

Back to the Future: From Book Warehouses to Library Learning Commons

Ray Uzwyshyn, Ph.D. MBA MLIS
Director, Collections and Digital Services
Alkek Library, Texas State University
ruzwyshyn@txstate.edu, (512)245-5687



The technology potential for academic learning commons is transforming libraries globally. Whether public, special or especially academic, a creative focused application of new technology is moving the needle and shifting traditional use of library space and expectation of services. This article looks at new technological areas and possibilities for library learning commons thematically grouping areas for larger reflection. It is written from pragmatic perspectives of Texas State University, Alkek Library, a large university emerging research library currently in the midst of a multi-year project transforming from book warehouse to multi-floored and centered learning commons. Because many of the ideas, technologies and projects discussed here are relatively new, plentiful use of video links and external references are used. The reader is encouraged to click on the links and watch the videos to get a better idea of possibilities.

The Nuts and Bolts: Library Infrastructure Planning and Larger Considerations



With the quickly changing pace of new technology, it should be noted from the outset that technologies deployed in any library learning commons project will change over time and are in a constant state of versioning. Planning should reflect these facts by allocation of library space without necessarily establishing specific technologies for each space. Needs here from the outset should emphasize expanded electrical and data to accommodate various technologies and a tech savvy user population. One possible way of accomplishing this potential for technological reconfigurability currently is through high density data/electrical raised spaces and floors and enabling high capacity wireless.



[Learning Commons Floor Video](#) (DIRRT)

By empowering infrastructure in this way from the outset, further planning can be less constrained by current technologies, equipment or practices. Library planning should anticipate the unknown. Technologies that we didn't expect to see in libraries as the rule have been constant. Accelerated

change over the past especially 15 years is unwavering. Existing buildings should endeavor to upgrade infrastructures holistically as technology driven activities will dominate library use. Build with ideas of technology with a longer timeline, so that budgetary expenditures remain vital.

Themed Moveable Centers.

Following infrastructure upgrades, planning for learning commons should emphasize ‘themed moveable centers’. Because of rapid changes of technology, there should be emphasis from the outset in creating reconfigurability, interdisciplinarity and collaboration - library as a third space with ideas of mobility are central.



Themed Moveable Centers.

Visualization Technologies



With the advent of film, television and photography, the twentieth century shifted the emphasis towards a visual media culture. The twenty first century expands these notions through wider

definitions of computing, interactive possibility and digital literacy. From academic library learning commons standpoints, good examples to look at are NCSU's Hunt Library ([Hunt Library NCSU](#)) and the [University of Calgary](#). The sheer spectrum of visual technologies possible for academic libraries from signage and scheduling to 3D modeling to more complex information visualization technologies is staggering. Visualization walls are now becoming standard for academic libraries and a more global thought out of architectural application from Instant Theatres to 3D labs are also tying the library to university technological interdisciplinary necessities. Good examples of more specialized visualization spaces may be reviewed at [Rice](#) (video, rationale, science) [UT Austin](#) (video, humanities), [Deloitte University](#) (video, business).



Similarly, 3D and Interactive Environments are entering new stages of development with Oculus Rift and [Microsoft Holo Len Lab](#) (video), [Site](#) focusing increasingly on education related areas. Previously, exorbitantly priced visualization infrastructures, such as the [University of Chicago CAVE](#) and [John Hopkins Libraries Brody Learning Commons Display Wall](#) provided benchmarks. These infrastructure possibilities have fallen steeply in price and are now within easy reach of any sized library.



Library Instant Theatre Space for Lecture, Viewing and Learning

Physical Computing and Maker Spaces

Physical computing and library maker spaces are also arriving in large manner. The general idea is to enable digital literacies for the larger patron population through technological learning and physical computing.



An ACRL article [Academic Library Makerspaces](#) (article), and TEDx [Video](#) opens up some of these possibilities. To note, there are larger lists of libraries creating makerspaces [Library Makerspaces, Examples](#)



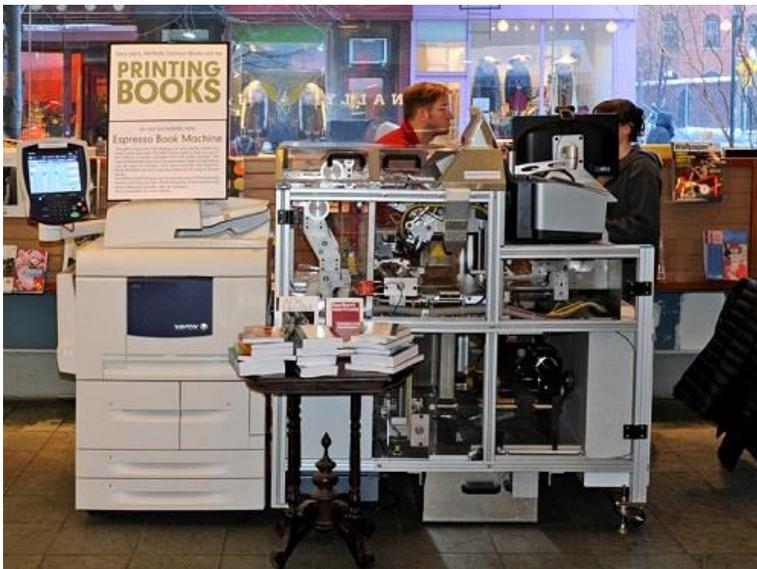
Wider considerations for these new types of makerspaces involve ventilation, internet connectivity and expanded electrical. Especially for areas such as 3D printing, ventilation and safety considerations are key.



The idea with 3D printing labs also is similar to an earlier Gutenberg revolution where processes held by a select few are now demystified and opened to a large set of producers. This is especially relevant for university and college campuses. Good examples of [3D Printing Prototype Lab \(Video\)](#) and [Academic Purposes](#) are available showing how these labs are beginning to flourish.

In House Library e Presses

As traditional university presses continue to go under because of financial considerations of running a press, the opportunity for in house library e-presses has also risen dramatically. These e-presses show how simply with a PDF file, a printed book is able to be created on demand and almost immediately.

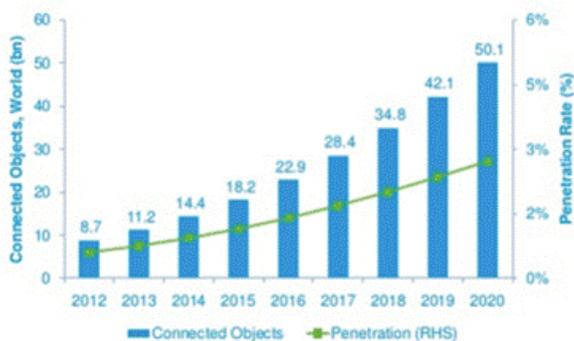


[Espresso Book Machine Animated Video](#), [Espresso Book Machine Video](#), [Site](#)

For example, an Espresso Book Machine can deliver a book in minutes after receiving a PDF file. Libraries become natural places here for a universities e-press. English and Library school graduates naturally and easily can facilitate staffing infrastructure for this redivivus of book culture.

Internet of Things

Number of Connected Objects Expected to Reach 50bn by 2020



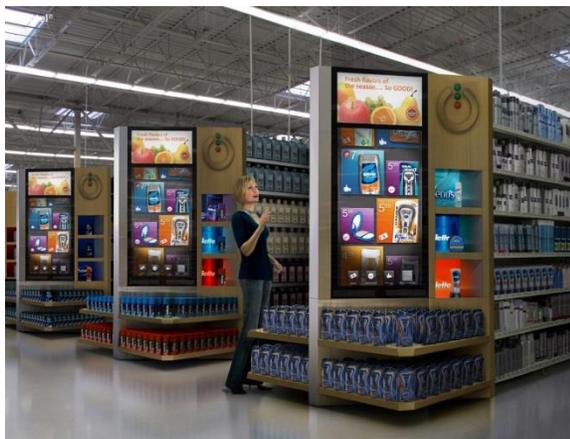
Penetration of connected objects in total 'things' expected to reach 2.7% in 2020 from 0.6% in 2012

Libraries are also beginning to embrace the rise of the Internet of Things. The number of connected objects is expected to reach 50 billion by 2020. Books and the social media/connectivity potential within these objects seem enormous especially on university environments where the entire populace already possess the devices necessary to enable these infrastructures.



The idea is that physical things are mapped to IP addresses/library/university spaces and this produces physical synergies with the patron. Key is wiring library spaces for IP address level connectivity and assigning IP addresses to individual books

The potential is to create smart scholarly spaces and augment the information surrounding books similar to current grocery/department store shelf smart shoppers. An outdated reference desk model may also innovatively be revived through Skype or other video/phone technologies.



The potential for connecting students and faculty through collocated interests in physical space also becomes a reality with the Internet of Things.



To point to a single example, May Chang at the University of Western Michigan has begun [prototyping](#) these types of IOT models with a variety of interesting methods focusing on the potential of the learning commons.

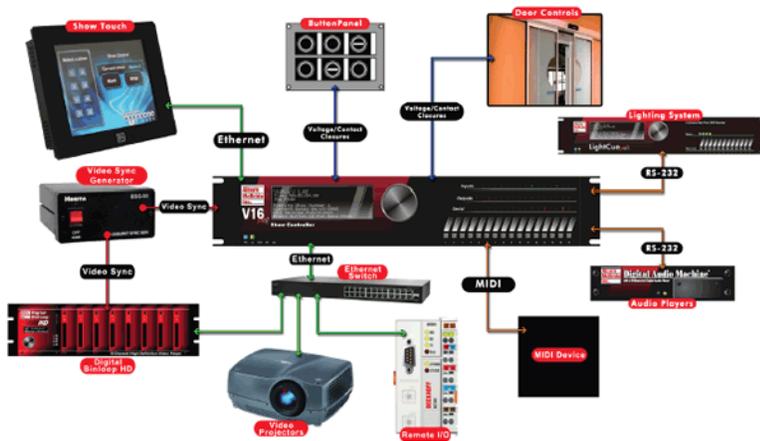
Imagineering Design

With the exponential expansion of technology into library spaces there is also a need for a wider coordination and orchestration of the traditional space. This involves everything from lighting to coordinating work spaces to complexly thinking about the idea of library as a smart building. The main analogue and metaphor for this type of library comes from theme park design and the idea of 'Imagineering' or coordinating more left brain engineering paradigms with right brained spatial design involving a more carefully designed and interactive use of space from smart lighting for hours and open computers to setting up 'physical classrooms' or group study interactively. Again, NCSU's [Hunt Library](#)

[Video](#), shows good example. This type of design potential also extends from patron focused to more complexly thinking about [Learning Work Spaces](#) and [Lighting Museums and Libraries](#).



The idea for the future is to imagineer academic library spaces through the present potential of theme park show controller technology. Cafes, computers, journal kiosks and lighting-narrative may all be connected through imagineering [show controllers](#), the standard in theme parks, mall and hotel environments which may easily find wider application in academic environments. The [U Calgary Design Thinking](#) video provides wider rationale needed to move these more visionary types of collaborative efforts forward towards next levels of realizations.



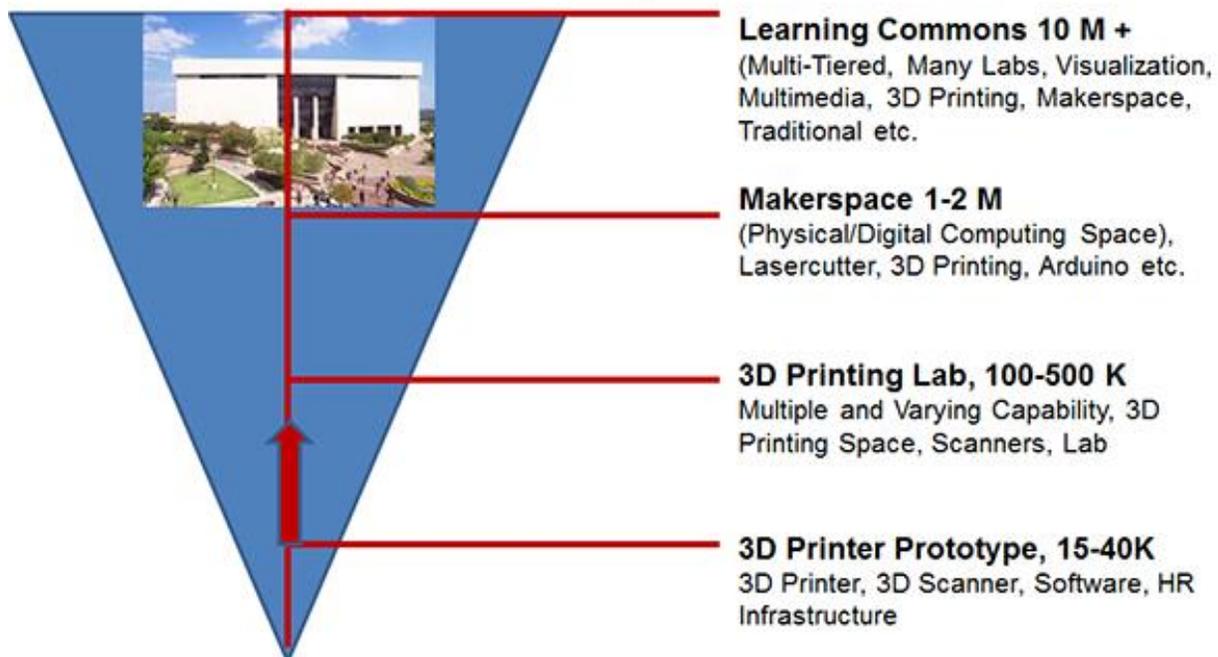
[Alcorn McBride](#) Show Controller

Conclusions, A Way Forward

The technological and research potential for libraries and learning commons of the future is currently largely unexplored. It will take visionary leaders to move these projects forward and advocate moving past still largely entrenched myopic views. This type of leadership is necessary and essential if libraries are to remain vital to our now technocratic society.

Equally, these types of projects need to be realized if libraries are not to be left further behind in the paradigm shifts continuing to occur in industry and wider society. It is also not necessary to begin with a ten or forty-million-dollar project. It is still possible to begin small but equally innovatively with a single area (e.g a 3D printer) and build from small successes here incrementally.

Prototyping/Scaling/Phasing Future Trajectories



The goal is to start. The wider idea is to begin with a prototype,, build on that success, expand to a lab or makerspace and then progress. Moveable centers, new paradigms and larger projects are possible and necessary. Let your project be a benchmark for others. We need a larger group to begin pushing the boundaries for libraries and add to the level of creativity and potential for which the 21st century is becoming known.

Ray Uzwyszyn, Ph.D. MBA MLIS Bio

Dr. Ray Uzwyszyn is currently Director of Collection and Digital Services for Texas State University Libraries. Previously, he served as Director of Online Libraries for American Public University System, Head, Digital and Learning Technologies for the University of West Florida and Web Services Librarian for the University of Miami. Ray possesses a Ph.D. (NYU, Media Studies), MBA (IT Management) and MLIS from the University of Western Ontario. He has chaired the American Society of Information Science & Technology, SIG in [Visualization](#), and served as a reviewer for the [Bill & Melinda Gates Foundation Global Access to Learning Technology Awards](#), 2009-2011. Contact Info: ruzwyszyn@txstate.edu (512)245-5687