

「學術界對圖書資訊學教育及學科發展之觀察與期許」
論壇 2010 圖書資訊學蛻變與創新國際研討會，2010 年
11 月 16 日，國立臺灣師範大學圖書資訊學研究所

“Insights and Expectations of Library & Information Science Research: An Academic Perspective” Panel held in 2010 International Symposium on the Transformation & Innovation of Library and Information Science, Tuesday, November 16, 2010, held at the Graduate Institute of Library and Information Studies, National Taiwan Normal University, Taiwan

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國立臺灣師範大學圖書資訊學研究所聯合中華民國圖書館學會與中華民國圖書資訊學教育學會，及本校資訊工程學系、School of Information Studies, University of Wisconsin - Milwaukee, USA、School of Communication & Information, Nanyang Technological University, Singapore 等學術機構與組織，共同舉辦國際學術研討會。希望邀集國內外重要學者專家，針對圖書資訊學之學科範疇、教育內涵、專業發展等面向之蛻變與創新，進行互動與對話。特別是邀請歐美亞洲等地於 iSchool 聯盟扮演重要領航角色的學者，分別以社會、文化、教育、專業、研究等觀點發表論文及專題演講（Invited Talk），分享其經驗與洞察。會中同時邀請國內學術界學者專家以論壇方式（Panel），發表其對圖書資訊學學科及專業發展的觀察與期許，透過產學多元觀點的分享與討論，激發創新思維。本特載特別刊出此次學術界論壇的報告，共有八篇。

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- Make LIS Professionals Ubiquitous / Yuan-Ho Huang

Exploring Innovative e-Learning Research Issues in Library and Information Science Fields

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Libraries have long been a primary resource used by instructors and learners to search and obtain learning resources. Although libraries are stores of valuable learning materials, their contributions to learning activities have not been acknowledged in the past. The rapid development of information and communication technology (ICT) in the e-Learning field necessitates the re-engineering of libraries to enable the delivery of library services that support efficient and effective e-Learning. The e-Learning with libraries' support should be fully discussed from three viewpoints including physical library, digital libraries/museums, and librarians. First of all, most readers served libraries as reading space, thus ignoring the principal property of libraries in supporting learning—rich book resources with excellent organization. Therefore, few evidential researches related to e-Learning supported by physical libraries were proposed. Furthermore, a digital library has powerful and efficient functionalities for content management (acquisition, storage, indexing, access, and maintenance), considerable metadata for content enrichment and structuring, as well as services for effective content searches, access, annotation, filtering, and dissemination. Due to the richness of structured digital collections, digital library services have been an essential component of a quality e-Learning system, and the growth in e-Learning, in which education is delivered and supported through computer networks, has also raised new research issues for library services. Although digital libraries have the potential to change significantly the fundamental aspects of the classroom in ways that can have an enormous

impact on teaching and learning, new pedagogical methods and easy-to-followed pedagogical procedures should accompany digital libraries as an emerging technology for education to reach the goals of formal, informal or life long education. Additionally, the goal for twenty-first century school librarianship in the United States and abroad has shifted toward more active involvement of librarians in student learning through teacher and librarian collaboration. However, the nature of this collaboration, including the process of collaboration, and the extent to which teachers and librarians working together improve teaching and learning, have yet to be fully explored. Particularly, few empirical studies have specifically examined the effectiveness of teacher and librarian collaboration.

Except for exploring the importance of e-Learning research in library and information science fields from different viewpoints, this talk also presents several innovative studies in relation to effectively e-Learning supported by physical libraries, digital archives/libraries, and librarians. Meanwhile, several potential research directions of e-Learning in library & information science fields have also been addressed in this talk. The talk aims at appealing that library and information science fields pay much attention to e-Learning research as well as encouraging much more scholars, who are interested in e-Learning research, to join this research field.

Linking Pictures: An Implementation of Idea “Linking Pages” on Pictures

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My presentation will introduce an idea called “linking pictures” for sharing content on pictures in Web 2.0 environment. Both Tim Berners-Lee (2007) and Kevin Kelly (2007) have shared their views on the links between documents, pages, and data in Web 1.0, Web 2.0 and Web 3.0, respectively. Especially, both of them have indicated that the idea “linking pages” is a key feature of Web 2.0 services. Now, all wiki and blog services provide links from one page to another. However, pictures sharing services such as flickr or Picasa only provide the “tagging mechanism” for users to share or organize their pictures. The current tagging function shows another Web 2.0 feature—that is, users’ sharing content. Compared with hierarchical categorization services such as “My Favorite” of IE or “Bookmark” of firefox, the current tagging mechanism seems to be just an implementation of alternative classical knowledge organization strategies.

Therefore, I begin to think how to implement the concept of “linking pages” on pictures. Two pioneering applications—facebook and Google map—have provided similar services. The former allows its users to label and link any part of a photo to any facebook users, while the latter allows its users to link locations to any webpage. However, the labeling function of facebook and Google Map are limited in their own environments. I notice that several services such as

Tagtoo, Stipple and Pixazza have started to provide their users the function of adding links on any parts of pictures at arbitrary blogs to other pages. The function works like the “ImageMap” function of most HTML editors, but allows a blogger to add links on labeled objects in a picture. By this way, a reader can click the labeled object and link to another webpage directly, which reveal the concept of “linking pages” for pictures. It’s not hard to imagine that the following scenario will happen.

“One day, when you read a friend’s blog, you find that your friend’s handbag in the photo draws your attention. And you cannot help clicking on the handbag. Immediately, you are directed to the Amazon page for the product, which you can click and buy at once.”

The implementation of linking pictures reveals that a picture is not just a document or a single concept. The “object” or “content” on a picture can be accessed and linked to other pages. So, users don’t need too much words, clicks, or searches for discovering the content of a picture. Just two clicks—one from an author for setting the links, and the other from a reader—can link the content of pictures and other pages together. This is what I called “linking pictures.”

Re-Search for Micro Phenomena with Macro Investigation

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For years, information behavior research has received a great attention from the LIS research community, whether information seeking, information transfer, or information use. Despite the proliferation of studies in information behavior research, LIS researchers are still eagerly seeking phenomena to be investigated, deliberate the possibility to adopt perspectives from other disciplines, such as sociology, management, psychology, and computer science. All these have led LIS to the pathway of inter-discipline. However, it leaves several questions and dilemmas that every one of us has to ponder:

1. LIS needs not only user studies but also the studies that can build a strong tie between population under investigation, problems addressed, and service design.
2. LIS needs another possible horizon to explore information behavior by looking through theoretical lenses of:
 - Affective paradigm
 - Social, cultural, and ethical paradigm
 - Organizational and political paradigm
3. Participatory librarianship needs participatory (action) research

- As library community is moving toward the participatory nature through the practice of community engagement, Library 2.0, and open access, LIS research needs also to reflect current and emergent priorities and to respond to the changing circumstances. Participatory research, different from natural scientific approach, becomes one alternative for research community to go beyond user-centric to value-centric, context-specific to general alignment.

4. LIS needs to re-search for micro phenomena with macro investigation

- Research topic that is micro enough to actually make the changes based on research findings

Research orientation that is macro enough to capture the inner, outer, and in-between phenomena with both objective and subjective perspectives.

I Think, Therefore I Am. – Make A Choice between to Change Or Not to Change

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Preface

Information organization is the knowledge of organizing and managing various kinds of information objects for users to access. Advances in technology and the information environment have precipitated a change in the field of information and knowledge analysis. As Hjørland points out, domain experts and library professionals should engage in domain analysis collaboratively. After years of efforts, specialized knowledge analysis and system have been developed in areas like bibliometrics, industry information analysis and patent or technology analysis. However, analysts must possess professional expertise to fulfill the task of analyzing and organizing. This study presents a model for development in knowledge analysis, knowledge auditing, knowledge extraction, knowledge representation, and information system design which utilize task-oriented knowledge resources; it also provides recommendations for future development.

Introduction

Adaptation and variation is an instinct for species to survival, and the change of environment, culture, science and technology, will modulate academics and industries development. To face current change, library

and information science try to restructure, merge and cooperate to find the new ways, which means except of the original specialized library service, it also expands its services into all in need of information services. Therefore, the role has become a combination of librarians, archivists, digital personnel, digital archivists, information architect as an informational service professional. Nevertheless, the development of academics influences library deeply. I am submitting some comments on how to master between to change or not to change as below.

1. Library versus Library's Environment

Cooperation is a solution to adapt the fast changing environment. It takes efforts to conduct studies and interactions in order to achieve mutual understanding of roles, missions, and services among above mentioned organizations. Particularly, mechanism of information services between professional organization and general industry is quite different.

2. Information Flow versus Value Chain

We have been viewing our professional from view points of "Information Flow" that we are familiar with. We pay more attention on individual output during the flow, as the value chain's flow from collect to suggest in figure 1.

But, if we view it from perspectives of the supply chain or value chain of the information services (Figure 2), libraries or institutes of its kind have become more of service oriented and content provision

units. Information consumers also have changed as well. How to satisfy these consumers needs become an important research topic.

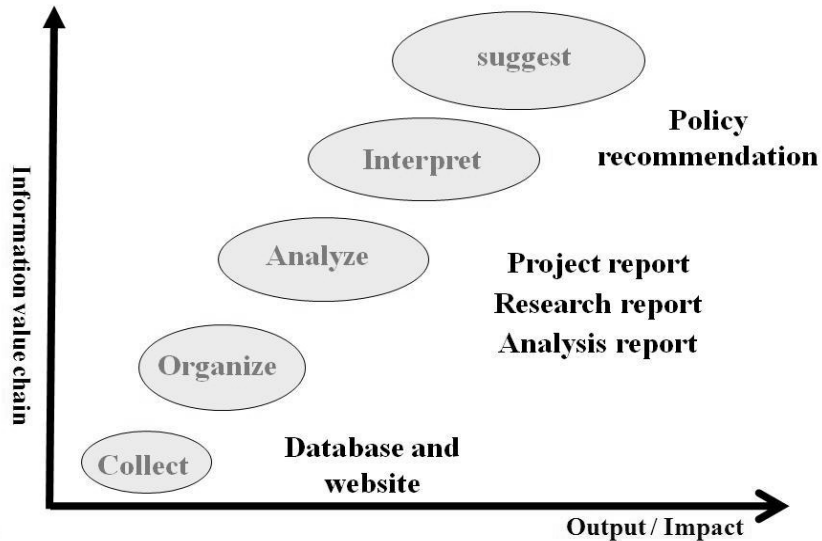


Figure 1 Information value chain and Output/Impact

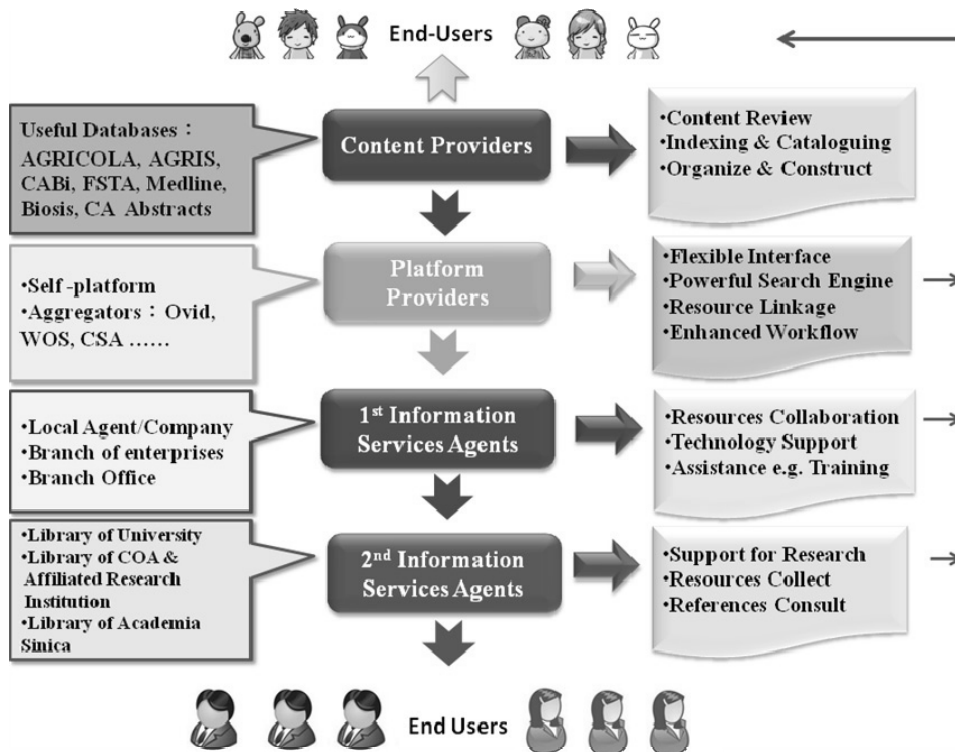


Figure 2 Information providers from different level

3. Publication versus Posting

In the past, libraries focused on publications as information resources which had established its own rules. However, with the development of cyberization, it is necessary to clarify that what is the scope of information resources as whether it is a product or a service. In accordance with the development of digital archives and institution repository, together with introduction of social software, different origin of sources produce different products, therefore, the problem of the scope of information resources have been high-lighted as well.

4. Professional versus Web Users

We provide professional information services, and what we deal with are professional issues. Users' information behavior or classification behavior is one of our major research topics. Figure 3 show us what we should do is to design systems as tools to classify and organize information in order to help us to conduct information analyzing, categorizing, or constructing tools for retrieval. It is not for us to instruct web users to help us to do information organizing or management.

One of the proper ways is to promote information utilization and information ethics through imparting of Information Literacy.

5. Breadth versus Depth

Figure 3 can be divided into 3 parts for the trend development discussion. Firstly, when librarians do subject analysis for retrieval, they focus on publication resources. Secondly, the breadth of its applicable context has been gradually transformed from libraries activities of classification and cataloging onto other settings, such as the web, museum, archives, gallery and office. Finally, in professional domain, experts base on the same idea to do subject analysis, but for task- oriented knowledge services, they do knowledge analysis deeply.

Library is approaching systematic development through years of efforts in building foundations of skills, tools and standards, accompanied with theories of librarianship. Thus, to be more in breadth and depth are possible, however, problems may encounter in each aspect accordingly.

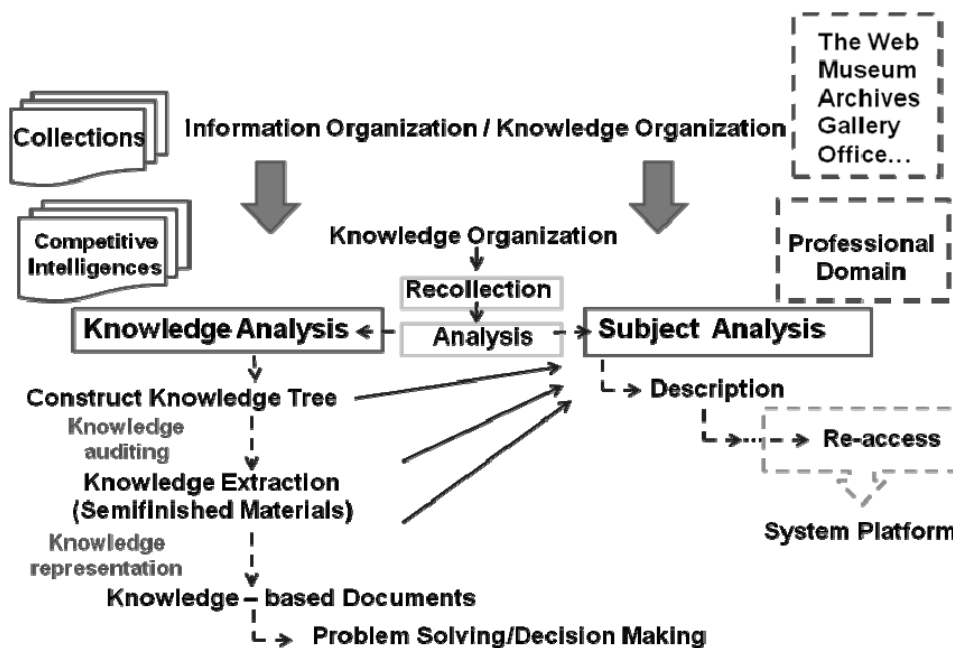


Figure 3 The schematic of science information flow within breadth and depth

6. Library and Information versus Information and Communications

Library and information emphasizes on information sharing. Information and communications emphasizes on effects. The combination of the two will certainly spark new impacts for the profession.

7. Library versus the Library Related Industries

In addition to librarianship, our Government has set out 12 service industries, including Financial services, Distribution services, Telecommunication and media services, Medical, healthcare and care-giving services, Manpower training, dispatching and property management services, Tourism, sporting and recreational services, Cultural and creative services, Design services, Information services, Research and development services, Environmental protection services, Engineering consulting services. Each and every industry has levels of requirements for talents in information services and communications. It is extremely a good opportunity for us.

Conclusion

As this study mentioned above, from environment, consumer needs, information resources, users, information processing, to information communications and information services, all has been changing. In conclusion, I'd like to point out the followings:

- Decision Making Supporting System needs knowledge from information of multiple resources and post knowledge analysis and organization.
- Achievements of this analysis model and system are based on theories and empirical implementation.
- Library contains massive information entities and is the foundation of IO/KO.
- The requirements of professional domain knowledge gradually become deeper, more various, and more customized.
- Significant difference between being capable of doing and doing well.
- Under task-oriented modern knowledge organization inquires integrated multiple resources, collective explicit and tacit knowledge, awareness of different approaches of analysis, be able to construct small and specific KOS, visual representation of knowledge, and systematic management.
- The related curriculum planning and design require concentration on differentiation in width and depth.

Finally, I am with two points in my conclusion. If we change our perspectives, we will see things a different way. Change brings opportunity, but it is challenging that we need wisdom to recognize and identify.

Cooperation in the Curriculum : Catalyst the Profession to Collaboration

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The LIS education is always copying with IT trend, and also be a charting the future roles played by library and information professionals. The adaptation to the digital age is stimulating curriculum innovation, to establish a new professional profile and to encourage the extended role of library and information professionals. In this relentless socio-economic and IT fly change, it is important for the diverse approaches to LIS education to have a strong community cooperation and collaboration, from courses to curriculum, from faculty to local community organization, and also extend to national and international dimension.

This present will focus on cooperation and collaboration in library and information science teaching and pedagogy, in with the goal of creating a clearer understanding of the issues impact on the professional qualifications and the motivation of students and graduates. It is not hard to understand why we should develop this capacity.

How are curricula in changing to the new educational needs? IT and new professional skill are always can keep up with world trend. But there is always on going. Only below issues can save with the goal of exchanging of ideas about the opportunities for curriculum development and for research.

Cross-courses collaboration: Formal curriculum review processes, professional faculty association small group team.

Cross-institutional collaboration: Different dimension organizations have commitment to a common collaboration mission for long term.

Cross-international collaboration: Maybe grater risk, power is an issue.

Among my academic colleagues at the department, there seems to be an unwritten assumption, which sometimes emerges in very explicit form, in which the Laboratory are not only the heart of the group courses, but are also somehow on a higher plane than professional fields. Teaching and research in those areas is “pure,” in professions “applied,” and, therefore, broad and deeper.

On the other hand, among at least some laboratory practitioners, one can find a quite pronounced view that we who are teaching in professional programs are not foggy-headed researchers-- hopefully impractical, capable of preparing our students for the real world of practice. More specifically, our curriculum is often seen to be so connected to real-world situations that it can offer more use to the working professional.

So what is it that we are doing when we get curriculum in this profession? Doing “merely” applied practitioners and curriculum collaboration view as so important that it is of useful Catalyst in the curriculum.

iSchool: Seeking an Identity or Accelerating the Transformation?

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Our school names evolved from school of library science to mostly school of library and information science. For some, the word “library” is a bit awkward for it denotes a physical building. Recently, a few schools have completely eliminated the word “library” and become school of information studies or department of information and communication. The battle is not only over nomenclature but more importantly over identity and value. Would supplant the school name by or supplement it with the word “information” substantially increase our identity or transmute our core value?

The iSchool movement brought into focus the relationship among information, technology, and people, accenting on “understanding of the uses and users of information, as well as information technologies and their applications.”[1] In reviewing course offerings, library and information departments/institutes in Taiwan and ALA accredited ones, being members of iSchool or not, already added more and more information technology essence in course design. The faculty ecology has also adjusted accordingly: almost every school has at least one full-time faculty member with doctoral degree from computer science or engineering related disciplines.

While iSchool endeavors to transform the value systems, researchers are closely examining users and

their use of “iLibrary.” The author eagerly looks forward to the flourish of real-time digital reference services, information commons, and mobile services. Nonetheless, while many users benefit from the convenience and new concepts, there exist some insist on face to face contacts and some fondly remember the library as nothing but a quiet sanctum. Librarians may or may not support changes with all kinds of reasons. The outcomes of iSchool—students about to become librarians—may diffuse the ideas far and wide, which helps accelerate such a transformation.

Notes

[1] iSchool. The Power to Transform Lives.
<http://www.ischools.org/>

Whither Go the Traditional Courses

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We live in a time of change. The information environment and users' information behaviors are changing. Undoubtedly, the information technology and web tools have changed our profession and our lives. Since the mid-1990s, a number of scholars and practitioners have urged us to take action to adapt to the change. For example, Stoffle, Renaud, and Veldof (1996) wrote an article, entitled "Choosing Our Futures," suggesting

[1] librarians must get away from thinking that libraries are about reference, cataloging, acquisitions, preservation, interlibrary loan, and circulating materials - or even about managing physical facilities and print collections. Simply translating current library activities and tasks into electronic or digitized information will not satisfy the needs of the library's customers, nor will it ensure its future. (p.220)

In order to meet the emerging challenges and needs, most, if not all, library schools/ departments have tried to adjust their degree requirements and many new courses have been added to the curricula. Since the number of required course work is fixed, adding new courses means we have to drop some existing courses. As a result, some traditional courses inevitably are compelled to reduce the credit hours or stop offering due to the low enrollment numbers. This phenomenon, nonetheless, makes me worry about the future of some of the traditional courses. Below I will briefly talk about my concern.

Admittedly, libraries exist to bridge the recorded knowledge and the users with information needs as well as to facilitate communication across time and space. In order to accomplish this task, we need to know how to effectively and efficiently organize recorded information for retrieval and utilization. Therefore, in the *ALA's Core Competences of Librarianship* (ALA, 2009), organization of recorded knowledge and information is regarded as a basic knowledge to be possessed by all persons graduating from an ALA-accredited master's program. In other words, organization and representation of knowledge is a core skill set of our profession. However, the reality seems to move in opposite direction. Courses related to cataloging and classification or information organization are reduced. Also, for some students, they might not think that this is a core knowledge they should learn or possess. If we truly think that the ability to organize information is a must-have-skill of our profession, is this the right way to do it? Besides, facing with the gigantic number of information sources and constantly emerging media, what and how should we teach?

When we look forward to the future, it does not mean that we should forget our past. Most people, if not all, would agree that we can learn from history. Not only can we learn what happened in the past, the insights into the past might also carry into the present

and the future. More important, learning history helps us to build up a historical perspective for viewing our world. In line with this point of view, one might assume that learning the history of libraries and librarians is helpful for promoting an understanding and appreciation of our profession. However, if we ask library school students whether they know, more or less, the history of libraries, the history of librarianship (or information science), or the history of books, it is likely that we may get an answer – “Not Really.” On one hand, we agree that learning history is important. On the other hand, we do not require our students to have a historical understanding of our profession and the development of the carriers of knowledge and information. It is contradictory, isn't it? Why?

I am also concerned about another two traditional courses: Chinese bibliography (中國目錄學) and Chinese textual bibliography (版本學). The former used to be a required course for most library schools in Taiwan but it is no longer the case. Chinese bibliography has its own tradition and characteristics. It is quite different from the bibliographic systems developed in the west. Chinese bibliography with a two-thousand-year tradition should have some merits for people to learn. Nonetheless, most young people are not interested in knowing this subject. Probably it is not necessary to be a required course for library school students in Taiwan. Personally, I think the issue is how to attract at least some young people who are interested in the subject area to come and learn. The second one, Chinese textual bibliography, is also a unique course in our culture. This course cannot simply be taught in class. It requires a lot of practical knowledge. However, most experts who are qualified to teach this course have retired. Finding an experienced and qualified instructor will become an issue then. Besides, the lack of students is a critical issue as well. To me, these two courses are full of unique cultural features. We should encourage and help some of our students to become the inheritors of this

cultural heritage. The library departments in Taiwan should take the responsibility and make effort to bridge the experienced instructors and the interested students.

My last but not least concern is the preservation and conservation of library collections. As long as a library has physical collection(s), the library is responsible to safeguard carriers of knowledge and information in all forms. When library collection contains more and more digitized materials, the digital preservation issue is getting even more critical. Providing preservation and conservation treatment to ensure that all collection materials are handled properly and are housed under appropriate environmental conditions is our inescapable responsibility. Nonetheless, most of us probably do not have the needed knowledge and skills to manage it. We are not equipped with the needed knowledge and skills because the library departments in Taiwan do not offer preservation and conservation courses. It is also not easy to find a qualified instructor. The person who can teach the course needs to have knowledge, skills and experience in preservation and conservation. This issue will become more and more critical and challenging. We definitely need to think about it and take action.

References

- ALA (2009). ALA's core competences of librarianship. Retrieved from <http://www.ala.org/ala/educationcareers/careers/corecomp/corecompetences/finalcorecompstat09.pdf>
- Stoffle, C., Renaud, R., & Veldof, J. R. (1996). Choosing our futures. *College and Research Libraries*, 57(3), 213-225.

Make LIS Professionals Ubiquitous

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LIS education needs to be reexamined from time to time in the changing environment. Before we enter into the issue of education, we need to think about the roles of information professionals. I use a pyramid (as shown in Figure 1) to present my viewpoints. At the first level, we are recognized in the role of information brokers which help users to find their needed information. At the second level, we can be the

knowledge leader or knowledge facilitator to lead toward a strategic decision in an organization. At the top level, we might become the social entrepreneur (Allison, 2007) that creates innovative solutions to social problems and mobilizes the ideas, resources, and social plans required for sustainable social transformations (Alvord, Brown, & Letts, 2004).



Figure 1 *Roles of information professionals*

As for the core competences of LIS professionals, ALA (2009) proposed eight core competences of librarianship, which include foundations of the profession (e.g. value, ethics), information resources, organization of recorded knowledge and information, technological knowledge and skills, reference and user services, research, continuing education and lifelong learning, administration and management composed by multidiscipline.

Based on the resourced-based theory agility which is one school of strategic management, core competences are heterogeneous, unique, and difficult to imitate. Therefore, I have proposed four aspects for envisioning core competences of LIS professionals, which are knowledge work leverage, solution delivery in time, entrepreneurial alertness, and agility as shown in Figure 2. Some of the concepts were inspired by Sambamurthy, Bharadwaj, & Grover (2003)'s research

and I have adapted the abovementioned concepts to our professions. By using "Knowledge work leverage", we develop collaborative and harmonious relationships between information and the users in order to enable the sharing of knowledge. "Solution delivery in time" is the problem solving ability to respond to users' information need immediately. "Entrepreneurial alertness" is the capability both to discover the LIS marketplace and to verify opportunities. "Agility" is the ability to take advantage of opportunities for innovation by assembling essential assets, knowledge, and relationships with both speed and surprise.

Seadle & Greifeneder (2007) proposed their iSchool curriculum model (Figure 3) with HCI (Human-computer interaction) as the core concept; other related concepts are about managing culture and ecologies, managing technology and collections.



heterogeneous, unique, and difficult imitate

Figure 2 *Envisioning core competences of information professionals*

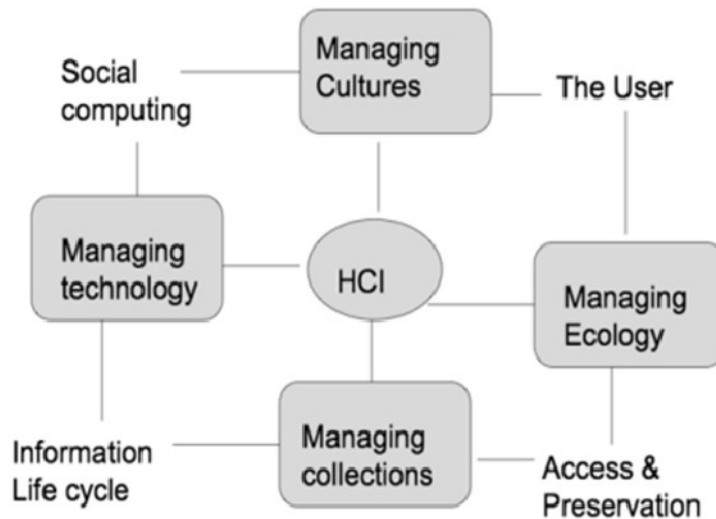


Figure 3 *iSchool curriculum model*

Source: Seadle, M. & Greifeneder, E. (2007). Envisioning an iSchool curriculum. *Information Research*, 12(4), Retrieved from <http://InformationR.net/ir/12-4/colis/colise02>

I have proposed three key elements for the LIS curriculum (Figure 4): objects, technology, and management. Users and information/knowledge are categorized as objects. Technology is about computer related issue or some other devices which facilitate the speed of information delivery. The element of management includes both a mechanism for organizing

information/knowledge, and also techniques for communication, coordination, and resource allocation, value, culture, and passion building, leadership, etc. The three elements need to exist in every course and attain synergy. Synergy is the combined action of two or more elements to achieve an effect of which each is individually incapable.

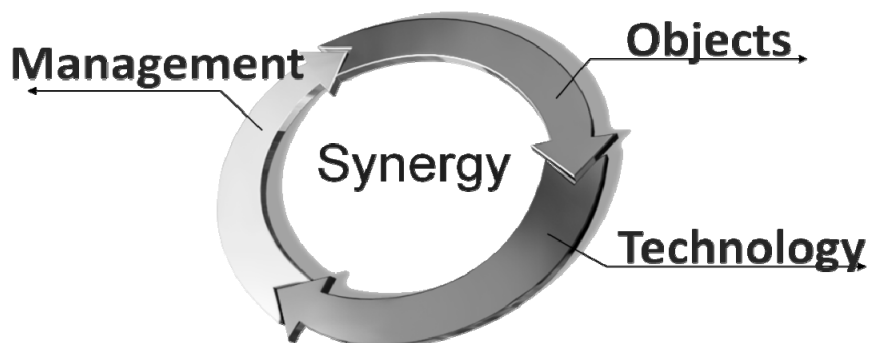


Figure 4 *Key elements of LIS curriculum*

As for future LIS academic research, Seadle & Greifeneder (2007) also proposed several potential library and information science research topics, such as digital libraries, long term archiving, etc. Hsieh-Yee (2010) has mentioned about several challenges and opportunities, which include Leverage LIS knowledge to organizing information in various venues, developing competencies in new areas, expanding the market and the reach of LIS, etc.

I have proposed four changing perspectives for LIS academic research: *from micro to macro or hybrid*, *from static to dynamic*, *from passive to active*, and *from downstream to upstream*. The example of “*from micro to macro or hybrid*” is to conduct the study of users’ information need, which we could explore from individual level, the group level, the organizational level, and even the societal level. The example of “*from static to dynamic*” is to collect the data from cross-sectional to longitudinal data and to further investigate the effect of path dependency. The example of “*from passive to active*” is to provide timely and useful information actively when a disaster happened to help with decision making. The example of “*from downstream to upstream*” is that we usually organize information or even knowledge; we could both focus on finding original data and possessing the originality. In the end, four expectations are presented for the future, which are *providing more flexible and adaptable mechanism for knowledge organization*,

creating the user’s information need, marketing the various LIS professions from time to time, and making LIS professionals ubiquitous.

References

- ALA (2009). ALA’s core competences of librarianship. Retrieved from <http://www.ala.org/ala/educationcareers/careers/corecomp/corecompetences/finalcorecompstat09.pdf>
- Allison, M.M. (2007). Women’s health: Librarian as social entrepreneur. *Library Trend*, 56(2), 423-448.
- Alvord, S.H., Brown, L.D., & Letts, C.W. (2004). Social entrepreneurship and societal transformation: An exploratory study. *Journal of Applied Behavioral Science*, 40, 260-282.
- Hsien-Yee, Ingrid (2010) People, information, technology: Information organization research, presented at International symposium on the future of information organization research in NTU, Taipei.
- Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. *MIS Quarterly*, 27(2), 237-263.
- Seadle, M. & Greifeneder, E. (2007). Envisioning an iSchool curriculum. *Information Research*, 12(4) , Retrieved from <http://InformationR.net/ir/12-4/colis/colise02>