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Proactive Digital Transformation and a Virtual Academic Library: The APUS Campus Guides Project

Fred Stielow

American Public University System, Charles Town, United States

E-mail address: FStielow@APUS.EDU



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Abstract:

This presentation provides practical underpinning for IFLA Trends Report's predictions on the impact of online education, but from the unique perspectives on a decade's experience along the cutting edge of a fully virtual university. Its online library had to build from scratch without established resources or sense of academic entitlement. Grounding in physical space and collection ownership was radically supplanted by a Web site, remote staff, and licensing for global access. Sustainability in the heightened competitive of a for-profit school and Internet economy demanded an entrepreneurial mindset and fundamental changes in library services. The results are a paradigm shift into a new variant of the university library.

The case study details APUS' award-winning Course Guides project and further transformation of the academic library. In studied shift from the established research libraries, innovative electronic bibliographies and classroom services rise to prominence. Remote subject-specialists librarians take the lead. Their skills in mining and staying abreast of the Web tidal wave supplant past concentration on massive collection building. Librarian expertise vets licensed holdings and the Open Web. It produces a dynamic array of individualized interfaces across the entire curriculum and alternatives in the struggles with textbook inflation. Working in partnerships with the faculty, the efforts proffer significant quality enhancements and pedagogical enhancement for the 21st-century classroom. They come too with major cost-savings and the creation of trusted research launching pad for students.

As seen, APUS' Online Library and Course Guides proved remarkably successful. Over an eight year period in heightened competitive setting, the number of professional librarians increased from 2 to 23. Library traffic grew an unprecedented 3,000 percent and the university emerged in the top echelon of research database use. Course Guides became a prominent figure within the electronic classrooms and library materials adopted in 1/3rd of courses with millions in savings.

Keywords: American Public University System, Virtual Academic Library, Online Education, Online University, Course Guides

1 INTRODUCTION

The second component in IFLA's *Trend Report* (2013) forecasts "Online Education will Democratize and Disrupt Global Learning." Like the rest of the document, the prediction highlights rapidly evolving economic, societal, and technological factors. Although informed by my and other comments, inquiry was designed to leave library applications for future unfolding:

Trends in online education stand to have profound impacts on employment, culture, communication and class around the world. The rapid global expansion in online education resources will make learning opportunities more abundant, cheaper and more accessible. Increased value placed on lifelong learning and the recognition of non-formal and informal learning will change the nature of recruitment, and equalize employment opportunities in a number of ways.

The following responds to this call, but from subtly different perspective. Instead of a traditional land-based university, discussion juxtaposes from the competitive frontlines of a for-profit and fully virtual university. Rather than prognostication on what "will" be, enquiry draws on almost a decade's practical experience in an established online library. Analysis focuses on lessons learned in the Campus Guides project of the American Public University System (APUS). Winner of ACHE's *Creative Use of Technology* prize in 2013 and a 2012 *Gold Innovation Award* from IMSGlobal, this pioneering project proved the centerpiece for a successful reinvention of the academic library and model for sustainable services in online education.

2 IMMERSION IN A DISRUPTIVE REVOLUTION

The theory of disruptive innovation has significant explanatory power in thinking through the challenges and changes confronting higher education. A disruptive innovation has a couple key elements or enablers that are particularly salient to the future of higher education

...The first is a technology enabler. This allows the innovation...by serving people—who were not able to be served or were not desirable to serve—to be "upwardly scalable" and improve year over year without replicating the cost structure of the old products and services it gradually replaces.

...The second element of a disruptive innovation is a business model innovation.

In *The Disruptive College* (2011), Harvard Professor Clayton Christensen extends his argument on the disruptive inevitability of the Web and altered business models to the ivory tower. As the *Trend Report* hints, however, the nature of these disruptions is now slowly dawning and remains difficult to grasp—especially in the mainstream.

Historical Framework

Those immersed in a communications revolution inevitably have trouble gaining perspective. They can be readily blinded within the swirl of events and allure of technology. In keeping with the insights of Marshall McLuhan (1962) and the Toronto School, historical

juxtaposition becomes valuable for analysis and dealing with hidden preconceptions. This sidebar steps in with a preliminary taste. Those seeking more detailed and theoretical views may wish to consult my *Reinventing the Library for Online Education* (2014).

Industrialization, Nationalism & the Research University: If past can be prelude, today's university administrations and librarians must look critically to the 19th century. Then, academic reformers responded within a rising tide of nationalism and new economic engines. To the chagrin of traditionalists such as John Henry Newman (1858), reforms with the German "New University" and American land-grant universities supplanted the classic liberal arts. State interests permanently entered the scene and were joined by Gilded-Age industrialists to stimulate a spate of innovative "research universities." Scientific-oriented and pragmatic curricula replaced the *trivium* and *quadrivium*. New "scientific" departments rose to prominence from Agriculture and Engineering, to History and Sociology, and into the 20th century with applied fields like Business. Governance altered and the university took on much of its present shape.

University Library: The triumph of research universities brought reinvention to the academic library. Entrepreneurial reformers pushed return to academic prominence that had been lost during the print revolution. Often taking symbolic positions at the heart of re-designed campuses, monumental facilities were asserted as marks of distinction for a "great" university. Professional librarianship was born as a field of study. Operations expanded from the passive receipt of donations to the active purchase of all-encompassing collections. Classification systems and stack systems sprang forth. The library brought order to the explosion of reading materials from the Rise of the Mass Press. The renewed institution played a pivotal role in the new mantra of "publish or perish." Acting in concert with the new Ph.D. degree, it added bindery/depository functions and became the requisite "go to" place for research. Libraries catalyzed the academic press movement and in a circular fashion became the major economic engine for scholarly monographs and journals.

Modern Land-Based Universities

The Web brings a related convergence of factors to bear today. Commercial LMSs (Learning Management Systems) and SCORM standards provide the disruptive trigger at the turn of the 21st century. While smaller schools generally ignore the option, large universities begin to dabble—albeit along basically conservative lines. Often weighted down by layers of bureaucracy, innovation is narrowly channeled toward established classroom practices and scheduling routines. Online course options become frequent and even normative, but understanding the transformative potential is effectively delayed. Matters change in 2012/2013. MOOCs (Massive Open Online Courses) produce frenzied and frequently naïve responses. The results of that fad remain to be seen; but, as will be discussed, other competitive forces are already ensconced and will serve to frame this study.

The Library: Academic libraries had been among the earliest adopters and trend setters on the Web. By the early 21st century, the effects of the medium were undeniable. Automation and digital collections pushed virtual services with a look and feel that transcended practices from the dawn of history. The Web knocked down the walls for a new class of remote users and different type of library experience:

- The centrality of the library as building is replaced by the Internet.
- Travel arrangements and parking concerns vanish.

- Hours of operation are no longer a concern.
- Stacks reorder into meaninglessness.
- Catalog searches, retrieval from the stacks, and the handling of materials are obsoleted.
- Full text of articles and then monographs becomes directly accessible.
- Search engines replace the reference desk.
- Use is anytime and anywhere on devices from desktop computers to smart phones.

Despite extensive virtual refurbishing, more transformation remains. As inferred from the *Trends Report* and until MOOCs, academic libraries were strangely weak in response to the full impacts of the Web. The dangers are palpable. Questions of future sustainability reared as Google and other search engines vitiate reference services. The immensity of resources on the Information Highway raises fundamental questions over the costs of massive collections and physical facilities. One still struggles to find examples of library automation working in concert with campus LMSs. DLS (distance library services) with remote provisioning of classrooms is set firmly on the fringes—an afterthought to the preservation and domination of established services on campus.

Online Alternatives

For-profit universities thrust to prominence during the first decade of the 21st century. Educational entrepreneurs and investors reacted with vigor to the opportunities proffered by the Web. LMS innovation leveled the technological playing field. Universities would no longer require a physical location. The medium obviated the need to capitalize and maintain massive campus infrastructures. Operations had become markedly affordable, yet the establishment remained weak in its counter responses.

The new players proved flexible and inventive by necessity. In the U.S., their student bodies grew at multiples greater than the established institutions. By 2012, the for-profit sector controlled 12% of course offerings. It had risen to increasingly competitive status with state universities and approached the market share of private schools. Their success involved fundamental changes to the fabric of higher education. The LMS allowed for a shift in emphasis from campus facilities along with ancillary housing and entertainment concerns. New business models moved away from faculty-centric operations and toward tailoring for student preferences.

Asynchronous Education: With LMSs, distance education would take major steps away from its roots in postal delivery into dynamic e-mail and new Web variants. Asynchronous study transformed on the medium with impacts across higher education. Transformation was complex with significantly altered teaching methods and new scheduling options:

- *Lectures Optional:* The need to physically attend lectures and face-to-face engagement largely vanishes. Although a possibility, even canned-lectures can disappear. They are replaced by intense readings/assignments on electronic discussion boards or e-mail.
- *Lecture Halls Replaced:* In contrast to MOOCs, successful virtual classrooms are small in size and with control mechanisms that require everyone participate.

- *Non-Traditional Students/Open University Focus:* Rather than design for a cohort of 18-24 year-olds directly from high-schools, Web alternatives are framed for a non-traditional body of adult learners. They are typically framed as Open Universities and designed to democratize higher education.
- *Scheduling Enhancements:* Instead of semester patterns, classes can start on a monthly basis—or even on demand. Awkward early morning and overly close class times are a thing of the past. Broader course availability eases complications with student planning and removes entrenched rituals of scheduling struggles.
- *Socializing Limited:* Although Web 2.0 approaches can supplement—the attractions of intramural sports, off-campus hang-outs, and library study spaces are largely absent. Online programs are designed for abstract studies removed from campus distractions.
- *Transportation and Security Obviated:* Transportation and campus parking concerns are no more. With Internet delivery, students avoid inclement weather and safety incidents.
- *24/7 Operations:* Instead of set class periods, asynchronous offerings allow students and faculty to turn on their computers at a time and place of their choosing within the framework of the course.

Business Effects: Directions from the for-profit sector are also surfacing in non-profit schools. Positive trends include the democratizing drive for Open Universities along with study anytime/any place on the Web. Student success and teaching evaluations has risen to prominence. Classroom accountability and measurable outcomes make justifiable appearances with a new rage for analytics and metrics. Yet, number crunching can be mixed. LMSs bring unprecedented abilities to monitor student and faculty activity—albeit to as yet unproven effects in terms of education. One also notes the problematic ascendancy of administrations and growing business orientation in higher education. The primacy of the professor is particularly reduced in for-profit regimes, including the demise of tenure and limits to academic freedom. Information technology and course designers intrude as major players in the classroom. Without careful oversight, the bottom-line and profit concerns can intrude on the pedagogical mission.

Indeed, libraries can become suspect in the new regimes. The for-profit sector seeks financial advantages and points of leverage. Library professionalism may be questioned and relegated as inferior to new technical credentials. Management readily diverts toward outsourcing or the chimera of free services on the Web. Despite readily demonstrable importance, the library struggles with being overlooked. The symbolic presence of monumental campus libraries and millions of dollars in underused collections has little cachet. Assumptions of entitlement and a vital role for the library vanish. Holdings are evaluated for use and subject to valuation along with other overhead costs. Accreditation may alone remain as a defense and *raison d'être*.

Case Study—The APUS Crucible

The American Public University System (APUS) is a for-profit, public corporation that is listed on NASDAC under the APEI stock symbol. The school offers fully online classrooms under two brands—the American Military University and American Public University. These provide associate, bachelor, and master degrees across the educational spectrum—

including specializations in areas like Homeland Security, Intelligence, and Military Studies. Classes are asynchronous—offered around the clock. Operations developed in concert with the Web and a niche strategy marketing to non-traditional learners in the military and first responders.

Currently serving over 100,000 students in 120+ countries, APUS has been acknowledged as a “white hat” within the industry. A low-price leader that has not raised tuition in over a decade, the AMU/APUS combination has been recognized as the top educational program among of the for-profit universities. Furthermore, the school proudly touts its Online Library as a market differentiator with its sector’s most advanced librarian corps and classroom-information services.

Enter an Online Library

Such was not always the case. Our study launches in mid-2005. At that time, APUS was a global operation and nationally accredited by DETC with an enrollment of some 6,000-8,000 students. It also harbored a bigger vision. The drive was toward regional accreditation—the *sine qua non* for university status in the United States. Library services, however, were rudimentary at best and had surfaced as a significant roadblock. Rather than outsourcing, a new provost opted for emergency internal construction. Resources would be committed to meet professional library standards. An enhanced facility would be integral to the accreditation strategy and the school’s commitment to educational excellence.

APUS required a research library suitable for accreditation purposes and the timeline would be extremely limited. I was thus recruited as Web library expert to guide the initiative. Efforts were framed by a quickly constructed strategic plan, “Positioning the APUS Online Library for Academic Excellence: A Prospectus.” It stepped forward with a revised mission and vision statement, which would foreshadow future engagement:

The APUS Online Library strives for academic excellence and professional leadership as part of a new wave of Academic Librarianship. This fully virtual facility is created to provide state-of-the-art research and educational support for the University; moreover, services that are available at any time of the day or night and regardless of geographic location. To these ends, the School has specially committed to professional librarians.... The design is part of an interactive learning community with our students, alumni, and other staff--nothing less than a new idea of the university for the Web Era.

The library actively leveraged accreditation. The process helped ensure prominent placement within the LMS shell. Given the tight schedule and budget realities, however, staffing was limited to one other part-time professional librarian and a single support staff. Initial labors concentrated on rehabilitating an extant Online Resources Center (OCR) into a symbolically renamed Online Library. Implementation followed with the construction of a new interface, which would include some twenty information literacy and academic support pages. Holdings were soon doubled from a base of 20,000 e-books and multi-year runs of approximately 4,000 scholarly journals. We actively sought political partnerships within the campus accreditation team. Such networking worked to lobby successfully for Information Literacy as one of five university goals in the accreditation review. With that, the library was better able to infiltrate its modules into required faculty training and the introductory course for undergraduates. In addition, the library took control of contracting for external tutorial

services, as well as asserting itself for copyright/anti-plagiarism and electronic services to the handicapped (ADA 508).

An Online Paradigm Shift: Results reflected the first stage in a reinvention of the library for online education. The Web obliterated the previous bedrock of physical facilities and ownership of materials. The APUS campus library would be a Web site with rented digital holdings and telecommuting librarians. Fortunately, the efforts had also produced a sufficiently functional simulacrum of a forward-looking research library at a teaching institution. In May of 2006, the Higher Learning Commission accepted this equivalency as it awarded APUS regional accreditation, including positive remarks on the groundbreaking directions of the Online Library.

Stage 2—Exploration beyond the Research Model

“Build it and they will come” may have sufficed for initial accreditation, but hardly met the full vision or guaranteed future success for the Online Library. Students were not flocking to the facility and survey data revealed the effects of training modules were slow to dribble down. The majority had little idea that the library existed. The library also had to come to grips with the implications of the Web revolution. Despite significant enhancements, the institution was losing out to search engines and the wide range of entrancing resources on the medium. Moreover, construction alone would not advance the library within the competitive environment of for-profits. It could be left as a necessary evil and passive memorial to regional accreditation.

Times had changed. The library would need to explore proactively and entrepreneurially beyond the research model and assumptions based on a physical campus. It needed to push for a new form of integration into the virtual fabric of online education. Thus, the full intent of the vision statement kicked in and strategic planning entered its second stage.

Accreditation contributions and the university’s rapid growth proffered a window of opportunity. Complacency or feelings on entitlement had no place. Engagement would benefit from a flexible environment, but demand entrepreneurial zeal. Accreditation engagement prepared the way with negotiations for two new Online Librarians. The library’s virtual setting allowed for national recruiting without the need relocation. The appointments also addressed a reputation-building narrative, which stressed Online Librarian skills as marketable assets.

Web-based prospects were again funneled through critical historical lenses. Analysis exposed a lingering contradiction. Robert Sorbonne invented the academic library to supplement the broad study needs of often poor college students and instructors. 19th-century reforms into research libraries had largely eschewed the instructional half of that mission. Moreover, APUS was not a research but a teaching institution. Overriding commitment to a research trope made little financial or pedagogical sense to its administration.

Internal economic and educational opportunities crystallized at a pivotal moment. As we uncovered, APUS had pioneered a grant to underwrite classroom materials for undergraduates. By 2005/2006, those efforts remained focused on printed textbooks and mail delivery. Costs had grown into a multimillion-dollar operation and subject to added inflationary pressures. But, the school was also navigating the early stages of online education and post-accreditation hyper-growth, which would double its size within a year and

continue. In this pioneering atmosphere, the bureaucracy was not yet aware of the recent onset of electronic textbooks or actively considering the implications of fully automated course materials.

The library stepped into the vacuum. It would take the lead for electronic course materials for APUS—a process that also surfaced generalizable issues for online education:

- How could universities teach upper division classes without reliance on the peer-reviewed journals, which were now electronically available through their libraries?
- Why should students at an online university in the Information Age endure print-era walls between electronic classroom materials and their library's digital holdings?
- And, harkening to Sorbonne for APUS graduate courses (and the rest of academia), what were a school's fiduciary responsibilities in regard to course materials for its students?

CRIS—Classroom/Research Information Services: APUS' reforms marshalled under the convenient term of Classroom/Research Information Services. CRIS proffered philosophical difference with print-era textbook models, which had arisen as industrialized solutions to the rapid growth in higher education with the WWII-era GI Bill. The rubric was rooted in the disruptive potential of the Web with the ability to tailored responses to the specifics of the university's curriculum. Rather than prior focus on internal collection building, CRIS would acknowledge the medium's growth into a modern Alexandrian Library and ultimate repository. And, CRIS reflected the for-profit environment with new found entrepreneurial zeal. In addition to academic quality and currency factors, the library promoted itself as a cost-effect bulwark with measurable return-on-investment. Such directions led to higher education's most sophisticated approach to electronic course materials and cost-containment against textbook inflation. They took concrete form in an integrated "Electronic Course Materials" (ECM) trio:

- *Course Guides:* As will be discussed, librarians took the lead in building electronic bibliographies for every course in the curriculum. Innovative devices were designed for both populating classes and facilitating research in the new age.
- *Electronic Bookstore:* This unit orchestrated the introduction of electronic textbooks and acted as a bargaining agency. It took the lead in holding the line against textbook inflation and eventually negotiated pricing thresholds at less than 1/3rd the average cost of printed textbooks.
- *ePress:* With this smallest of the endeavors, CRIS actively joined the Open Source movement. Our electronic press would commission APUS faculty to produce electronic course materials for selective classes. The object was topics that were inadequately addressed in the literature or suggested specific tailoring for the APUS context—such as a collection of authorized manuals of style.

Course Guide Concept

The case study turns to the particulars of library operations in electronic course materials through the Course Guides project. Analysis began with established functions to note students and faculty approached the use of printed library materials during two types of micro engagement:

- *Research Trip:* The leading practice featured going to the library for background on completing an assignment. In addition to panoply of general reference and access tools, librarians had stepped in with Pathfinders for specific responses.
- *Course Readings:* The secondary tactic was Course Reserves. Professors picked appropriate selections for their courses from the library's holdings. The library then worked in partnership to provide controlled and ensured access for students.

The APUS model combined the above into a new type of electronic publication. The medium facilitated a move beyond controlled check-in/-outs at a physical station. With digital formats, selections no longer had to be isolated for single use and pulled from general circulation. Pathfinders could be channeled from library subject-orientation to classroom economics. Individual Course Guides could emerge as centerpiece for sustainability and a reinvention of the academic library for online education.

Expanded Site Prospect: The collective nature of the Web offered further opportunity. The project could orchestrate beyond single courses. Site formation could also deal with the broader realities of the university's academic structure and individualized curriculum, which were glossed under the dominant textbook models. Its framework was altered into a hierarchical, albeit permeable structure with additional navigation paths. Although entry could take place on any page, the virtual top-level would replicate the university's seven major schools. Those linked at an intermediate level to individual department and degree program pages—proactively serving natural scholarly desires for departmental libraries and in turn linking to the base of course offerings. The collective emerged as an array of individual boutique libraries and tailored services for every school, department, and class. It also developed as unique alternative rerouting around the main research library interface for classroom and departmental purposes.

Page Design

In keeping with best practices, Web design began by factoring for the audience(s) and functional needs. The process surfaced with two obvious and an easily overlooked component:

- *Faculty Pick List:* Quality and economic features focused on the faculty as audience. Librarians would review individual syllabuses and invite instructor input as they mined for relevant materials. Selections would be prepared, including proxy controls, for ready "cut-and-pasting" into the syllabus and classroom assignment sections in the LMS.
- *Student Research Launching Pad:* The Guides would also address students as audience. In addition to the library's licensed holdings and needed emphasis on peer-reviewed literature, these devices facilitate with an initial vetting of Open Web sites.

- *Web Search Engines:* WYSIWYG design can be deceiving. HTML construction is easily enhanced by an understanding of the underlying structures being added to the text and their potential for enhancing search-engine discovery. Hence, APUS Guides feature an awareness of the Title tag and careful construction/terminology controls with the embedding of headings and their hierarchical nature—h1, h2, h3...

The screenshot shows the APUS LSTD401 Maritime Law Course Guide. At the top, there is a breadcrumb trail: APUS » Online Library: CampusGuides » Library Course Guides » LSTD401 Maritime Law | Course Guide. A search bar is located on the right. Below the breadcrumb is the page title 'LSTD401 Maritime Law | Course Guide' and a set of navigation tabs: Home, Articles/Journals, Books, Multimedia, Web Resources, Writing/Citing, and E-Reserves. The main content area is divided into three columns. The left column, 'Maritime Law Headlines', features a large image of a ship and a list of news items. The middle column, 'Welcome', has a title 'Welcome to the LSTD401: Maritime Law Course Guide' and introductory text. The right column, 'Librarian', features a photo of Molly Fischer, MLIS, and contact information. A 'Modern Challenges of the Law of the Sea' section is also present with a video player.

Figure 1: Sample APUS Course Guide

Layout: As seen in Figure 1, design is simple and follows popular styling. Current Guides employ a tripartite layout with terminology that mimics that in the research library. Given the growing affinities of millennials, the devices often feature inviting videos or other media. They always attempts to personalize and invite contact with the librarian specialist, as well as general comments from student users. Top navigation is standardized under a set of no more than 7 tabs:

- *Articles/Journals:* Recognize the primacy of shorter works for online study. The tab links to a selection of key journals and articles of particular importance to the class and, in advanced versions, will drill down to a particular week of study.
- *Books:* Librarians also step forward with a tailored list of monographic studies for the course. Like article choices, this process presupposes Collection Development and gaining faculty recommendations for additional purchases.
- *MultiMedia:* This area merges library licensed materials and resources on the Open Web. It reflects university initiatives to meet student desires for course materials beyond printed texts.

- *Web Resources*: Concentrates on librarian-vetted resources for the class that are freely available on the Open Web. It may include Web 2.0 communities, key association and university collections, and so on to OER (Open Educational Resources).
- *Writing/Citing*: Proffers additional library support with program-specific and general tutorials for the students.
- *eReserves*: This tab appears as an alternate when faculty embed links from the Course Guides in a syllabus, which is the main point of entry.
- *Theses/Great Student Papers*: A development option to hold a sample of key student contributions, which meet the program’s scholarly standards and the Online Library’s publication review.

Implementation

Accreditation success plus an almost self-evident economic case opened the door for presidential and board approval. The project would be long range. Planning required flexibility for evolving library practice, building a corps of online librarians, and transitioning among complex human/political factors within a revolutionary context. The project faced formidable barriers. The course-scape was daunting with 1,500 classes across 90 degree programs. The scene was also in motion. New courses were arriving and older courses departing depending on university desires and assessments. Moreover, the medium remained in dynamic development. New information resources and applications were constantly appearing.

Human Factors & Web Transition

Top management support within a for-profit and the library’s training initiatives helped ease matters, but the project still had to deal with Web timing. General acceptability of online reading was in transition and would not arrive until 2010. E-books and, especially, electronic textbooks were only effectively emerging on the scene in 2006; products remained rough PDF-versions of print and often laden with awkward DRM (Digital Rights Management) software. Faculty were less than receptive to that genre, but also justifiably enamored of printed books. Convincing them to switch would take time—ultimately requiring inducements and administrative mandates during a financial crisis. Given the business model, student acceptance was a major consideration. It proved easier than with faculty, but still difficult. APUS’ non-traditional student base averaged over 30 years of age. In 2006, most had not grown up with native affinity to the Web; moreover, they were quite pleased to receive shipments of free printed books. Over time, library outreach combined with the onset of born-Web clients, inherent problems with mail delivery, and improvements in electronic delivery to significantly ameliorate matters.

Planning: Planning harkened to the librarian’s medieval past with copying cycles—albeit with production greatly collapsed in time. Continuing quality management approaches suggested mapping to the typical three-year pattern of college course design. The project would have to build from the ground from minimal assets and prove itself on the fly. Activity had to demonstrate financial and academic advances to justify the addition of sufficient librarians for project completion and sustainability. Matters were further complicated by the accompanying need to create structures for remote staff and project management.

Priorities: Prioritization emerged as an art form. Departmental politics and willing v. obdurate faculty played their role. The onset of a new program of study would prove particularly inviting. We turned to matrix management for the main tool to ensure as orderly a process as possible. Courses were arrayed in a grid that calculated enrollment by cost of course materials. Library assignments were framed with precedence typically given by economic calculations for undergraduate classes. Although selections had to be condition by the available expertise among librarians, the project consciously sought to balance among the programs. It also gauged for the applicability of library materials—e.g., added weighting for upper division courses in selected programs of study.

Stages: As I write, the project is entering the second of three stages:

1. *Initial Implementation:* The first stage was by far the most complicated and vital for future success. The Online Library proactively embarked on construction and building stakeholder buy-in as part of that process. Measurements determined a ten-hour basis for construction of lead Guides and helped establish production quotas. Dealing with remote staff, required creation of Web-based controls for the project and individual dashboards. Efforts began in 2006 and would take seven years to reach the completion level for launch into stage two for undergraduate courses.
2. *First Copy Cycle:* Planning calls for a roughly five-year stage. Layout is undergoing review and new technologies must be evaluated. The latter include dynamic site generation from XML databases, HTML5 standards, and the alluring prospects of tailoring discovery search engines to specific fields of study. Pilot studies suggest production rates for undergraduate Guides can ratchet approximately 1/3rd. Librarians must also turn attention to complete construction for graduate classes and any new undergraduate endeavors. The former retain lower initial financial priority, but their own draws. The library joins faculty in the ethical drive to reduce costs for graduate students, as well as the financial/marketing prospects for their recruitment and retention.
3. *Ongoing Maintenance Cycles:* As projected, the ideal of ongoing three-year cycles (with flexibility for more rapid updating of volatile subjects like Information Science) should commence in 2018 for undergraduate classes and the following year for graduate courses.

Technology: The project took special notice of the difficulties of inputs from remote workers. Web consciousness pushed beyond access through the library to placement wherever students might look and special attention to locations in the LMS campus. Construction itself relied on the HTML standard with added regard for search engine operations.

CMSs: In keeping with the dispersed nature of the team, implementation channeled through CMS (content management system) software. Templates ensured internal layout conformity, but also color and font continuity with branding controls for the university site.

1. *Site-Executive CMS:* Efforts began in 2006 with the internal campus system, but it soon proved overly difficult for remote librarians and isolating from cooperative endeavors

2. *LibGuides*: In 2009, the Course Guide manager discovered the SpringShare platform. Technologists had caught up with our special needs. LibGuides could be readily adapted to course materials and site needs. The software proved easily for the librarians to use and offered the added benefits of a growing library community. The company was also willing to fine tune for us and the price point extremely affordable. By 2013, APUS would be by far the products most active user.

LMS Insertion: Technological considerations were also framed by an underlying drive for transparency and simplifying access for the students within their online campus. This involved:

- *Voluntary*: Librarians strove through interpersonal relations and demonstrations of quality to inveigle instructors to place Guides as links within syllabuses.
- *Systemic*: Another opportunity arose in 2010/11 with conversion to the Sakai LMS. Thanks to their success and increasing presence, the library succeeded in having Course Guides automatically included for each course.

Rewired Librarians—Completing the Shift

Librarians provided the lynchpin for implementation. Success rested on a sufficient corps of librarians with the ability to produce and secure use of their Course Guides. That would require studied build-up over a number of years. Management thus consciously “cherry-picked” candidates with outstanding academic credentials and experience to best insure faculty acceptance. We also had to counter negative stereotypes and preconceptions inherent to the for-profit economy. Hence, the library had to orchestrate a marketing effort to highlight the special skills of librarians for online education:

- *Identity/Reputation Makers*: Librarians are demonstrable signs of academic excellence. These expected academic touchstones are often less off-putting than newer classroom support elements—especially for the faculty. Their absence can be shown to hurt reputation building and presence branded for competitive advantage.
- *Compliance Experts*: Librarians come with defined legal status under copyright and education laws. Their involvement can help protect the corporation in a way not available to other employees. Properly positioned, librarians bring trust factors and added credibility to accreditors and regulators.
- *High Touch Intermediaries*: Interpersonal skills are of particular value for the virtual campus. They can assist faculty, but also students cope with a readily isolating space.
- *Subject/Quality Assurance Specialists*: With CRIS, librarians are sold as cost-effective, subject experts. They step forward as new type of partners to work with online faculty and useful components for the mounting and accrediting of new degrees.
- *Web Gurus*: In addition to subject specialists, librarians are marketable for Web expertise, including:

- *Deep Web*: Librarians are easily most knowledgeable for dealing with and exploiting the library's peer-reviewed resources.
- *Open Web*: They are also uniquely skilled in evaluating the myriad of "free" resources on the Web.
- *Information Literacy*: This is home turf for the librarians and a useful calling card for embedding within research and methods classes.
- *Technology Monitors*: Librarians add value through their ongoing patrols and implementation of evolving technologies.

The narrative and online university setting also necessitated concurrent rewiring of the librarian. Such transformation can be problematic. Remote employ brings loss of the reassuring symbols and interpersonal engagements on campus. Rather than passively waiting for reference and research traffic, librarians must seek engagement as department liaison and with individual faculty over the Internet. For-profit placement forces financial considerations that may be unsettling for the academic purist and "thinking Web" a revolutionary challenge. Web construction skills take heightened precedence; indeed, production quotas/quality checks become the main measure of librarian employ and sample fabrication an evaluation criterion for job candidates.

The Librarian Shift: Course Guides and the nature of the Web ultimately engender a fundamental inversion. The medium provides suitable repose for the bulk of potential holdings. Online libraries do not have to invest in "just-in-case" collection development. They can employ more financially justifiable licensing on a "need-basis" with demonstrable use statistics and the potential for return-on-investment. Thus, the skills of information professionals supplant the size of collections as the defining element for an online academic library and its sustainability.

Assessment

Assessment has risen to the fore in academia, but remains at an awkward stage of development for libraries and online education. Representative metrics are complicated by the lack of reporting conformity among commercial databases and difficulties with LMS measurements. Suitable altmetrics for database effects are only dawning. "Library Course Impact" factors with specific usage, predictive analytics, and cost implications await development.

For the moment, the focus stays with simple traffic counts and size of holdings. By any measure, however, the data for APUS' reinvention of the academic library and Course Guides is dramatically positive. Over an 8 year span, holdings expanded more than ten-fold to approximately 200,000 e-books and multi-year runs of more than 47,000 journals. In the same period and while the field faced significant retrenchment, the number of librarians grew from 2 to an industry-leading corps of 23 subject specialists with liaisons to every department.

Traffic: As seen in Figure 2, the library has emerged as a solid presence on the electronic campus. Traffic increased by a spectacular 3,000 percent over 8 years, easily surpassing APUS' own rapid growth. Figure 3 reveals similarly dramatic advance with the Course Guides. By 2013, over 1,000 guides collectively averaged 100,000+ hits a month—by far SpringShare's busiest.

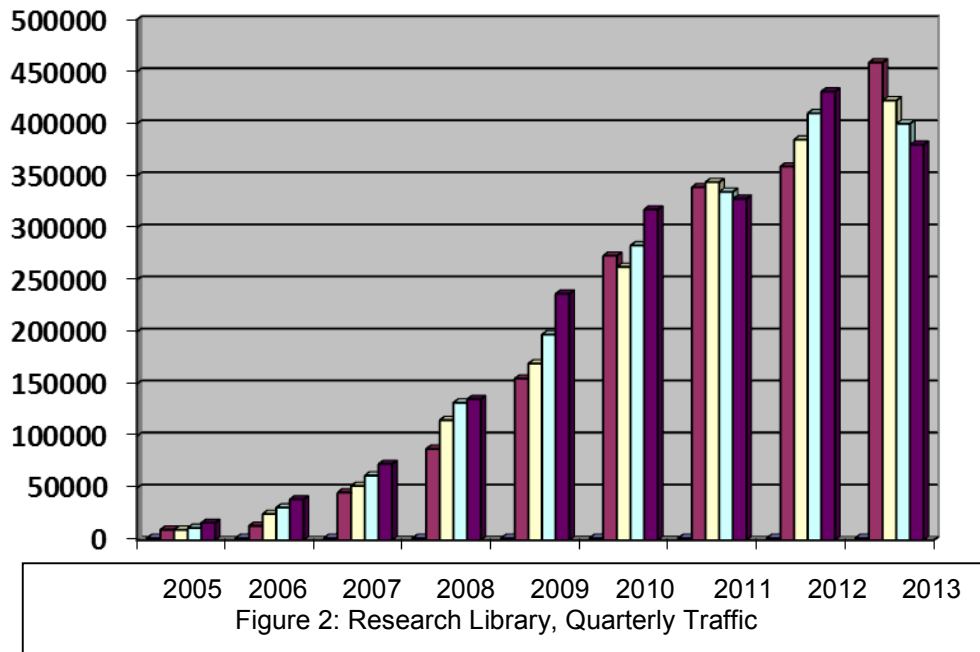


Figure 2: Research Library, Quarterly Traffic

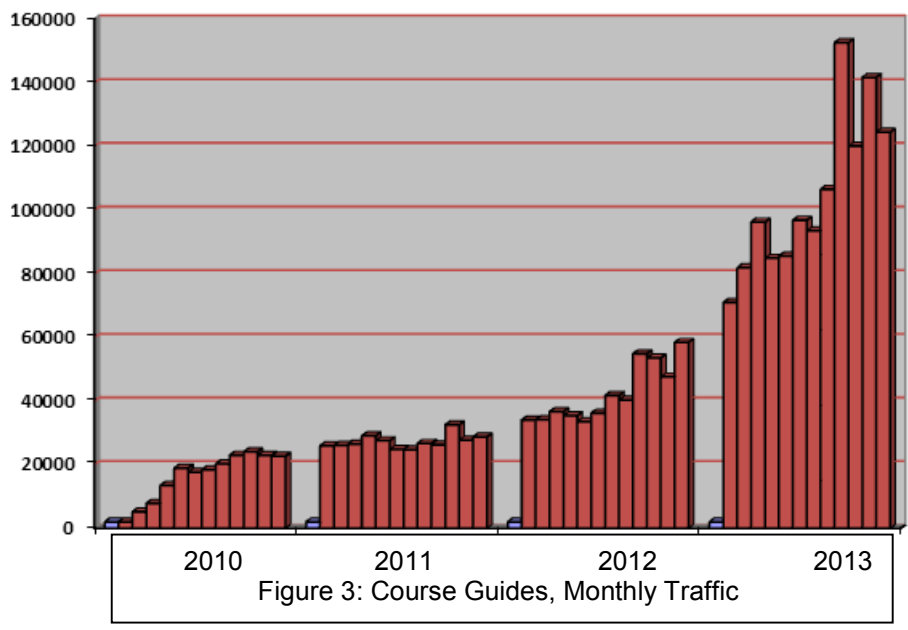
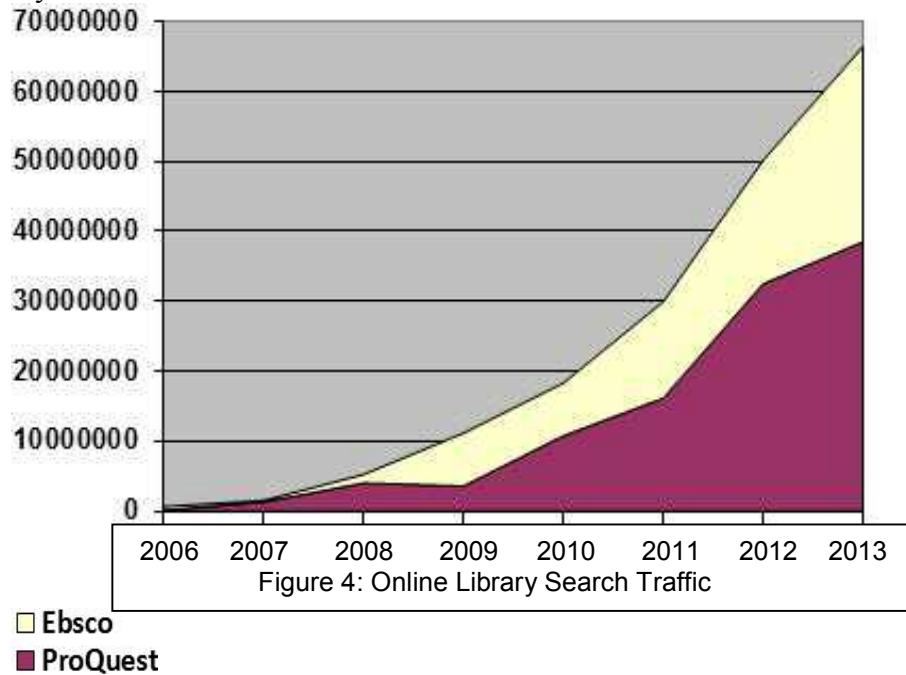


Figure 3: Course Guides, Monthly Traffic

Financials: The bottom line remains especially crucial in a for-profit environment. Library materials are now embedded in roughly 1/3rd of classes covered by Course Guides. Conversion to electronic course materials itself took on renewed energy in 2012. Financial pressures elsewhere in the university threatened the continuation of the undergraduate book grant. The ECM team stepped forward with an accelerated APUS ePress/Online Library initiative. Formally announced on Wall Street as one of 4 Pillars for APEI’s future, it required \$8 million in savings. 2012’s actions joined cumulative effects that now save the

university approximately \$25 million annually. Online Library contributions augment far more than the entire costs of the facility.

Research: Finally and in a fashion that should catch the eye of the field, the paradigm switch to classroom services maps to an explosion in student research. The fully online, teaching institution that is APUS is now in the top echelon of online database use. APUS is easily most active user of JSTOR and Alexander Street. As displayed in Figure 4, increase in the two major databases during the Course Guides project has been dramatic. As best as can be determined, we are within their top 10 users. From miniscule engagement, APUS' Online Library searches are now in the tens of millions.



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