Metamorphosed librarians at the National University of Singapore Libraries -
developing an excellent electronic resource collection and increasing
accessibility to the NUS community

By
Mrs LEE Cheng Ean

Abstract:

The proliferation of electronic resources and the ever demanding needs of the NUS
users have driven the NUS librarians to undergo a complete make-over
instantaneously. Librarians had to evaluate electronic resources, understand
emerging IT technologies, negotiate site licenses, control the decreasing budget,
configure the electronic resources and organise more user education programs to
increase accessibility to the vast resources.

With a diversity of researches carried out at the NUS and affiliated research institutes,
the NUS librarians are forced to acquire new knowledge, skills and expertise in order
to serve the needs of our users. This paper focuses on how NUS Libraries developed
its electronic resource collection and provide the necessary conduits to access the
collection with evolving roles of the librarians.

Introduction

When I first looked at the title given to me, I thought to myself, “How can I share with
you how and what the NUS librarians have done over the years while battling many
unwanted forces, in particular in the last 3 years?”

In the last decade, the NUS Libraries have gone through tremendous changes to
move with and ahead of the pervasive internet. It has moved from a traditional
library to a hybrid model by building up the print and electronic collections so as to
increase the accessibility with the implementation of enabling technologies.

The librarians have been empowered with the acquisitions of new skills and have
learnt to use the enabling technologies to reach out and serve the library users to the
best of their ability. Over the years the librarians have metamorphosed (we are still
transforming!) into versatile and agile IT savvy librarians. We have moved with times
from paper to digital library and have emerged unscathed and ever so ready to serve.
Why did I say that the last 3 years were most challenging?
1. There was a change in the University's organizational structure
2. With that there was a change in governance
3. We were required to strategize and set target deliverables

As a result of those catalysts, the NUS Libraries formulated and articulated our vision, mission, and strategic goals to synergize with the vision of the University - Towards a Global Knowledge Enterprise.

The NUS Libraries support this vision and aim to be a premier information hub with our vision - To be a premier knowledge hub that promotes the University’s global knowledge enterprise vision. Our mission is - To deliver just-in-time information with passion and a smile.

**Strategic goals**

In 2002, we formulated strategic goals which saw us through 2002 – early 2005. The nine major strategic goals which we had set ourselves were: -

1. Access and Collection - To provide timely and user friendly access to relevant information
2. Service - Provide proactive, customer-focused and value-added services to faculty and students
3. User Education - Impart information seeking skills to students
4. Innovative library - Maintain an innovative library with use of the latest technology that conforms to current international standards in order to provide customer-focused services.
5. Highly skilled staff and best practices - Adopt best human resource management practices to recruit and develop staff of high quality
6. Effective communication - Promote communication and foster partnerships with faculty, students and administrative departments
7. Strong alliances - Forge alliances with academic and research institutions for mutual benefit
8. Conducive and safe library - Provide a conducive and safe environment that facilitates learning and research
9. Effective organization structure - Establish an effective organizational structure
In addition, we also had to set deliverables under the Quality Assurance Framework for Universities (QAFU) for the University’s Self Assessment Report (USAR) which was submitted to the Ministry of Education.

Formulating strategic goals, using balanced scorecard and setting objectives/targets for the pertinent library services for the various University committee reports had given us very good experience. It has enabled us to think more strategically to plan for better services.

The NUS will embark on its next journey of excellence – to review the strategic plans covering key goals for NUS for 10 – 15 years with an initial set of goals for the next 3 – 5 years. The NUS Libraries will participate actively in this journey. The strategic plans will remain the same basically, that is, to concentrate on collection excellence, service excellence, increased accessibility and staff development.

**Collection Building**

The NUS Libraries comprise of 6 libraries.

- The Central Library serves the faculty of Arts & Social Sciences, School of Design and Environment and the Faculty of Engineering. The collection comprises materials on Singapore/Malaysia, Architecture, Building and Real Estate, Engineering, Arts & Humanities and Social Sciences.

- Our Chinese Library which is the 3rd largest outside China holds materials on Chinese studies, South East Asia, Classics and Chinese Overseas. One important electronic resource we have is the Chinese Journal Net (CJN). Recently, our Japanese collection which was housed separately was integrated with the Chinese Library.

- The CJ Koh Law Library is Singapore’s most comprehensive law library. It was named after the late Mr C J Koh in appreciation of a generous donation made by his trustee. The CJ Koh Law Library focuses on Singapore Law, UK Law, US Law, ASEAN Law as well as the Laws of China.
• The Hon Sui Sen Memorial Library provides services primarily to the NUS Business School. It was established in memory of the late Mr Hon, former Singapore Minister of Finance. The Library specializes in collections on business, finance and management. It also holds a comprehensive and sizable collection on Annual reports of Singapore companies.

• The Medical Library is the de facto Medical library in Singapore. It has the most comprehensive medical collection and its main focus is medicine, dentistry and pharmacy. The Medical Library is one of the best in this region.

• Our Science Library holds collections on biological sciences, chemistry, computer science, mathematics, statistics & applied probability, material science and physics.

The six libraries serve a diverse group of users. Our priority users are the staff and students. As at June 2004, the library membership stands at over 50,000 members 75% of whom were staff and students.

In addition to the NUS community, we also serve beyond NUS by providing services to the NUS alumni, faculty & students of other tertiary institutions as well as the Research & Development (R&D) community in Singapore. The NUS Libraries also manage the electronic subscriptions of Singapore’s Agency for Science, Technology and Research (A*STAR).

The NUS Libraries’ print collection has grown from strength to strength each year. However, the growth has slowed down because of decreasing budget allocations. The total number of unique titles now stands at over 1.18 million. The number of internet resources, media programmes and microform resources stand at over 22,000 for each format.

In terms of volume, the total has now increased to over 2.3 million. The book collection now stands at almost 1.6 million while the journals more than 700,000.

The number of active print journal subscriptions stands at 13,512 with 9,694 paid subscriptions.
Digital Library Initiatives

-- Licensing and purchasing electronic resources

As you can see we have a very rich print collection which the NUS Library members are privileged to have. While we continue to build the print collection, we have also consciously expanded our electronic resources. As we all know a large part of information still exists in print. With uncertainties in publishers’ archival efforts and access technologies, NUS Libraries will continue to build a hybrid library.

Many professors still prefer to retain the print. They want to be able to access the online journals from their desktops but do not support cancellation of the print. Also, in some cases, publishers calculate the access fee on the previous’ print subscriptions. When that happens, it may be more economical to retain the print and negotiate a discounted fee for the online access.

The size of the NUS Digital Library had increased exponentially over the years. Majority of the electronic collection is accessible via IP authentication both on campus and off campus for our authorised users.

From 1993 – 2003, the number of electronic resources subscribed by NUS Libraries increased 9 fold. The number of ejournals increased to 12,789. Our strategy is to license complete bundles of journals from major publishers like – American Chemical Society, Blackwell Publishers, Cambridge University Press, Elsevier’ ScienceDirect, Kluwer, Oxford University Press and Springer. Most of these bundles are tied to our print subscriptions. This allows us to retain the print journals while at the same time negotiate for affordable access fees.

We now have more than 100 databases accessible via several platforms. They include several databases from SilverPlatter, Cambridge Scientific Abstracts, ISI’s Web of Science, etc. Eg. Of such databases are ABI/Inform, Business Source Premier, Factiva, IEEEXplore etc.

The ebooks grew steadily to 8,634 but did increase exponentially like the journals. We purchased ebooks mainly from netLibrary. We also have some ebooks from Springer and our Singapore University Press, which is the University’s Press.
Today, we still have a number of full text CDROM subscriptions. They are patents, ASTM, ISO, BSI and ITU standards, some international newspapers and law reports. These CDROM subscriptions are very costly to convert to online access.

-- Digitization projects and digital services

Besides increasing the collection through site licensing, several Library digital projects have been introduced over the years. The digital projects include both linking electronically and digitizing resources. Our digital projects had covered indexes, library publications, table of contents, preservation and online art galleries. Examples of the projects are Digital Media Gallery, Video on Demand, Examination papers and creating selected ebooks from our print collection.

The Digital Media Gallery (DMG) aims to be a central depository of digitized resources for the NUS community. It contains audio, videos, images, clip art and photographs. Here we have two photograph collections – Historical photos of NUS and the Vanishing scenes of Singapore. The useful navigation feature in the DMG for videos enables the faculty members to incorporate these files easily into their online courses.

The Library also purchased and licensed videos with copyright clearance so that they can be mounted on the Video on Demand system. These VOD programs are streamed to students’ desktops wherever they are on campus. Access is restricted to students taking the course only.

Another important resource which we digitize is past examination papers. Although some are given to us in softcopies, many of them are in the usual printed form. They are scanned and loaded into the database using the BRS software. These are highly in demand just before the examinations. The online examination database is searchable by course number, course name, department and faculty. The access is restricted to NUS staff and students only.

In collaboration with the Singapore University Press, we have digitized 10 of their books. These ebooks are restricted to NUS staff and students only.

The NUS Libraries also produce online indexes. One example is PERIND. PERIND is an index to articles, book chapters and conference papers relating to Singapore,
Malaysia, Brunei and ASEAN as an entity. This has resulted in a publication called SMC Ondisc published by RMIT Publishing. Other indexes compiled are the Southeast Asian Studies database in Chinese, Index to Singapore Acts. A new project in the pipeline is the Chinese Overseas Periodical Index.

We have also published several online library publications. They include Singapore literature, Statistics on Singapore, Primary materials on Chinese Education in Singapore, 1819-1959 and a Sense of History.

We also enrich the NUS Libraries catalogue (LINC) by adding Table of Contents. The TOCs were purchased from Blackwells Book Services. In addition we create selected TOC for some Chinese books with Singapore/Malaysia content ourselves.

Preservation of newspapers, rare books and speeches by digitization on a small scale is also one way to increase accessibility. Examples of our digitization projects include, Lat Pau – an old Chinese newspaper, Journal of three voyages along the coast of China in 1831, 1832 & 1833, Speeches by distinguished speakers and 3 rare books on Singapore in the Japanese language.

To preserve some of the art pieces donated to the Library, we have created an online art gallery. The gallery include paintings donated to the Chinese Library. We also inherited Mr CJ Koh’s paintings which we have preserved and placed them online for all to view and enjoy.

For requested articles which are not in our collection, we provide a document delivery service. Users request for documents online. The Library sends requests to suppliers using Ariel. On receipt, the documents are sent to user’s desktop electronically. Due to the vast resources which we have, the DDS service receives about 4,000 requests last year. Requests are sent to suppliers and forwarded to library users via Ariel with a turnaround time of between 1 – 3 working days. Our users are most impressed with the speed of delivery.

-- Intensifying use of information technology in teaching and learning by providing alternative modes of course delivery – IVLE & e-reserves

Recently, we embarked on creating an e-reserve for recommended readings for students. The e-reserve accessible via the University’s homegown Integrated
Virtual Learning Environment (IVLE) provides links to subscribed journal articles and scanned documents. Access to the documents is restricted to students taking the particular course. This has increased accessibility and reduced a certain amount of workload at the Loans Desk. The service has been received very well by both the faculty members and students.

**Launching federated search (EnCompass)**

In August 2003, we implemented EnCompass and LinkFinderPlus which we called InfoGate. InfoGate enables users to execute one search across multiple databases. They can select to search indexes and abstracts, journals and library catalogues all at once. The results presented allow them to link from bibliographic citations to full-text documents. They can also check our local holdings.

**Implementing Library proxy**

While our strategy is to increase accessibility, we also had to be responsible in ensuring that our users abide by the license agreements of the resources which we have subscribed. As such a proxy service was commissioned and implemented in March 2003. Users will only gain access to the electronic resources after authenticating successfully with their NUS network IDs and password.

This service alerts the Library whenever there is excessive downloading. Action is then taken against the user. In future the system will be enhanced to alert users in real time, immediately instead of one hour later.

**Launching the library portal and SDI service**

To provide a one-stop access point for library users, the library portal was designed and implemented. This service requires a convenient single sign on to myLINC, library proxy and the eforms. Users can personalize preferred services. This way they will see only what they have selected. A key feature of the library portal is that users will be able to receive automatic email alerts on new acquisitions. This alert service will be extended to electronic journals using InfoGate in future.
Implementing other services

Finally, we will also be adding wireless services which take advantage of the campus wireless LAN. Currently, users can search the library OPAC via WAP enabled mobile phones. At the end of July, we target to launch AirLINC which will make the catalogue available on pocket PCs.

How have the roles of the librarians evolved?

Moving from a traditional paper-based library system to a hybrid system required tremendous effort and skills which we had to learn on the job. Our librarians had to learn survival skills on the job in order to empower themselves to serve the needs of our users effectively – that is – to provide the right information at the right time to our users. With the changing demands of the job, we have developed skills in,

a. IT applications for the diverse resources

IT applications are so pervasive and have engulfed our lives. Librarians at NUS have to learn how to configure links, how to build connectors, how to manage the vast electronic resources, license agreements and many others. In addition we have also learnt Microsoft Excel and Access to maintain and analyse all sorts of information.

Learning the various IT applications and making the most efficient use of them is still a big challenge. We had to learn to use Innopac and Millennium, EnCompass, IVLE and not forgetting all the various databases subscribed or created in house. Without mastering the resources available it would be difficult for us to provide users with the information required.

We have become information intermediaries and facilitators by applying knowledge and information skills with IT applications thus linking users to correct and timely information.

b. Outreach projects

Instead of waiting for users to come to us, we now bring our services to the faculties. In the past we provided mainly tutorials for small groups in the library premises. Now,
we partner faculty to conduct courses customized to their students needs. We also conduct focus group sessions to solicit feedback on our services.

We have become educators who are familiar with the various information resources, in all formats, not just paper or electronic, in serving the needs of the users. By working closely with the users, we hope to be able to understand their needs better and provide service excellence.

c. Entrepreneurial ventures – negotiations

With the government’s guidelines to cut manpower by 3% and to outsource non-core processes or services by 5% each year, we had to look at ways to become the best source. We are now managing A*STAR’s electronic subscriptions and the NUS High School.

We also negotiate site licenses for our electronic resources which we did not have to do before. Meeting vendors and counter proposing prices, terms & conditions can be very challenging at times. Some contracts take as long as a year to finalise when both sides refuse to compromise.

Negotiating the best deals, constantly improving processes, effective financial planning has become part of our lives now. Acquiring entrepreneurial skills to do more with less has now changed the way we view library services.

Conclusion

Rapid changes in governance, developments in IT, users’ needs and demands for collaboration have propelled NUS Libraries to stay efficient and relevant. The strong support role that we play in research and teaching will continue to be challenging. We will constantly be plagued with these questions – how do we provide value added services with a shrinking budget, how do we ensure users are equipped with information seeking skills, how do can we collaborate with librarians regionally and internationally to share resources and expertise, how do we stay relevant and essential in our organization?