Knowledge Management in Academic Libraries

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ACRL Pre-conference
Baltimore March 29, 2007
Knowledge Management in Academic Libraries
Pre-conference Agenda

• 8:30   Introductions, Agenda, Outcomes
• 8:45   Basic Concepts of Knowledge Management and Their Application in Academic Libraries (Branin)
• 10:30  New Technology Tools, Services, and Competencies for Knowledge Managers (Rogers)
• 1:00   Reshaping Our Space and Public Services in a Knowledge Management Environment (Stuart)
• 2:45   Taking Knowledge Management Perspective and Practices to Your Own Library (All)
Knowledge Management in Academic Libraries
Pre-conference Process

• Process: Short presentations, questions and discussion, group exercises
  • Active listening, learning, and participation
  • We want this to be an interactive workshop
  • We will manage time, discussions, focus on topic

• Breaks and Lunch
  • 10:00 -10:30 Break
  • 12:00 -1:00   Lunch
  • 2:30 – 2:45   Break
  • 3:30   Finish
Knowledge Management in Academic Libraries
Pre-conference Outcomes

• Understand the concept of knowledge management and some of its basic principles

• Critically examine examples of knowledge management work in academic libraries

• Apply a knowledge management perspective to your own work in academic libraries

• Share your ideas, experience, and opinions on usefulness of a knowledge management approach to work in academic libraries
Basic Concepts of Knowledge Management and Their Application in Academic Libraries

http://library.osu.edu/about/preslibdir/acrl2007jb.pdf

Joe Branin
8:45 – 9:30 am
Knowledge Management for Librarians
Overview

1. The evolution of work (collections work) in academic (research) libraries: from *collection development to collection management* to *knowledge management*

2. What is *knowledge management*, and what is its value to librarians?

3. How can we apply knowledge management to all aspects of academic library work?
From Collection Development to Knowledge Management

1950-1975: Collection Development

1975-2000: Collection Management

2000- :Knowledge Management
1950-1975: Collection Development

Major environmental factors

• Rapid growth in scholarship and libraries
• Rise of government sponsored research
• Professionalization of collection management

Collection development

• Acquisitions and selection
• Collection building
Increase in Mathematical Literature

Andrew M. Odlyzko, *Tragic loss or good riddance? The Impending demise of traditional scholarly journals*. Notices Amer. Math Soc. 42 (January 1995), 49
Growth in Scientific Journals

Growth of Publications

UNESCO Worldwide Annual Book Titles


Citations in SCI and SSCI “Scientific publishing in Transition: an Overview of Current Developments”, Mark Ware Consulting
## Worldwide Production of Original Information If Stored Digitally (in terabytes)

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>1999-2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>1,634</td>
<td>1,200</td>
</tr>
<tr>
<td>Film</td>
<td>420,254</td>
<td>431,690</td>
</tr>
<tr>
<td>Magnetic</td>
<td>5,187,130</td>
<td>2,779,760</td>
</tr>
<tr>
<td>Optical</td>
<td>103</td>
<td>81</td>
</tr>
</tbody>
</table>

U.S. University Presses Book Production

- 1993: 11,941
- 1995: 12,897
- 1999: 14,110
- 2000: 14,787
- 2001: 13,667
- 2002: 14,236
- 2003: 13,631
- 2004: 14,484
- 2005: 14,746
1975-2000: Collection Management

Major environmental factors

- budget constraints
- commercialization of scholarship in the sciences
- emerging digital technology

Collection management agenda

- collection policy development
- materials budget allocation
- collection analysis
- use and user studies
- training and organization of collection managers
- preservation
- cooperative collection development
Monograph and Serial Costs in ARL Libraries

Graph 2
Monograph and Serial Costs in ARL Libraries, 1986-2005*

% Change Since 1986


Serial Expenditures (+302%)
Serial Unit Cost (+167%)
Monograph Unit Cost (+81%)
CPI (+78%)
Monograph Expenditures (+59%)
Serials Purchased (+42%)
Monographs Purchased (-7%)

*Includes electronic resources from 1999-2000 onward.
Journal Costs by Broad Subject

Library Journal, April 15, 2001
Cooperative Collection Development

- Farmington Plan of the 1950s and 1960s
- National Periodicals Center of the 1970s
- RLG Conspectus of the 1980s
- Center for Research Libraries, North Carolina Research Triangle

✓ Lessons Learned: power of local autonomy, highly decentralized system, difficulty of moving print around
In 1996 there were 90,000 Web sites, and it is estimated that the Web doubles in size every 50 days with a new homepage added every 4 seconds (Nicholas Negroponte, *Wired Magazine*, 2-1-96)
## Type of Library Use by Group and Academic Area

<table>
<thead>
<tr>
<th></th>
<th>Visit in person</th>
<th>Use office computer</th>
<th>Use home computer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>37.9</td>
<td>28.1</td>
<td>76.2</td>
</tr>
<tr>
<td>Humanities/Soc Science</td>
<td>60.7</td>
<td>56.4</td>
<td>70.2</td>
</tr>
<tr>
<td>Science/Engineering</td>
<td>49.3</td>
<td>41.8</td>
<td>64.7</td>
</tr>
<tr>
<td>All Faculty</td>
<td>47.3</td>
<td>40.6</td>
<td>71.0</td>
</tr>
<tr>
<td><strong>Graduate Students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences</td>
<td>79.7</td>
<td>59.6</td>
<td>39.8</td>
</tr>
<tr>
<td>Humanities/Soc Science</td>
<td>82.5</td>
<td>72.1</td>
<td>47.5</td>
</tr>
<tr>
<td>Science/Engineering</td>
<td>68.2</td>
<td>45.1</td>
<td>57.4</td>
</tr>
<tr>
<td>All Graduate Students</td>
<td>77.7</td>
<td>59.6</td>
<td>48.1</td>
</tr>
</tbody>
</table>
User Priorities

- Delivering full-text to the desktop
- Providing electronic full-text access to older journals
- Maintaining the quality of the Libraries' print collection
Continuing Growth of Publication

- Worldwide book titles: 1,000,000 (2004), 1,337,000 (2009)
- Worldwide magazines: 183,000 (2004), 212,000 (2009)
- Worldwide e-magazines: 36,000 (2004), 159,000 (2009)
- U.S. newspapers: 9,000 (2004), 8,000 (2009)
- U.S. music CD titles: 33,000 (2004), 27,000 (2009)
- Worldwide music downloads: 52,000,000,000 (2004), 129,300,000,000 (2009)

Projected shifts in annual production volume (2004–2009)

OCLC: 2004 Information Format Trends
Nearly three-quarters (73%) of college students say they use the Internet more than the library, while only 9% said they use the library more than the Internet for information searching.

The Internet Goes to College 9/15/2002

### Growth of Activities on the Internet in Recent Years

<table>
<thead>
<tr>
<th>Activity</th>
<th>2000</th>
<th>2004</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go online</td>
<td>52</td>
<td>70</td>
<td>18</td>
</tr>
<tr>
<td>Use email</td>
<td>45</td>
<td>58</td>
<td>13</td>
</tr>
<tr>
<td>Get news</td>
<td>19</td>
<td>35</td>
<td>16</td>
</tr>
<tr>
<td>Check the weather</td>
<td>14</td>
<td>25</td>
<td>11</td>
</tr>
<tr>
<td>Do research for their job</td>
<td>14</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Research a product before buying it</td>
<td>12</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Look for political news or information</td>
<td>9</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Send instant message</td>
<td>10</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Do research for school or training</td>
<td>9</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Get travel information</td>
<td>6</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Get health or medical information</td>
<td>6</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Look for religious and spiritual information</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Buy a product</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Participate in online auction</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

This is How Many Americans Have Ever Done These Activities

97 million Internet users have used government Web sites
2000 - Knowledge Management

Major environmental factors

• New digital information opportunities and competitions
• “De-centering” of the library in the academic setting
• Rise of the social consumer internet

Knowledge management

• Information policy and architecture
• Managing print and digital information systems
• Enterprise-wide content management and information services
• Reforming Scholarly Publishing
Knowledge Management Basics

1. Data, information, and knowledge
2. Tacit and explicit knowledge
3. The dynamic and social nature of knowledge management


Special issue on Knowledge Management in *Journal of the American Society for Information Science and Technology*, 2002
Knowledge management

Knowledge management comprises a range of practices used by organisations to identify, create, represent, and distribute knowledge for reuse, awareness, and learning across the organisations.

Knowledge Management programs are typically tied to organisational objectives and are intended to lead to the achievement of specific outcomes, such as shared intelligence, improved performance, competitive advantage, or higher levels of innovation.

Knowledge transfer (one aspect of Knowledge Management) has always existed in one form or another. Examples include on-the-job peer discussions, formal apprenticeship, corporate libraries, professional training, and mentoring programs. However, since the late twentieth century, additional technology has been applied to this task, such as knowledge bases, expert systems, and knowledge repositories.

Knowledge Management programs attempt to manage the process of creation or identification, accumulation, and application of knowledge or intellectual capital across an organisation. Knowledge Management, therefore, attempts to bring under one set of practices various strands of thought and practice relating to:

- intellectual capital and the knowledge worker in the knowledge economy
- the idea of the learning organization;
- various enabling organizational practices such as Communities of Practice and corporate Yellow Page directories for accessing key personnel and expertise;
- various enabling technologies such as knowledge bases and expert systems, help desks, corporate intranets and extranets, Content Management, wikis, and Document Management.

While Knowledge Management programs are closely related to Organizational Learning initiatives, Knowledge Management may be distinguished from Organizational Learning by its greater focus on the management of specific knowledge assets and development and cultivation of the channels through which knowledge flows.

The emergence of Knowledge Management has generated new organisational roles and responsibilities, an early example of which was the Chief Knowledge Officer. In recent years, Personal knowledge management (PKM) practice has arisen in which individuals apply KM practice...
Knowledge Management Definitions

Data = simple, discrete facts and figures
Information = data organized for a meaningful purpose

Knowledge = Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experience and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents and repositories but also in organizational routines, processes, practices, and norms. (Davenport and Prusak)
Explicit and Tacit Knowledge

- Formally articulated
- Documented
- Stored in repositories
- Reports, lessons learned
- Fixed, codified

- Transferred through conversations
- Difficult to articulate or unspoken
- Held within self, personal
- Insight and understanding
- Judgments, assumptions

From Claire McInernye, *JASIST*, 2002
Knowledge tends to happen in and among people; it is the **social** life of information

- Inclusive or **enterprise-wide** view of data, information, and knowledge
  - Managing expertise
  - Creating a culture of **learning** and of sharing knowledge

- Dynamic process of creation, elicitation, and sharing (concern for **life cycle** of information)
Implications of Knowledge Management for Academic Libraries

1. We must concern ourselves with a broader range of information resources and services
2. Create a culture and environment for active learning and information sharing
3. Collaborate much more proactively and deeply with other libraries, information technology services, and users
Two Examples of Knowledge Management Practice in Academic Libraries

1) Managing print and digital collections in new and cooperative ways
   - Future of print collections
   - Managing storage and access to print collections
   - OhioLINK and deep cooperation

2) Creating an institutional repository program for collecting a broad range of digital assets
   - Digital content management
   - New competencies and service models for library subject specialists
Library Storage Needs

Low Memorial Library
1894

Butler Library
1934
Overcrowded Shelving Conditions
Less-than-ideal Storage Conditions
Welcome to OhioLINK

OhioLINK Library Catalog
Electronic Journal Center
Digital Media Center
Chat With A Librarian

Explore OhioLINK Databases
By Subject
By Type
By Name
Subject Cluster Search
E-Journal Finder
My Express Links

About OhioLINK
Members
Search pages on this website

OhioLINK - The Ohio Library and Information Network - The Ohio State University Libraries

Quick and simple search:

OhioLINK
Ohio Library and Information Network

New at OhioLINK: ODCE Conference Proposals Due October 31 (October 08, 2004)

OhioLINK Update Newsletter - October Issue Online (October 08, 2004)

Eric Full-Text Documents Now Freely Available (October 04, 2004)

Reference E-Books Collection Grows to 348 (October 01, 2004)

The library at Kent State University, an OhioLINK member, OhioLINK is a consortium of the libraries of 84 Ohio colleges and universities, and the State Library of Ohio.
OhioLINK Resource Sharing

Filled Online Patron Borrowing Requests

- 1995
- 1997
- 1999
- 2001
- 2003
- 2005
Student OhioLINK Borrowing

Online Patron Borrowing by Patron Type

- Public Library Users
- Faculty & Staff
- Graduate Students
- Undergraduate Students

Interlibrary Lending/Borrowing at OSU
OhioLINK Research Databases

Number of Research Databases

Research Database Searches
OhioLINK Electronic Journals

More than 6,400 titles in EJC

Subject Coverage of EJC Journals in 2005

EJC Monthly Article Downloads

More than 6,400 titles in EJC
Cost Effective Purchasing Power

- Average Annual Journal Cost Increase for Typical Academic Research Library
- Average Annual Cost Increase for Journals Licensed through OhioLINK
- Average Annual Cost Increase for Research Databases / Undergraduate & General Journals Licensed through OhioLINK

<table>
<thead>
<tr>
<th>Year</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 vs. 00</td>
<td>8.0%</td>
</tr>
<tr>
<td>02 vs. 01</td>
<td>6.1%</td>
</tr>
<tr>
<td>03 vs. 02</td>
<td>6.9%</td>
</tr>
<tr>
<td>04 vs. 03</td>
<td>4.5%</td>
</tr>
<tr>
<td>05 vs. 04</td>
<td>2.4%</td>
</tr>
<tr>
<td>06 vs. 05</td>
<td>3.9%</td>
</tr>
<tr>
<td>07 vs. 06</td>
<td>1.8%</td>
</tr>
<tr>
<td>08 vs. 07</td>
<td>5.5%</td>
</tr>
<tr>
<td>09 vs. 08</td>
<td>1.7%</td>
</tr>
<tr>
<td>10 vs. 09</td>
<td>2.3%</td>
</tr>
<tr>
<td>11 vs. 10</td>
<td>2.5%</td>
</tr>
</tbody>
</table>
A Proposal for Development of an OSU Knowledge Bank

Submitted to the OSU Distance Learning/Continuing Education Committee
June 21, 2002

http://www.lib.ohio-state.edu/Lib_Info/scholarcom/KBproposal.html

By The OSU Knowledge Bank Planning Committee
Chair: Joseph J. Branin, Director of Libraries
Data Maps-Metadata

Relative emphasis of content in WorldCat

Stewardship/publishing

Books
Journals
Newspapers
Government docs
Audiovisual
Maps
Scores

Special collections
Rare books
Local/Historical newspapers
Local history materials
Archives & manuscripts
Theses & dissertations

Freely-accessible web resources
Open source software
Newsgroup archives

Institutional repositories
- ePrints
- Learning objects/materials
- Research data

Lorcan Dempsey, OCLC
Center for Epigraphical and Paleographical Studies
“Squeeze Collection”
The Knowledge Bank Broadly Defined

The OSU Knowledge Bank project proposes to create a knowledge management system for the University that will support the creation, organization, storage, and dissemination of the institution’s digital information assets.

The Knowledge Bank will be both a “referatory” providing links to digital objects and a “repository” capable of archiving the increasing volume of digital content created at OSU for long-term use and preservation.
Knowledge Bank Scope/Strategy

• Broad, comprehensive scope based on enterprise-wide “knowledge management” concepts
• “Federated” approach to knowledge management: coordination, not centralization
• Phased implementation based on user needs, and on strategic and funding opportunities
Digital Knowledge Bank at OSU

➢ Online Published Material
  • E-books, e-journals, government documents, handbooks
➢ Online Reference Tools
  • Catalogs, indexes, dictionaries, encyclopedias, directories
➢ Online Information Services
  • Scholar’s portal, alumni portal, chat reference, online tutorials, e-reserves, e-course packs, technology help center
➢ Electronic Records Management
➢ Administrative Data Warehouse
➢ Digital Publishing Assistance
  • Pre-print services
  • E-books, e-journal support
  • Web site development and maintenance
➢ Faculty Research Directory
➢ Digital Institutional Repository
  • Digital special collections
  • Rich media (multimedia)
  • Data sets and files
  • Theses/dissertations
  • Faculty publications, pre-publications, working papers
  • Educational materials
    • Learning objects
    • Course reserves/E-course pack materials
    • Course Web sites
➢ Research/Development in Digital Information Services
  • User needs studies
  • Applying best practice
  • Assistance with Technology Transfer
Title: Wakeup call: Soviet naval policy and the Cuban Missile Crisis

Creators: Pfister, Andrew B.

Advisor: Siegel, Jennifer

Issue Date: Jun-2005

Abstract: This paper studies how the events of the Cuban Missile Crisis influenced the evolution of the Soviet Navy during the course of the Cold War.

Series/Report No.: The Ohio State University. Department of History Honors Theses;2005

Keywords: Soviet Navy
naval policy
Cold War
Soviet military
naval history
military history
The OSU Knowledge Bank Model

Knowledge Bank Team
- Leadership
- Training
- Coordination
- Standards
- Technical Support

+ New Technology
Unified Access
Trusted Archive

Diverse Sources
- Worldwide Resources
- Internet
- OARNet
- Columbus & Ohio Resources

Integrated Information
- Enriched Instruction
- Collaborative Research
- Business Partnerships

OSU SONNET Network
- OSU Central Databases
- OSU Academic Unit Databases
- OSU Faculty Data

Knowledge Bank Engine
New Roles for Academic Librarians as Knowledge Managers

• Librarians “can no longer meet the information needs of faculty and students through the traditional avenue of simply adding to their collections.” (The Mirage of Continuity: Reconfiguring Academic Information Resources for the 21st Century, Brian L. Hawkins and Patricia Battin, Council on Library and Information Resources & Association of American Universities, 1998)

• “With the incorporation of distributed technologies and more open models, the library has the potential to become more involved at all stages, and in all contexts, of knowledge creation, dissemination, and use. Rather than being defined by its collections or the services that support them, the library can become a diffuse agent within the scholarly community.” (Diffuse Libraries: Emergent Roles for the Research Library in the Digital Age, Wendy Pradt Lougee, Council on Library and Information Resources, 2002)
Group Exercise:
Charting the Life Cycle of Knowledge

1. Try to imagine and list the major steps or stages in the life cycle of knowledge
2. Attach to these steps or stages the role of the academic librarian or library might play
✓ 15 minutes for preparation, 15 minutes for reporting