Introduction

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The scholarly publishing market plays a critical role in modern societies since it communicates research findings to researchers, businesses, and industries. Scientific research findings are expected to lead to innovations, inventions, and new products and services that are driving forces of countries' economic growth and development. Research findings in social sciences and business are expected to provide policy guidance for improving individuals' lives and organizational effectiveness and efficiency of businesses, nonprofit institutions, and government agencies. Academic libraries have always been part of the scholarly publishing market since they represent the demand side of the market equilibrium and play an important role in acquiring, maintaining, and delivering scholarly publications. The changes in the scholarly publishing market such as price increases for packaged journal subscriptions and ebooks can have an impact on academic libraries' budgets, and therefore affect their collections and acquisitions policies and decisions. While inflation is a factor in price increases, the oligopoly behavior of a few large commercial publishers can be a cause of price increases in journal and book prices. In fact, commercial publishers have been reshaping the scholarly publishing industry in recent decades and continue to expand their presence as a dominant force in today's scholarly publishing market, whereas the presence of noncommercial publishers, particularly the presence of university presses, has been diminishing, and some of them have been consolidated into library operations (Clement 2011) to achieve economies of scope. Commercial publishers control a larger share of scholarly information products, including print books, ebooks, open access journals, and research databases. The lack of competition in the scholarly publishing market can only lead to increased prices for these information products. It is not uncommon to see a few large corporations dominating an industry in the current global

LIBRARY TRENDS, Vol. 67, No. 2, 2018 ("The Role and Impact of Commercial and Noncommercial Publishers in Scholarly Publishing on Academic Libraries," edited by Lewis G. Liu), pp. 183–95.

economic system. They hire workers to make products, and then sell them to consumers who usually are not part of the production process. What is unique in the scholarly publishing market is that scholarly content creators are also consumers of their own products and their institutions have to buy back the very creations of their own research, in many cases at a higher price than they are willing and able to pay.

In this *Library Trends* volume, we have gathered academic researchers, practicing librarians, and library administrators who have research expertise and working experiences in their respective subject areas to examine the role and impact of commercial and noncommercial publishers in scholarly publishing on academic libraries. Given the time constraint to complete this research project and maximum total pages allowed, we are not able to address as many topics as we would like. We, however, have covered some important issues related to the theme of this *Library Trends* volume.

Scholarly publishing mainly consists of journal and book publishing. Although consumers, providers, and content creators of scholarly journals and books are more or less the same groups of individuals and organizations, journals and books are different types of information products. Journals are demanded in a more timely manner than are books. Researchers need the most recent research results from their fellow researchers to update their own research. Journals in general are more expensive than books partly because the timely demand for journals drives up their prices. Therefore, journals and books belong to separate information markets and will be discussed as such.

The Scholarly Journal Publishing Market and Academic Libraries

1989 Studies and the Collapse of the Scholarly Journal Market

The scholarly journal publishing market had been more or less in equilibrium until the late 1980s when many academic libraries' budgets could no longer keep up with escalating journal prices charged by commercial publishers and started canceling journal subscriptions. Nationwide complaints about escalating journal prices prompted the Association of Research Libraries (ARL) to investigate the issue. The ARL commissioned Economic Consulting Services, Inc. (1989) to conduct an economic cost analysis of journals published by a few major commercial publishers in the fields of science, technology, and medicine. The conclusion was that journal prices charged by these commercial publishers were much higher than their costs and inflation, revealing excessive profit made by commercial publishers. In the very same year, H. Craig Petersen (1989), an economic researcher, conducted a study on randomly selected journals

in various subject areas. With the use of a linear regression model and dummy variables, he was able to identify the journal price differential between commercial and noncommercial publishers. He reached the same conclusion as the ARL-sponsored study: that commercial publishers overcharged libraries for the journals they subscribed to. His follow-up study reconfirmed these conclusions (1990).

These independently and empirically conducted studies on scholarly journal prices around 1989 marked the beginning of the collapse of the scholarly journal market and also generated a controversial body of research literature on whether or not and to what extent commercial publishers overcharge libraries. Authors from various academic and working backgrounds, including economic researchers, information science researchers, practicing librarians, university administrators, and publishers, participated in the discourse of the causes of escalating journals prices. While almost all the researchers using either the cost-accounting approach or the regression approach concluded that commercial publishers overcharged libraries (e.g., Economic Consulting Services Inc. 1989; Petersen 1989, 1990, 1992; Chressanthis and Chressanthis 1994; Tenopir and King 1997; Liu 2005, 2011; Liu and Gee 2017), the findings from some case studies using small sample sizes and arithmetic calculations were inconclusive (e.g., Creaser and White 2008; Rose-Wiles 2011). One study with flawed statistical modeling came to the opposite conclusion. Ortelbach, Schulz, and Hagenhoff (2008), based on their insignificant regression results (the standardized coefficient of for-profit publishers was only 0.089), argued that "it can be doubted that pricing policies of for-profit publishers are the main cause of the serial crisis" (194, 196). Some authors criticized libraries' parent institutions for their research and publication requirements for faculty tenure and promotion and asserted that their demand drove up journal prices (e.g., Plasmeijer 2002; Baveye 2010; Dilevko 2014). But these arguments are mostly based on theoretical assumptions, personal observations, and opinionated views without much empirical evidence to support their arguments.

1992 Symposiums on Scholarly Publishing on the Electronic Networks and the Earlier Concept of Free and Open Scholarly Communication

Despite the heated debates in the research literature, there was a general consensus among researchers, practicing librarians, and university administrators that commercial publishers' profits from libraries' journal subscriptions were excessive and that they had to find new ways to fix the dysfunctional journal market. They responded to the "serials crisis" by launching some groundbreaking initiatives, most notably the open access movement. In the early 1990s, it was believed by many that it was feasible to produce scholarly publications that could be accessed openly and freely

given advances in internet infrastructure, new developments in computer and information technologies, and the mostly free research labor force (e.g., Okerson 1993). Peter Suber (2009) systematically documented many research projects, new developments in computer hardware and software and networks, and scholarly publication activities that had been created by researchers, librarians, higher education institutions, government agencies, and collaborated efforts from both for-profit and nonprofit organizations since 1966. Publications and computer programs and networks developed from these research and scholarly activities were in general free and open to users on the internet. However, these activities before 1990 tended to be isolated and were not coordinated with well-defined missions and goals of creating a free and open access publishing model, and they were not consciously intended to find a solution to the widespread serials price problem. But they certainly reflected the progressive advancements in internet technologies and the willingness of researchers to use the internet as a scholarly publication venue to share their research results with their colleagues and the general public.

It was in 1992 when the basic concept of free and open scholarly communication was conceived and articulated among the panelists in the First and Second Symposiums on Scholarly Publishing on the Electronic Networks—"Visions and Opportunities in Not-for-Profit Publishing"—sponsored by the ARL and the Association of American University Presses (AAUP). The participants of the Second Annual Symposium envisioned the following: "Virtual library: libraries will not be limited by the constraints of physical buildings" (Okerson 1993, 45). "Virtual library" means that collections of books, journals, and articles are online and available on the internet. Since these collections are not limited by "physical buildings" of libraries, they can be accessed from anywhere and anytime. The members of the Library Committee of the American Mathematical Society at their annual meeting in 1993 sent questions to panelists for discussions, including the following: "Some librarians feel that scholarly communication is in need of fundamental restructuring. Do you agree? If so, what form should the new structure take? If not, can you see a scenario for a resolution of the crisis of spiraling costs and journal cancellations?" (Anderson 2013, 48). It clearly shows that librarians fully understood the problem they were facing. They were also, during these early years of the open access movement, determined to solve the problem by taking over the control of scholarly journal publications so that costs of accessing them could be substantially lower if not free. As one of the panelists stated, "There is a movement among librarians to take scholarly publishing out of the for-profit sector as a means of controlling costs. . . . The reasoning is that since scholarly research is a product of the Academy, then the Academy should create an alternative distribution mechanism that it can control" (Anderson 2013, 50).

The Creation of the Scholarly Publishing and Academic Resources Coalition in 1998

In 1998, six years after these symposiums, the ARL launched the Scholarly Publishing and Academic Resources Coalition (SPARC) (Suber 2009). Its goal is to promote open access to scholarly journals and research data among its members, with reasonably low annual membership fees. It currently has hundreds of academic and research library members. The annual membership fees range from $6400 to $7100 (SPARC 2018), which could be just an annual subscription price for a single journal. But at that price, a member can have access to many high quality journals in many subject fields. SPARC is certainly a competing force to large expensive commercial journal publishers.

Technical, Legal, Intellectual, and Philosophical Descriptions of Open Access Publishing in 2002–2003 and Thereafter

Ten years later, since the ARL and the AAUP organized symposiums in 1992, the Budapest Open Access Initiative (2002), the Bethesda Statement on Open Access Publishing (2003), and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003) all announced their official statements (Crawford 2011) that describe open access publishing from technical, legal, intellectual, and philosophical perspectives. Perhaps the shortest and most concise definition of open access publication could be the one written by Peter Suber (2012): "Open access (OA) literature is digital, online, and free of charge, and free of most copyright and licensing restrictions" (4). John Willinsky (2006) lists ten models for financing open access journals in the earlier years of open access development, among which are three models—articles listed on authors' home pages (free and open), author fee-based journals, and subsidized journals (212)—that continue to play an important role in today's open access publishing. These open access financing models provide multilayer access to scholarly articles. Open access publishing was embraced by almost everyone at its infancy, including commercial publishers who did not want to miss this opportunity to make a profit. The total number of open access journals increased from 20 in 1993 to 4,767 in 2009, and the total number of open access articles increased from 247 in 1993 to 191,851 in 2009 (Laakso et al. 2011, 7). Currently, the Directory of Open Access Journals (DOAJ) lists over 11,000 open access journals and over 3 million articles (https://doaj.org).

But how many of these open access journals are actually open, and how many of these open access journals are actually free as envisioned by librarians and academic researchers two and a half decades ago? The answer is very clear: a large majority of these open access journals are not open and not free. Instead of taking the control of scholarly journal publications from commercial publishers, librarians find that commercial publish-

ers control an overwhelming majority of open access journals. Christian Fuchs and Marisol Sandoval's study (2013) on randomly selected journals from the Science Citation Index, the Social Sciences Citation Index, and the Arts and Humanities Citation Index, with a total of 8,600 journals, concluded that "in the analysed sample, 88.1% of the journals were closed access and 11.9% open access journals. 71.0% of analysed journals were published by for-profit organizations as opposed to 29.0% non-profit organizations" (432). Currently, there are various types of publishing, storing, delivering, and financing models for open access journals.

In this *Library Trends* volume, John Willinsky, with his in-depth knowledge and experience in both the commercial publishing and noncommercial publishing worlds, presents his views on open access scholarly communication. He observes the dominance of corporate commercial publishers in open access publishing and their profit-driven pricing policies and practices. He seems to believe that commercial publishers are an integral part of open access publishing. In the meantime, he advocates the development of various "cooperative" publishing models. Under these models, academic libraries, universities, funding agencies, and other nonprofit entities can work together to serve as "a price check" against commercial publishers. He suggests a number of open access publishing platforms for academic libraries.

Robert Holley discusses a wide range of issues related to open access publishing from the perspectives of researchers/authors, publishers, and academic libraries. He incorporates extensive research literature and current discussions among scholars, practicing librarians, and library administrators on open access publishing using traditional and contemporary scholarly communication sources. His discussions and analyses demonstrate a reality that open access journals are mostly not truly open and free open access journals are mostly not truly free.

The opportunity to make a profit on the scholarly journal publishing market gives many commercial publishers incentives to create many predatory open access journals. Many of them charge authors high publishing fees. All of them publish low quality journals. In this *Library Trends* volume, Jingfeng Xia addresses issues related to predatory journals, with a focus on China, using an economic theoretical framework developed by Gary Becker, a Nobel Prize–winning economist. China is a rising research, technological, and economic superpower and is ranked as the number-two country in scientific research publications (SCImago 2018). But like some other countries, its scholarly publishing system has been infected by predatory journals. Xia analyzes the economic behavior of unethical authors in research and scholarly publishing, which is facilitated by the very existence of predatory journals.

Many researchers are drawn to predatory journals because they promise to produce quick and easy publication opportunities. Some research-

ers are innocent and have no idea that they are contributing to predatory journal publications. Others have the intent to commit the century-old sins in academic research and scholarly publishing. Predatory journals pose a serious threat to the quality of scholarly publishing. They not only exist in China but also in the United States and other countries. They must be closely watched and reduced to a minimum if not totally eliminated. An academic librarian, Jeffrey Beall, provides a long list of predatory journals, which has created some controversies and received criticisms by many (Straumsheim 2017), including librarians. Whether or not and to what extent academic librarians should play a role in compiling and screening predatory journals is a challenging question for the library profession.

The Scholarly Book Publishing Market and Academic Libraries' Collections and Acquisitions

The long-term trend for the scholarly book market in North America has been characterized by steady growth in the book production, rising book prices, and the stagnation and decline in demand as indicated by academic libraries' monograph expenditures in the recent decade. Although flat and declining monograph expenditures and inflation undermine academic libraries' ability to keep up with increased book supply over time, short-term loans and demand-driven acquisition practices help many academic libraries meet the book demand of their users. The emergence of ebooks, however, has created demand variations in the scholarly book market in recent years. While the demand for print books decreased, the demand for ebooks increased dramatically from 2010 to 2016 (Zeoli 2015; Library Journal 2016). Although ebooks sales fluctuate in the short run, they will continue to increase their share in academic libraries' book collections in the future. Ebooks are more expensive than print books and have a bigger impact on libraries' budgets. Just like the scholarly journal publishing market, the scholarly book publishing market, particularly in the fields of science, technology, and medicine, is mostly controlled by commercial publishers. The oligopoly behavior of a few large commercial publishers can also be observed in the scholarly book market.

The research literature on the roles of commercial and noncommercial publishers in the scholarly book publishing market has mostly focused on university presses (e.g., Greco and Spendley 2016). Very few empirical studies with large sample sizes have been conducted to examine the book-price differential between commercial and noncommercial publishers. Scholarly book prices have not been given enough research attention for a number of reasons: the demand for books is not as timely as the demand for journals, book prices are not as high as journal prices, and libraries' monograph expenditures have been stagnant/declining for years since journals take a larger part of share of libraries' material budgets.

Some institution-based studies examined the roles of commercial pub-

lishers and university presses in dissertation citations (e.g., Franks and Dotson 2017). Some case studies looked at the roles of commercial and noncommercial publishers in the provision of ebooks (e.g., Tucker 2012). Ebooks are appealing to academic libraries because of their advantages over print books. They can be accessed from both inside and outside of libraries and can be simultaneously used by multiple users. Additionally, ebooks do not need physical bookshelves and binding repairs. Because of these advantages, commercial publishers may charge higher prices for ebooks. Many academic libraries have felt the impact of high ebook prices. For example, Susan Stearns and John Unsworth (2014) complained that their library consortium was overcharged by commercial publishers for ebooks they subscribed to (1).

In this *Library Trends* volume, Lewis G. Liu, Harold Gee, and Charles Terng examine long-term and current book-market trends and important factors affecting scholarly book prices in science, technology, and medicine using a semilogarithmic econometric model. The findings show that commercial publishers dominate the scholarly book market in STM areas and charge much higher prices than noncommercial publishers; ebooks are much more expensive than print books; and various geographical locations affect book prices as well.

Ryan Phillips studies the role of commercial publishers in book citations of PhD dissertations in seven fields of sciences at the City University of New York (CUNY), covering over nine hundred dissertations with over 9,300 book collections. His analysis concludes that, overall, commercial publishers account for 60 percent of the total number of citations. This study, coupled with previous studies at other universities, shows the domination of commercial publishers in this specific research publication area.

Kimmy Szeto discusses the roles of academic libraries in digital music publishing. He points out that both academic libraries and the music industry fall behind the digital revolution. He argues that academic libraries can reshape the music industry life cycle and make music products more accessible and discoverable.

Emerging Scholarly Publishing Models and Academic Libraries

Commercial publishers play a major role in the scholarly publication production today despite the fact that almost all the earlier scholarly publications before the nineteenth century were produced by learned societies and scholarly associations (American Journal Experts 2018). It is unrealistic to think that commercial publishers can be replaced. The best way to improve scholarly publishing market efficiency is to create and expand the role of noncommercial scholarly publishing forces, including university presses, learned society presses, scholarly association presses, educational

research institute presses, and other nonprofit scholarly publishing entities. Universities should control scholarly journal and book publications. But current missions of many universities are to create new knowledge through research and maintain existing knowledge through teaching. Packaging, printing, and distributing research results are not an essential part of their missions. Researchers are mostly faculty members at universities, and their job is to perform research and teaching duties. Although many of them work for commercial publishers and serve as editors, reviewers, and board members of scholarly journals and books and make judgements on the contents of these publications, they are not publishers and have no control of the day-to-day publishing business and pricing policies. Universities with in-house publishing presses utilize their faculty research strengths and hire skilled labor to produce journals and books in the subject fields where they have expertise. But some of them cannot sell their publications in large volumes to achieve economies of scale and have to merge into libraries. The commercial publishers' dominance of the scholarly publishing market is the result of the failure of universities and scholarly associations to undertake the scholarly publishing business. A large scale of collaboration among universities is needed to succeed in controlling the scholarly publishing market.

In this *Library Trends* volume, Yuan Li, Sarah Kalikman Lippincott, Sarah Hare, Jamie Wittenberg, Suzanne Preate, Amanda Page, and Suzanne E. Guiod discuss the collaboration between academic libraries and university presses in academic publishing. They present two cases: one is at a state university, and the other is at a private university. These two cases can serve as an academic publishing model for other libraries and university presses. From an economic perspective, the library-university press collaboration can achieve operating efficiency, which is described by the authors for Indiana University. Indiana University also views academic publishing as part of its missions, which is not common for many universities. The library-university press collaboration can be a model for achieving economies of scope. The consolidation of university press and library operations enables the library and university press to share human, physical, financial, and technological resources to reduce the costs that incur when they operate separately. Such a model can not only be mutually beneficial for both libraries and university presses but can also be financially sustainable.

Heather Moulaison Sandy and Janice B. Mattern explore a library-based publishing model. They believe academic libraries need long-term and continuous financial support to be able to sustain their scholarly publishing mission. They point out that the quality of library publishing should be ensured since it affects the reputation of their publications. Furthermore, they argue that librarians have a great deal to learn to fulfill the scholarly publishing mission.

Melanie Schlosser presents the Library Publishing Coalition, an emerging model for library publishing. She discusses the LPC's mission, goals, governance, membership, current publishing activities, and its future.

Copyright Laws, Fair Use, and Academic Libraries' Services

The advances in digital technologies have greatly improved the storage and transmission of information. Information in all types, shapes, and forms can be instantly input, processed, and transmitted through local and global networks. Academic libraries take advantage of digital technologies to improve their services to students and faculty. They digitize teaching and research materials to support classroom instruction and faculty research at both their own institutions and other institutions via e-reserve, interlibrary loan, and other library services. However, the US copyright laws set limitations to fair use of copyrighted works. Commercial publishers and a very few big and lucrative university presses keep a close watch on libraries' use of their copyrighted materials to protect their financial interests. Because of the ambiguity of copyright laws and the complexity of the materials digitized and used by libraries, some academic libraries are sued by publishers for copyright infringements. There is a need for providing legal training for academic librarians (Charbonneau and Priehs 2014). With adequate training, academic librarians can perform their copyright-related jobs and help their users competently and confidently.

Laura Burtle and Mariann Burright present lawsuit cases against their library. They examine the principles of copyright laws and their applications to fair use in the context of their university library's e-reserve service. Their contribution should be part of training guides for academic librarians to understand the courts' interpretations of fair use in regard to digitized materials used in academic libraries.

Cynthia Kristof examines the impact of publishers on academic libraries' interlibrary loan service. Resource sharing is a very important part of scholarly communication. No one library has everything. Researchers depend on interlibrary loans to get the books and articles they need for their research. Her discussions reveal that publishers control their published materials processed for interlibrary loans through licensing.

Conclusion

The contributors of this volume have examined various issues related to the scholarly journal and book markets featuring open access journals, STM books, music publications, new publishing models, and copyright laws governing fair use of copyrighted materials in the context of academic libraries.

A few patterns have emerged from their studies and analyses. First, commercial publishers dominate both open access publishing and STM book markets in terms of the total number of suppliers on the markets and the total market share. Second, a handful of large commercial publishing houses control a larger part of the markets leading to oligopoly power and price control. Academic libraries continue to be the victims of the excessive profit-making behavior of oligopolistic publishers. Third, individual researchers, academic libraries, and their parent institutions are trying to create new scholarly publishing models to get more control of their own publications and reduce costs. Some new scholarly publishing models such as the library-university press partnership and the Library Publishing Coalition have emerged in recent years. Library publishing and institutional repositories have started gaining momentum as well. Finally, commercial publishers and a very few big and lucrative university presses have made great efforts to use copyright laws to protect their financial interests. This is the direct result when researchers give up the copyrights of their works and hand them over to publishers, particularly commercial publishers.

The fundamental change in the scholarly publishing industry requires many universities to add the scholarly publishing mission to their current teaching, research, and public service model and work collectively as scholarly journal and book publishers. Given diverse organizational structures of higher education and wide variations in strategic and operational priorities of individual institutions, it requires exceptionally strong leadership (which is currently nonexistent) for universities to work together to achieve economies of scale and become a major force in scholarly publishing.

Acknowledgments

As the issue editor, I would like to thank all the reviewers of the articles published in this *Library Trends* issue for their valuable comments and suggestions.

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