The Future of Scholarly Publishing

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Panelists and Presenters
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Questions and Scenarios

Questions

1. Outcomes. Who will be the winners and losers in this particular scenario? Whose ox gets gored? Whose ship comes in? Who is the poster child?
   a. Authors, readers, students, society members?
   b. Publishers?
   c. Societies, commercial publishers, university presses, higher ed institutions?
   d. Research funding agencies and research sponsors?
   e.Advertisers?
   f. Libraries?
   g. Others?

2. Enabling Conditions/Forces/Events and Disabling Conditions/Forces. What will enable this scenario to come to be? What would prevent it?
   a. Enabling Conditions/Forces/Events
      i. What events/states/actions enable, cause, or manifest the scenario? Which MUST happen for the scenario to come true?
      ii. Which indicators are predictive/foreshadows/exemplars?
      iii. What specific forces will enable this scenario?
   b. Disabling Conditions/Forces/Events
      i. What events/states/actions disrupt, constrain, or prevent the scenario? Which MUST NOT happen for the scenario to be true?
      ii. Which indicators are predictive/foreshadows/exemplars?
      iii. What specific forces will disable this scenario?

3. How will this scenario change the structure or shape of the world? How will it change our organizations? Our roles?
   a. Are there new players who will facilitate access to information in the scholarly space?
   b. In this scenario, what is the equivalent of the library catalog or the Abstracting and Indexing database? Whose job is perpetual access and preservation of the "published" material?
c. Are there players who are taking on new technical function (e.g., societies, publishers)?
d. What are the new partnerships and who are the new vendors in the scenario?
e. What transitions in roles/outlook must IT make in each scenario? What transitions in roles/outlook must the library make? (e.g., libraries must shift focus from acquisition to access; IT must shift focus from utility/capacity to service/integration?)
f. Do new technologies or services need to be developed or purchased in order for this scenario to become real?
g. How should our institutions prepare for the scenario in case it does become real?

4. Rank this scenario by
   a. Attainability, i.e., likelihood of occurrence (1=Highest likelihood, 4=lowest). Why?
   b. Desirability, i.e., from the standpoint of your business function (1=Highest, 4=lowest) Why?
Richard Harrington III gazed across his desk, and out his window overlooking the Thames in London and smiled. It had been a long, hard, and risky journey but the numbers don’t lie. Revenues had risen from $7.6 billion in 2003 when his father had the helm to $40 billion at the close of the 2020 fiscal year. While all the divisions were profitable and the firm’s media and financial interests were downright enviable, the Education Division was really the Cinderella story of the decade. Yes, who would have thought at the beginning of the millennium that the old text division could be reinvented as Thomson Learning in the first decade of the century and then to Thomson-Phoenix in the second decade.

Things were dicey in the 1990s and early into the 21st century. During the dot-com boom, Thomson had little choice but to spread its bets around, betting on new acquisitions, start-ups, and even oddball university consortia like Universitas21. No one could predict how the rapid advances in computing and communications would change the normally genteel (and profitable!) publishing business. The credo was “eat or be eaten” as Thomson and its competitors believed that the Internet would spell either unimagined shareholder wealth or doom for publishing businesses that were hundreds of years old.

Most of the investments in those days didn’t pan out. They were primarily defensive plays, bets that if something “popped” and Thomson had an investment, then Thomson could prosper much like covering all numbers at the roulette table.

Who would have imagined that the University of Phoenix would figure it out? Starting with a great brand franchise and the license to grant degrees in most U.S. states and in 34 countries, the University of Phoenix went online, attracting 100,000 full time students around the globe by 2010. In 2002, the University began to assemble some of the greatest academic subject matter experts, the geekiest animation, simulation, and virtual reality experts, and higher education’s best corporate designers. The University of Phoenix systematically built learning objects for use in its own programs relentlessly and remorselessly. By 2010, their learning objects library, all compliant with SCORM, IMS, and other standards and specifications, helped not only to expand that University’s student enrollments, but elevated that University’s reputation among all but the stodgiest and most resentful sandstone universities.

Harrington remembers meeting the president of the University of Phoenix at a meeting of the Young President’s Organization. Like the classic collision of peanut butter and chocolate, making Reese’s Peanut Butter Cups, both executives realized immediately that they were in the same business. They realized that all publications are in fact “learning objects” and that the real “drivers of the business” were access to students and control of academic intellectual property. The University of Phoenix had, by 2010, over 500,000 students at their ubiquitous learning centers and 100,000 online learners. It had become the dominant global brand in higher education’s “convenience market.” Sure, Harvard still owned the high end, but Phoenix was happy to play Wal-Mart to Harvard’s Nordstrom. Thomson on the other hand dominated the textbook market, the market for textbook supplements and through its WebCT subsidiary, had developed the world’s most popular learning portal and course authoring environment. This was key because what people did not understand in the early years of the century was that it was course assembly and integration that either enabled or stopped faculty from developing or using learning objects. WebCT’s easy to use plug-and-play course authoring environment made it easy and fun for faculty to build a course from concept to storyboard to finished product. The University of Phoenix library of learning objects could be the jelly in Thomson’s jelly roll! It was a good thing, Harrington smiled, that they met over lunch. And of course Thomson’s stable of authors could lend even
greater credibility to Phoenix. Harrington smiled as he thought of how ironic it was to have the University of Phoenix offering business courses using learning objects authored by the finance wonder kids at Berkeley! Yes, in 2020 content was king and Thomson-Phoenix controlled the creators of content—both in publication and in the classroom!

Between April and June 2010 Phoenix and Thomson courted. By September, a merger was announced. Following six months of due diligence, the deal was concluded in February 2011. It took about 18 months of hard work to really identify the synergies, to put the right executives in place, and to move Thomson-Phoenix (T-P) forward. It was worth it. Thomson's stable of authors lent Phoenix prestige and the Phoenix curriculum was built on a foundation of Phoenix learning objects and Thomson textbooks, serials, and supplements. The model was so successful that Thomson-Phoenix moved quickly to gain accreditation in all 50 U.S. states and in more than 50 countries. Thomson expertise in foreign language translation and in international intellectual property management made Thomson-Phoenix the fastest-growing educational institution on the planet AND the fastest-growing educational publisher. By 2015, T-P was repurposing its learning objects, texts, and curriculum for sale to high school districts throughout the U.S. They dominated this market. The big win came, of course, in 2015 when T-P won the right to plan, manage, and deliver the lower division undergraduate curricula in 15 academic disciplines— for the People's Republic of China. Thus was born the All-China Polytechnic University, with over 300 locations throughout the PRC.

Of course these massive enrollments meant that T-P could pay authors greater royalties, thus increasing T-P's dominion over the scholarly publishing apparatus. As faculty authors flocked to Thomson as their publisher of first choice, T-P contracts evolved to require authors to participate, via Webcasts and other media, in courses at Phoenix, further elevating the Phoenix academic reputation. Yes, Harrington was pleased. Soon T-P would begin to buy up some of those bucolic campuses and march out of the convenience market!
B. A Media Conglomerate: Success University
Dr. Sandra Braman

Like other media conglomerates, Success University has several different product lines, and content produced for one mode of distribution is usually repurposed so that it can provide multiple different revenue streams.

New knowledge produced by faculty, staff, and graduate students is owned by the university, which protects that knowledge with patents, copyright, and, in some cases, trade secrets. Because knowledge created within the university community is owned by the community, book-length manuscripts by community members must be offered first to Success University Press, journal articles must first be offered to journals within the club of journals favored by the university's distribution system, and the results of research can be taught on campus but not included in any teaching materials made more widely available. Manuscripts that wind up being published elsewhere generate a royalty stream for the university. The university owns courses produced by its faculty. As a means of increasing the audience for its other media products, however, the university does release knowledge architectures to the mass market through the means of publicly accessible course syllabi. This activity expands the consumer base for other work products by university faculty. The university also distributes knowledge produced by its faculty through the education system as a medium via electronic games developed for use in primary and secondary education. Subscription fees for participation in these games, as well as the purchase price of learning aids associated with these games (called "cheat sheets" in the gaming world), go directly to the university.

Because all of the work produced by faculty, staff, and graduate students is work for hire, non-compete agreements must be signed by faculty and staff regarding both teaching and publication of work based on research conducted while at Success University should anyone leave for another institution; graduate students must sign such agreements should they take positions at institutions outside of a consortial hiring and collaborative research club of universities. (There are several such clubs, some oriented around particular types of research specializations, and others oriented around national affiliations.) Faculty members who succeed in achieving positions at an institution within the most prestigious knowledge clubs rarely, if ever, leave, though they may move from institution to institution within that club. Such movement, however, is less rare than it once was because of the nature of today's work for hire contracts.

Decisions about which paths of knowledge production and which knowledge products for distribution should be pursued are made at the university level by a team of individuals from each discipline as well as top administrators. Decisions by institutions within a particular knowledge club are coordinated with each other. Because—as in any industry—resources for production and distribution are limited, calculations regarding expected ROI enter into decision-making about research paths to pursue. When this practice began, such decisions were made product by product and distribution medium by distribution medium. Decision teams, however, not only gained experience but, at the knowledge club level, were also able to benefit from research on the very decision process in which they were engaged. Today, complex calculations are involved that include not only the expected value of a knowledge product across distribution media, but also—in appreciation of the often-unexpected synergies of genuinely interdisciplinary work—projected synergies that might derive from the complementarities and interactions of knowledge production in different disciplines.

Success University earns additional funds as a distributor of research. Because it licenses scholarly publications that can be accessed only by those within its community—and because access is sometimes exclusive to members of university communities within a particular club—the opportunities not only to have access to new knowledge but also to have the knowledge one produces distributed—are valuable selling points for potential students as well as for potential faculty and staff. Again following the practices of other media conglomerates, consumers may
purchase participation rights in this knowledge production community in several different forms: A "bundle" that includes both access to the publication resources and an individually tailored package of courses is available that looks much like what were referred to historically as the BA, MA, and PhD degrees. An ongoing subscription that provides access to electronic publications (including electronic versions of materials published by Success University Press) and the print library can be purchased by those who have previously purchased a bundle at a significant annual cost. Certificate programs, which require intensive on-campus participation for a relatively short period of time (ranging from a week to a month), are also available in bundle form for less than the cost of a degree-like bundle but at a price that itself generates for the university tens of millions of dollars a year in revenue at relatively low delivery cost. The fact that purchase of a certificate bundle also opens up the possibility of subscribing to Success University content on an ongoing basis adds to the allure of such programs. Subscriptions to educational electronic games may be purchased by individuals, but are more often purchased by schools or by larger governmental units such as school districts, municipalities, and states. Purchase of learning tools associated with these games—the cheat sheets—is a matter of choice at the household level.

Students actively seek admission to Success University, knowing that doing so will not only provide them with an excellent education but will also serve as entree into lifelong club membership. Faculty and staff with research interests, too, compete heavily for positions at Success University because they know that only through such a position can they participate in certain types of research and have access to cutting edge knowledge in a timely manner. To make up for the reduction in income that comes from treating everything a faculty or staff member produces as work for hire, all positions are 12 month positions at highly competitive salaries.

Inclusion of the electronic games within the suite of knowledge products had one effect on the complexion of university life that could have been predicted, and one that had not been expected. The predictable effect was that development of these games now provides employment for significant numbers of artists. The unpredicted effect was the consequence for knowledge development. Though there had been research on the impact of data visualization on knowledge development across the physical, biological, and social sciences since the mid-1990s, the extent to which this would influence entire disciplines once artists were regular collaborators on university faculties had not been foreseen. Interestingly, faculty artists also played important roles in design of information architectures that not only helped students and faculty locate information available through their knowledge club, but also added value to that information.
C. Society Service Centers

John Sack

Whatever trust the best authors and editors had for commercial publishers had evaporated by 2009. Five years of bad publicity—and unresponsiveness on pricing issues—for the for-profit publisher community, plus their Cyclops-like focus on squeezing costs out of journals by homogenizing them for greater economies, had left authors and editors feeling that they were working for the journal equivalent of a mail-order degree mill. Disaffected authors and editors found they had colleagues with similar feelings when they went to their society annual meetings—such as the American Mathematical Association and The Endocrine Society—and so they collaborated on new publishing techniques and business models using the society infrastructure to support new journals, and journal-like services. Internet distribution technology and the growing comfort with online rather than print gave them this option. This was a very gradual shift over several years. But you could now in retrospect plot the falling impact factors of commercial journals underneath the rising impact factors of society and university press journals.

Libraries, faculties, societies, and university presses realized they were synergistically (not parasitically) linked. They formed a trust-community circle: none of them existed apart from the communities they served, and they existed only to serve each other, without a profit (though without a loss either). These entities also escaped the commercial cure and curse of being bought and sold to appear more profitable.

Because they were closer to the customer who was both information supplier and seeker, the libraries, faculties, societies, and university presses also were more flexible than the commercial publishing in realizing they were in the information transformation and communication business, not in an “article packaging” business. Just as Apple realized with iTunes that listeners didn’t want albums, they wanted entertainment, so societies realized that scholars wanted information, not articles. They were able to price and package fairly and flexibly, in some cases leveraging the possibility of a barter economy since in many research fields the writers and the readers of articles were the same community.

Because they were focused on cost-recovery rather than revenue generation, the societies were able to drop costs as the readers dropped paper, and as the cost of computing became cheap enough that even small amounts of advertising—sold by Google alongside journal articles—could support a modest journal web site under society sponsorship.

While the large commercial publishers continued to have the best marketing and sales staff to make subscription sales, the non-profits were willing to support content for data mining research groups and companies that could build sophisticated discipline-specific and cross-discipline search tools. These groups taught computers to “read” the thousands of papers published each week and link the knowledge in them together into discovery services that were far more useful to exploration than keyword searching in Medline and other search systems. Readers now read the indexes that were “mass customized”—by the individual for their own disciplinary interests—rather than reading discipline-specific journals, just as TV watchers now turn on the TiVo to see what has been recorded that matches their interests, rather than watching live TV. These data mining machines also created extracted knowledge objects that were smaller than articles: highly focused bundles of assertions and evidence, twenty of which could be scanned in the time a single paper could be; details were accessible by hyperlinks for people who needed to validate the object, and the community encouraged “post publication peer review” of these objects through commentaries posted online.

Universities provided technology and expertise to solve publishing system problems: Cornell with Euclid, Stanford with HighWire and LOCKSS, Johns Hopkins with Muse, Princeton with JSTOR, MIT with dSPACE, etc. The preservation problem for the electronic research record was addressed by research institutions, university and national libraries, and society publishers—
institutions that had existed for decades or centuries and were unlikely to abrogate their mutual responsibilities without finding a home for them. Institutions took responsibility for preservation of raw data and works in progress and gray literature; societies took responsibility for current and future published literature preservation; national libraries took responsibility for retrospective digital conversion and preservation of the 19th and 20th century journal literature.

The roles of all intermediaries were up for redefinition as the capital and expertise needed for some parts of the traditional publishing operation became negligible. Those intermediaries who were community-based and service-oriented were part of the redefinition of roles. Others had to be very adaptable to move to new niches as old ones disappeared. As consumers were able to create their own products dynamically, service suppliers (as opposed to product suppliers) did well. Service suppliers rarely owned content; those that did took this on as a service to authors who didn’t want to be bothered with the responsibility for IP administration. Journals that were successful commercially had transformed themselves into magazines of a sort that identified and commented on the most important research in a particular field, (re)publishing only parts of papers and pointing to longer versions online. This fit the “info sipping” attention span of the research grazer trying to keep up with what’s new in his or her field. But these magazines were only as good as the editors who did the selection and the editors who wrote the summaries, and editors with a good nose and editors with a sharp pen were an important part of this new ecosystem.

Societies noted that just as the subscriptions on their old-fashioned journals were falling, the attendance at their society meetings was rising. One society had 30,000 attendees at its annual meeting, but only 3,000 subscribers to its journal. Smart societies realized that if the journal resembled the annual meeting more, it would be more valuable as a research communication vehicle; journals were redesigned with this in mind, and the old-style journal functions were moved to online-only and archival services.

The concern about electronic-only publications being “second class” or more ephemeral than print publications had disappeared with the generation that thought of a record as something on vinyl with scratches. To the new generation of researchers, information is just bits, and is understood to be malleable and everywhere accessible; an article and its content is no more tied to a single journal issue and format than a telephone number has to be attached to a Princess phone in a physical location.

As new and additional ways of measuring “impact factor” become commonplace, young scholars take some risk in their early careers with publication models that offer the potential for enormous readership/distribution—but no guaranteed distribution at all because there are no subscribers in these models, just ad hoc readers—for important ideas. The new measurements work like Google’s PageRank, and quickly identify value through collaborative filtering.
Professor Joshua Juvenal just received notification that the 10,000th person this month downloaded a copy of his essay on the parallels between Moby Dick and the presidency of George W. Bush. Apparently seeing the moral parallels between Ahab’s obsession with a white whale and George W’s obsession with Saddam Hussein struck a cord with a lot of people. Thinking back to George W’s ill-fated presidency reminded Joshua of how different scholarly publishing and communications were during the time George W. was president and how much things had changed since that time.

While the changes in scholarly publishing were revolutionary, the changes happened so organically that hardly anyone noticed until they were in full swing. It started with the early experiments with digital repositories like the D-Space project at MIT and Fedora at Cornell. At first, most faculty members were skeptical of these projects and found it too hard and time-consuming to submit their articles and materials into digital repositories. In fact, digital repositories like D-space and Fedora resembled yet another failed attempt by the academy to take over the means of distributing scholarly communication through electronic publishing.

Then something interesting started to happen.

First, major publishers agreed that faculty could put copies of their articles on their own Web sites. Then a few faculty members discovered that digital repositories were actually a very good and convenient way to securely store and organize all their research materials—including pre-prints of articles. As D-Space and Fedora became easier to use, more faculty members began using digital repositories to create personal portfolios of all their research materials and articles—the dawn of the personal digital library. Widespread sharing of personal libraries was the next logical step. As more faculty members began creating and sharing personal digital libraries, the publishing industry got scared. But by then it was too late!

Institutions realized that as more faculty members shared information through digital repositories, there would be less demand for institutions to maintain expensive serial budgets. The California State system announced that it was canceling its $5 billion contract with Elsevier and instead using the funds to give all faculty members virtually limitless disk space to store and share their research communications electronically. Other institutions soon followed California’s example. Moreover, faculty began to realize that digital repositories were actually better at achieving their number one goal—getting their work read and cited!

Four factors contributed to the expansion of using digital repositories for scholarly communications. First was the development and widespread use of Peer to Peer (P2P) file sharing. Although the music and film industry did try to outlaw P2P technology with the Patriot II Act, this effort failed and the use of the technology continued to expand exponentially. As more and more people became facile with using P2P technology as a way of sharing all sorts of material—from family photos to digital books—scholars sharing information directly with other scholars across the Internet was simply a natural extension of the P2P world that was developing.

Second was the improvement of search engines and, even more importantly, the development of effective content alerting systems like RSS. Today, most scholars are automatically notified the minute any paper or material of interest is available online anywhere in the world.

Augmenting these content alerting systems is the third factor—the institutionalization of digital repositories by professional and learned societies of the academy. As more scholars began to store their materials in digital repositories, professional societies shifted their focus from publishing journals to providing intelligent links. These organizations now create Web sites that
serve as portals to their field’s key research. Links to materials are created only after the materials go through a rigorous peer review.

What was totally unexpected was the fourth factor that helped spread the use of digital repositories—publishers! As scholars began to use digital repositories, the publishing industry began developing ways to make money. With so much information flowing, scholars and students needed some way of finding out what information is most important to attend to in a specific discipline or area of study. Peer review and portals weren’t enough. Researchers wanted evaluative summaries so they would know which materials would truly meet their needs. Enter the publishers who hired faculty members at very reasonable salaries to review and write summaries of other faculty members works. The publishers then made this material available by subscription on web sites. They also hired librarians to write finding aids and guides for particular topics. These finding aids and summaries were especially popular with students who used them as their grandparents had used “Cliff Notes,” although now the entire world’s knowledge was summarized and available!

Josh, in reflecting back on all this, remembered that he still hadn’t cashed his $20,000 quarterly check for his reviews. He also remembered that he still had to add new material from his personal digital library into his faculty evaluation portfolio. Josh is still amazed at how quickly he can now gather material for his reviews. Something that used to take him weeks to do now takes only minutes. Moreover, the portfolio that he now submits for evaluation provides much more information about his work and accomplishments. For example, he can now provide review committees not only samples of his work but also reviews of this work by colleagues and even the number of people who have read or commented on his work.

Another thing that gave Josh comfort about the world of personal digital repositories was how easy it was to access his research notes. Before, Josh was always misplacing papers, disks, and even forgetting where he stored things on his hard drive. More importantly, he took great comfort in knowing his data were safe. He still shudders when he remembers the time before he had a digital repository when four weeks of work was wiped out after his computer drive crashed. The safety of data in digital repositories was clearly demonstrated to Josh and all his colleagues when MIT burned down after a bonfire celebrating Kerry’s re-election got out of control. Although the buildings were gone, not a single professor lost a byte of work stored electronically. All their materials were safe on MIT’s remote redundant storage array.

As Josh reflected on all that had transpired in the world of personal digital repositories, he received another email advertisement that got through his spam filter. Despite all the new developments in technology, spam filters still continue to fail periodically. This advertisement was particularly troubling, however. It was for a new United Artists Organization. Josh was already aware of this organization and the debate surrounding it. Richard Katz, after selling ECAR to the Gartner group for megabucks, founded a new organization that he called United Artists. The title in itself was a bit ironic because people had often referred to the current order of scholarly publishing as the United Artists model because researchers had taken control of their own intellectual property. Richard now wanted to change that model to a different kind of United Artists—a business model based on a fee-to-read approach. He signed the major name professors at Harvard and MIT to an exclusive contract so that readers could only access their materials through Richard’s pay site.

Many of Josh’s colleagues condemned the professors who signed up for this new service. They said it was undermining the new open information commons they had spent years creating. Some of his colleagues were demanding that institutions of higher learning assert their right of joint ownership of faculty research to stop more faculty members from signing exclusive contracts with United Artists. Not everyone was sure that institutions had such rights. Josh suspected that the whole issue of ownership would only be settled by the Supreme Court. Given Chief Justice Lawrence Lessig’s view on copyright, Josh believed that higher education institutions would
prevail if a case were brought before the court. In any event the next few years should be interesting.