

DOMAIN SCANS

(new items as of 2/11/08 in yellow)

Domain: **Technical Infrastructure (DLIST functional scan)**

Topic: **Digital access to and preservation of content**

Trends:

- Development and adoption of standards such as Certification of Digital Archives (CRL) will be important.
- No discovery tools or processes that integrate all levels of searching needed by all users have been developed yet. Interoperability will be key to achieving such functionality. New tools are being developed that can improve web search ability.
- Archiving of digital products is of significant concern to libraries, scholars and researchers. Third party archiving of digital products such as LOCKSS and Portico are gaining acceptance. However, for many publishers, print remains the archival copy.
- The issue of economic sustainability for digital preservation and persistent access is being looked at by a task force with funding from NSF and the Andrew W. Mellon Foundation with support from the Library of Congress, the San Diego Supercomputer Center, the National Archives and Records Administration, the Council on Library and Information Resources and the Joint Information Systems Committee of the United Kingdom.
- The proliferation of digitization projects is resulting in development of silos of data in unconnected repositories with no way to search across or connect them. The development and implementation of interoperability standards and collaboration are needed.
- Google, is planning to host terabytes of open-source science datasets – “The storage would fill a major need for scientists who want to openly share their data, and would allow citizen scientists access to an unprecedented amount of data to explore.”
- 3 Libraries (Cornell, State Library of Ohio, and University of Delaware) sign up to use WorldCat Local,
- Library of Congress is considering using JPEG2000 as they collaborate with XEROX on Digital Image Storage, Preservation, and Access
- Google and other mega search sites are affecting the ways libraries act but very slowly, generally less than 30%.

Supporting Data: From previous scan,

<http://blog.wired.com/wiredscience/2008/01/google-to-provi.html#more> ,
<http://portal.mlcnet.org/communique/?p=419> , <http://www.loc.gov/today/pr/2007/07-213.html>, Primary Research Group has published ***Libraries & the Mega-Internet Sites (A Survey of how Libraries Use and Relate to Google, Yahoo, Wikipedia, eBAY, Amazon, Facebook, YouTUBE & Other Mega-Internet Sites)***, ISBN 1-57440-096-7;
<http://www.oclc.org/news/releases/200673.htm>

Summary Analysis: Since the Library is very involved in digitization projects and storing data, these issues are of extreme importance to the Library.

(Optional) Opportunities and/or need for change to be strategic: The Library must find continuous permanent funding for the large expense of expanding, maintaining and providing archival quality copies of our data.

Topic: Finance

Trends:

- The granularity required by Library administration requires the use of shadow bookkeeping systems.
- The Library's current internal system needs to be re-written – issue – will KUALI provide the functionality the Library needs without a shadow system.
- The Libraries' data management and storage needs are increasing, due to the Exposure project and the Digital Library.
- The University is just beginning to pursue asking ABOR to approve using KUALI to replace FRS.
- The University is pursuing using PeopleSoft to replace PSOS and SIS

Supporting Data: From previous scan, DITC meeting.

Summary Analysis: Because of the large amount of money involved these issues are very important to the mission of the Library.

(Optional) Opportunities and/or need for change to be strategic: We need to continue to watch KUALI and whether it will replace FRS. If that decision is made, the Library should work closely with KUALI programmer so that when KUALI becomes production, the Library will also be able to use the new system, or have a shadow system that works with KUALI. This is a very large (at least 1 full time programmer and a full time analyst, possibly more) project. DLIST does not have the expertise for this work so we would have to pay someone else to do this work.

Topic: Gaming

Trends:

- The industry continues to grow and educational gaming is growing as well. Educational applications related to gaming include having students play games, create games, and research aspects of gaming communities. Gaming is also showing up in higher education settings in the form of simulations and use of consumer virtual environments. An educational game still must be a game to get people to play and ultimately learn from it. This requirement is difficult to fund as popular games can cost in excess of \$75 million to create.
- There are more than 65 million active online U.S. gamers; 64% are women; 117 million U. S. citizens spend a minimum on one hour on a gaming device per week; teenagers remain the largest portion of the gaming community; however, men still dominate the overall gaming environment by more than 2

to 1; 70% of college students reported playing video, computer or online games at least once in awhile and 65% reported being regular or occasional game players.

- The demands of gaming software is driving a demand for specialized hardware beyond the specifications of computers the library is normally purchasing for public use (see note in Social Computing)

Supporting Data: From previous scan

<http://www.technologyreview.com/Infotech/19817/?a=f>

Summary Analysis: Currently gaming is not a mission critical trend for the Library.

(*Optional*) Opportunities and/or need for change to be strategic:

Topic: **Social Computing**

Trends:

- Social computing is the use of computer technology to facilitate interaction and collaboration. Variants include social bookmarking and folksonomic tools, social writing platforms, blogs, and RSS services. Examples are MySpace, Socialtext, and Feedstar.
- As faculty and students integrate social computing tools into their work, they may want the Library to provide support such as meeting hardware and software, making pieces of microcontent drawn from Library resources available, and assistance with use of freely available tools.
- The primary lifespan of social web sites is said to be between 16 and 30 months. Sites reach plateaus and declines for different reasons, but the pattern of hits and length of stay are said to apply universally for all non-gaming social sites.
- Some social computing sites take advantage of advanced gaming hardware that the library is not providing in our public computers.
- Many public and free (advertiser supported) web service are really controlled by the customer. "Facebook launched and then shut down an advertising program called Beacon (behaviorly targeted ads) that alerted users to purchases and other activities their "friends" made outside Facebook" because its customers complained. Basically private information must be "opt-in" not "opt-out".
- Possible reduction in keeping personal information personal as social networking sites expand and people add more private information (already HR departments are learning about data that is ok and not ok to use from Facebook etc) and companies request more data to provide more targeted marketing.
- Increased ability to stay in touch with friends during all aspects of your life.

Supporting Data: From previous scan.

<http://online.wsj.com/article/SB119760316554728877.html>

<http://www.technologyreview.com/Infotech/20048/page1/> , "Hiring: The Hidden Risks of Using Google, Facebook, MySpace, and Other Websites to Scope Out New and Prospective Hires; What You Need to Watch Out For", Wall Street Journal January 28, 2008; Page R1" Thinking About Tomorrow"

Summary Analysis: Currently, social computing is not a mission critical trend for the Library.

(*Optional*) Opportunities and/or need for change to be strategic: Continue to watch for opportunities for the Library

Topic: **Mobile Technology**

Trends:

- Mobile devices (portable gaming systems, iPods, other MP3 players, PDAs, cell phones) continue to become cheaper and lighter. These devices can connect to high speed networks.
- Faster networks are supporting data transfer at greater speeds.
- Cell phones are incorporating more and more features including music players, web browsing, calendaring, and text messaging.
- Several universities, including Georgia College and State University, Duke, and MIT have programs incorporating mobile devices.
- These devices are being used to support both in-class activities and out-of-the-classroom learning.
- It may be beneficial to examine Library content to determine which portions users would find beneficial to access using mobile devices.
- Product changes are currently smaller and more features (mobility, granularity and personalization) on old technology. Barriers for educational use are expected to be much smaller in the next 1-2 years.

Supporting Data: From previous scan,
http://online.wsj.com/article_print/SB119905604752158353.html,
<http://www.nmc.org/pdf/2008-Horizon-Report.pdf>

Summary Analysis: Currently, DLIST is the sponsor developing a charge to investigate and recommend changes to the Library website including support for mobile technology.

(*Optional*) Opportunities and/or need for change to be strategic:

Topic: **Search Engines and Other Tools**

Trends:

- Microsoft has indicated that they plan to provide an independent and enhanced search engine and global mapping tool that will compete with Google. Microsoft is in the midst of trying to purchase Yahoo for \$44.6 billion, showing the importance of search in the world.

Nov. 2, 2007
Updated Feb, 11, 2008

Written by DLIST

- Microsoft is now competing with Google Scholar and Google Books. Open Content Alliance is a group of library's providing a similar function without the access restrictions Microsoft and Google place.
- The Library may need to evaluate whether or not it would be beneficial for us to participate in the Google projects and/or Microsoft projects should they occur.
- The advantages of collaboration for UAL-specific materials would be increased market (on a global scale) and increased accessibility.
- When people talk about searching (in futuristic articles) they do not mention the Library but Google and they don't talk about research needs for searching but social/personal needs for searching.
- News of the future will not come from big news sources but more from friends sending links or search results and be readable on hand held devices (and you might have to pay for it – like Kindle).

Supporting Data: From previous scan,
<http://www.nytimes.com/2007/10/22/technology/22library.html?ex=1193716800&en=abc109c23daee1fe&ei=5070&emc=eta1>

Summary Analysis: Our customers mainly want easily understood access to all of our holdings, yet this is the one thing we have not been able to provide. This is a mission critical need for the Library. We now must play catch up with companies like Google who are able to provide people with one search box (federated searching capabilities). Though we have tried with Scholars Portal, SiteSearch and Serials Solutions CentralSearch we have yet to succeed. This should be our main goal until we are successful. New tools are being developed that can improve web search ability. (Members of DLIST have this as a learning goal and we will report updates in the Feb. 2008 scan)

(Optional) Opportunities and/or need for change to be strategic: This issue is not only ours, but it is an issue for all Libraries. We need to partner and collaborate with other Libraries and Library organizations to solve this problem. All other projects are less critical to the Libraries survival.

Topic: **Applications on the Web**

Trends:

- Google and others are putting applications on the web that require no fees to use, for example Google Apps with its version of Word, Excel and PowerPoint. The applications and storage of the items is all done on the web so there are no issues with licensing costs. Because the files are stored on the web, they are accessible from any computer which reduces the issues of accessibility. There are concerns about privacy though.
- If this becomes widely used, the need for Office products and other applications the Library provides students will change. This will affect the amount of money need, as well as the licensing needed.

- Online collaboration tools could improve the ease of collaboration, especially across space.

Supporting Data: Use of such applications

Summary Analysis: Currently, Applications on the Web is not a mission critical trend for the Library.

(Optional) Opportunities and/or need for change to be strategic:

Topic: **Video and books on Demand**

Trends:

- The increased availability of videos on the web is changing the way people watch TV and movies. In the future, low budget movies (under \$10 million) could be made for only the web, and access to fans with appetites for series can be easily met (both regarding cost and content). Also, the quality of the image continues to improve. The increased ease of creating your own "grassroots video" is exploding (YouTube) and opportunities are being found for educational uses.
- Products like Joost (free online movies) and Flash 9 (allows you to view interactive content such as YouTube) continue to improve minimizing the difference between capability of DVD's and online viewing.
- Intellectual property suites and increased video on demand use will fuel the fair use debate
- The ability to have a digital books bound could affect the services the Library provides.

Supporting Data:

<http://www.parksassociates.com/research/reports/tocs/2004/vod.htm> ,
<http://www.joost.com/whatsjoost.html>,
<http://www.flashmagazine.com/1431.htm>,
http://www.umi.com/products_umi/bod/
<http://www.nmc.org/pdf/2008-Horizon-Report.pdf>

Summary Analysis: Changes in Video on Demand must be watched because of our current Video Furnace and FMG projects that provide video access to students.

(Optional) Opportunities and/or need for change to be strategic: This becomes strategic for the Library to monitor because of the large amount of money we have invested and continue to invest in our video projects.

Topic: **Improvement in Hardware, Software and Operating Systems (OS)'s**

Trends:

- Solid state drives might change the pricing on current drives and has the potential to offer us new opportunities for solutions to our storage needs.
- Virtual Machines continue to be popular for large businesses
- The decrease in the cost of disk space and the increase in storage needed by the Library are allowing different options for backup to be available such as Disk-to-Disk, Outsourcing, etc. Tape backup is no longer a viable solution for terabytes of storage.
- Video camera's are now included in laptops and the Library is now lending laptops with video cameras. The Library also has increased the amount of video cameras in the Library for security. Issues of privacy and illegal use should be researched, understood and possible policies written.
- The University is researching adding more campus software agreements. This might reduce the costs of software and time to manage licenses for the Library. Different licensing models continue to be created for different software.
- The ability to have an open source operating system and other open source software on a CD might change the way the Library and University provides computers and software to students
- Book readers continue to be produced but currently offer mainly mass produced/best seller list books, not books we offer our customer.
- Prices of hardware that provides what most people need has dropped substantially so that we could purchase a \$400 laptop or \$800 desktop that could allow access to the internet, wireless connection and basic productivity software (MS Office or open source versions of Word, PowerPoint and Excel).
- The ability to combine data in new ways "data mashups" has the potential to change the way we understand and use information. Combining this with collective intelligence (Wikipedia, community tagging) will expand our understanding of ourselves and our use of information and technology.
- Social operating systems (based on people not content) is just starting but has promise to change education substantially.

Supporting Data: http://en.wikipedia.org/wiki/Solid_state_drive ,
http://en.wikipedia.org/wiki/Virtual_machine ,
<http://www.ubuntu.com/products/WhatIsUbuntu/desktopedition> ,
<https://help.ubuntu.com/community/LiveCD> ,
<https://help.ubuntu.com/community/LiveCDPersistence>

Summary Analysis: These issues must be watched because of the large expenditures on Hardware, Software and OS's.

(Optional) Opportunities and/or need for change to be strategic:

Topic: IT **Security**

Trends:

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Written by DLIST

- IT Security will continue to be a major concern for the Library and the University
- The University has a new Information Security Officer who is starting a program to improve the IT security of the University.
- DLIST has a large priority project to improve the security of the Library.

Supporting Data: <http://security.arizona.edu/>, DITC meetings, <http://www.itsecurity.com/features/security-trends-2007-010807/>

Summary Analysis: IT security is a mission critical issue because of the disruption to the Libraries work and services offered to our customers.

(*Optional*) Opportunities and/or need for change to be strategic: We must continue to be diligent in implementing security solutions.

From Educause's Horizon report <http://www.nmc.org/pdf/2008-Horizon-Report.pdf> for 2008, the following challenges were mentioned as effecting academia in the next 1-5 years:

- *Significant shifts in scholarship, research, creative expression, and learning have created a need for innovation and leadership at all levels of the academy.*
- *Higher education is facing a growing expectation to deliver services, content and media to mobile and personal devices.*
- *The renewed emphasis on collaborative learning is pushing the educational community to develop new forms of interaction and assessment.*
- *The academy is faced with a need to provide formal instruction in information, visual, and technological literacy as well as in how to create meaningful content with today's tools.*

Future Work:

- How is work in your area changing? What new work is emerging?
 - We continue to be asked to purchase, support and maintain new types of hardware and software. For example, tablet PCs, laptops with video cameras, new software for the IC and specialty software for staff.
 - We continue to be asked to support new services that often require new software. For example, the SDKE grant project will bring Drupal content management software to the Library and the new Digital Library will bring Fedora. Last year we added Joomla (another content management system for the Afghan project), Koha (a library catalogue system for the Afghan project), MINISIS (a museum content management system for CCP and Special Collections). Streaming video added Video Furnace software and FMG software and new vendors to work with. **SDKE will no longer**

