



**A case study of changing management: how we radically evolved library processes from information technology impact**

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**Abstract:**

*Information Technology (IT) applied to academic libraries has been impacting and changing the library organization and management. This paper explored and discussed the emerging trend for academic library management changes from information technology impact based on a case study from the library of Chicago State University, USA. The authors analyzed the management and organization of the library utilizing **Strengths, Weaknesses/Limitations, Opportunities, and Threats** (SWOT strategic planning theory) process to explore the current environment and developments at academic institutes, applications of information technology, the economic pressures, and the changes they made in the library's organization structure, the leadership of the library, and the competencies of professional librarians and support staff. From this case study, the authors summarized that the emerging trends for library management, and provided recommendations that to change academic library organization and management should be based on the mission/vision of academic institutes and match up the rapidly development of information technology and academic world.*

**I. Introduction**

**Chicago State University** (CSU), founded in 1867 (one of the oldest Illinois public universities), is a public, urban, state academic institute with 7,200 students (including 2,300 graduate students) in 5 colleges, such as the College of Arts and Sciences, College of Business, College of Health Sciences, College of Education, and the College of Pharmacy. There are 36

undergraduate and 25 graduate programs including a [Doctor of Education](#) and a [Doctor of Pharmacy programs](#), plus a Division of Continue Education for the community with extension courses, and we have extensive distance learning courses and not-for-credit programs. There are 983 full time employees: 298 faculty members (plus 173 adjunct faculties), 314 administrators and 371 support staff. Diversity Characters of the university are 85% minority students, 59% minority faculty, 78% minority administrators and 92% minority support staff.

[University Mission and Vision](#) emphasizes to “provide access to higher education for students of diverse backgrounds and educational needs” and “CSU is committed to teaching, research, services and community development including social justice, leadership and entrepreneurship.”

The [Library and Instruction Services](#) (LIS) of the Chicago State University (CSU) is a robust operation, which includes about [426,000 volumes](#) of collections, plus, 37,000 titles of E-Resources (e-journals, databases) including [2,780 titles of full text e-books](#), and other materials such as 29,755 Microforms, over 6,000 titles of AV materials, etc.

In our LIS operation, we are organized into five departments (49 FTE including 14 Professional Librarians) including [Administration](#) (Dean’s office, Business Management, Library Development, Facilities Management and Student Employment), [Public Services](#) (References, Circulation, ILL, Education Resources Center, Music and Government Docs), [Technical Services](#) (Acquisitions and Serials, Cataloging, Library Systems, Web and Digital Services), [Archives and Special Collections](#), and [Instruction Services](#) (Distance Learning, Center for Teaching and Research Excellence, Learning Assistant Center). In addition, LIS is a member of the [Consortium of Academic and Research Libraries at Illinois \(CARLI\)](#), 103 members’ consortium) and [I-Share](#) (76 members’ networked information resources sharing system), which are admitted to share 32 million volumes of collections within the Consortium through Ex Libris Voyager Integrated Library Management System.

Various types of Information Technologies (IT) have been applied in the library at CSU. Generally, besides web and multimedia technology, there are over 300 networked public access workstations with four public networked printers and multiple scanners linked through CAT6 cabling system with 1000 mbps speed T3 internet networking system in the new library building, which opened in 2006. At CSU, wireless with WiFi access is available all over the campus.

LIS uses [Ex Libris Voyager](#) through CARLI / I-Share consortium as the Integrated Library Management System (ILS). [OPAC](#) (Online Public Access Cataloging) is accessible for World Web Wide access. There is an ASRS ([Automatic Storage and Retrieval System](#)) system used in the library by users in retrieving and circulating library collections and to save library space. [Radio Frequency Identification \(RFID\) Technology](#) is also used in the library to circulate library materials.

We would like to share the our change management journey over the past five years since we moved into a new facility and the dramatic changes we have made to our facility and operations as a result of technologies (such as ARS, RFID, iPads) which we have purposefully embraced as well as technologies (such as social learning and multimedia) that we have managed

both successfully as well as encountering a few problems with respect to how we interface and relate with our students and faculty.

## **II. Changes and Challenges for Emerging Trends in Academic Area and IT**

Changes in the academic area, institutional organizations and leadership, global and local economic situations, information technology (IT) and IT applications in academic institutes, have been rapidly evolving especially in the past five years. This volume of change has impacted and caused library management to shift in an attempt to better align with the dramatic changes.

Academic changes in higher education have been appearing in curriculum. Many new instruction technologies and new teaching methods have been used and accepted by the faculty members for their courses. Online remote distance learning courses have been popularly used by various colleges and universities. For instance, the online courses increased rapidly at CSU during past five years, from couple of courses a decade ago till now, there are nearly 100 types of online courses taught by faculty members at Chicago State University. An instruction services oriented unit, the Centre for Teaching and Research Excellence (CTRE) was established in the LIS operation in 2010 and has quickly grown to efficiently introduce instruction technologies and new teaching methods to the faculty for teaching and research support needs. Along with new instruction technologies used, many new courses have been created and offered by the faculty, which shaped and changed the new curriculum.

A new generation of students has emerged, called as “Generation Y” or “Millennium Generation”. These students are very high-tech oriented and IT savvy, which changes and challenges the teaching, learning and management of academic institutes, including LIS services. They demand electronic and digital resources for their learning; prefer online and multimedia oriented courses, plus online services with various academic instructional techniques and services from online registration to all types of courses, to online evaluations on all courses.

E-communications in academic area enhances scholarship as e-Scholarship including e-publishing, Open Access of academic resources, and various institutional repository systems commonly established in academic institutes promote faculty research.

A perfect storm of academic operational challenges has propelled our changes of the leadership and management in academic area. Updating IT knowledge and skills, innovative ideas for higher education in the 21<sup>st</sup> century, understanding and serving the Millennium Generation’s student keep challenging academic leadership. The mission and vision of institutes have to be updated along with academic process changes; the management and organization of academic institutes must keep pace with the evolving mission / vision of the universities. In response to institutional changes in mission and vision, some programs were updated and changed, some new courses were generated or added; academic organization structure has changed along with program changes, including management policies and procedures, and the leadership of corresponding organizations.

Global, state and local economic situations during the past five years have not been good, creating the critical financial pressure to change for many academic institutes. As a state institute,

CSU was faced with a shortage of financial support that caused the budgets cuts and elimination of many staff positions. From 2008 till 2011, CSU cut over 100 positions on campus. The library acquisitions budget had not been increased for 10 years until 2010, while the prices of library materials were increased 10-15% annually. Financial pressure forces academic institutes including libraries to use more technology and change management techniques to maintain and evolve library services.

*Changes in IT, especially digital initiative* has been the most significant pressure impacting LIS changes. **Libraries** and/or **Information Services** have had to be co-planned for if not co-managed carefully with Information Technology for many years now. During the past five years, digital initiatives in information management have been rapidly developing along with high speed network facilities for information retrieval, huge capacities of IT equipment for resource storage, portable devices with mobile technology and wireless access for convenience of information usage. The other important changes in IT are the images oriented visual search engines and various social network applications, which are replacing the text oriented searching engines for web interfaces; plus the more and more collaborative technology between academic institutes especially the information collaborations, including libraries, are operating successfully and extensively.

### **III. Emerging Trends for Changes and Challenges in LIS**

LIS mission is to support and serve the academic institutes for teaching, learning and research. We purposefully aligned LIS changes with institutional changes. The four major changes described as above, have been shaping, propelling and impacting emerging trends and developments in academic areas, which in turn impact the LIS changes.

LIS services changes follow academic changes. As academic programs change, the Liaison Librarians' have growing critical responsibilities for planning how library services can change to better support teaching programs. The librarians are not limited to providing reference and instructional services at reference desk or circulation desk within the library building, they have responsibilities to take initiative to go into teaching departments and work with faculty members to evolve and merge informational support with the corresponding curriculum and courses, including serving students to participate in learning assistance programs.

LIS services further engage in campus community in support of various relevant academic programs, including institution research projects and e-Scholarship communications. From Primary Research Group survey reports in 2007, over 86% of American academic libraries are responsible to work on institutional repository systems. LIS would not only select, order, organize and provide information resources as traditional information services, but also would design, create, setup and maintain digital resources including digitization of institutional resources.

The leadership of LIS operations has changed as well its mission and vision, which now further closely aligns with the new institutional mission and vision for education purposes. Organization structure and management of LIS is based on academic institute need, and is compatible with academic teaching departments; the leadership changes in the LIS compliment the needs of academic teaching departments.

IT applications and digital resources have increased rapidly during the past five years, such as e-Books and streaming videos. Successful LIS operations depend upon library collections and resources. New IT applications reduce the need for traditional manual processing in libraries, digital and electronic resources change library operations, processes, and workflows, including skills and competencies required for librarians and support staff. All these changes cause library organization and management changing. For instance, LIS at CSU applied EOD process (Embedded Order Data) with ILS Voyager system and GOBI (the books ordering system from the vendor YBP) to automate acquisitions process and replace a manual input of acquisition data. This technology saved staff work time and increased accuracy of acquisitions work. The workflow of acquisitions was changed and resulted in more accuracy, more efficiency and reduced one position in the department. An increase in ordering electronic journals and e-books correspondingly reduces the ordering printed periodicals and books on a limited budget, which causes major changes in cataloging workflow, and serials control processes, plus, changes in staffing for Technical Services operations. Six positions were eliminated from the Department of Technical Services at Chicago State University over the past five years.

As a result of the intensity of IT applications and digital resources used in LIS, with management and organization changes at LIS, both the new employees and the existing employees are required to develop new competencies with IT knowledge and skills. The job descriptions are updated with the new requirements along with new technologies and/or equipment experience needed, plus, staff training for professional development has been frequently and necessarily arranged by LIS administration to meet the operations needed. LIS staff competencies are all standardized by academic institutes' corresponding standards. For instance, various types of related documents have been developed for professional librarians including a handbook for faculty, contracts for the faculty union, CUE (credit unit equivalency) sheets, work assignments, portfolio requirements for retention, and job descriptions for corresponding positions, etc. For faculty librarians, the hiring requirement is generally two Master degrees (one ALA accredited MLS) plus digital resources processing, managing, searching and serving skills and experiences. As for support staff, the Illinois [State Universities Civil Service Staff System](#) (SUCSS) requirements are used as standards to hire and evaluate library support staff, which are also updated to compliment evolving academic IT requirements. In general, IT literacy (computer operations and web applications) and academic service experiences are required in different levels for staff.

Library and Information Science educational programs have always been on the cutting edge for investigating and exploring the emerging trends for libraries. In 2005, the [iSchools organization](#) was founded by a collective of Information Schools for advancing the information field in the 21st Century. "These schools, colleges, and departments have been newly created or are evolving from programs formerly focused on specific tracks such as information technology, library science, informatics, and information science." The graduates from those iSchools will be considered as the new generation of librarians or information specialists to improve library and information services in the future. The courses provided by iSchools are expected to focus on emerging trends of library science changes, i.e., the focus shifting to serving and organizing information to reflect society development and need often replacing the existing and traditional library service structures.

#### **IV. Case Study: Analysis of LIS Emerging Trends of Management with IT Impacts**

A SWOT analysis is a planning tool used to understand the Strengths, Weaknesses, Opportunities, and Threats involved in a project or in a business. It involves specifying the objective of the business or project and identifying the internal and external factors that are supportive or unfavorable to achieving that objective. SWOT is often used as part of a strategic planning process. **SWOT** is an acronym for **Strengths, Weaknesses, Opportunities, and Threats**. (from: <http://rapidbi.com/swotanalysis/> )

While a SWOT analysis may look like a simple model and easy to apply but to do a SWOT analysis that is both effective and meaningful, requires time and a significant resource. A SWOT analysis cannot be done effectively by just one person, it requires a team effort. The LIS leadership team of Chicago State University used this technique for library strategic planning, and analyzed and explored the emerging trends of LIS management and operational changes.

**Strengths:** LIS moved to a new library building in 2006, which has very good facilities available to use IT and E-Resources; there has been new leadership for LIS since 2010, which brings a strong background in education and instruction services and strong initiative for change of library organization; has good relationships with CSU leadership, campus education departments and CSU Information Technology Division; LIS obtained the extra funding from CSU Administration for library acquisitions and Archives; the Illinois State did not cut higher education budget for fiscal year 2011; at the end of year 2011 the LIS cooperated with other four Illinois state university libraries to be awarded a Grant from the Institute of Museum and Library Services (**IMLS, \$575,000.00**) for digital preservation project; **CARLI** has very strong consortium services in IT applications, organizes collections development projects with funding, and provides staff training for Voyager ILS operations to support all members of CARLI.

**Weaknesses/Limitations:** The new employees (Librarians and Support Staff) are short of work experiences; the new organization structure has not yet implemented new documented operational policies and procedures with documents to keep changes standardized and stabilized; Even more cooperation is needed between faculty or staff unions and administration for changing on library management; trust is improving but there is still a persistent culture of mistrust.

**Opportunities:** there are good opportunities for expanding operations in LIS to enhance changes in education; instruction services units such as Learning Assistance Center (LAC), Centre for Teaching and Research Excellence (CTRE), Distance Learning with the library services together for enhancing library for serving education programs; many projects with IT technologies and digital resources from CARLI and other organizations or institutes are available. There is an opportunity to continue to reshape operations to better compliment academic needs and trends.

**Threats:** The majority of library funding still depends on Illinois State funding and the state economic financial problems continue; the change in leadership of LIS is new and needs to be enhanced and stabilized; there remains some resistance to change existing across campus and

with some staff; the campus Information Technology's ability need to keep up with pace of change; there is competition from other Universities; there is competition internally for resources.

## **V. Implementation and Processes of Changes**

After utilizing a SWOT analysis approach the LIS management team launched the resulting process changes, which have been rolled out strategically over the past few years.

The LIS leadership team made the new organization changes based on strategic LIS positions eliminations, where positions were merged in some operational units to reduce staff through new technology utilization (e.g., implement EOD to merge Acquisitions unit and Serials unit); changed staffing with education refocus (enhance liaison duties with educational departments, etc.) and updated some operations and workflows based on automation. Attrition accounted for some of the reductions and staff was retrained where appropriate.

Changed LIS allocations of acquisitions budget, i.e., increased electronic and digital resources and reduced budget on non-electronic/digital resources, increased e-books ordering and related access service issues, purchased streaming video programs to replace CD, DVD, which had made up 3/4 Library acquisitions budget for e-resources;

Re-arranged facilities and environment in the library building to increase learning spaces for students, instruction services, faculty support and community activities; Moved all shelved books from the 4<sup>th</sup> floor to the 3<sup>rd</sup> floor through using ASRS system; "Trim down" the 3<sup>rd</sup> floor's shelved materials to the main stack area to save spaces for instruction services and faculty support (CTRE); Reduced printed periodicals to save printed periodicals spaces for Information and Learning Commons to serve students, and expanded multimedia facilities in open study rooms.

## **VI. Continue Progress – Planning for Changes in the Future**

After successful initiative changes through LIS organization and management over the past few years, the continuous progress made to enhance LIS operation with support, collaboration and merging educational support programs and research has been strategically planned and very successful.

We generate strategic planning for further changes through annual reviews with a continuous quality improvement goal in mind. We utilize techniques such as a SWOT analysis and assessment measures to evaluate progress. Following the President's and Provost's lead, we develop departmental Key Performance Indicators (KPI) and assessments plans to align with the university strategic plan. All the planning processes are inclusive and we engage various corresponding faculty and staff committees, and try to keep IT engaged to support evolving technology needs.

## **VII. Summary: Emerging Trends for LIS Management Changes with IT Impact and Recommendations**

Based on our working experiences, alignment with the university academic mission for education and research and emerging technologies are the essential foundations for LIS management changes. Key elements include:

- Evaluation of resources emerging trends -- Digital resources
- Library staff and career personal goals and emerging trends -- Librarian's career evolution with refocus and merging with instruction and education
- Operational emerging trends – Our specific universities' mission

Our recommendations are:

- Seize opportunity
- Keep communications open
- Build bridges from LIS with various divisions, agencies and organizations
- Make assessments, reports regularly
- Listen from all aspects, including staff, faculty, students, and various departments on campus and community
- Understand and speak 'education' and focus it as our direction and foundation for our services and development
- Be open to new and innovative possibilities.