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WITH MEMORIES OF KARL LO:

A Report on the 9th International Conference on Asian Digital Libraries

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Preface

Karl K. Lo had an enormous impact on the field of East Asian librarianship, but - just as importantly - he influenced many of us in a very personal way as well. I count myself fortunate to be one of the lucky ones who “grew up” professionally in his shadow.

I first met Karl Lo in late October 1975 during my second year as a librarian, when I ventured from Princeton NJ to St. John's University, Jamaica NY, to attend the library-related panel at a special conference on “An Evaluation of Chinese Studies at American Colleges and Universities, 1958-1975.” Karl's paper that day was entitled, “Acquisitions for Chinese Studies: A National Program for Service and Economy.” As a recent graduate embarking on my career, I was impressed from the start with Karl's brilliance and inspired by his expansive vision. My sense of wonder and amazement at the connections he could make between the potential of emerging technologies and the routine tasks facing librarians on a day-to-day basis never faded. Certainly therein lies his legacy!

During Karl's term as Chairperson of CEAL, 1985-1988, he asked me to take minutes of the CEAL Plenary Sessions. In those days CEAL had only one officer, so “volunteers” were needed to help out with various duties. He and I had a few conversations about the need to change the organizational structure so that “volunteers” could be included in the organization in a more formal manner, and those conversations continued with his successor, Tom Lee. Ultimately, though, the job of pushing through long-needed organizational reform fell to me to accomplish when I followed next as chairperson. My awareness of the need arose in Karl's term, though.

Well, my memories of Karl Lo are crowded with recollections of minute-taking and reporting. It was not only that I wrote minutes during his term, more importantly he was always reporting about exciting conferences in which he had participated, usually somewhere in Asia, as well. As it turns out, I recently had such an experience myself. Therefore, in memory of and tribute to Karl K. Lo - and again feeling the conflicting emotions (pressure from a time-consuming and seemingly non-essential task, yet awareness of the service ethic involved in sharing information) that are still familiar to me from twenty years ago - I offer a report on ICADL 2006.

ICADL 2006

The Ninth International Conference on Asian Digital Libraries was held in the Shiran Conference Center (Nov. 27-29) and Clock Tower Building (Nov. 30) of Kyoto University last year. The program consisted of forty-six full papers, fourteen short papers, and six poster papers. In addition there were two keynote speeches, four invited talks, a joint panel of five digital library experts, and a special session with reports from nine digital library projects. An exhibit hall provided opportunities for hands-on searching in digital libraries. The papers, one of the invited talks, and six of the digital project reports have been published as:

Digital Libraries: Achievements, Challenges, and Opportunities: 9th International Conference on Asian Digital Libraries, ICADL 2006, Kyoto, Japan, November 27-30, 2006 Proceedings (Berlin: Springer, 2006) ISBN: 978-3-540-49375-4

This report will focus on what is not included in the published volume. First of all, I should note that the conference was sponsored by:

- 21st Century Center of Excellence Program: “Informatics Research Center for Development of Knowledge Society Infrastructure” (Kyoto University) - http://i.coe21.kyoto-u.ac.jp/index_e.html
- Research Center for Knowledge Communities, University of Tsukuba
<http://www.kc.tsukuba.ac.jp/index.en.html>
- Special Interest Group on Database Systems, Information Processing Society of Japan
<http://www.ipsj.or.jp/english/>

and held in cooperation with:

- The Database Society of Japan <http://www.dbsj.org/English/index.html>
- I-explosion -- Cyber Infrastructure for the Information-explosion Era (MEXT Grant-in-Aid for Scientific Research on Priority Areas, 2005-2011)
<http://i-explosion.ex.nii.ac.jp/i-explosion/ctr.php/m/IndexEng/a/Index/>

“Age of Content and Knowledge Processing”

Dr. Makoto Nagao, President of the National Institute of Information and Communication Technology (formerly: President, Dean of Engineering, and Director of University Library at Kyoto University), opened the conference with a keynote address on “Age of Content and Knowledge Processing.” Nagao divided his presentation into five topics:

- Web Information Analysis Project (NIICT). NIICT collects massive amounts of information from the web, does machine translation into Japanese, provides automated surface analysis for information reliability (reputation of individuals; frequency of updates; status of links; types of citations (academic, casual, etc.)), and then conducts an automated deep analysis of information reliability. The latter is still under development, but essentially it involves clustering large amounts of data, checking data against established academic knowledge, and detecting new or contradictory information within the time sequenced flow of information on a specific topic. Finally reliable information is put into a knowledge database.
- Kyoto Digital Archives. <http://www.archives.astem.or.jp/> Rather than simply describe this project in terms of preservation and access to cultural properties, the initial focus, Nagao emphasized the city of Kyoto’s efforts to use digitized cultural assets to foster traditional industries, stimulating economic vitality.
- U-Japan = Ubiquitous Japan. http://www.soumu.go.jp/menu_02/ict/u-japan_en/index.html A project of the Ministry of Internal Affairs and Communications, it aims at making network connectivity ubiquitous. Museums and other institutions are incorporating image files, providing digital museum or city tours accessible via cell phones.
- Natural Vision. This project looks into moving from RGB to realization of true and precise color reproduction utilizing multi-spectrum photography and primary multi-color displays. Still in an experimental stage, the technology is being used to photograph Central American codices -- 4,000 photographs of a Mayan site in Copan, Honduras have been transformed into a Virtual Reality space.
- Machine Translation. Quality of MT is now adequate for translation of newspaper articles, scientific and technical papers, and introductory materials. Currently they are aiming at very high quality Chinese- Japanese machine translation capability in order to monitor rapid advances in scientific and technological research in China, on the one hand, and to present Japanese research results to Chinese researchers too. By the 2008 Beijing Olympic Games the goal is to have machine translation facilities available from mobile telephones to support Japanese tourists attending the games.

“Cyber Science Infrastructure and Scholarly Information”

Dr. Jun Adachi, Professor of Digital Content and Media Sciences Research Division and Director of Development and Operations Division, National Institute of Informatics gave an invited talk, “Cyber Science Infrastructure and Scholarly Information for the Promotion of e-Science in Japan.” Dr. Adachi provided an overview of NII’s strategy to develop the next-generation scholarly environment, addressing the following topics which he noted are all inter-related:

E-science; data-centric science; virtual laboratories; collaboration

Information explosion era
CSI = Cyber Science Infrastructure
CSI architecture
Networking, grid computing, Universal Public Key Infrastructure
Strategy for scholarly information
NII's information services
Institutional repositories

Dr. Adachi's excellent overview of current and emerging approaches to scientific research, along with his analysis of the cyber-infrastructure needed to support it, was compelling. Some of what he discussed is available on the following NII web site, which also includes links to institutional repositories: "Next-generation scientific information resources infrastructure" <http://www.nii.ac.jp/irp/index-e.html>

Although Adachi's topic was broad and far-reaching, his explanations were down-to-earth and easy to understand. He started out by explaining that the World Wide Web enables millions to disseminate information, but our ability as humans to accept and digest that information has not been similarly enhanced. Time required for human administration or involvement in searching, organizing, and accessing information has actually increased by as much as 30%. NII has identified this situation as an area for research, specifically into the following aspects: resilient distributed systems, next generation search, interactive engines and interaction dynamics, and governance of knowledge-based societies.

Prominent among the many aspects that Adachi introduced (about which details are available on NII's web site - see above) is NII's promotion of institutional open access repositories (IRs). NII's role with regard to IRs is threefold: automated harvesting of information in IRs, storage in NII's metadata databases, and provision of integrated retrieval services. Further, NII supports the curation of IRs and provides a federated search for end users.

Other keynotes

Daniel Clancy, Engineering Director of Google Book Search, provided insights into current research projects underway as a part of Google's mass digitization of books. Pointing out that Google is primarily a technology company (not a Web company), Clancy stressed that they try to innovate at every stage of their work. For example, now they are involved in developing cost effective scanning processes in order to reach their target of 30 million books to be scanned within ten years. They are still working on OCR software (especially for CJK, mathematics, old texts, manuscripts, marginalia), methods of page number detection and page ordering, and other issues related to the granularity of documents for indexing.

Mary Lou Jepson, Chief Technology Officer of One Laptop Per Child (OLPC), brought along a prototype of the \$100 computer that her foundation has developed. Her description of the process by which this computer was developed and current efforts to enlist governments to commit to purchasing and deploying them to the world's children was inspiring. Much of the discussion generated was about providing content for the children to access through cooperative projects, such as Wikipedia, Wikiversity, etc.

Panel Discussion on Next Generation Search

Professor Masaru Kitsuregawa (U Tokyo) described a large scale project that he directs, The Grand Voyage Project: Information Technology, a consortium of government, industry and academia. Moving beyond search into various methods of access, analysis and use of information, the project aims to develop, not search engines, but service engines. More details are available on the web site: <http://www.jyouthoudaikoukai-consortium.jp/en/about/>

Dr. Wei-ying Ma (Microsoft Research Asia, China) introduced Libra Academic Search, a free computer science bibliography search engine developed by Microsoft Research Asia (<http://libra.directtaps.net/about.htm>). He also discussed a research project, Guanxi, which is moving away from process-centric systems toward a data-centric model. In closing he predicted that a future platform for global internet economies will have speed (driven by algorithms), efficiency (driven by data), and scale (driven by infrastructure).

Professor Hai Zhuge (Chinese Academy of Sciences) emphasized that the key issue for next generation search is that the semantic space in which query operations are located will be normalized. In describing an “information knowledge grid,” he used the Dunhuang caves as an example - content is dynamically clustered according to requirements. Therefore the Dunhuang cave content space could be considered as an “information knowledge grid.”

Professor Zhou Lizhu (Tsinghua U) focused his remarks on personal search engines as solutions to individual needs for topic-specific (vertical) searches that are expressed through terms, schema, or media types.

Finally, Daniel Clancy (Google) served as a commentator. He sees the future of search as a dialog, with refinement operators providing feedback during a search. In addition to general searches and vertical searches, he suggests that custom searches will find a niche too.

Digital Library Projects

Reports from National Diet Library (Japan), National Institute for Informatics (Japan), National Archives of Japan, National Digital Archives Program (Taiwan), Kyoto International Manga Museum, and National Digital Library of China are published in the conference proceedings.

Keita Goto presented the progress of the Kyoto University Digital Library and Institutional Repository, which expands on Kyoto University’s pioneering projects to develop digital library resources. See: <http://ddb.libnet.kulib.kyoto-u.ac.jp/minds.html>
<http://repository.kulib.kyoto-u.ac.jp/dspace/>

Noriko Arakawa of the Japan Science and Technology Agency (JST) introduced Journal@rchive. Currently more than 300 Japanese journals have been digitized, with over 200,000 articles available in J-Stage, an e-journal platform for academic societies in Japan (<http://www.jstage.jst.go.jp/>). In 2005 JST started a project, Journal@rchive, to scan and archive backfiles of journals. A journal selection committee prioritizes the list of journals to be archived—74 journals selected from 550 titles nominated in 2005 and 65 from 612 titles nominated in 2006. In 2005-06 over 6 million pages and 400,000 articles were digitized. These are available at: <http://www.journalarchive.jst.go.jp>. Citation links to articles and databases are available through the JST Link Center. Future plans are to select additional titles annually with a goal of covering 500 titles in five years, expand the links to other sites in cooperation with search engines, and provide additional functionality.

Raju Buddharaju provided an overview of the digital library services at the National Library of Singapore. While most of the projects described were fairly typical of digital libraries, the planning and implementation process commanded attention. In particular, she described a “digital life cycle framework” and a preservation architecture that is being developed under the assumption that mandated legal deposit of web sites will drive the need for web archiving services at the national level (not mandated yet, but expected). She also described the Singapore Infopedia project in which answers to reference questions are packaged as stories.

Finally, there was a presentation from Indonesia - “Digital Libraries: Sharing Information Resources in the Heterogeneous Environment, Case Study: University Libraries in Indonesia” by Zainal A. Hasibuan and Luki Wijayanti. After several days of concentrating on the future, suddenly here we were in the present. Indonesia has about 17,000 islands, with about 2,400 institutions of higher education. Until now there has been a lack of interconnectivity, with a resulting lack of resource sharing. Now there is a movement to implement e-Indonesia strategies as the basis for a knowledge-based society. With a vision of joining the global information society, Indonesian university libraries are making progress step by step.