

Creating an Inclusive Information Future through Singapore's Libraries

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Abstract:

The National Library Board's approach to creating an inclusive information future in Singapore was twofold - building an info-literate nation through providing facilities for IT Literacy training programmes, and a nurturing environment in its libraries for further skills development; easing library users into using electronic services through providing online options for basic library services before launching value-added personalized information services. The Board is also building an e-inclusive region by connecting ASEAN and Asia to each other and to the rest of the world. Initiatives include the CONSALWeb which connects a regional grouping of librarians from ASEAN countries.

Introduction

When I was invited to speak for the conference, I was intrigued by the theme, **e-volving Information Futures**. I asked myself not so much what this future would be but who would feature in this future – in particular, whom this future was for. In this paper, I will share whom the National Library Board (NLB) of Singapore has included in its plans for creating an information future and the initiatives to make that future a reality for both Singapore and the region.

Choosing a Future for Singapore Libraries

First of all, I would like to shed some light on the development of libraries in Singapore. The history of the library in Singapore goes back as early as 1823 – five years after the founding of Singapore - when the first school libraries were set up. In 1887, the first public library was set up in the Raffles Library and Museum. The Raffles National Library Ordinance was enacted in 1958, making the library a free public and national library. In 1960, the National Library building was opened.

The library system came to a crossroad about 8 to 10 years ago when discussions were made on the future of libraries in Singapore. A landmark study by the Library 2000 Review Committee was carried out between 1992 and 1994. In this study, it plotted the progress of our system over the next 15-20 years. The National Library Board (NLB) was subsequently formed in September 1995 and guided by a vision and mission that came out with the Report of the Library 2000 Committee. (Singapore. Report of the Library 2000 Review Committee, 1994.) The mission of our organisation is to expand the learning capacity of the nation. Complementing this mission is the service vision that we will deliver services that are convenient, accessible, affordable and useful to our people.

I came into the picture in 1995 as the Chief Executive of the NLB. People then looked to the new leadership to move the library into the information future. We had two choices.

We could note that Singapore was one of the most wired countries in the world with one of the highest PC penetration rates – in 1996, 4 out of 10 households already had PCs, today 99% of the island is wired with a broadband infrastructure . Perhaps the library should focus on value-added services and content that Singaporeans who are already info-savvy could enjoy. Or we could also look at people who are on the wrong side of the digital divide – the 6 out of 10 households who still did not have PCs. (Singapore. Infocomm Development Authority of Singapore, 2001b)

We took the latter path first. Even though today the proportion of households with PCs and Internet access has risen to 6 and 5 out of every ten, we have persisted with this strategy as the proportion of digital have-nots remain high.

Our national goal as expressed by Prime Minister Goh Chok Tong is “to build an e-inclusive society, where everybody is able to reap the benefits brought about by infocomm technology. In an e-inclusive society, technology is accessible and affordable to all, regardless of age, language, social background or ability.” (Singapore. Infocomm Development Authority of Singapore, 2001a)

I never forgot the other path, which was to provide value-added services to those in the know. It was always there at the back of my mind while the library board was performing its roles as an info-equalizer for Singapore. In the recent past, we have launched a suite of value-added services. Of course the two strategies are intimately linked since empowering more people with info-literacy resulted in a constantly burgeoning customer base for our value-added services.

Building an Info-Literate Nation

In 1996, when we were upgrading one of our community libraries, the Toa Payoh Community Library, I had an opportunity to include a training centre for information literacy. This was a rather controversial decision then as the library was not seen as a viable training centre since there were a plenitude of computer schools and community centres for that purpose. Eventually we did set up a 124-seat **ONE Learning Place** training centre in the library, which opened to the public in May 1999.

It has since spawned two other training centres in two of our libraries – the Tampines Regional Library and the Woodlands Regional Library – each with 40 training places. All three centres have been adopted by the **National IT Literacy Programme (NITLP)**, a programme launched in June 2001 to equip Singaporeans with essential basic computing and Internet skills. The three centres are major cornerstones for reaching the programme's target of equipping 350,000 Singaporeans with basic computer and Internet skills over the next three years.

The training is quick, easily available and affordable. The courses range from 7 to 14 hours in duration and are fun and easy. The curriculum consists of examples in daily life and work situations as one of the objectives is to help the average citizen understand how information-literacy can play a part in their lives. As Singapore is a multiracial and multilingual society, the classes are conducted in English, Mandarin, Malay and Tamil. These courses are also affordable because trainees bear only 20% of the cost, which can be as little as S\$20. At certain times of the year, such as the e-celebration Singapore, a part-time, five-week program encouraging the use of information and communication technology, these courses are even offered free.

To date, the training centres in the libraries have filled more than 120,000 training places. More heartening than the numbers is that the trainees belong to a diverse range of people that traverse the categories of age, race, occupation and education levels. Homemakers and senior citizens make up 12% of the people trained. The programmes are very popular to people from the very young to the very old - 10% of the trainees are more than 50 years old while 16% are less than 12 years old. These include a six-year old student and an 82 year-old retiree.

Peer training is also popular. Groups who have special classes include taxi drivers, retrenched workers and the handicapped. In addition, volunteer groups such as the **Retired and Senior Volunteer Programme (RSVP)** conduct classes for their groups – in this case, senior citizens. Some who were formerly students become trainers. For instance, Madam Shaidatunnira, a housewife, is conducting computer skills classes for her peers.

The digital divide can create a rift of understanding in Singapore families. The ONE Learning Place has contributed to family re-integration as parents and grandparents are led to

understand that technology can make their lives easier. The entire Chen family has gone for a Cisco Certified Network Associate (CCNA) course, a high-end internationally recognized certification. The Singh family is learning Internet so they can print out the daily sermons from the website of the Golden Temple in India, and hear the daily hymns and prayers downloadable from the Internet.

With a 66-strong public library network, there is great potential for libraries to become places for public learning and empowerment. We have also learned that libraries being open public institutions are a supportive and nurturing environment for the average Singaporean to continue his learning by using facilities such as Internet-enabled PCs and information databases available onsite in the libraries. Hence, since 1995, we have increased the number of PCs in our libraries six fold.

Easing Our Users into the Information Future

Libraries in Singapore are great social and community places for our citizens. About 1 in 2 Singaporeans is a library member and 21 million or more than 5 times the population visit libraries yearly. Hence, libraries are a great platform to impact all segments of the population.

By gradually introducing online options into the basic services used by this considerable customer base, we played a pivotal role in easing Singaporeans into becoming adroit information users of the future.

Baby Steps – Heralding Self Service Online to Libraries

We started with the corporate website, formerly known as **NL.Line** and recently relaunched in March 2001 as www.nlb.gov.sg. This includes a suite of standard library services such as browsing the NLB's catalogue online, placing reservations, making renewals, checking on the status of their loans and reporting lost items. You could even recommend a book for inclusion in the NLB collection or have materials delivered to your doorstep. Another popular service is a reminder service for overdue materials. The website is also the official channel used to disseminate information on new services, facilities etc via the online newsletter "@ the Library".

With the launch of the new library portal, **eLibraryHub** (www.elibraryhub.com), payment for reservations, fines and even information checked out online can be made via Cash Cards, major Credit Cards and prepaid accounts through a secure online interface.

NLB Welcome to NLB's E-Payment System [back](#) myaccount

Pre-paid Account Top-Up

Choose from a variety of payment methods to top-up your prepaid account.

Current Balance:	\$50.00
Top-Up Amount:	+ \$0.00 (minimum \$10 for credit card payment)
GST:	\$0.00
Gross Amount:	\$0.00
Payable Amount :	\$0.00

Payment Method

Using:

Card Holder Name:

Credit Card Number : - - -

Card Type:

Expiry Date:

Topping up a secure prepaid library account at eLibraryHub

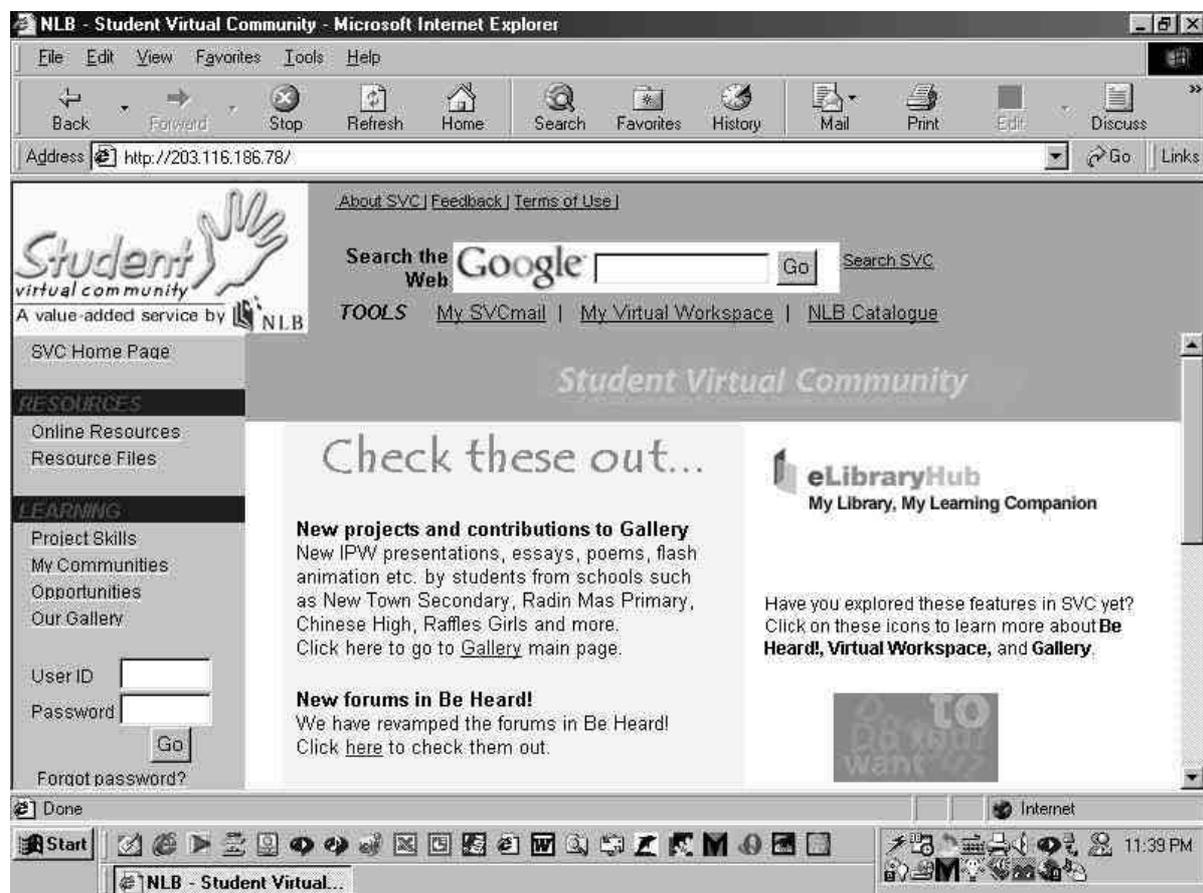
From 18 Oct 2001 onwards, we took our users into the world of mobile information services. Singaporean library members who are also eLibraryHub members can enjoy the added convenience of carrying out library transactions through their mobile phones. This is made possible through the use of the mobile Short Message Service (SMS) technology, which enables library members to send a simple formatted SMS to retrieve details of their library account or perform library transactions such as renewals or making payments - from the convenience of their mobile phone.

Library members will also be able to receive timely reminder alerts before their borrowed books are due. With more than 3 million mobile phone subscribers in Singapore, the service could help a large number of library members who are frequently on the move to manage their library account. The service is a collaboration between the National Library Board and two partners – Starhub (mobile phone operator) and mPayment who developed **mLibrary** – the world-first mobile library service and payment product. The National Library Board of Singapore will be the first library network deploying this service full-scale.

Setting Up Communities Online

Communication and collaboration across geographical boundaries is an undeniable boon of the information age. To help its users leverage off the potential of online collaboration, NLB helped to build online communities for a variety of groups in Singapore including students, small business people, and different ethnic groups.

For instance, schools have enrolled their entire grades into the **Student Virtual Community (www.nlb.gov.sg/svc)**. Contributions include book reviews, essays, short stories, poetry and projects. Students and teachers can access the community to review and critique these contributions. Other community learning facilities in the virtual community include virtual workspaces where students can save URLs, create webpages and forums for students to post their comments and views.



The Student Virtual Community at www.nlb.gov.sg/svc

Value-Added Information Services

In 1997, **TiARA (http://www.tiara.com.sg)** for Timely information for All, Relevant and Affordable was launched as a national effort to bring information to the people of Singapore in a cost-effective and timely manner. It was developed with the then National Computer Board (now Information Development Authority) and included participation from other government agencies and libraries. TiARA provided access to a wide range of services

hitherto not directly or readily accessible to the individual user. TiARA was a first attempt to deliver information services online and in an integrated manner at a national level. Access to authoritative information hitherto not readily accessible such as some 300 information databases from leading content providers such as The Dialog Corporation, Reuters, and more specialized databases from companies such as Faulkner Cambridge Scientific among others. The subject coverage ranges from general news to more in-depth reports on trends, policies, companies, industries, market research in a broad range of fields such as science and technology, education, arts, literature, humanities, laws, etc. The returns-on investment is high as we obtained special discounts or had negotiated a flat national fee for selected databases.

Other services included Gateway to Internet Resources where pertinent websites were identified and maintained for specific subject areas. This filters sites not deemed useful or relevant and minimises the need for users to glean through the vast number of sites available on the Internet. Links are also maintained to avoid the frustration of finding dead links. Users can also search across library catalogues of 12 major libraries through a common interface.

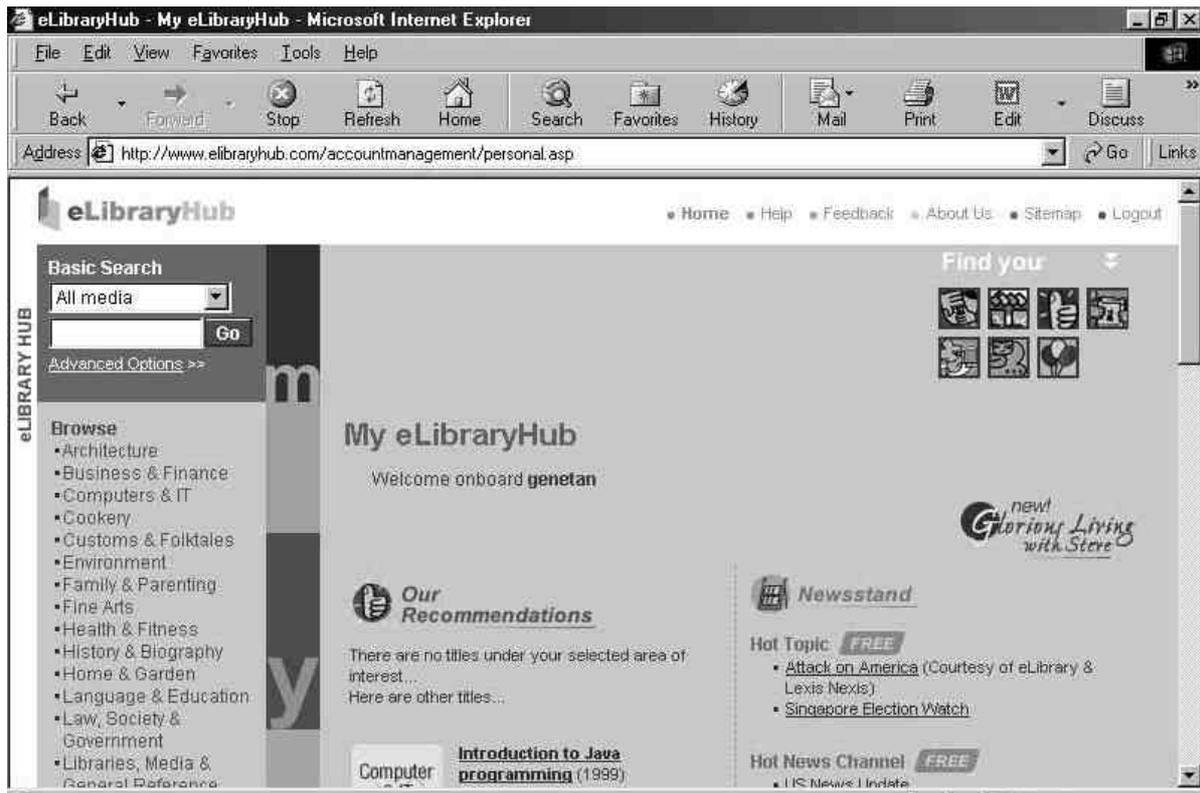
Finally, Ask TiARA allows the user to send questions or seek assistance from library staff. This is manned by NLB's **Reference Point** – an enquiry centre managed by NLB's library staff and which enabled users to make reference requests remotely (via phone, fax, email and mail). Requests came from around the world and ranged from book availability to specialized information searches.

Personalised Libraries at eLibraryHub

Late last year, we asked four young enterprising librarians to think what the future holds for our users. One of the simplest and yet most refreshing scenarios was one when everyone has his or her personal library.

The use of technology to help users to customize their access to the considerable information resources available was one way of helping build individual libraries for everyone. These individual libraries would cater to the specific needs of individuals rather than perpetuate the “one-size-fits-all” policy of traditional public libraries.

In Sep 2001, we launched **eLibraryHub.com**, an enhancement of the TiARA service and is a one-stop, integrated digital library. This is both a content and community portal. It holds rich content comprising some 10,000 electronic books, 13,000 electronic magazines, journals and databases, 900 video-on-demand titles and 700 CD-ROM that will be streamed seamlessly through the Singapore ONE Network. The 2 million members of the NLB library system have immediate access to this eLibraryHub hence providing an immediate critical mass for a community. In addition, several community organizations, government bodies and private corporations have already adopted eLibraryHub as their personal digital library. These include more than 480,000 people from the Central Singapore Community Development Council, the Teachers' Network, the Ministry of Manpower, and the Singapore Management University.



A Personalised Library @ www.eLibraryHub.com

The portal is both a horizontal portal that covers a wide range of topics as well as a vertical portal (vortal) that seeks to provide depth for specific interests.

A key feature of the eLibraryHub is the ability to personalise the digital library to the user's needs to create a personal library. The user can search, organise and stock up his library according to his personal preferences and interests. Relevant information is then surfaced and presented to the user when he logs into the digital library. This is done through analysis of user patterns and preferences. eLibraryHub users will also be able to consult a "Cybrarian" (Cyber Librarian) about their library needs.

In NLB, we adopted a phased implementation of personalisation for eLibraryHub.

In Phase I, three sources of information are used for personalisation: the customer's borrowing history, specification of interests by users and the customer's interaction with the portal.

In Phase II, NLB will gather and combine all information into a data warehouse where it can be analysed for clustering and segmentation. Once the customer segments are built, intelligent marketing decisions can be made when managing promotion campaigns and providing alert services.

Phase III will build upon Phases I and II to combine business rules with collaboration filtering where user's likes and dislikes are tracked and reviewed for patterns similar to other users. Offers to customers could be generated dynamically based on predictions of estimated numbers and types of users under different scenarios.

Creating an Enterprise-Wide Data Warehouse System

To manage personalisation initiatives effectively requires a data warehouse system that would provide a central repository of customer data from various application systems. Interactive analysis tools were also required to help NLB make effective marketing and business decisions. The result was **NEWS – the NLB Enterprise data Warehouse System**. The prototype system will support NLB in identifying target member groups for more effective marketing and promotional activities, developing new products, services and programmes, cultivating member relationship and optimising delivery channels.

We used to grind to a halt each time someone needed to know how many visitors there were to a library. Everyone drops everything to count. This is like a blood pressure meter giving us the vitals on our customers.

Building an E-Inclusive Region

In addition to connecting Singaporeans to the wider information future, NLB is forging ahead in building bridges connecting ASEAN and Asia to each other, and to the rest of the world – in particular Europe and North America.

By working closely with the regional libraries and information providers, NLB can develop robust infrastructure to facilitate the flow of information and protect the rights of owners of information, and acquire, if not catalyse the creation of digital content in niche areas.

Hence, in addition to building an e-inclusive Singapore, NLB is also committed to developing an e-inclusive region.

Although Singapore possessed virtually no natural resources, it enjoyed brisk trading with the establishment of itself as the entrepot port for the region and it served in this role for over a hundred years from its early beginnings as a mart for the exchange of the produce from Indo-China, Thailand, the Malay Peninsula and the Indonesian Archipelago for the merchandise of India, China and Europe.

In a similar fashion, NLB is attempting to leverage off its connections within and without the region to create an Information Asia to better position Asia as a whole to keep up with the rapid development in other parts of the world such as e-Europe and the digital revolution in North America.

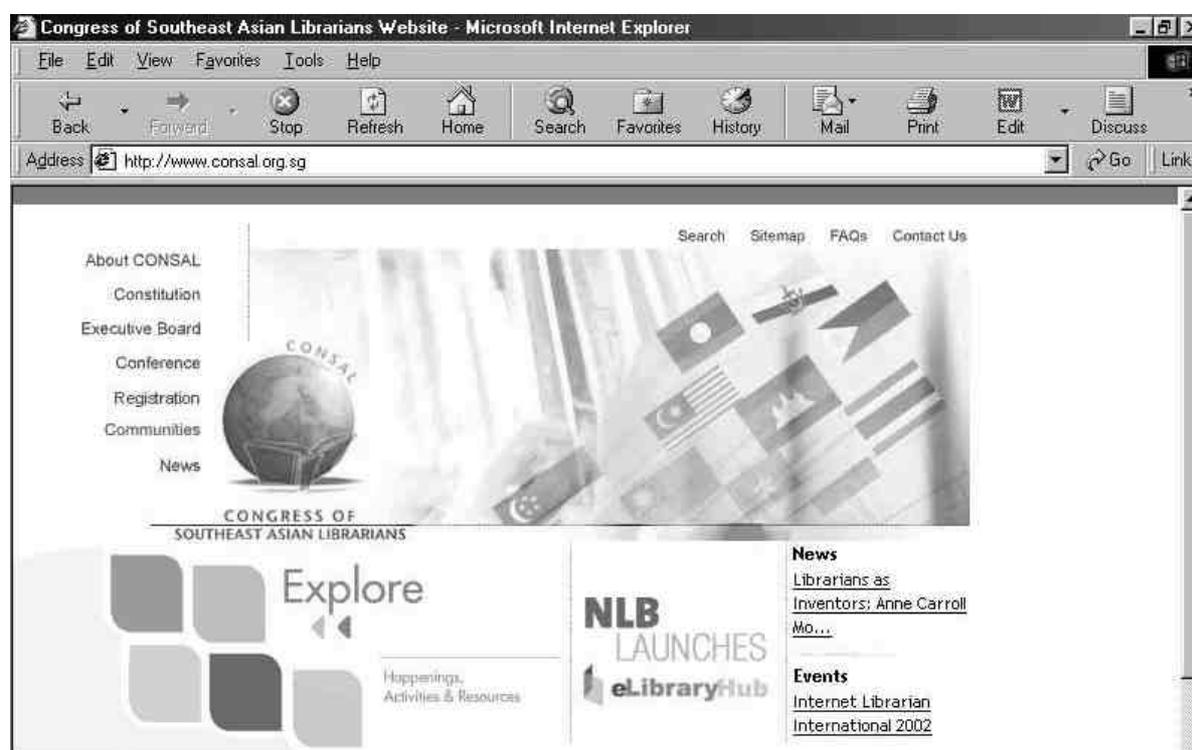
NLB could contribute to enriching the connections established in digital Asia by harnessing the information resources and expertise residing in libraries all over the world and potentially provide information services to the more than 500 million users in the region. In addition, with its various platforms, NLB is forging a strong community – particularly in the region – to establish macro initiatives such as building infrastructure for resource-sharing and digital content creation.

The sum total of these initiatives will provide a heightened visibility for the region in the global information domain and contribute to enhancing Asia's competitiveness in the global information industry.

CONSALWeb (www.consal.org.sg)

The Congress of Southeast Asian Librarians (**CONSAL**) is a regional grouping of librarians from ASEAN countries. Formed in 1970, it promotes cooperation in librarianship, bibliography, documentation and related activities. Represented by libraries and librarians in the 10 ASEAN countries, CONSAL provides a forum for idea and knowledge exchange between library and library-related professionals. CONSAL holds a conference every three years on a rotating basis. Singapore hosted CONSAL in 2000 when the CONSAL Secretariat was inaugurated with Singapore as the host country.

CONSALWeb connects this community while facilitating access to information, training and knowledge sharing. The enhanced web hosted by NLB was launched in April 2001.



CONSALWeb at www.consal.org

For the first time librarians have a platform through which they can interact and learn. It provides access to useful tools and information resources for librarians to plan and develop libraries of the future. Information and library vendors and market players can also use the platform interact with librarians and orientate librarians online with their latest products and services.

Professional services include discussion groups and forums for communication and sharing of information, directory of librarians and libraries in the region, etc. In addition, the site also offers an information exchange platform for the CONSAL Management Committee represented by librarians from each member country.

Other key services include a resource centre, which provides information such as alerts, reviews, and databases that would assist librarians to develop a knowledge base supporting

the region-wide library community. The CONSAL content and editorial team has also secured privileges with “e-streams”, an Electronic Review of Science and Technology References covering Engineering, Agriculture, Medicine and Science. The service hyperlinks and/or repackages the content in their existing site. The Review is a collaborative venture between H. Robert Malinowsky of the University of Illinois at Chicago and YBP Library Services, a Baker & Taylor Company. Finally, CONSALWeb can be customised to provide access privileges to different types of users based on user registration profiles and CONSAL web policy guidelines.

The website enjoys daily hits of more than 140,000 with monthly hits of 4 million on average. The number of registered members is 445. The most number of visitors have come from countries such as France, Australia and United Kingdom.

Other Regional E-Initiatives

NLB is also in the forefront organizing platforms for information professionals to congregate and share their knowledge and expertise in global and regional developments. For instance, from 21 to 27 April 2002, we will be organizing the inaugural **World Library Summit** in Singapore in collaboration with CONSAL. Topics to be addressed include knowledge augmentation, digital societies, digital publishing and intellectual preservation in the digital age. Regional and global initiatives such as Renardus, the aforementioned ASEAN Information Net and the Shanghai Inter-City Digital Project will also be shared at the forum.

With its connections within and without the region, NLB has created a number of regional e-initiatives. One of these is **Huayinet**, a database of overseas ethnic entrepreneurs was developed in partnership with other agencies. An Inter-Agency Committee on Overseas Chinese Databank and Research Collection was formed to shape the development of services and collection to serve the information needs of Chinese individuals living outside China. Its outgrowth, HuayiNet, an online overseas Chinese databank website was launched in February 2000.

Creating an Information Reality

I have a picture of a woman standing glued to a wall, with her face buried in the mud-wall. It is a still taken from a film by an artist named Shirin Nestat. I like to call it “Contemplation.OVERRATED”. It never fails to draw titters in my presentations overseas especially hoots from librarians who feel it hit home at all blueprints that had stalled rather than catalysed movement.

While NLB thinks contemplation is overrated, we did not rush in like fools. We have a habit of spreading our bets on a range of innovations. Our libraries were transformed into test-beds for incubating ideas, and our broad and diverse customer base into our test samples. The result is that not only were we able to finetune these services before launching them on a broad scale, our customers had the opportunity to familiarize themselves with the use of electronic services.

We also ran very fast - fast enough to show results for the best way to convince our stakeholders was not to write lengthy reports or hold extensive meetings. We did not have all the money or expertise to test the innovations. But we did not wait for extensive funds to come from our stakeholders. Through collaboration with the private sector or other agencies, we secured the funds or expertise we did not have. For instance, for the ONE Learning Place, we worked with 11 other partners who provided either funds or expertise.

Through this bootstrapping approach within and without the Singapore and the region, the NLB has attempted to translate the possibilities of technology and information into a reality for its users both in Singapore and the region. While keeping an eye on developing value-added services that will focus increasingly on the individual, the NLB continues to reach out to the have-nots of the digital divide to ensure they have a place in the information future.

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