries could manage to find the funding they would not spend it on system maintenance, because it could be far more productively used on staffing and resources.

Local vs international systems and support

International systems have a number of advantages over locally developed systems in Vietnam, including the fact they are proven systems with most basic functionality in place, and are less likely to suffer from issues of scalability or working under load. Despite that, they have not been successful in penetrating the Vietnamese market to date, partly because of the cost issues discussed above, but partly because of a range of other factors. The most important of these is the manner in which ongoing support is provided. As is common to all software, library management systems undergo continuing development and are frequently updated, both to correct existing problems and to add new features. They also occasionally meet with problems that must be corrected by the original software vendor. When these considerations are combined with the general lack of experience, both from an IT and a library staff perspective, it becomes clear that the more accessible the support the better libraries will cope on an ongoing basis. Remote support from within the country can work well, for example, CMC provide satisfactory support for the system in Can Tho from Hanoi. However, when language and time zone factors are introduced, this is no longer an effective option. It is almost essential that support be provided from within the country, and very few international vendors have any local arrangements in place. If these reasons weren't enough in themselves, two other factors tip the scale in favour of local systems: they have Vietnamese language interfaces already and the vendors are not weighed down by the requirements of a large existing customer base – and they have proved to be extremely flexible in meeting the needs of specific libraries.

A related issue is that of long-term vendor viability, and this is an issue that applies to both local and overseas vendors. It appears that most institutions have some experience of past projects (non-library related) that have not been sustainable in the long-term because the vendor has either gone out of business or pulled out of the market. The general response to this has been to ask for the source code so that the institution may maintain the system itself. Such requests are often tied in with notions of being able to add functionality at any stage – including while the vendor is still under a maintenance contract – and are further confused by a lack of clear delineation of systems responsibilities for in-house staff, and less than ideal regional support. As in the rest of the world, the local vendors have resisted these requests because of the implications for their maintenance of the system, but the process of identifying the exact role of in-house IT staff is an ongoing one.

National infrastructure - telecommunications and IT

Quite apart from anything to do with the library world, there are serious limitations in the national infrastructure with regard to basic requirements for automation in the areas of telecommunications capacity, availability of IT staff and skills and even power supplies. Perhaps the experience of the staff at Can Tho best gives the flavour of the situation:

The electricity is up and down continuously, especially in the dry season because most of the electricity in Vietnam is provided by the hydroelectric stations, and drops in water levels cause interruption in supply. If the computer doesn't have the uninterruptable power supply (UPS), the program will be down. We must stop using all kinds of electronic utilities during storms. Environment is a considerable element directly affecting to machines and every kind of materials. Vietnam is a tropical country; therefore the moisture is high. The library doesn't have air conditioning except the Cataloging room with some computers used to input the database. Dust continuously covers the machines during the working time. In fact, we cannot solve this problem by using the cleaning machines because of the outside dirt. This could be solved if the library were equipped by the air conditioning. (Diep & Huynh 1998)

While there are problems with the quality of the power supply and these are easy to dramatise, it is the other areas of national infrastructure that will perhaps have more serious consequences. There is a lack of skilled and experienced IT staff capable of supporting the computing and network equipment required in the new environment, and although the situation is being addressed, there is also increasing demand and competition for their services from other industries as they develop. There is also a lack of resources available to those staff which is significant enough to hamper their maintenance of internal networks – even something as simple and essential as access to the latest virus protection software can be an unaffordable cost and the lack of same inevitably leads to network downtime. Telecommunications, although developing quickly in terms of bandwidth, is still inadequate to meet the need, and this is a serious impediment to both the development of services between campuses and the ability to access the huge range of resources available via the Internet – another factor in limiting the experience of librarians and so slowing their progress.

Sustainability

Ongoing sustainability is essential to these projects if the universities concerned are to benefit. Stueart (2000) emphasises this in a broader context when he discusses the crisis caused by the 1996 economic collapse in the region and the renewed focus on information / resource sharing, but particularly pointing out the problems with costs, even in relatively advanced countries such as Thailand. While he focuses on the cost of resources and the ways in which copyright and licensing practices act to exclude access in the region, the cost of the basic infrastructure must be considered even ahead of that.

The success of the library system will depend on a number of factors not directly related to the functionality of the software itself. These include:

- the availability of local or regional support
- the cost of ongoing support
- the ongoing viability of the system vendor
- the availability of training and professional support
- the availability of a national library infrastructure e.g. copy cataloguing
- the scalability of the system
- adherence to relevant standards and the availability of tools to support their use
- technical support, and
- working relationships with other libraries and services.

Our experience in Vietnam has shown that each of these areas must not only be dealt with if the library service is to maintain effective management of its automated systems, but that they are often interrelated and that they must be dealt with simultaneously. Problems in any one of them, by itself, can erode confidence in the ability of the system to serve its purpose and cause serious problems in service provision. Getting the mix wrong can have the same result.

Conclusion

The market for integrated library management systems within Vietnam is in an early stage of development but is growing rapidly. Given present funding levels, the only realistic strategy for most libraries is to work with local vendors and to grow together, but it is not just a case of developing more sophisticated systems. For this strategy to work, and for local systems to become sustainable into the future, library services themselves must become more sophisticated, and a whole range of national standards and infrastructure put into place. The process will take several years but, as discussed, significant steps have already been made.

Web sites

Can Tho University Library <http://www.ctu.edu.vn/library/>

CMC <http://www.cmc.com.vn>

Da Nang University LRC <http://www.ud.edu.vn/en/information%20center.asp>

Hue University LRC <http://www.lrc-hueuni.edu.vn/>

Lac Viet <http://www.lacviet.com.vn/>

NACESTID <http://www.vista.gov.vn/vistaenglish/>

National Library of Vietnam <http://www.nlv.gov.vn/>

Tinh Van <http://www.tinhvan.com.vn/>

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