Surveying Library Publishing Development Trends Through the Historical Evolution of the "Library Publishing Directory" Post-print

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Abstract

By examining the historical evolution of the nine-volume "Library Publishing Directory" released by the Library Publishing Coalition project, this study investigates the development trends of library publishing. Through methods such as literature research and web-based investigation, it analyzes the current status of the "Library Publishing Coalition" project and summarizes the development trends in the field of library publishing, primarily conducting comparative analysis across aspects including the distribution of participating libraries, publishing platforms, publishing services, peer review and open access status, as well as cooperation partners and modalities, presenting the current status and evolving trends in the library publishing domain through data visualization, and revealing the all-element, all-round open academic publishing characteristics that library publishing has initially formed, thereby providing reference for domestic libraries to undertake library publishing initiatives.

Full Text

Examining the Development Trend of Library Publishing Through the Historical Evolution of the Library Publishing Directory

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Abstract This study examines the development trend of library publishing through the historical evolution of nine volumes of the *Library Publishing Di-*

rectory released by the Library Publishing Coalition project. Through literature review and web-based research, we analyze the current state of the Library Publishing Coalition project and summarize development trends in the field of library publishing. The analysis focuses on comparative examination of library distribution, publishing platforms, publishing services, peer review and open access practices, and cooperation partners and models. Data visualization is employed to present the current landscape and evolving trends in library publishing, revealing that library publishing has initially formed a characteristic of all-elements, all-dimensional open scholarly publishing. This provides valuable reference for domestic libraries to develop their own publishing initiatives.

[Keywords] *Library Publishing Directory*; library publishing; open access; Library Publishing Coalition; scholarly communication models
[Classification Number] G250

In early research, L. Brown et al. argued that driven by digital technologies, future scholarly communication models would be dominated by open journals, preprints, and institutional repositories, and that every university should have its own publishing policy to help institutions fulfill their research sharing missions [1]. As open peer review transforms traditional publishing models into a new scholarly communication paradigm, university libraries are also transitioning toward more sustainable scholarly communication processes, making library publishing a focal point of academic attention [2]. Libraries cannot completely replace publishing services dominated by traditional publishers. In the digital environment, publishing involves issues such as rational resource reallocation, seeking broad collaboration, balancing revenue streams, automating publishing processes, and digitizing publishing resources. It also involves the possibility that non-publisher-dominated publishing models may be disrupted, giving rise to new publishing models adapted to digitization and open access—including library publishing.

Under the consensus that library publishing will become a dynamic subfield within the scholarly publishing ecosystem, the Educopia Institute launched the Library Publishing Coalition (LPC) project in 2013 with the goals of knowledge sharing, collaboration, and practice development. Initially driven by 60 university libraries (now expanded to 82), the project aims to present a comprehensive picture of library scholarly publishing through as intuitive and detailed data as possible. The project primarily collects information through questionnaires about institutional publishing history, partners, publications, and professional staff numbers, enabling libraries to understand each other and encouraging stakeholders to pay greater attention to this field.

Liu Ziheng [3] and Chu Jingli [4] have synthesized foreign academic institutions' descriptions of library publishing, exploring its meaning and capabilities in depth. They point out that compared with traditional publishing, the fundamental difference of library publishing lies not merely in the change of publishing

entity, but in its purpose—not profit-driven publishing, but providing academic services and integrating into the scholarly communication system. Therefore, library publishing must emphasize publication quality, with academic value verified through peer review or academic certification, while also stressing full scholarly lifecycle services and open access. Currently, library publishing is defined as a series of activities through which libraries support scholarly communication, demonstrating that this concept has broad extensions. As the LPC organization describes in its reports, library publishing has yet to have clear boundaries and remains in rapid flux.

In 2018, the International Federation of Library Associations and Institutions (IFLA) established the Library Publishing Special Interest Group (LibPub SIG), aiming to create an active global library publishing community. Inspired by the LPC, this alliance has begun documenting the publishing activities of its core member libraries. The library publishing field is receiving increasing attention worldwide. However, rapid technological development and changing international situations have created disconnects between theory and practice in various aspects of scholarly communication, posing challenges to libraries' position within the scholarly communication system. To play a more critical and important role in the new scholarly communication system, particularly in the open access environment, libraries must actively and proactively engage in the upstream aspects of the scholarly communication system (the publishing domain), break down barriers between upstream and downstream processes, integrate themselves into publishing activities, and become a significant force in the publishing field.

Existing research has primarily focused on practical studies of academic library publishing services based on the *Library Publishing Directory* [5][6][7], using statistical methods to analyze the progress [8][9], current development status [10][11], and values cultivated by library publishing [12], often examining activities or developments in the field from a single dimension. This paper conducts a detailed analysis of data from nine editions of the *Library Publishing Directory* (hereinafter referred to as "the Directory") recorded by the LPC to examine the overall development and historical evolution of library publishing, assess international development trends in the field, and understand libraries' core advantages to address the transformation and changes libraries are driving forward.

2.1 Organization and Cooperation

In both its initial vision and ultimate goals, the LPC inherits the consistent philosophy of the Educopia Institute, aiming to enhance the accessibility and sustainability of knowledge in all forms and encouraging practice development and broad cooperation. The coalition comprises over 80 libraries forming a powerful publishing network, helping each library quickly launch, implement, and refine its publishing programs through exchange of practical experience among member libraries. To date, the LPC has established strategic alliances with more than ten institutions and organizations, including the Digital Library Fed-

eration, Directory of Open Access Journals, and Society for Scholarly Publishing. These partnerships cover infrastructure architecture support, permanent preservation of digital objects, information cataloging and indexing, open resource access, project partner identification, and scholarly achievement dissemination, advancing the development of library publishing. The Library Publishing Coalition continuously scans the entire landscape of scholarly communication from a macro perspective, making the Directory the most comprehensive platform currently available in the United States and worldwide for revealing academic library publishing activities, encompassing publishing patterns, technologies, developments, organizational structures, and strategic partnerships. In 2021, the LPC' s cooperation with IFLA further elevated global attention to this field, and together they will commit to broadest information access, inspiring practice and professional activities, and supporting technology development and service expansion.

2.2 Content Publishing

The LPC promotes practice and expands field influence through continuous sharing of professional publishing knowledge and provision of publishing process guidance. In recent years, the LPC has actively organized and conducted library publishing forums, formed strategic partnerships with multiple academic institutions, continuously released working project documents, and prepared scholarships for best practice teams and outstanding contributors in the publishing field. Its publications include but are not limited to: (1) Official blogs sharing news and commentary about the coalition and library publishing forums, alerting users to projects of interest; (2) Library publishing-related documents, including the Library Publishing Competencies Checklist, research agendas, academic ethics frameworks, and online courses and teaching materials for librarians to strengthen scholarly publishing activities; and (3) The Library Publishing Directory and annual reports, providing detailed introductions to publishing activities each year, introducing the growing field of library publishing to external audiences, and supporting IFLA' s Publishing Special Interest Group' s global library publishing landscape project.

3.1 Number and Distribution of Libraries

Overall, the number of libraries (publishing coalition members) recorded in the Directory has increased from 115 in 2014 to 145 in 2022, as shown in Figure 1. Due to the pandemic, the total number decreased after 2020, but the number outside North America showed an increasing trend, demonstrating the vitality of the library publishing field and the gradually expanding influence of the Directory. After establishing strategic cooperation with IFLA, future editions of the Directory will no longer be limited to academic libraries but will actively incorporate data from public and other types of libraries to more comprehensively depict library publishing activities worldwide.

3.2 Changes in Statistical Catalog

From its inception, the LPC project established a Directory Subcommittee to support the design of each annual directory, aiming to describe the field' s full landscape as accurately and comprehensively as possible. Consequently, the questionnaire for each year' s report has been modified. Overall, the number of items has increased annually, with descriptions of key items becoming more detailed. For example, in the 2014 report, the "funding sources" entry provided nearly ten sources including library materials budgets, library operations budgets, and donation income. However, in the 2020 questionnaire, the "funding sources" entry was replaced with percentages for each funding source, giving the collected data statistical significance. Additionally, publication types have increased yearly. The 2014 survey asked about "five different disciplines, media formats, top five publications, and their publication types," while in 2016 it added "how many publications use hybrid models, open access or require payment, and the number of university press publications." By 2019, the project team had expanded publication type options to more than ten categories, including "faculty and student-led journals, databases, electronic theses, research reports, and conference papers."Furthermore, specific entries such as the number of publishing platforms, cooperation forms with external partners, and digital resource preservation methods have been continuously refined, providing reference and guidance for other libraries in various aspects.

Overall, several major entries in the Directory have continuously added new content, indicating that the library publishing field is constantly expanding and extending. First, cooperation forms and partners are increasing, showing that library publishing business models are gradually maturing. Second, the service checklist in library publishing is gradually lengthening, whether for core publishing services or additional services, making publishing business more integrated into the overall library service chain and becoming an inseparable part. Third, the types of library publications, publishing platforms, and formats are continuously increasing, reflecting the vitality and exploration of the library publishing field and demonstrating that libraries are actively joining scholarly communication and user services.

4.1 Library Publishing Platforms

Publishing platforms are carriers for recording academic activities and disseminating academic achievements and ideas. When libraries participate in publishing, they should understand the characteristics and advantages of various platforms to find appropriate ways to showcase resources without imposing additional data organization work on researchers. Libraries can choose from various types of publishing platforms, including open-source platforms, proprietary platforms, hosted platforms, and locally installed platforms. To intuitively analyze platform usage and its changes, we selected data from the 1st edition (2014) and 9th edition (2022) of the Directory and employed complex network analysis to examine platform usage and co-usage relationships, as shown in Figure

2. Larger nodes indicate more frequent adoption, and thicker edges between nodes indicate more frequent simultaneous usage of two platforms. The comparison between the two figures reveals that European and American libraries show convergence in platform selection, and multi-platform combination usage has become a trend.

4.1.1 Convergence in Platform Selection As shown in the figure, some large institutions or platforms, such as the comprehensive institutional repository Digital Commons, the Open Journal Systems (OJS) series, the large institutional repository DSpace system, and the major content management site WordPress, have established solid foundations in long-term resource preservation and management, content open access, scholarly publishing, and services through years of accumulation, continuously strengthening infrastructure and improving service quality. Libraries with publishing experience value the value-added services these platforms provide to optimize their publishing content, while libraries newly entering the publishing field also prioritize these platforms for their stable infrastructure. In the 2022 report, 47% of libraries used OJS, 32% used Digital Commons (bepress)—with 23 libraries using this platform exclusively—29% used DSpace, 25% used WordPress, and 23% used Omeka. These platforms have gradually become mainstream platforms for European and American university library publishing, expanding their advantages in the field. Libraries can benefit from the services provided by these platforms to broaden their publishing pathways, optimize publishing content, actively cooperate with major mainstream platforms, and maximize resource value.

In 2021, nearly two-thirds of library publishers chose to use combinations of multiple platforms and technologies. Jiang Honghua et al. [13] analyzed that this trend has been evident since 2017. Since each platform has its own advantages for different publication types and fields, using multi-platform collaboration for complementary advantages has become the choice of more libraries. However, almost no libraries simultaneously select only two mainstream platforms, as the powerful advantages and overlapping service content of mainstream platforms would cause resource and funding waste. Therefore, most libraries adopt approaches such as "one mainstream platform + multiple niche platforms" or "a few mainstream platforms + multiple niche platforms" to enhance services while controlling costs and saving effort.

4.2 Library Publishing Capabilities and Services

Library publishing operates in a rapidly changing environment. Domestic scholars have summarized library publishing capabilities as content support, dissemination, and preservation capabilities [14]. To help libraries in early development or role transition quickly adapt to and master the library publishing field, the Library Publishing Coalition' s Development Committee compiled the *Library Publishing Competencies Checklist* (hereinafter referred to as "the Checklist"), detailing a series of capabilities that library publishing should master, as shown

in Table 1. These capabilities are divided into three categories: publishing, curriculum development management, and educational consulting. The Checklist emphasizes that library publishing should understand and possess all capabilities throughout the publishing process, as most services are typically developed in-house and may omit important workflows. The Checklist provides both a macro perspective on library publishing and introduces the importance of each capability. Although no single position within a library can encompass all aspects, neither should any part of the process be completely delegated to other partners. Libraries should use the Checklist to identify their deficiencies and shortcomings based on current conditions to seek comprehensive development.

Table 1: Library Publishing Competencies Checklist

Publishing	Curriculum Development Management and Educational Consulting
Publishing platform setup, configuration, and maintenance	Development of sustainable and scalable programs requiring needs assessment, planning, publication formats, and procurement workflows
Content description and discoverability	Stakeholder development and relationship management
Publishing production workflow	Familiarity with library and institutional services
Tracking metrics and impact factors	Open access and author rights
Digital long-term preservation methods	Ethical standards, legal issues, and marketing
Program development	Project sustainability and effective evaluation
Related identifiers (DOI, ORCID, ISBN)	Conducting thematic consultations on provided services

Publishing	Curriculum Development Management and Educational Consulting
Copyediting, peer review, proofreading, layout editing, print-on-demand	Collaboration with students
Measuring publication impact and interpreting impact differences	Copyright, author and user rights, open access licensing, preservation, content and format publication scope, diversity-equity-inclusion, usability, content withdrawal
Services and preservation practices, internal preservation services, institutional repositories, local preservation solutions	Encouraging authors to submit materials to institutional repositories, resource storage and metadata services, ORCID integration, DOI registration, copyright services
Open source vs. proprietary, hosted vs. locally installed, departmental vs. library budgets, staff availability	Accepting principles of open access and author rights, such as publishing works under Creative Commons licenses so authors retain copyright while providing readers with extensive reuse rights
	Diversity, equity, inclusion, intellectual freedom, copyright and licensing, content visibility and discoverability
	Stable resource staffing, establishing regular stakeholder evaluation of publishing programs
	Copyright education, peer review processes, accessibility, publishing business model options

Publishing	Curriculum Development Management and Educational Consulting
	Familiarity with opportunities and challenges of collaborating with students, motivating student participation in publishing

Corresponding the service types listed in the Directory with the Checklist, we also divide them into three categories: publishing workflow, project management, and educational consulting. We statistically analyzed the number of libraries providing each service in annual reports, with results shown in Figure 3.

Figure 3: Annual Library Service Categories

As the Directory' s coverage of universities gradually increases, library publishing services also show an upward trend. Affected by the pandemic, the total data volume for 2021-2022 decreased. Overall, services related to publishing workflow have shown the greatest growth rate. Project management services are susceptible to significant reductions due to unexpected events, but simple quantity changes are insufficient to summarize specific changes in the library publishing services field. In practice, the focus should be on the correlation and continuity between services, emphasizing integration of business workflows and personalized identification of service targets. In the early questionnaire design, libraries could submit other services they provided, but recent surveys have focused more narrowly on the publishing field, further clarifying publishing activities' role and position in scholarly communication. For example, in 2014, Columbia University additionally recorded services beyond questionnaire options such as PMC (PubMed Central) deposit services, Open Access Week events, and open access fund management. In its recent data, it included using tools like JANE to help publishers find appropriate journals or platforms, providing open access institutional repositories and scholarships to incentivize scholars to publish research results, evaluating digital publications, and providing information consulting services on copyright for authors [15], enabling readers to easily obtain information about the entire publishing process, maximizing elimination of information gaps, and increasing scholars' publishing willingness and achievement transformation.

4.3 Peer Review and Open Access of Publications

Peer review refers to obtaining advice on research results from experts in the field who are not journal editorial staff [16]. The purpose of peer review is to examine the academic ethics and quality of research results, widely existing throughout the scholarly communication process rather than merely endorsing publication correctness. Meanwhile, open access has become a major trend in scholarly communication, with its importance further highlighted during the pandemic. In this regard, libraries have tremendous potential and risk mitigation capabilities. In recent years, libraries have adopted a very clear supportive attitude

toward open access. To expand understanding of dynamic open access publishing practices, IFLA' s 2020 Open Access Publishing Action Plan established two strategic directions: strengthening librarians' global voice and enhancing professional practice [17]. At the 2021 OASPA Conference on Open Access Scholarly Publishing [18], scholars from various countries discussed through roundtable sessions the construction of open collaborative infrastructure, open access policies and missions, and libraries' transformation paths as publishers, mentioning the need to focus on infrastructure sustainability in the open science environment while accelerating peer review and promoting open access to scholarly achievements through preprints or establishing priority review repositories for thematic papers.

Almost all libraries in the Directory recognize the importance of open access, with the term "open access" gaining increasing weight in future vision descriptions (the "future" item in the Directory). Libraries, scholars, and academic journals have reached unprecedented levels of attention to social media academic resources, with open scholarly resources becoming an inseparable and important component of library content resources, author scholarly communication, and journal citation sources [19]. However, open access does not mean directly making all research results public. Instead, it represents a change in scholarly communication models and business models, requiring all researchers and stakeholders throughout the entire process to shift from conceptual change to effective practice. Achieving barrier-free access and reusability of scholarly achievements imposes stricter requirements on scholars' academic ethics and the academic quality of achievements, with peer review being one of the most effective means of quality control. The Directory requires libraries to list the proportion of their publications that conduct peer review, as shown in Figure 4. Libraries conducting peer review for all publications showed an upward trend from 2014-2019, with a slight decline after 2019 due to the pandemic. The number of libraries conducting peer review for more than 50% of publications has increased annually, while the overall mean of peer review has also risen steadily with fluctuations.

Figure 4: Peer Review Practices

Theoretical and practical discussions on peer review have always been topics of academic concern. Domestic research already exists on peer review quality control [20] and practical applications [21], with peer review holding increasingly irreplaceable academic status and significance especially in the open science environment. Since its proposal, the open access movement has received widespread attention, aiming to eliminate barriers to accessing scholarly achievements and maximize their utilization, using new technologies to overcome barriers at various stages of achievement transformation and resolve contradictions between academic development needs and resource monopolies. To this end, global practices have unfolded through various methods such as building institutional repositories and founding open access journals, but problems such as data silos, publication embargoes, article processing charges, and predatory

journals still exist and hinder further development of open access [22], issues that library publishing and the entire publishing field must face and properly resolve. The fundamental effort should be to advance the public interest of the academic community, enabling a virtuous cycle between scientific progress and technological development.

4.4 Library Cooperation Objects and Forms

The primary purpose of the LPC project is to conduct practice to achieve broad cooperation and seek maximization of common interests. Libraries seeking to better carry out publishing practice can pursue cooperation in two forms: interlibrary and intramural. Interlibrary cooperation refers to agreements between several libraries or other academic institutions based on geographical proximity or shared academic expectations to form library consortia. Intramural cooperation refers to collaboration between libraries and other campus departments or faculty to improve their own construction.

In 2022, the LPC cooperated with 82 libraries or institutions, sharing digital technology, infrastructure, and collections with coalition members. The coalition also provides various resources and services to member libraries, supporting researchers' broad and long-term access to electronic resources. For example, the University of Houston Libraries, Sam Houston State University, and the University of Texas at Austin joined the Texas Digital Library Consortium, which has over twenty member institutions and regularly conducts academic forums and network meetings.

4.4.2 Intramural Cooperation Intramural cooperation partners include campus departments or programs, faculty, undergraduate and graduate students. In the 2022 report, over 86% of libraries indicated they were cooperating with other organizational departments, a 6% increase from 2021. Meanwhile, cooperating with current students is also a major advantage of library publishing itself. Publishing activities both serve education and constitute an important educational form that can improve students' understanding of publishing workflows and motivate them to produce high-quality scholarly achievements. Additionally, the 2021 report added, for the first time, a survey on library cooperation with university presses. In both 2021 and 2022 surveys, approximately 20% of libraries adopted library-press cooperation, but libraries' willingness for open cooperation grew from 12.6% in 2021 to 19% in 2022, indicating that broad cooperation will become a future development trend. However, information asymmetry, service asymmetry, and market irregularities between libraries, library vendors, and publishers constrain library literature resource construction [23]. Through library-press cooperation, both parties can leverage their respective advantages, reduce information gaps, save funding and effort, and jointly complete publishing workflow tasks and services.

5.1 All-Elements and All-Dimensional Open Academic Publishing

Openness is one of the essential attributes of science. Open science establishes a new paradigm that promotes transparency and reproducibility by increasing the openness of scientific content, tools, and processes, and integrates sharing and collaboration into scientific enterprise practices [24]. In 2021, UNESCO' s *Recommendation on Open Science* stated that open science should support the needs of the entire scientific community, different research communities and scholars, as well as the broader public and knowledge holders outside traditional scientific communities [25]. The *China Science and Technology Journals Development Blue Book (2021)* indicates that China' s open access publishing development is synchronized with the world, having made significant progress particularly in open access to papers and journal transformation, becoming a future development trend [26].

5.1.1 All-Elements Openness Under further development of open trends, researchers can submit scholarly achievements to libraries in multiple data formats (such as text, datasets, XML files, etc.). After peer review, libraries decide whether to publish or transfer to other publishing institutions, or researchers can choose to have libraries or themselves release preprints for social review. In this process, what is opened includes not only research results and research data, but also peer review and reader comments. When achievements are transferred to the next entity for operation, all elements from previous processes are also transferred, and all documents and their metadata can be transmitted across systems. Libraries can seamlessly transfer their published journals or preprints downstream to other publishing institutions, achieving all-elements openness of scholarly communication achievements and related reviews.

5.1.2 All-Dimensional Openness In an open scholarly communication environment, achievement transformation will further accelerate, leading to enhanced status of digital publishing, with its advantages and disadvantages both amplified. Libraries will face unprecedented opportunities and challenges. Libraries should strengthen their capacity building, construct an all-dimensional open resource system covering multi-channel and multi-type open resources based on open resources, and use information technology as the engine. They should employ data storage technology, search engine technology, semantic technology, information collection and fusion technology, personalized service systems, visualization technology, knowledge recommendation technology, and multimedia technology to carry out all-dimensionally open resource services [27]. However, costs cannot be ignored—digital publishing is not cost-free. We cannot simply solve problems by shifting user access costs to author publication costs, nor can we transfer trivial and complicated publishing work pressure to researchers to save costs. Moreover, knowledge verification and guarding against the threat of pseudoscience are particularly important. It is inappropriate to only praise subscription models while mentioning their defects, or to over-attribute defects of certain open access journals to the entire open publish-

ing model. Libraries should further seek technological and practical innovations in the transition toward all-dimensional openness.

5.2 Forming a Library-Centered Scholarly Communication System

In UNESCO' s *2022-2025 Programme*, the key role of libraries in education, culture, information access, and other fields is further emphasized [28]. The values advocated by libraries—justice, cooperation, equality, service orientation, and respect for knowledge—align with contemporary mainstream cultural values and have important impacts on the increasingly complex scholarly communication environment and rapidly changing publishing field. As shown in Figure 5, a library-centered scholarly communication system is taking shape.

Libraries are important and reliable information sources for researchers because they inherently possess unique academic environments and resource advantages. While providing ubiquitous services to researchers, libraries can timely adjust and update their resource allocation and strategic planning through user feedback and track research frontiers through intelligence studies. Second, by uniting with other stakeholders such as publishers and database providers, libraries can obtain or exchange resources through agreements aligned with open science concepts and provide researchers with more comprehensive and personalized services through resource integration and data processing. Third, libraries can establish strategic cooperation with numerous social academic groups and associations to maximize the utility of their resources and accelerate research achievement transformation. Finally, throughout the entire scholarly communication system, libraries constantly emphasize collective interests and concern for equitable resource access. The more advanced the technology, the more libraries' participation and services are needed to ensure that ultimate scholarly communication effects do not contradict initial expectations.

In a library-centered scholarly communication system, libraries' publishing capabilities and service capabilities will become crucial components. Therefore, promoting libraries to fulfill new roles and responsibilities through broad resource access to participate in global academic dialogue is essential. This paper primarily analyzes nine editions of the *Library Publishing Directory* published by the U.S. Library Publishing Coalition to examine development trends in library publishing. However, library publishing belongs to the entire scholarly communication field. Under the dual impact of emerging technologies and supply-demand contradictions, scholarly communication itself faces enormous uncertainty, and library publishing is among its most rapidly changing components. Moreover, the Directory itself continues to develop and improve, making any examination of trends inherently limited and lagging. Nevertheless, a partial view can reveal the whole. This paper first analyzes the overall changes in the Library Publishing Coalition and the nine editions of the Directory to identify the general direction of library publishing development. It then conducts quantitative analysis of publishing platforms, publishing capabilities, and publication peer review practices recorded in the Directory. Finally, it synthesizes

current frontier discussions on scholarly communication methods in the global open science environment to anticipate development trends in library publishing, analyze advantages and disadvantages, emphasize why libraries occupy a central position in future scholarly communication systems, and recommend that major libraries incorporate publishing into strategic plans to grasp future development autonomy.

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Note: Figure translations are in progress. See original paper for figures.