Subscribe to Open (S2O) Transition Progress and Its Implications for the Transformation of University Libraries in China

Authors: ZHANG Yuxiang, Cui Lirui, Xin Chengguo, Zhang Yuxiang

Date: 2025-08-19T00:00:00+00:00

Abstract

Subscribe-to-Open (S2O) is regarded as an alternative to the APC model. This model is witnessing rapid expansion in 2025, attracting growing attention from various stakeholders including libraries and publishers. Currently, no practical cases of S2O implementation exist domestically, and related research has primarily focused on introducing foreign experiences and case analyses. This paper systematically reviews the development trajectory of the S2O model, utilizing the online statistical table from the S2O Community of Practice and the S2O online journal list from the Open Access Directory as data sources to compile statistics on their key characteristics, and conducts visual analysis. Finally, it qualitatively analyzes the impact and implications of this transition model on the transformation of university libraries.

Full Text

Progress of Subscribe-to-Open (S2O) and Its Implications for the Transformation of Chinese University Libraries

Yuxiang Zhang[1], Lirui Cui[1], Chengguo Xin[2]
[1]Shandong University of Traditional Chinese Medicine, Jinan, 250355
[2]Qilu University of Technology (Shandong Academy of Sciences), Jinan, 250014

Abstract: Subscribe-to-Open (S2O) is poised for comprehensive growth in 2025, drawing increasing attention from diverse stakeholders including libraries and publishers. Currently, China lacks practical implementations of the S2O model, with existing research focused primarily on introducing and analyzing foreign experiences. This paper systematically traces the developmental trajectory of the S2O model, utilizing the online statistical table from the S2O Community of Practice and the S2O online journal list from the Open Access Directory as data sources to analyze key characteristics and conduct visual analysis. Finally,

it qualitatively examines the impact and implications of this transformation model for university library transformation.

Keywords: Open Access; Subscribe-to-Open; Visual analysis; Library Transformation
Chinese Library Classification: G250.7, G237.5

Open Access (OA) has experienced rapid development in recent years, driven primarily by the OA2020 Initiative and Plan S, which have injected new momentum into the OA movement and provided a fresh engine for global open science development. The conversion practices of Plan S and the Max Planck Digital Library have attracted worldwide attention from the research community. On one hand, the Coalition S has grown rapidly, with its advocated Transformative Agreements (TAs) achieving remarkable success—the Coalition' s OA level far exceeds the global average, highlighting its leading role. On the other hand, academic publishers have expressed support for TAs, jointly advancing the OA conversion process. According to registration data from the ESAC website, as of June 2025, 1,327 TAs have been signed globally [1], with a clear upward trend since 2021, maintaining an annual signing volume of over 200 agreements. TAs have thus played a crucial role in the recent OA movement.

Despite these achievements, Plan S faces direct challenges. The *Plan S 2024 Annual Review Report* states that current OA growth relies on hybrid journals and TAs, a model that perpetuates the old "article-based payment" system and may exacerbate global research inequalities [2]. In April 2025, the Open Access Scholarly Publishing Association (OASPA) announced on its website the launch of a project called "Beyond 50%" [3], as relevant data shows that after the proportion of OA articles broke through the 50% threshold, growth has slowed significantly, hovering around 50% in recent years. One of the project' s primary objectives is to explore diversified open access pathways, including emerging models such as Diamond OA, preprint community review, collaborative open monograph models, "Subscribe to Open" (S2O), and open infrastructure. Among these, the S2O model is set for comprehensive growth in 2025. Although its scale cannot yet compare with TAs, it is attracting increasing attention from stakeholders such as libraries and publishers. This paper will examine the current state of S2O development, conduct quantitative statistics on existing S2O journals, analyze key characteristics of S2O practice, and provide references for the transformation practices of Chinese university libraries.

1. Origin and Research Status of the S2O Model

1.1 Origin and Development of the S2O Model

Annual Reviews has been exploring and seeking stable and universally applicable OA transition pathways. Between 2017 and 2019, its pilot journals repeatedly flipped between subscription and OA models. By tracking the impact of

licensing changes, it discovered that the OA model could significantly enhance journal dissemination and usage efficiency, and this positive change strengthened Annual Reviews' commitment to OA. Since 2020, nine non-profit or small-scale publishers including Annual Reviews, the European Mathematical Society Press, and EDP Sciences have successively launched S2O pilots and established the S2O Community of Practice (S2O CoP) to continuously track S2O progress.

In April 2021, Coalition S began recognizing the S2O model and encouraged publishers to "seriously consider S2O as a model for achieving a full transition to open publishing and compliance with Plan S." Harvard University' s Open Access Tracking Project (OATP) also monitors the latest developments in the S2O model in real time. In March 2025, DOAJ launched a tagging feature, with the first tag being S2O to identify journals adopting this model. Johan Rooryck, a French linguistics researcher at Leiden University, considers S2O the second-best solution after Diamond OA. A survey by the Association of Learned and Professional Society Publishers (ALPSP) related to Plan S identified "S2O as the most promising transformative agreement for publishers because it provides a predictable revenue stream."

From 2020 to the present, multiple publishers have experimented with the S2O model. In the first round of the European Mathematical Society Press' s S2O program, 10 journals achieved open publishing in 2021, while EDP Sciences successfully converted 6 mathematics journals the same year. During 2023-2024, several publishers began piloting S2O: Karger with 3 journals, the American Society for Microbiology with 6, and Taylor & Francis Group with 3. By late 2024 to 2025, these pilot initiatives evolved into formal implementations, with multiple publishers announcing formal adoption of S2O and offering positive outlooks for the model' s future. In February 2025, Project MUSE announced that its S2O program had achieved sustainable development goals for 2025, with over 100 journal volumes from 27 publishers available open access on the MUSE platform for 2025. Unlike previous S2O initiatives launched by publishers, MUSE S2O was initiated by the MUSE platform itself. If the goals are achieved, S2O journals will account for approximately 1/8 of the platform' s offerings. Since 2025, the S2O model has entered a period of rapid development.

1.2 Current State of Theoretical Research

As an emerging OA model, theoretical research on S2O is still in its initial stages globally. However, the S2O model has gained increasing recognition from publishers, libraries, and research institutions, with related theoretical research becoming more robust. Langham-Putrow [4] provides a detailed description of the S2O model, arguing that it offers publishers a roadmap for transitioning to full OA. Crow et al. [5] analyze the pilot implementation of 5 journals by Annual Reviews, focusing on the internal logic behind the S2O model' s success. Sara B et al. [6] argue that for non-profit and low-volume publishers, choosing APC or TAs often involves significant financial risks, whereas the S2O model, based on existing subscriptions, enables sustainable openness. Ellysa Cahoy,

editor of *portal: Libraries and the Academy*, reviews journal participation in MUSE' s Subscribe-to-Open program [7], which achieved S2O publishing in 2025. André Gaul [8] analyzes EMS Press' s open publishing practices in the first round of S2O journals in 2023, identifying sustainability and equity as key factors for S2O success. Hoogendoorn [9] analyzes the Biochemical Society' s adoption of "Read and Publish" agreements from 2019 to 2022, finding highest conversion efficiency in regions with adequate funding, high research output, and strong institutional willingness. In less favorable regions, the plan was to supplement with S2O in 2025; indeed, the Biochemical Society achieved 5 S2O journals in 2025. Borchardt et al. [10] note that approximately half of library and information science (LIS) journals use APCs for openness, and targeted survey results show most journals have not discussed transitioning to a no-publishing-fee OA model. The S2O model could be a viable option while ensuring revenue.

Chinese literature shows relatively fewer scholars focusing on S2O. Chen Lijun [11] systematically analyzes domestic open access transformation based on two-sided market theory, arguing that forcibly canceling traditional subscriptions through policy mandates is arbitrary. Cui Liyuan [12] analyzes and compares 75 S2O journals from 9 early publishers, concluding that S2O is an emerging model with uncertainties, possessing both advantages and potential issues that require continuous improvement in practice. Yu Linxi [13] and Liu Yang [14] use EDP Sciences as a case study to summarize practical experiences with S2O transformation and its implications for Chinese journal OA transformation.

In summary, foreign research includes explanations of the S2O model, summaries of practical cases, and individual journal studies, presenting a relatively rich landscape with increasing numbers of papers annually, indicating a rising trend and growing scholarly attention. Domestic theoretical research remains underdeveloped, lagging behind foreign research in both quantity and depth, primarily introducing foreign practices and experiences. Overall, Chinese research on the S2O model is in its initial stages. However, it is worth noting that Chinese scholars adopt an extremely cautious attitude toward OA transformation. Shen Yaqi et al. [15] explicitly propose that Chinese university libraries should cautiously respond to OA transformation and make adequate preparations before implementation.

Domestic University Library S2O Agreement Signing Status

S2O Agreement Content	Validity Period	Open Access Deadline	Conditions	Institution Domain Email
De Gruyter (No APC hybrid journals, sponsored OA journals, and S2O journals)	Unlimited journal access	December-31		Institution domain email

S2O Agreement Content	Validity Period	Open Access Deadline	Conditions	Institution Domain Email
De Gruyter (No APC hybrid journals, sponsored OA journals, and S2O journals)	Unlimited access to 260 humanities and social science journals	December 31	-	ROR identifier
American Physiological Society	No APC	December 31	-	Institution domain email
American Society for Microbiology	No APC, plus 25% discount on page charges and supplemental material fees, unlimited quantity	December 31	ASM Press 6 hybrid subscription journals	Institution domain email

Note: Information sourced from official university library WeChat public accounts or website news.

1.3 Practice in Chinese University Libraries

Based on web searches and visits to university library official websites and public accounts, only four Chinese university libraries have adopted the S2O conversion model, with detailed statistics shown in Table 1. All four institutions subscribe to products from corresponding publishers, with essentially consistent agreement terms. Regarding journal types, they primarily involve publishers' S2O journals, hybrid journals, and sponsored journals. In terms of discounts, Xiamen University Library also secured discounts on page charges and supplemental material fees. All agreements have a one-year validity period and require communication author and institutional identification processes, consistent with procedures for other OA models.

2. Quantitative Statistical Analysis of S2O Practice

The S2O CoP community continuously tracks S2O progress, compiling information on publishers implementing S2O since 2020 and providing an online shared spreadsheet, detailed in Table 2 [16]. The Open Access Directory (OAD) is

an online resource maintained by scholars and researchers to help researchers understand the latest developments and resources in OA. OAD' s metadata originates from the OATP project, and Ross Mounce (Arcadia Fund OA Program Director), who maintains OAD' s S2O journal list, has joined the S2O CoP community. Therefore, the data analyzed in this paper comes from the S2O CoP and OAD' s S2O journal list [17].

2.1 Quantity Analysis Based on S2O Journal Statistics

Table 2 shows that in terms of publishers: in 2025, 29 publishers adopted the S2O model, representing more than sixfold growth from 4 publishers in 2020, with a year-by-year increasing trend. Project MUSE has the most S2O journals; however, this is a non-profit journal aggregation platform integrating 27 publishers. De Gruyter shows strong performance—in 2024, it became the first major academic publisher to announce "Subscribe-to-Open" as the core transformation model of its OA strategy, with plans to have approximately 270 S2O journals by 2028. These two publishers exceed the S2O originator Annual Reviews in quantity. In terms of journal numbers: the total increased from 24 journals in 2020 to 378 currently, showing exponential growth with two peaks in 2023 and 2025. However, the annual growth rate shows strong fluctuations, likely related to publisher pilots or immediate adjustments—for example, IWA Publishing adjusted its S2O model in September 2024. Additionally, rapid S2O journal growth has been supported by KU and JISC. Overall, the S2O model is becoming an important option in academic publishing.

2.2.1 Discipline Distribution

OAD' s S2O journal list primarily annotates three discipline types, with annual distributions shown in Figure 1 [Figure 1: see original paper]. Overall, SSH (Social Sciences and Humanities) has consistently been the main application field for the S2O model, with the most obvious growth trend. LS (Life Sciences) showed significant growth in 2023 and 2025, while PSM (Physical Sciences and Mathematics) declined noticeably in 2025. 2025 represents the most significant year for S2O journal growth, particularly in SSH, indicating that the S2O model has found its broadest application in social sciences and humanities, with an accelerating growth trend in recent years.

From the past three years' data, all disciplines saw substantial growth in 2023: LS (24 journals), PSM (19 journals), and SSH (29 journals). In 2024, SSH continued growing to 20 journals, PSM remained at 4, while LS had no new additions.

2.2.2 Relationship Between Affiliation/Society and S2O Adoption Time

After filtering institutions/societies with $ $3 journals and grouping by time, a heatmap was created to show the relationship, with results in Figure 2 [Figure 2:

see original paper]. Journals without clear affiliations (marked "none") dominate in quantity. Other major institutions include the American Physiological Society (APS), American Society for Microbiology, Biochemical Society, and European Mathematical Society.

Journals without clear affiliations had 16 S2O journals in 2020, surging to 28 in 2021, peaking at 66 in 2023, and still adding 41 in 2025. Professional societies' participation timing: APS and American Society for Microbiology journals all adopted S2O in 2025, while European Mathematical Society journals concentrated in 2020 (9 journals), with significantly fewer thereafter.

Journals without clear affiliations are the primary S2O adopters, continuing for multiple years. Professional society participation came relatively late, mainly concentrated in 2025. Different institutions/societies show distinct participation timelines, possibly related to disciplinary characteristics or policy changes. These results indicate that S2O adoption presents different temporal patterns across institution types, with independent journals (no clear affiliation) as early adopters and professional society journals joining relatively later.

2.2.3 Relationship Between Growth Rate and Country

After calculating annual growth rates by country and filtering countries with at least 3 years of data, a heatmap of national growth rates was created, shown in Figure 3 [Figure 3: see original paper]. Analysis reveals a significant correlation between S2O journal growth rates and country.

The United States experienced explosive growth in 2023 (4,900%) and maintained an ultra-high growth rate of 2,240% in 2025. Germany showed stable growth (averaging 33%), reaching 236% in 2025. France grew 400% in 2021, adjusted, then achieved 1,800% growth again in 2025. The UK started with high-speed growth in 2021, rebounding 500% in 2024. Notable fluctuations include the Netherlands' complete withdrawal after high growth in 2021, with most countries rebounding strongly in 2025 after adjustments in 2024.

Evidently, European and American countries dominated early development (2020-2022). The US formed an absolute advantage after 2023 (accounting for 63% of the total), while non-English-speaking countries (e.g., Germany, France) maintained stable participation, and Asian countries (China) began to emerge in 2025.

The implications are clear: national science and technology policies and OA strategies significantly impact S2O development. English-speaking countries have first-mover advantages, but non-English-speaking countries continue to participate. 2023 may represent a critical turning point for global S2O policy. In other words, S2O model development is closely related to national research policy environments, language advantages, and academic publishing traditions, showing a clear "core-periphery"distribution, with the US becoming the absolute dominant country.

Country Dominance Differences: - The US and Germany are the main drivers of the S2O model, occupying 117 and [number] journals respectively in 2025 - France and the UK show fluctuating growth characteristics - China and Switzerland, though late starters, both achieved breakthroughs in 2025

Typical Growth Patterns: [Content continues with analysis of growth patterns by country]

3. Impact of Transformation Models on University Libraries

3.1 Higher Requirements from Academic Ecology Changes

Authors, libraries, research institutions, funding organizations, publishers, and the public must all face challenges posed by Plan S and 磨合 new social roles and divisions of labor within an open framework, forming a new academic communication model and support system. For university libraries, transitioning to an open science environment through transformative agreements requires fundamental changes. First is role transformation: libraries are no longer single literature providers but must also participate in open publishing, publicize open access policies, formulate implementation plans, and engage in more frequent communication with publishers, researchers, and administrators. University libraries should promptly adjust business and service function layouts to actively meet these challenges [18]. Second is choice transformation: diamond OA, green OA, transformative agreements, and Community Action Publishing (CAP) all aim to promote open science development. Whether choosing "Publish and Read" or "Read and Publish" agreements, these are transitional path selections during the transformation period, and the S2O model provides libraries or consortia with another option. When facing path choices, libraries require more professional knowledge and skills. Third is service content transformation: transformative agreements provide new services. Libraries are no longer merely purchasing content but can also provide publishing services, assisting institutions, universities, and researchers in adapting to the open science environment, leveraging libraries' resource collection and management capabilities to become information resource centers and enhance their status and value. University libraries must align with technology development trends, actively foster an open science atmosphere, and engage in open science practice [19]. At present, Chinese universities need libraries to explore whether they possess OA transformation conditions, whether transformation models are feasible, and whether the timing is mature [20]. Therefore, to respond to academic ecology changes, libraries must possess higher-level capabilities.

3.2 Comprehensive Transformation Pressure

Plan S' s 2024 Annual Review Report states it is shifting from "policy-driven" to "ecosystem reconstruction" to promote academic communication toward "a public good for all." In contrast, Chinese university libraries have been some-

what hesitant in participating in the new academic ecosystem, with significant shortcomings in staffing, funding, and open infrastructure. Regarding staffing: apart from the Chinese Academy of Sciences establishing OA specialist positions, Fudan University' s transformative agreements are managed by multiple reference librarians on a part-time basis. While Shanghai Jiao Tong University Library and other universities have conducted open librarian skills training, overall frequency and participation remain low [21], making the lack of professional librarians the first pressure hindering open transformation. Regarding funding: according to Chen Qing' s estimation [22], China' s "Double First-Class" universities pay as much as 780 million RMB annually for OA article processing charges. However, according to the "Literature Resource Purchase Fee Statistics" published by university library working committees, library funding varies significantly—from over 50 million RMB annually for some to less than 10,000 RMB for others. This significant funding imbalance, combined with double-dipping payments for both subscriptions and transformation, raises the question of how to break through the "paywall" as the second pressure. Due to funding and expertise shortages, achievements in open infrastructure construction remain limited. Tsinghua University has built a public welfare academic resource service platform and an "International Open Access Journal Recommendation List," while the Chinese Academy of Sciences has launched online tools such as APCheck. Most other university libraries remain at the information dissemination level, introducing basic knowledge and reporting foreign practices, lacking open platforms as the third pressure. With multiple open access pathways available, libraries must respond cautiously to OA, maintaining existing subscription models when transformation proves difficult [15]. If choosing pilots, libraries must select appropriate transformation models based on actual conditions through comprehensive evaluation and testing, making the choice of suitable transformation models the fourth pressure.

3.3 Changes in Resource Construction Models

Open access transformation affects library resource construction models, involving significant fund reallocation [23]. Under traditional subscription models, libraries' role was to purchase digital resources and provide them to specific users. This streamlined supply model is severely unsuited to the current open research environment, neither meeting diverse needs nor effectively monitoring resource construction benefits. Regarding resource types, libraries must plan for preprints, OA repositories, OA books, and open data in addition to traditional journals. Regarding service content, this includes explaining and publicizing OA policies, helping researchers choose copyright forms, identifying predatory journals, APC review and management, and even participating in transformative publishing and price negotiations. Regarding evaluation and monitoring, libraries must assess transformation conditions pre-transition, select transformation strategies based on policy environments, funding, and user needs, and dynamically track and monitor transformation effects post-transition for timely adjustments. Against this transformation backdrop, the quality of digital re-

source construction in university libraries is becoming a "core" issue, requiring libraries to fulfill professional responsibilities, expand new horizons in literature resource construction, actively participate in OA database price negotiations, promote policies aligned with their interests, and enhance discourse power [24].

3.4 Greater Demand for Library Consortia

The development from subscription to OA transformation, combined with COVID-19 impacts and limited physical services, has objectively caused significant library funding reductions. Against the OA backdrop, library consortia should actively expand services in open publishing and transformative agreements [25]. In foreign practices, consortia such as Germany' s Projekt DEAL and the California Digital Library have played key roles in signing transformative agreements with publishers. According to ESAC records, the UK' s Joint Information Systems Committee (JISC) has signed 118 transformative agreements with various publishers since 2019, and in March 2025, JISC officially launched negotiations with five major publishers on behalf of the UK higher education sector to ensure a unified stance.

The Chinese Academy of Sciences is committed to promoting domestic open science development. Since its Documentation and Information Center signed China' s first transformative agreement, the conversion service has extended to relevant universities including the University of Science and Technology of China, ShanghaiTech University, and Shenzhen Institute of Advanced Technology by March 2025, implementing unified APC reduction policies. Shanghai Jiao Tong University leads the Digital Resource Acquisition Alliance of Chinese Academic Libraries (DRAA), playing a crucial role in domestic university transformation practices. However, neither NSTL nor DRAA are national-level library consortia, and the Chinese Academy of Sciences system remains relatively small-scale. Despite considerable efforts, they still lack discourse power and bargaining capacity in negotiations with foreign publishing institutions. Moreover, DRAA' s joint negotiation processes and organizational methods for transformative agreements remain immature [26], requiring repositioning of library consortia roles and functions. National-level consortia have clear advantages in negotiating with publishers, while individual efforts face greater difficulties [27]. Consequently, China' s OA environment urgently needs a well-developed library consortium.

4. Implications for Chinese University Libraries

4.1 Conduct Adequate Assessment and Preparation Before Transformation

In the OA development process, transformative agreements are transitional, aiming to find a path from paying-to-read to paying-to-publish, ultimately achieving an open science scenario. When subscription-based payments cease, transformative agreements will no longer exist. Transformative agreements have specific

phases and dynamic characteristics; therefore, selecting suitable transformation paths is key. For university libraries, adequate pre-transformation preparation is essential. First, conduct in-depth research and investigation. Libraries with capacity should also conduct theoretical research, mastering transformation theory and cutting-edge developments, analyzing typical domestic and foreign cases, while internally conducting open science publicity and training, establishing specialized business departments, cultivating professional open access librarians, and fostering an open research ecosystem within their institutions. Second, comprehensively grasp the library' s resource conditions. At the data level, collect accurate data on collections and OA publications, including researchers' willingness to choose OA and publishing experience. At the funding level, conduct transformation cost calculations based on demand data, compare differences between subscription and transformation fees, and determine whether special transformation funds are available beyond existing subscription budgets. If significant double payments or excessively high transformation costs exist, maintain the original subscription model. Third, utilize analytical tools effectively. Make full use of current digital infrastructure for transformation practice, such as the ESAC Transformative Agreement Reference Guide, which provides detailed workflows, and the transformation toolkits released by Coalition S and ALPSP. Besides guides and toolkits, open data statistical analysis tools such as Dimensions, Delta Think, APCheck, and IOPP Journal Finder can achieve twice the result with half the effort.

4.2 Conduct Transformation Practice Based on Disciplinary Needs

Against the backdrop of China' s "Double First-Class" construction, disciplines' supporting role for universities has become more prominent, while uneven disciplinary development means some universities must choose the path of "characteristic-based development." For universities with less abundant funding, comprehensively supporting open science is unrealistic. Zhu Jiang proposed a three-tier transformation path at national, consortium, and institutional levels, with the consortium level responsible for meeting discipline-level OA transformation needs [26]. Foreign research shows that APCs vary across disciplines—for example, biomedicine APCs are much higher than humanities and social sciences, meaning different disciplines cost libraries differently for transformation. Discipline and resource volume are factors affecting transformation suitability; specific disciplines with small publishing volumes are more easily sustainable [28]. For small and medium-sized universities or those with prominent disciplinary characteristics, selective transformation practice is feasible. For example, the Sponsoring Consortium for Open Access Publishing in Particle Physics (SCOAP^3) focuses on converting high energy physics (HEP) academic achievements, successfully implementing three phases, with annual OA-funded HEP papers accounting for over 90% of global HEP papers. In 2021, 102 HEP books funded by SCOAP^3 were officially published and highly recognized by CERN. Chinese participants in SCOAP^3 include the University of Science and Technology of China, University of Chinese Academy of Sciences,

Tsinghua University, and DRAA. Previous analysis shows S2O had higher early participation in social sciences and humanities. EDP Sciences piloted S2O with 6 mathematics journals, achieving sustainable openness. Chinese universities participating in S2O practice include Guangzhou University of Foreign Studies, Southern University of Science and Technology, and Xiamen University. Based on this analysis, under incomplete basic conditions, small and medium-sized university libraries can choose to join library consortia or disciplinary alliances to participate in specific transformation practices.

4.3 Build an Author-Centered Working Community

In March 2025, the 17th Berlin Open Access Conference (B17) continued focusing on sustainable open science development and promoting a shift to "collective responsibility," listing "return of academic autonomy" as the top action goal for the next phase. It advocates authors retaining copyright and adopting the simplest Creative Commons Attribution (CC BY) license to ensure barrier-free academic information dissemination. Adam Der from the Max Planck Digital Library (MPDL), summarizing transformation experience, believes that "letting funding follow authors" enables seamless OA integration into existing systems because libraries select academic journals that authors trust and know best, requiring no changes from authors themselves, thereby reducing conflicts and ensuring participation [29]. Surveys show domestic researchers have concerns across multiple dimensions including uneven development, security, quality control, costs, intellectual property, and convenience [30]. Researchers from the Kunming Institute of Botany, Chinese Academy of Sciences, stated in a 2020 interview that "professional relevance" was their primary reason for choosing OA, indicating low domestic acceptance of OA. To truly achieve OA transformation, university libraries must shift thinking by leading the establishment of author-centered working communities to achieve leapfrog development. First, redefine stakeholder roles, requiring changes from libraries, researchers, publishers, and society associations as funders. Second, libraries must assume transitional responsibilities, comprehensively integrating stakeholder interests, strategically positioning themselves, and providing refined services, such as Xiamen University Library' s thematic seminars, OA publishing policy guides, and TA implementation disclosures, which effectively meet user needs. Finally, build new academic communication environments, such as Tsinghua University' s OpenSign public welfare academic resource service platform, which provides not only resources and data services but also information, publishing, and push services. Future research working communities should also include discussion, communication, negotiation, and emotional support functions, truly realizing author-led, stakeholder-participatory collaborative networks.

4.4 Conduct Timely Evaluation and Real-time Monitoring

Open access advocate Peter Suber states that "the core concept of open access is that research results are not constrained by price and most permissions on

the internet." Whether in original subscription models or open transformation models, transparency and fairness have always been obstacles during the open science transition. For transformative agreements, stakeholder transformations are not achieved overnight but through continuous exploration, adjustment, and adaptation. Therefore, timely evaluation and real-time monitoring help correct errors. First, promptly evaluate transformation practice effectiveness. For example, Germany' s DEAL consortium released a *Progress Report on DEAL' s First Transformative Agreements 2019-2023* in 2024, evaluating executed agreements to enhance transparency. Coalition S releases annual review reports on Plan S implementation to provide references for appropriate adjustments. Second, real-time monitor transformation fund flows. Guo Jing et al., analyzing Shanghai Jiao Tong University Library' s transformation experience, believe data should eliminate uncertainty by collecting APC price and payment data to formulate appropriate fund reorganization plans that reduce transformation costs [31], while preventing funds from flowing to predatory journals and guarding against new monopolistic "paywalls." Finally, dynamically monitor changing user needs. Transformative agreements have time limits and dynamic changes, and user needs also evolve in real time. Libraries must dynamically grasp actual user needs—transformation needs, specific journal needs, copyright selection needs—and identify transformation methods that meet these changing demands.

References

[1] ESAC Transformative Agreement Registry [EB/OL]. [2025-7-10]. https://esac-initiative.org/about/transformative-agreements/agreement-registry/
[2] Plan S 2024 Annual Review Report [EB/OL]. [2025-7-10]. https://www.coalition-s.org/plan-s-annual-review-2024/
[3] OASPA [EB/OL]. [2025-7-10]. https://www.oaspa.org/news/announcing-oaspas-next-50-project-a-different-conversation-about-the-open-access-transition.
[4] Langham-Putrow A, Carter S J. Subscribe to Open: Modeling an open access transformation[J]. College and Research Libraries News, 2020, 81(1): 18.
[5] Crow R, Gallagher R, Naim K. Subscribe to Open: A practical approach for converting subscription journals to open access[J]. Learned Publishing, 2020, 33(2): 181-185.
[6] Sara B, Rod C, Philipp H. Open access through Subscribe to Open: a society publisher' s implementation[J]. Insights, 2022, 356.
[7] Cahoy E S. 25 Years of portal: Libraries and the Academy[J]. portal: libraries and the academy, 2025, 25(1): 1-3.
[8] André Gaul. EMS Press Criteria for Sustainable Open Access with Subscribe to Open (2023)[J]. 20.
[9] Hoogendoorn C, Redvers-Mutton, Gaynor. Scaling up open access publishing through transformative agreements: Results from 2019 to 2022[J]. Learned Publishing, 2024, 37(2).
[10] Borchardt R, Schultz T, Dawson D D. Financial and Other Perceived Barriers to Transitioning to an Equitable No-Publishing Fee Open Access

Model: A Survey of LIS Journal Editors[J]. College & research libraries, 2024, 85(1): 19.
[11] Chen Lijun. Competitive Analysis of Open Access Journals and Traditional Subscription Journals—From a Two-Sided Market Theory Perspective[J]. Library Work and Research, 2014, (08): 14-19.
[12] Cui Liyuan, Liu Chunli. "Subscribe to Open" (S2O): An Emerging Model for Transforming Subscription Journals to OA Journals[J]. Library and Information Service, 2021, 65(22): 65-73.
[13] Yu Linxi, Kang Yinhua, Yao Sihui. Research and Analysis of the "Subscribe to Open" (S2O) Model[J]. Chinese Journal of Scientific and Technical Periodicals, 2024, 35(01): 9-16.
[14] Liu Yang, Liu Yuanyuan, Charlotte Van Rooyen, et al. The Origin and Development of the "Subscribe-to-Open" (S2O) Model—A Case Study of EDP Sciences Press[J]. Chinese Journal of Scientific and Technical Periodicals, 2024, 35(01): 1-8.
[15] Shen Yaqi, Zhang Yihua, Guo Jing, et al. Research on Subscription Transformation Strategies for Literature Information Resources of Chinese University Libraries Under the Open Access Transformation Environment[J]. Library and Information Service, 2024, 68(21): 45-53.
[16] Publisher-Based S2O Journal Statistics Table [EB/OL]. [2025-7-10]. https://subscribetoopencommunity.org/.
[17] S2O Journal List [EB/OL]. [2025-7-10]. https://oad.simmons.edu/oadwiki/Subscribe_{{{to}}}{{Open}}}(
[18] Chen Juan, Lin Yuehua. Global Open Access Transformation Practice and Its Implications for Chinese University Libraries[J]. Library and Information Service, 2023, 67(21): 136-146.
[19] Chen He. Practice and Reflection on Promoting Open Science Development in University Libraries—A Case Study of Xiamen University Library[J]. Information Research, 2025, (05): 98-105.
[20] Chen Juan, Lin Yuehua. Preliminary Exploration of Open Access Transformation Policies and Practices of Major Global Academic Journal Publishers[J]. Chinese Journal of Scientific and Technical Periodicals, 2024, 35(09): 1271-1282.
[21] Cui Liyuan, Zhu Yaxin, Qu Bo. Foreign Open Access Librarians: Position Settings, Core Roles, and Chinese Training Strategies[J]. Library and Information Service, 2022, 66(19): 72-83.
[22] Yuan Qing, Chen Xingchen. Dilemmas and Solutions for University Libraries Promoting Academic Journal Transformation from Subscription to Open Access Models[J]. Library and Information Service, 2020, 64(18): 15-20.
[23] Lai Can, Chen Ya. Analysis of Open Access Research Progress in Chinese Libraries in the 21st Century[J]. Library Research and Work, 2025, (05): 39-44+90.
[24] Han Zijing, Yan Qinying, Tian Ji. Analysis of Database Purchase Price Game Based on Open Access Transformation Agreements—A Case Study of ACM OPEN Model[J]. Journal of Academic Libraries, 2022, 40(05): 48-57.
[25] Xiang Jiali, Lin Yuehua. Research on Current Status and Development Trends of Foreign Library Consortia Services[J]. Library Development, 2023,

(05): 157-166+175.
[26] Zhu Jiang, Luo Yu, Chai Miaoling, et al. Problems and Strategies for China in Responding to Open Publishing Transformation Agreements[J]. Library and Information Service, 2025, 69(10): 110-124.
[27] Dai Xing. Progress, Impact, and Implications of Plan S and Transformation Agreements[J]. Library Journal, 2021, 40(12): 108.
[28] Zhao Jiawei. Research on Factors Influencing Library Resource Transformation to Open Publishing[D]. Peking Union Medical College, 2022.
[29] Zhou Yang, Zhang Yi. China' s Open Science Development Strategy—A Discussion from the Perspective of Researchers[J]. Library Tribune, 2023, 43(12): 161-168.
[30] Ádám Dé r. What Gets Missed in the Discourse on Transformative Agreements[EB/OL]. [2025-7-10]. https://katinamagazine.org/content/article/open-knowledge/2025/transformative-agreements-discourse-what-gets-missed.
[31] Guo Jing, Zhang Yihua, Shen Yaqi, et al. Empirical Research and Coping Strategies for Open Access Transformation in Chinese University Libraries[J]. Journal of Library and Information Science in Agriculture, 2024, 36(10): 53-62.

Author Biographies:

Yuxiang Zhang: Male, born 1984, Master' s degree, Librarian. Research interests: Open Access, Digital Libraries. Email: yxzhang84@163.com. Address: No. 4655, Daxue Road, Changqing District, Jinan, Shandong Province, 250355.

Lirui Cui: Female, born 1979, Master' s degree, Associate Research Librarian. Research interests: Library Management.

Chengguo Xin: Male, born 1986, Master' s degree, Librarian. Research interests: Library Transformation, Information Retrieval.

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