EDITUS: LEARNING CONTENT MANUFACTURING—PUBLISHING

Scholarly and academic content publishing has relied upon a close partnership between authors (often faculty) and "manufacturers" (typically publishers). Digital disruption, changes in teaching and learning, and the rise of new consumer expectations and product innovations are creating extreme pressure on the traditional model and leading to revolutionary changes within the incumbent publishing companies. New digital adaptive learning products and platforms could alter the face of learning content in substantial ways and for years to come.

Key Points

1. The act of scholarly publishing was designed both to diffuse new knowledge and confer credit on its discoverer. It initially was controversial, unprofitable, and widely ridiculed.

2. The transition to digital textbooks and other learning content is proceeding slowly—disrupting the publishing industry in key ways:

    a. Pedagogy is evolving: The *lectio* mode is being supplemented or replaced.

    b. The ante in academic publishing is rising.

    c. Rich primary and secondary resources are within easy reach—often at no cost to users.

    d. A stubborn OER movement is maturing and strives to "liberate" learning content manufacturing from the publishers.

    e. Digital media stimulate changes in human behavior, patterns of consumption, and preferences.

3. A key challenge for academia and its publishers is maintaining the integrity of the peer review process, while making the process faster and more transparent.

4. The key trends in learning content manufacturing include:

    a. Publishers making significant investments in digital capabilities to enable learning content to do more and go further digitally.

    b. Rising rental of physical and digital textbooks and the emergence of online sourcing as standard store practice are both depressing sales of new textbooks.

    c. The critical need to make learning content discoverable and useable internationally.

    d. Publishers turning focus to courseware and monetizing content by incorporating licenses into the courseware they sell.

5. As publishing and education become increasingly dependent on cost containment, service quality, globalization, demonstration of outcomes, and sophisticated technologies, they must increasingly look over their shoulders at giants like Amazon, Google, Facebook, and Apple.

Mapping the Learning Content Ecosystem
SCORECARD
EDITUS: Learning Content Manufacturing—Publishing

Supplier Power

- Rise of superstar faculty raises costs + "the bar"
- OER, MOOCs, and open web offer suppliers new channels

Buyer Power

- The Long Tail (like print textbooks)
- E-commerce savvy consumers
- Knowledge of channels, pirate sites…
- Possible decline in faculty authority over student preferences
- Alternate sources like YouTube
- Course materials fee could be game changer

Rivalry Level*: 4

Rivalry is intense with pressure to "grow or go."

New Entrants

- Amazon Press? Google Press? Apple Press? Facebook Press?
- Barnes & Noble + Flashnotes?
- Uber/Lyft for textbooks?
- Rise of 3rd party content curators (Ace Learning)
- Shift to competency-based education

Substitutes

- OER
- Library e-reserves
- Informal content (e.g., Khan Academy, Wikipedia)
- Content exchanges and the sharing economy (think Uber for textbooks)

*Rivalry is an indication of competition in the segment from 1-lowest to 5-highest; both among current players and between them and new entrants.

Publishing: History, Mission, and Value Proposition

Content manufacturing is an ancient endeavor. Copying was used in the ancient world for the maintenance of commercial records and for the dissemination of proclamations and regulations. Book production—in the ancient world and later in the West—was confined largely to religious learning centers. Hebrew scribes transcribed books of the law and Catholic scriptoria—copy centers—became established sources of Church revenue and a stimulus for reading in the 4th century.

Modern publishing dates from the invention of the Gutenberg press and concurrent innovations in typography and the manufacture of paper and inks. These technical innovations depended on, and in turn, fueled the spread of literacy. These improving technical and social conditions prepared the ground for the emergence of the modern publishing industry. Many credit the rise of printing, publishing, and literacy with some of the most important transformational movements of Western history such as the Enlightenment, the Protestant Reformation, and the Industrial Revolution.

> The act of scholarly publishing was designed both to diffuse new knowledge and confer credit on its discoverer. Initially, scholarly publishing was controversial, unprofitable, and widely ridiculed.

In 1476, Cardinal Juan de Torquemada commissioned the creation of a printing studio in the oldest Benedictine monastery in the world—the monastery of St. Scholastica in Italy. This studio is credited as being among the oldest publishing houses in the world.[48]

Academic publishing as we know it is believed to be a 17th century innovation. Two of the earliest research journals—the *Journal des Savants* in France and the *Philosophical Transactions* of the Royal Society in England—were published within weeks of each other in 1665. The act of scholarly publishing was designed both to diffuse new knowledge and confer credit on its discoverer. Initially, scholarly publishing was controversial, unprofitable, and widely ridiculed. The belief that science can only move forward through a transparent and open exchange of ideas backed by experimental evidence continues to drive the mission of scholarly publishing. This belief is a cornerstone of modern scientific inquiry. Transparently demonstrating quality, authenticity, and rigor through an open exchange defines the mission of academic publishing across all scholarly disciplines. Since the 17th century, an estimated 50 million journal articles have been published.[49]

In U.S. education, the breakthrough publishing innovation since Gutenberg was the introduction of the textbook in the 19th century in the form of New England Primers and McGuffie's Reader. *McGuffey's Eclectic Reader*—copyrighted in 1879—enjoyed wide distribution under the publishing mark of John Wiley & Sons.[50] Any American over the age of 50 who can recall *See Spot Run* was deeply influenced by Wiley & Sons and the McGuffey Readers and their successors. In many ways, the textbook—refined over 200 years and deepened for the college or university audience—codified or enforced the "transfer of information" model of instruction. This durable model—which casts the student as a sponge—has ruled higher education "since the days of the medieval Schoolmen who, in their lectio mode, stood before a room reading a book aloud to the assembly, no questions permitted. The modern version is the lecture."[51]

[48] The Monastery of St. Scholastica. Available at http://www.terredaniene.com/i-monasteri-benedettini-subiaco/monastero-santa-scolastica-subiaco.

[49] Wikipedia, "Academic Publishing." Available on March 28, 2015 at: http://en.wikipedia.org/wiki/Academic_publishing.

[50] See *McGuffie's First Reader*, Project Gutenberg. Available at: http://www.gutenberg.org/files/14640/14640-pdf.pdf.

[51] Craig Lambert, "The Twilight of the Lecture," in *Harvard Magazine*, March-April 2012. Available at: https://harvardmagazine.com/2012/03/twilight-of-the-lecture.

Disruption of Learning Content Manufacturing

The written word continues to be the *sine qua non* of college and university teaching and learning, and peer review continues to be the gold standard of academic quality control. Their durability, coupled with the tremendous growth of higher education,[52] created conditions for the growth and durability of academic publishing. Indeed many publishing houses have become giants and boast roots that are centuries old.

Notwithstanding their size and long pedigrees, academic publishers too are being disrupted. Many argue that academic publishing is ripe for disruption and that the shift to digital, while the dominant force, is not the only one. While academic publishers continue to occupy an influential place in the collegiate learning content ecosystem, they have become lightning rods. The complex inter-dependence between academic publishers and college and university libraries, for example, is rife with resentment over the consolidation of the publishing industry and perceptions by many of monopoly pricing for academic journals. Digital disruption is adding headwinds to the mix—from shifting pricing models, license terms, consortial arrangements, and the conversion from print to electronic subscriptions.[53] Over the last decade, there has been "a remarkable shift in the move of research libraries away from collecting current journals in print form." By 2012, only 2% of the contracts for bundles of library journals (among ARL research libraries surveyed) still included print.[54]

Academic publishing attracts lightning with students as well. Any casual scan of the web on the subject of "textbooks" is more than likely to yield results that are predominantly concerned with their costs. Many argue that the textbook market—like that for prescription drugs—is "remarkable because the primary individuals who choose college textbooks (faculty) are not the people that pay for those textbooks (students)."[55] Many believe that "a faculty member's choice of a textbook seldom is considered in any evaluation and even less often is the price of that textbook a factor."[56] This "broken market" theory is often used to explain why textbook prices rise faster than the rate of inflation.

> The raw learning content to fuel nearly any imaginable course is now available in a legally and technically useable form for free on the web.

While the transition to digital textbooks and other learning content is proceeding slowly, it is disrupting the publishing industry in key ways:

1. **Pedagogy is evolving.** Many faculty today are experimenting with different forms of so-called active learning. For many, interest is based on the belief that "the hands-on interactive experience in a lab or an art studio is more powerful than a lecture, and can't be replicated online."[57] At many institutions, the lectio mode is being supplemented or replaced with video lectures that can be viewed anytime by students. Class time is being liberated for more active forms of instruction. Many of those at the forefront of the active learning movement view the traditional textbook as a passive extension of the "talking head" mode of instruction they seek to replace.

2. **The ante in academic publishing is rising.** The antidote to passive print textbooks is highly interactive, multi-modal (text, games, simulations, etc.), and fluidly integrated learning content. Progressive publishers are enriching traditional learning content with rich media that extend the learner's capacity to understand through models, simulations, photographs, videos, etc. And most publishers are now creating adaptive learning materials which assess a learner's mastery and comprehensive and then "change" their pace, text, problem sets, and pathways to reflect a student's progress. These innovations succeed in making passive materials "active," but drive up the cost of learning content in the process. Content remains a substantial investment whether print or digital; and 24/7 servers and technology staff come at a greater expense than the print versions' binding and warehousing.

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[52] See The Economist Special Report, "The Whole World is Going to University," March-April 2015.

[53] Karla Strieb and Julia Blixrud, "The State of Large-Publisher Bundles in 2012," in *Research Libraries* Issues, 2013. Available at: file:///C:/Users/Richard/Downloads/3p34ja.pdf.

[54] Ibid.

[55] James V. Koch, "An Economic Analysis of Textbook Pricing and Textbook Markets," ACSFA College Textbook Cost Study Plan Proposal, September 2006. Available at: http://www.immagic.com/eLibrary/CBICBT99/FIN_AID/US_ED/A060923K.pdf.

[56] Ibid.

[57] Craig Lambert quoting Logan McCarty, Harvard College Director of Physical Science Education, in, "The Twilight of the Lecture," in *Harvard Magazine*, March-April 2012. Available at: https://harvardmagazine.com/2012/03/twilight-of-the-lecture.

3. **Rich primary and secondary resources within easy reach—at no cost to users.** Google, for example, has teamed with 40 important research libraries around the world "to make it easier for people to find relevant books." Google's ultimate aim is "to work with publishers and libraries to create a comprehensive, searchable, virtual card catalog of all books in all languages that helps users discover new books and publishers discover new readers."[58] In essence, the raw learning content to fuel nearly any imaginable course is now available in a legally and technically useable form for free on the web.

4. **A stubborn OER movement is maturing.** Digital technologies—by facilitating scholarly collaboration and lowering the barriers to creating and sharing the outputs of scholarly work—have unleashed an impulse to share resources of all kinds. An open education resources movement strives to "liberate" learning content manufacturing from the publishers and place it into the hands of the faculty who created that content. This movement still awaits sustainable governance, funding, and collaborative models, and improved links to the tenure and promotion process.

5. **Digital media stimulate changes in human behavior, patterns of consumption, and preferences.** In particular, the emergence of wireless networking and of powerful handheld devices unleashed or liberated humans' natural preference for mobility. And as ink on paper became pixels on screens and as screens became smaller and pocket-sized, reading patterns and preferences began to change. These changes affect publishers and booksellers, challenging a centuries-old supply chain that linked authors to publishers to distributors to booksellers to readers. A similar phenomenon has already occurred in the movie rental ecosystem (Figure 7).

Figure 7 – Changing Consumer Preferences in the Digital Age | Source: Piper Jaffray
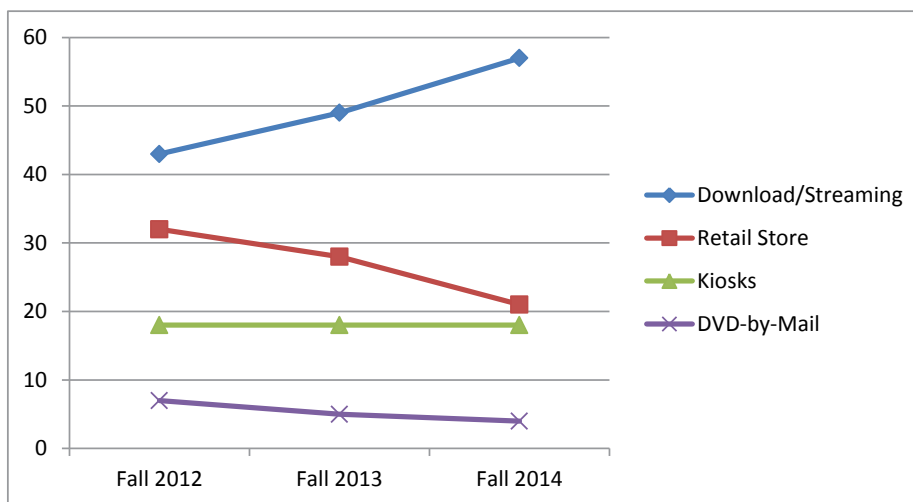
Competitive Dynamics

The dynamics in scholarly publishing—including the publishing of college and university learning content—are challenging. University of Utah Associate Dean Richard Anderson summed it up concisely: "Publishers are fielding more and more [journal] submissions and chasing smaller and smaller budgets while also dealing with an increasingly complex scholarly communication environment. It's a very tough position to be in."[59]

Key Trends

Many important trends are influencing modern academic publishing. Peer review, for example, remains a vital part of the academic tenure and promotion process, serving as a filter for relevance and rigor, controlling quality, and seeking to ensure that published works move learning and the discipline forward. A key challenge for academia and its publishers is maintaining the integrity of the peer review process, while making the process faster and more transparent.

[58] Google Books. Available at: https://www.google.com/googlebooks/library/.
[59] Dalmeet Singh Chawla, "Nature publisher to merge with the world's second biggest science publisher," in *Science*, January 15, 2015. Available at:
http://news.sciencemag.org/scientific-community/2015/01/nature-publisher-merge-world-s-second-biggest-science-publisher?rss=1.

Faculty concerns over the growing influence of commercial publishers, the growing importance of student success, and continued textbook affordability issues warrant keeping Open Access (OA) and Open Educational Resources (OER) on the radar. SPARC claims that "open access publishing is the fastest growing segment of the scholarly publishing market."[60] OA is the free, immediate online availability of research articles, coupled with the rights to use these articles freely in the digital the environment.[61] The Directory of Open Access Journals lists more than 10,000 journals from 136 countries encompassing more than 1.8 million articles.[62] Scholars today can publish their work in open access journals, preserve that work in open digital repositories, and enter into licenses that assure the wide use and accessibility of that work. OER are freely accessible, openly licensed documents and media that are useful for teaching, learning, and assessing as well as for research purposes. OER "have not noticeably…affected daily teaching approaches at most institutions,"[63] and "OER is not a driving force for faculty decisions about which educational materials to adopt."[64] Despite this, OER is worth tracking. New sustainability models like Lumen Learning are emerging, and a recent study indicates that 77.5% of faculty members who are not current OER users expect either to use or will consider using OER.[65]

> A key challenge for academia and its publishers is maintaining the integrity of the peer review process, while making the process faster and more transparent.

The key trends in learning content manufacturing (publishing) include:

- **Digital future**—Publishers are making significant investments in digital capabilities to enable learning content to do more and go further digitally. These include investments in adaptive learning technologies, testing, learning platforms, content curation, and assessment. Publishers are also positioning to support researchers' growing obligation to make research data accessible, hoping that the shift to digital can deepen the connection between the research and the publisher.

- **Flat revenues**—Rentals of both physical and digital textbooks are rising, and emergence of online sourcing as a store practice is depressing sales of new textbooks. The market for bundles of academic journals is constrained by collegiate revenues and budgets and is not supporting price increases. In the academic serials market, constrained budgets are making contracts with larger publishers more enticing, fueling merger and acquisition activity.

- **More research outputs**—The number of papers continues to increase, driving an increase in the number and size of journals in the market. There are approximately 114 million scholarly documents in English on the Internet now.[66] Bigger publishers have greater reach, attract more papers, sell into more markets, and can launch more journals more easily. More research data to process demands more infrastructure, more technical capabilities, and greater data curation skills again favoring the large publisher and fueling mergers and acquisitions.

- **Globalization of publishing**—Making learning content discoverable and useable internationally is critical. Many journals now feature author-submitted multi-language abstracts. Scale is key to addressing the entire globe effectively and the globalization trend, too, is fueling merger and acquisition activity in publishing.

[60] SPARC, "Open Access." Available at: http://www.sparc.arl.org/issues/open-access.

[61] Ibid.

[62] Directory of Open Access Journals. Available at: http://doaj.org/.

[63] Gerd Kortemeyer, "Ten Years Later: Why Open Educational Resources Have Not Noticeably Affected Higher Education, and Why We Should Care," in *EDUCAUSE Review*, February 26, 2013. Available at: http://www.educause.edu/ero/article/ten-years-later-why-open-educational-resources-have-not-noticeably-affected-higher-education-and-why-we-should-ca.

[64] Allen, Elaine I. and Jeff Seaman, *Opening the Curriculum: Open Educational Resources in U.S. Higher Education, 2014.* Available at: http://www.onlinelearningsurvey.com/oer.html.

[65] Ibid. p. 31.

[66] Becky Degler, "Five Key Trends in Professional Publishing," in *Wiley Exchanges*. Available at: http://exchanges.wiley.com/blog/2014/08/15/5-key-trends-in-professional-publishing/.

- **Contention over intellectual property**—As commercial publishing becomes dominated by tech-savvy, scale-seeking "giants" and as the educational uses of digital technology become more sophisticated, the textbook will change. Publishers may come to think of textbooks more as stores of raw materials than as finished products. They will manage vast stores of digital learning content that is discoverable by subject, level, competency, learning outcome, and other attributes. These stores will be linked to exercises and assessments. Publishers may focus on *courseware* and will monetize their content by incorporating licenses into the courseware they sell. Courseware may incorporate today's "textbooks." Commercial content in courseware will reside along open content. Value in content-agnostic courseware will come in part from snippets and chunks of vended learning content and from traditional integrated texts. As the need and means to monetize granular chunks of learning content rises, so will contention over its fair use. Even more, the commercial interests of publishers in this mode may come into sharp conflict with students raised in a cut-and-paste world.

- **Publisher vertical and horizontal integration**—Large publishers increasingly think of themselves as learning companies. Cengage Learning sees integration this way: "Our heritage as a leading educational publisher coupled with our investments in technology and academic services positions us to benefit from the migration to digital solutions."[67] Today's academic publishers are not only creating (and harvesting) value from snippets, chunks, and fully integrated learning content, but from courseware, content personalization, course integration, problem set creation and administration, tests and testing administration, assessment support, and other instructional services. One journalist recently described this trend: "To prepare their students for Pearson exams, districts can buy Pearson textbooks, Pearson workbooks, and Pearson test prep…They can connect kids to Pearson's online tutoring service or hire Pearson consultants to coach their teachers. Pearson also sells software to evaluate teachers and recommend Pearson professional development classes to those who rate poorly… ."[68]

> **NACS Resource:** "Copyright Primer for the Campus Community" and "Questions and Answers on Copyright for the Campus Community," available in The Hub (NACS member login required) or upon request to education@nacs.org

Rivalry within Publishing

Rivalry within the publishing industry is intense. First and foremost, firms in the publishing industry are under intense pressure to "grow or go." Becoming a global, tech-savvy, digital-first publisher is a competitive necessity. Of course, rivalry in an eat-or-be-eaten environment is intense. The grow-or-die mantra derives directly from the digital disruption which adds hugely to the rivalry. As *The Economist* recently put it: "Digital disruption will prompt innovation, hastened by desperation."[69] Academic publishers in 2015 have two choices: (1) they can become huge K-20 research or instructional integrators; or (2) they can try to dominate specialized educational niches and withstand the ongoing pressures for assimilation into the larger integrators.

Exacerbating the industry rivalry is the fact that the integrative digital vision that fuels the rivalry is not fully formed. Perhaps not even partially formed. Imagine running a marathon with neither a map of the course to be run nor a clear notion of the finish line. Combustive fuel is also being added to the publishing industry rivalry as a result of member firms' need to reach far outside their traditional areas of competency. The pre-digital publishing world had famous, sometimes familial rivalries, but it was a stable world hallmarked by durable "franchises" (textbook titles) protected by copyrights. Today's publishers are locked in an acquisitive or developmental

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[67] Cengage Learning Holdings II, Inc., "Transition Report for the Nine Months Ended March 31, 2014, p. 6. Available at: http://www.cengage.com/investor/pdf/annual_report_for_fy2014-8.28.14_final.pdf.

[68] Stephanie Simon, "No Profit Left Behind," in *Politico*, February 10, 2015. Available at: http://www.politico.com/story/2015/02/pearson-education-115026_Page2.html.

[69] *The Economist*, "The World in 2015: The World in Numbers: Media," January 2015, p. 123.

scramble that extends far afield from their historical roots. They are creating big data, data curation, and analytics capabilities; testing and assessment services; tutoring, advisement, mentoring, and counseling; and so forth. Industry leader Pearson even opened Pearson College London, "The New Way to a Degree."

> Exacerbating the industry rivalry is the fact that the integrative digital vision that fuels the rivalry is not fully formed.

Massive investment in the absence of a clear road map is both a competitive necessity and a source of considerable risk. For those unable to complete the jigsaw puzzle in time, it may be a race to the bottom. *Publishers Weekly's* "The World's 56 Largest Book Publishers, 2014" indicated that industry leader Pearson's sales in 2013 declined to $7.8 billion from $9.16 billion in 2012. In this period, Reed Elsevier and Wiley were flat, McGraw-Hill was down, and Cengage Learning emerged from Chapter 11. Perhaps Cengage Learning summed up the industry rivalry best in its 2014 Transition Report. The top risk factors identified by Cengage Learning were the:

- impact of competition from established competitors and new businesses that have not traditionally participated in our markets, including the impact of new and enhanced product and service offerings and technology and competitors' ability to adapt more quickly to new or emerging technologies and market conditions;
- impact of used textbook and/or rental textbook programs and our ability to compete with them; and
- effect of increased accessibility of free or relatively inexpensive information and materials on pricing and demand for our products and services.[70]

> **NACS Resource:** "Creating a Good Faith Course Materials Campus—Guidelines" available at www.nacs.org/goodfaith

Bargaining Power of Suppliers

The key supplier to publishers is the creators of learning content. As long as commercial publishers own the top tier scholarly journals, and publishing in these journals remains the best path for advancement in research universities, the pipeline of journal articles and specialized scholarly monographs is secure. **The great threat to publishers as regards the bargaining power of suppliers is the emergence of a potent and growing open access movement.** If faculty promotion and tenure become more closely aligned with publication in open access journals, the flow of submissions—the raw material of publishing—will change course. To forestall any such shift, publishers must moderate price increases, retain quality while adding innovation (such as well-curated datasets), and retain the engagement of the top scholars who serve on their editorial boards. Overall, the suppliers of raw content to be manufactured are fragmented and while many academics are sympathetic to the means and ends of open access publishing, they know well the value of a publication in *Nature* or *JAMA*.

The situation with student-acquired learning content supply is more complex. Textbook authoring has long been highly specialized. Increasingly—as higher education moves toward greater standardization at the general education level—textbook authoring becomes a winner-take-all market. To the extent that this becomes the case, there is little incentive for faculty to write the second or third reading textbook in a given field. Such scholars will either write for journals, or will consider OER avenues. This possible change to the supply dynamics would not be a substantial one in this scenario.

Lastly, it is possible to imagine a scenario in which the power of learning content suppliers—higher education's faculty—*shrinks*. If large publishers focus in the future on courseware, their demand for textbooks may drop. In such a scenario, there might evolve a lively market for more granular learning objects. For example,

[70] Cengage Learning Holdings II, Inc., "Transition Report for the Nine Months Ended March 31, 2014," p. 3. Available at: http://www.cengage.com/investor/pdf/annual_report_for_fy2014-8.28.14_final.pdf.

the need becomes for a 300-word block of text, a video, and a simulation that illustrate and explain the conservation of momentum, a core component of every introductory physics curriculum. Publishers can commission such objects as employee works-for-hire, or contract with faculty at rates far lower than those associated with an entire textbook. In such a scenario, the core competency needed by the publisher becomes instructional design, learning object integration, usability testing, content personalization, testing, and evaluation. As publishers develop and contextualize repositories of vetted and market-tested learning objects, their dependency on suppliers of textbooks (faculty authors) will decline.

Threat of New Entrants

Richard Anderson's characterization of publishers as "fielding more and more [journal] submissions and chasing smaller and smaller budgets while also dealing with an increasingly complex scholarly communication environment," does not roll out the welcome mat for new market entrants. **The flat higher education enrollments, rapid growth of textbook rentals, rise of content piracy, textbook's declining cachet, and widening investment moat in publishing will also discourage most ardent new entrants.** That said, one possible class of new entrant poses an existential threat to today's publishers. As publishing and education become increasingly dependent on cost containment, service quality, globalization, demonstration of outcomes, and sophisticated technologies, they must increasingly look over their shoulders at giants like Amazon, Google, Facebook, Apple, LinkedIn, and others. Amazon is now where much of the world buys books. They are global, tech savvy, deeply customer-oriented, and both gaining a foothold on campus and moving toward same-day delivery. Most importantly, Amazon has quietly become a large publisher. All of these firms have the means, if not the motivation (yet) to dominate learning content publishing. Google's YouTube is already the go-to source for do-it-yourself educational videos. Facebook hosts a good many academic "garage bands." LinkedIn may have a unique position in a competency-based-education world through its intimate connection with employers. These firms have the capital, the brands, the global reach, and the audacity to re-conceptualize academic publishing.

> As publishing and education become increasingly dependent on cost containment and sophisticated technologies, they must increasingly look over their shoulders at giants like Amazon, Google, Facebook, and Apple.

Bargaining Power of Buyers

Despite the hue and cry over textbook prices, **it is a good time to be a learning content buyer**. Most of today's college and university undergraduates are Millennials—born between the early 1980s and the early 2000s. These students are fully acculturated to the Internet, social networks, search, e-commerce, and mobile commerce.

Figure 8 – Time and Money Spent Online Annually by Age Group (U.S. 2013) | Source: Forrester
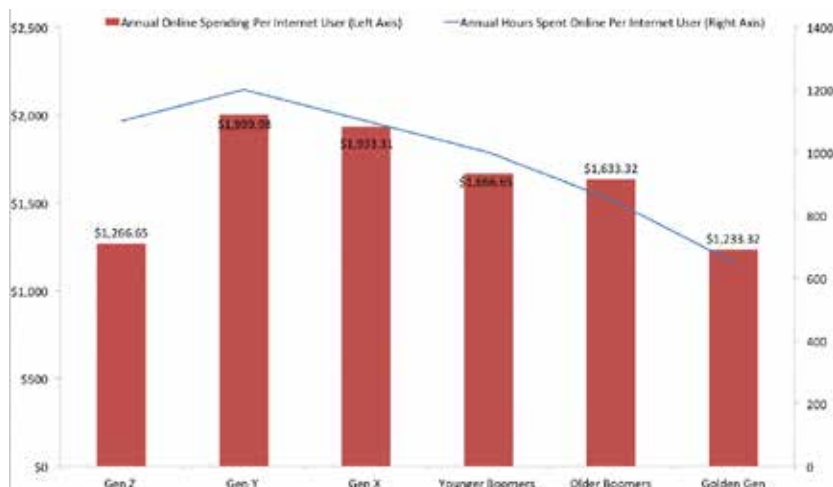
Not only do Millennials spend more time shopping online than does any other age cohort, they outspend the others despite their lower disposable incomes. They are sophisticated online consumers who know how to use comparison sites, and other tools. Many taught their parents "showrooming" or the art of examining merchandise in a brick and mortar retail store then buying it online. Most of them took online courses in high school and have very different ideas about intellectual property rights. This generation grew up during the heyday of Napster, Bit Torrent, and widespread piracy of music, games, and video content. They are reading less and renting more. And less than 40% of them would prefer a campus-only college experience to one that blends "on-ground" and online learning.

Today's students must be persuaded that required learning content is relevant. Many will shop aggressively for the best price, are comfortable with textbook rentals and used books, and in some cases will not purchase or rent a required textbook at all. They are juggling a variety of consumer strategies to drive down their textbook costs. Textbook utilization by this generation declined by more than 20% between fall 2010 and fall 2013 according to the Book Industry Study Group (BISG).

As the Cengage report notes, "the increased accessibility of free or relatively inexpensive information and materials" poses a direct threat to that company's pricing power. This threat likely refers to both the rich array of materials that are simply "out there" on the web and the more formal array of OER materials that can be found. While it has not been studied, it would not be surprising to find that fully online/distance courses incorporate few sold or rented learning resources. Certainly this is true of MOOCs. As more faculty teach online, it is likely that more will find openly available, web-based resources to fuel their students' needs for learning content. Continued cost-rise of learning content produced by commercial publishers can only accelerate their search for alternatives.

Threat of Substitutes

In the academic journals market, a transformation is underway. In a nutshell, the agencies that fund research in the U.S., U.K., and E.U. are now insisting that sponsored research results be made available in journals at no cost—within a year. Outsell estimates that revenue from open-access journals will rise from $172 million in 2012 to $336 million in 2015. The number of open-access papers is forecast to grow from 194,000 to 352,000 in the same period. While this remains a small part of this $6 billion market, both the growth rate of open access materials and the intentions of research sponsors are important. As many of the leading publishers of academic journals are also publishers of college-level learning content, the loss of revenue from journal licensing must ultimately trickle down to course materials.[71]

In 2014, sales of textbooks and other educational materials (not including technology purchases) for the kindergarten-through-12th-grade market were 3% lower than in 2009 according to a survey of seven education publishers, including the biggest three, by the Association of American Publishers. Loss of revenue in K-12 will also trickle down.[72] A K-12 shift to open access materials is the likely driver of this revenue loss.

The threat to learning content publisher's core product—the new and current textbook—is substantial. Learning content rental is the most proximate threat to commercial learning content publishers. As Figure 9 illustrates, less than two-thirds of the students surveyed by the Book Industry Study Group (BISG) in 2013 identified buying a physical or digital book as their preferred strategy for acquiring required course materials. This statistic does not indicate whether those who prefer to buy would buy new books or used ones. The students surveyed show little long-term attachment to the physical book. Among those who prefer to buy, most plan to sell their book back. Since they have no long-term plans for these books, it is likely that many of those who buy and later sell their books could easily become textbook renters.

[71] "Academic Publishing: Free-for-All," in *The Economist*, May 4, 2013. Available at:
http://www.economist.com/news/science-and-technology/21577035-open-access-scientific-publishing-gaining-ground-free-all.
[72] Rachel Monahan, "How Common Core is Killing the Textbook," *The Hechinger Report*. Available at:
http://hechingerreport.org/how-common-core-is-killing-the-textbook/.

Figure 9 – Student Learning Content Acquisition Strategy | Source: Book Industry Study Group, 2013
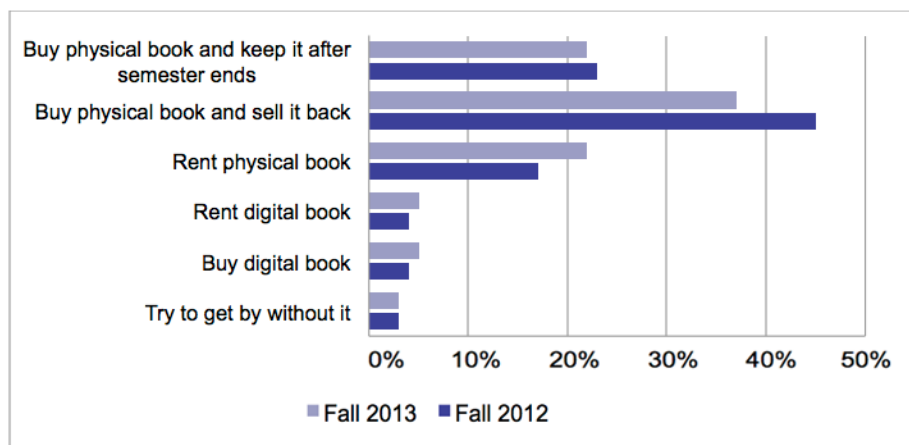
Materials openly available on the web that are not formally part of the OA or OER system are also substituting for commercial publications with increased frequency.

Less urgent, but nevertheless worrisome threats of substitution can be found in:

- Internet giants like Amazon, Facebook, Apple, Google, and others who might at any time opt to vertically integrate backwards into publishing;
- independent courseware manufacturers such as Tata Systems, an Indian developer of custom e-learning;
- course management systems that strive to regulate the flow of course content; and
- independent content curation and management firms like ACE Learning Company that provide online platforms to help faculty "select the best content for each learner while allowing institutions to align content investments with course-level learning objectives." A content curation engine that has been tuned to OER content is easy to imagine. Ultimately, CNET-style comparative rating engines might make it easy for faculty members and instructional designers to evaluate content quality and cost to student side-by-side.

Key Players

While there are a number of influential academic publishers, the higher education learning content market is dominated by **a few very large firms**.

Figure 10 – Key Academic Publishers' Total Revenues, 2013 (in $ Billions) | Source: Statistica
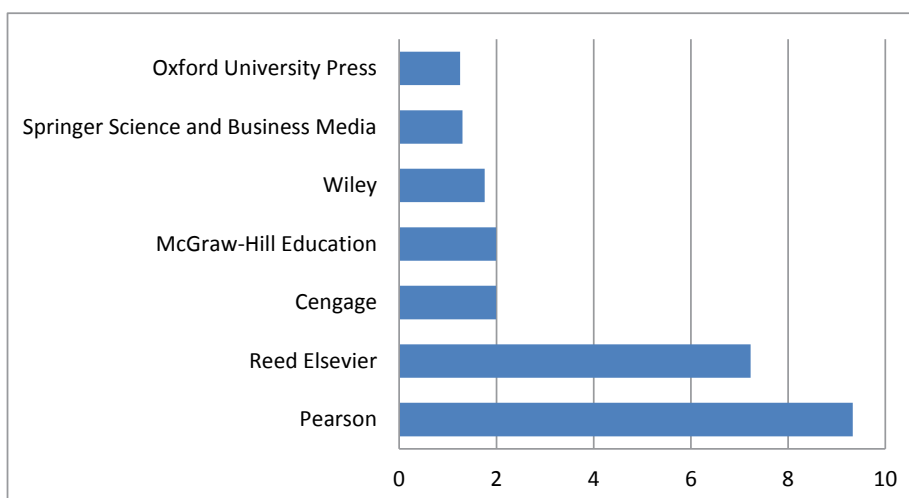
Technologies and Innovations to Watch

To remain viable for the longer term, commercial publishers must provide course materials that are demonstrably better. The static text can be and is being replicated in many general education disciplines in the OER context. OER texts, of course, win the battle on costs. For some students in some institutions, the cost battle is the ultimate battle and for these individuals and institutions, OER material is likely to trump commercial learning content most of the time.

That said, a number of innovations and technologies are essential to follow:

- **Subscription licensing and pricing.** Subscriptions are enjoying a new prominence as a revenue model for digital content. Internet companies are exploiting the opportunity to boost ARPU (average revenue per user), thanks to recurring payments from a subscriber base. Just as libraries and publishers have moved to licensing bundles of journals, it likely makes sense for publishers and higher education institutions to license bundles of learning content. To finance this new expense, colleges and universities will need to consider the adoption of student content fees. Such fees—assuming bundles are well priced—should lower the average cost of learning materials for students while increasing total revenue to publishers. Losers in this scenario are students who eschew learning content altogether or those who lower their costs by acquiring out-of-print editions. These strategies may be effective financially but are risky from an academic success perspective.
- **Adaptive or personalized learning,** discussed earlier.
- **Courseware manufacturing.** Tomorrow's "course" may be the new textbook.
- **Learning analytics**—course materials that can summarize important mastery variables like time-on-task in ways that can help teachers tailor personal interventions or help students understand, in real time, where added effort (or coaching) is needed.
- **Connection of learning content to broader learning outcomes such as competencies.**
- **Integration of learning content with testing and assessment.**

Today, the linkage between a student's successful completion of a course, module, or program, and the learning content their faculty required, is weak and speculative. If and as pressure continues to rise to increase completion and graduation rates, attention is likely to turn to course materials. It is now increasingly possible to collect and analyze data that will improve our understanding of how learning materials contribute to student learning and success. Technologies, techniques, and frameworks that support such data collection and analysis will likely grow in importance.

> **NACS Resource:** "The Eight Steps to Providing Digital Content to Your Campus," available in The Hub (NACS member login required) or upon request to education@nacs.org

Critical Questions: Learning Content Manufacturing—Publishing

1. *What percent of your campus faculty are experimenting or using different forms of learning content (YouTube videos, online articles, etc.) or teaching styles (e.g., flipped classroom, Socratic Method, learning/group activities)? Are there members of the academic community on campus you could engage with to learn more?*

2. *Are OER materials being used or discussed on your campus? By whom? In what ways? What is your level of knowledge about, and comfort with, discussing OERs as well as the creators and repositories of these materials?*

3. *To what extent are custom print or digital course materials in use on your campus? Is this a potential growth area?*

4. *What is the status of your relationships with the industry's learning content publishers? Of their business models and future corporate direction? Are there others on your campus who are having conversations with these content providers—with or without your involvement?*

5. *Is the store seen as a resource (or the expert) on copyright and copyright clearance for learning content on campus? If not, is there a role for the store to play in this area?*

6. *Does your campus have a learning/course content strategy in development or in place? Are store leaders involved in this effort? If no to either, how can the store initiate or get involved in the campus' effort?*

7. *Are you communicating to the relevant campus stakeholders about the changes happening in learning content creation and publishing—and the potential implications for store sales, products, and services?*

Further Readings

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