Forward Into the Past-Offsite Book Depositories: The Future of Libraries

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In concluding, the OCLC report notes that the network of organisms within an ecosystem contributes to its growth and expansion by facilitating adaptation, change, and contribution. A critical balance between cooperation and competition generates energy and motivates the evolution of the ecosystem toward higher function, nourishing the entire community. In a Web-scale world, collaborations must both promote sharing and drive innovation. As demonstrated in the NISO and NFAIS instance, this will require establishment of shared values and principles that can support cooperation and commerce through partnerships that co-create a vision of the future with content publishers and their platform providers, libraries and their service providers, library consortia, and national and international standards initiatives. “A Web-scale world makes this conversation urgent — and exciting.”

Endnotes
3. Lawlor, B. email to list.niso.org, February 1, 2012. For full text, see: http://info.nfais.org/info/codedraftintro.pdf
5. Ibid., p. 32-33.
6. Ibid., p. 33.
7. Ibid.

Rumors
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of his wonderful Celtic music out. I listen to them frequently when I get stressed.

Speaking of stressed, I see that someone on my Facebook page noted that Stressed is Desserts spelled backwards! I love palindromes, don’t you?

And there was even more music involved in the Penthouse Interviews! One of our interviewees was the brilliant Scott Plutchak who plays with the Bearded Pigs, a band of librarians! We are hoping to get the Bearded Pigs to the Conference for a small gig in 2013! Unfortunately, Scott will not be with us.

In fact, my interest in the subject of archival storage came about from a talk I attended given by Matthew Sheehy, Head of Access Services of the Harvard University Libraries, where he gave a detailed history and tour of the facility using slides and pictures. The size and scope of this project so amazed me that I later asked Matthew for a personal tour. He turned me over to the capable hands of Patrick O’Brien, Systems and Special Projects manager of the Depository. Lee Anne Hooley, Dark Archive Project and Document Delivery Librarian, was a great resource for details about the journal archiving function of the Depository.

I visited the Harvard Depository on a cool March afternoon, and it was a good preparation for entering the temperature and humidity-controlled warehouse that is kept at a constant fifty degrees and thirty-five percent humidity. The Depository is also pressurized from inside to create an outgoing breeze when doors are opened to keep out unwanted intruders such as flying insects. So a cool gust of air greeted us as we entered the towering stack area. Summer is the hardest time for the Depository with the infamous New England humidity forcing the air conditioners and dehumidifiers to run twenty-four hours a day.

On this day the Depository was handling its usual hundreds of requests from the Harvard Libraries and many from its Borrow Direct partners: Brown, Columbia, Cornell, Dartmouth, New York Public, University of Pennsylvania, Princeton, and Yale. The partners have access to each others’ catalogues, and patrons can “borrow direct” from participating libraries simply by requesting items from their catalogue screens. The books in the Depository are all in the library’s catalogue and can be delivered anywhere on campus within a day. Books ordered by 6:00 p.m. are delivered first thing in the morning. Same-day delivery is also available if ordered early enough in the day. The Depository circulates about 2.5% of its holdings annually, about 215,000 items.

The Depository also acts as a “Dark Archive,” not unlike a “Seed Bank” which stores seeds against the possibility of some future calamity. By storing runs of journals for JSTOR and others, the Depository provides a physical backup to online journals. In spite of the mass digitization of journals, workers at the Depository deliver many articles electronically after scanning the appropriate journal.

The Harvard Depository has found that human rather than robotic retrieval of books works best for them. Employing forklifts fitted with work stations, they can go directly to the box they need and retrieve a single book. Books are grouped by size after bar coding and the

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box is bar coded as well. Robotic book retrieval typically brings back a whole box of books that contains the required material. Because of the size of the facility, Harvard has found that individual-item retrieval works best.

I got to ride along on one of the lifts with Patrick, and I got to see firsthand how easily it can be positioned exactly where the driver wants it. Boxes are stored on shelves that have been polished with bowling alley wax to make sliding the boxes onto steel work trays practically effortless. I asked Patrick what other techniques they employed for long-term storage, and he told me, “The ‘tray’ boxes in which we store books upright are made with PH-neutral paper. The air circulated in the storage area is filtered mainly for particulates. Lighting in the storage area is UV-filtered and switched on by motion detection, so overall exposure is reduced as well as saving power. Pest control is managed on a regular basis with ‘bug lights’ and periodic cleaning.” We also discussed earthquake preparedness, and Harvard is beginning to take action on that front. Depositories in higher-incidence earthquake zones, such as California, have built earthquake-mitigation details into their construction from the ground up. It cost Stanford University millions of dollars simply to re-shelve all of the books that came down in their main library during the 1989 Loma Prieta earthquake.

The Harvard Depository is built in a “modular” format that has been extended several times since its inception in 1986. The Depository was the first facility specifically designed for library storage. Previously, older warehouses or factories were retro-fitted for library use. This modular design will allow for continued growth in a facility that is absorbing nearly a half-million items per year. The Depository now contains over nine million items including books, media, photographs, and manuscripts. It houses more books than the combined holdings of the myriad other Harvard libraries. Because of overcrowded shelves on campus and the Depository’s effective delivery system and limitless storage capacity, most of the new books purchased for the library are going directly to the Depository. This has freed up a lot of space in the Harvard libraries for use as teaching and meeting facilities.

Another Harvard library, the Baker Library at the Business School, has developed a “virtual browsing” window on their catalogue that allows patrons to view books stored off-site as if they were on a shelf. For an added benefit the books are color-coded by frequency of circulation.

Harvard Digital Archive

“In Cambridge, the Digital Repository Service (DRS) is a rapidly growing. 109-terabyte online library of 14 million files representing books, thesauri, types, maps, music, images, and manuscripts, among other things, all owned by Harvard. In a facility that also serves other parts of the University, a two-person command center monitors more than a hundred servers. Green lights indicate all is well; red flashes when environmental conditions such as temperature or humidity exceed designated parameters. There are at least three copies of the entire repository — one in, and two outside of, Cambridge. One of them, secured by thumbprint access, is constantly being read by the disk level to ensure the integrity of the data, a process that takes a full month to complete.”

“Several times a year,” says Tracey Robinson, who heads the library’s office for information systems, “we detect data that have become corrupted. We engage in a constant process of refreshing and making sure that everything is readable. Any damaged material is quickly replaced with another copy from the backup.”

Robotic Storage Depositories

The first time I visited a shelving facility for “little-used” books that employed robotic technologies, I also got a personal tour of the Jean and Charles Schulz, of Peanuts fame, Information Center at Sonoma State University in Rohnert Park, California. When it opened in 2000 theirs was the third such facility built in the U.S. (Cal State Northridge was the first in 1996). Even though many other industries had been utilizing the same robotic technology for years, libraries only started taking advantage of them comparatively recently. The first warehouses to employ robotic storage were aircraft manufacturers who needed “just-in-time” access to the hundreds of thousands of parts required for assembling even one airplane, let alone hundreds of others. Library compact storage is actually one of the smallest uses of compact storage in a field where industrial warehouses may cover many acres.

I also got to visit the robotic storage facility at Colgate University that, like Sonoma State, has decided to keep archival storage as part of the library building. Both libraries found that quick retrieval was paramount in convincing faculty and students of the effectiveness of storing books away from the open stacks. Colgate also found that storing current DVDs and other media gave them another layer of security for items that had a habit of “walking” from more public spaces.

In some ways this new view on managing library materials is a return to the past, almost Medieval in its outlook. In Europe and elsewhere books are not kept on open shelves for decades. Most books are kept in an archival setting and are retrieved only on request. This gives much more security to the collection and allows for compact storage. Once upon a time books were even chained to library desks for security. The primary task was to eliminate useless works. They would invade the hexagons [Borges’ library shelves], exhibiting credentials which were not always false, slip through a volume with annoyance, and then condemn entire bookshelves to destruction.” (Borges 1962, 84-85)

Much of what offsite storage reminds me of, and not just the robotic part of it, is a science fiction tale. In fact, such sci-fi movies as “The Book of Eli” directly address the possibility of a loss of books, archives, and, thus, of our species’ memory. Science fiction has proven to be a good predictor of future realities. I am glad to see that depositories such as Harvard’s are addressing this issue of preservation and re-invention in the real world.

Endnotes


For further reading:
http://www.bbc.co.uk/news/uk-england-oxfordshire-16325727
“Superpostapocalypticxipidicious” John Riley, 2010; Benjamin Press; also available on Kindle; (title story of the book is about the Harvard Depository in a post-apocalyptic world).
To see pictures inside a high-density book storage facility, go to YouTube “Views at Duke: Library Service Center.”