

# Scenarios for the future of scholarly communications

How might scholarly communication change in the future, given the shifting landscape and impact of technology and what would this mean for publishers and libraries? Within Wiley, scenario planning provides a framework for looking forward to identify critical uncertainties and model how those uncertainties could unfold, which provides context for decision making in the present as well as planning for the future. Four possible futures emphasizing different outcomes in scholar behavior related to the communication of research and content distribution models for scholarly works are briefly summarized and outline the potential impact on some of the key stakeholders. With this as context, possible strategic directions and some related questions for how publishers and libraries can remain relevant and successfully contribute to the future development of the scholarly communication process are put forward.

## Introduction

The current environment for scholarly communication is tumultuous. Innovations in technology, questions about content ownership and use, business models including open access in all its rich variations, professional and academic credentialing, peer review, content preservation, social media and the role of learned societies, are some of the many factors that will have a significant impact on how scholars exchange ideas, consult with one another and establish their standing in their communities in the future. These factors will also directly impact those who facilitate scholarly discourse, such as publishers and librarians. All of this takes place in the context of worldwide economic uncertainty, which has led to, among other things, library spend on content declining by about 4% globally in the last three years<sup>1</sup>. By comparison, R&D spending has increased by 3-4% per year in the same period<sup>2</sup>.

Thinking about the future and all of the possible permutations that might unfold can be paralyzing. We cannot know with any certainty what the future will bring but we are all faced with the need to make decisions now that will enable us to be successful in the future. One useful technique for thinking about the future is scenario planning. The approach is to identify the most significant factors likely to influence the area of concern and create several scenarios based on how those critical uncertainties might unfold. The objective is not to predict the future but rather to develop several plausible, potentially difficult, alternative futures that bring to the fore those forces that might push the future in very different directions. It is then possible to determine strategies that are robust across all or at least most of the possible futures described, as well as scenario-specific strategies and the milestones or warning signs that indicate the future is trending in the direction of a particular scenario.

## Future scenarios

The scenario planning framework used at Wiley identifies critical uncertainties of end-user behavior and distribution models. The uncertainty has not been over whether end-user behavior and distribution models would change (since we cannot imagine a future in which these don't change substantially over time). Rather, we considered the pace and extent of change, which led us to the following scenarios for the future of scholarly publishing.



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"The objective is not to predict the future but rather to develop ... alternative futures"

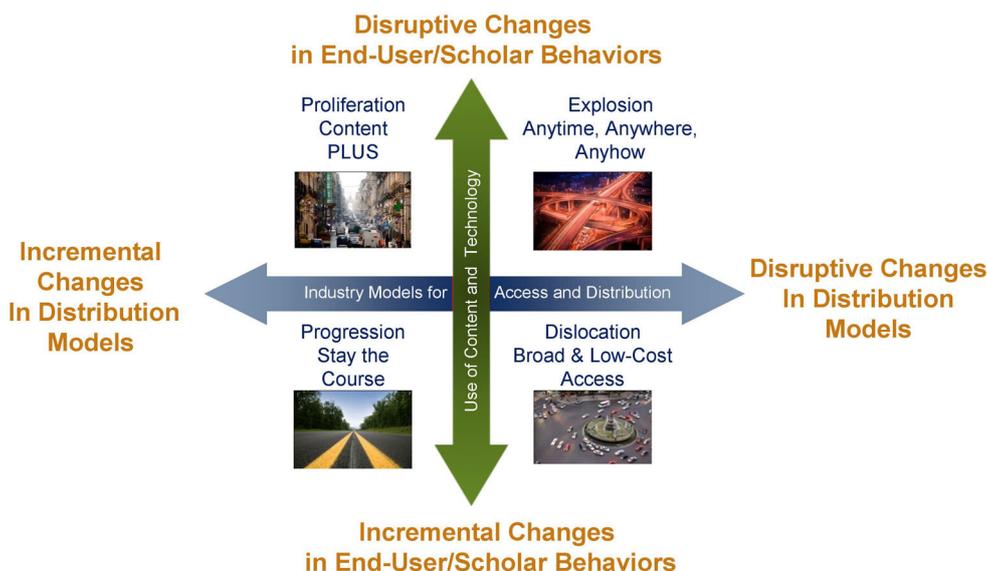


Figure 1. Scenarios for the future of scholarly publishing

Snapshots of these scenarios and their implications for publishers and libraries follow. You are bound to see certain aspects of each already coming into existence.

### Progression

This is a world in which current trends progress incrementally, leading to persistent and pervasive changes in the ways scholarly content is created, shared, published, distributed and used over time. Research flourishes and the peer-reviewed article still rules. Publishing supports validation, discovery and credentialing. Libraries remain the primary providers of content and access to content for the scholarly community – researchers don't pay. Several viable business models evolve, including open access, all of which drive down price from the payer perspective. To remain competitive, publishers must deliver products and services faster and take cost out of the process. They look to new products and new markets to deliver growth. Emerging markets grow in importance as a source of content and customers. Library budgets remain under pressure because of the perception that content can be obtained more cheaply than in the past; however, the volume of published content continues to grow at a faster rate than unit costs can be reduced by efficiencies and new models.

“Who can be a ‘publisher’ changes based on ability to harness technology. “

### Proliferation

This is a future in which the enhancement of content, through technology, delivers products and services in response to evolving customer needs and workflows. Researchers publish differently, taking advantage of enabling technology. The peer-reviewed article, enriched by technology, remains king but other forms of output increase and gain status. Data underlying articles must be published for validation and sharing, leading to a proliferation of available data. While data is more accessible, it needs to be organized and made more discoverable. Increased importance of sharing and collaboration drives the creation of professional networks and communications tools, taking social networks to the next level. Who can be a ‘publisher’ changes based on ability to harness technology. Publishing takes on more of a service orientation. The traditional subscription model becomes less important as other business models emerge and gain credibility. Channels to access content and the intermediaries who control them become increasingly important players. Libraries can still be the primary access provider for academics but only if they can deliver more, better and customized service to meet users needs – otherwise users will go elsewhere.

### Dislocation

In this scenario, open access thrives. Global government and funder mandates requiring publicly funded research to be made freely available fundamentally change business models. Articles are more important than journals. Peer review is still important and largely follows

63 the traditional model. Distribution is transformed by consolidation and price wars among existing publishers and intermediaries, leading to commoditization of traditional publishing, disruption of business models and dislocation across the value chain. New business models develop around tools and workflow solutions and customization that makes content useful. These changes enable new players to emerge and also create new opportunities for existing players who are able to adapt. Content is available from multiple sources/repositories and no longer needs to be intermediated by libraries. Most content is available somewhere in some form for free. The role of the library is called into question, as content and access acquisition is no longer needed and for many scholars, a robust internet-search service is all they need to find the information they are looking for. Some remaining library functions can be outsourced and the concept of a single library or a commercial library serving multiple academic institutions takes hold. In other instances, libraries develop services and capabilities designed to meet the needs of a specific scholarly constituency within their institution, which might include institutional repository management or provision of learning materials or publishing services. A wide variety of library models develop and the library community is radically reshaped.

### Explosion

In this future, technology and social networking transform the ways end users and communities develop and use content. End-user communities form both vertically (subject interest) and horizontally (professional life-stage). Societies and associations are the organizers in some cases, as are solutions providers who add value to customer workflows. Everything changes as technology is fully embraced. Research is simultaneous with publishing of results using social-media-derived channels. Tools are developed to push data to the web as part of the collection process. The formal write-up of data interpretation and analysis for publication is a separate and later step intended to preserve the record rather than facilitate communication. Traditional peer review is replaced; new metrics are established to support the new process. Completely new business models emerge to support the radical change in how scholarly communication is done, partly based on the value of services provided and partly based on who benefits from the discourse. The traditional roles of publishers and libraries are at first diminished and then eventually become irrelevant to scholarly communication; publishers and libraries that don't substantially reinvent themselves to meet the needs of online communities cease to exist.

“Publishing is not a static process with immovable boundaries – it must constantly reinvent itself.”

### Implications for publishers

So here we have four very different future scenarios, each of which suggests specific strategies should scholarly communication evolve in these ways. There are also some shared themes that suggest strategies for publishers that are robust across multiple futures and provide a context for thinking about what changes they can make today to prepare for tomorrow. This section summarizes some of these robust strategies.

**Innovate to remain relevant!** In all cases, the requirements of the scholarly community will change in response to evolving technologies and there will be many opportunities to provide new and better service and products. Publishing is not a static process with immovable boundaries – it must constantly reinvent itself.

**Accelerate the move to digital** In all foreseeable futures, scholarly communication benefits from and depends more on technology. That which is not available digitally will not be used.

**Community leadership** Staying abreast of the evolving needs of the communities publishers work with and belong to is essential in order to better serve customers, authors and users. There is much to be gained by working with these groups to identify and articulate challenges, requirements and opportunities. Partnering with those who share common interests to advocate for and deliver the best solutions is essential to remaining relevant and will lead to improvements in the scholarly communication process.

64 **New business models and channels to market** Through development of new services and business models (not simply pricing models), publishers can (re)define what their role is in the value chain, who the intended beneficiaries are, how products and services are paid for, how much and how they are delivered. This could lead in interesting directions if publishers move towards freemium, professional open-source, sponsorship or advertising models and away from the traditional subscription and direct-sales models. Publishers may also consider whether distribution channels offer additional opportunities to provide end users with the information they need in the format and context they want it. Intermediaries, both traditional and new, have unique customer experience and knowledge through the services they provide. Publisher and intermediary partnering could generate innovative new solutions and business models for end users and customers in core and emerging markets.

## Implications for libraries

Similarly, each of the scenarios offers a different vision of how libraries might transform in response to changes in scholarly communication. However, as librarians consider and question how to prepare for an uncertain tomorrow, there are some common strategies that may help libraries to thrive in any of these possible futures.

**Innovate to meet future needs** Maintaining a strong understanding and close connection to the unmet needs of authors, users and other stakeholders as they evolve will make libraries an integral part of innovation and improvement of the scholarly communications process. How might libraries best fulfill these unmet needs in the future? Are there opportunities to offer new services and create new capabilities as a result of technological innovations in emerging fields such as data management and analytics? In a future in which 'free' content proliferates, will libraries be called upon to provide a filtering or quality-assurance service? Can libraries fulfill existing roles more capably than others do now?

**Continue to collaborate** Libraries can shape and lead the discussion and facilitate communication between stakeholders in the academic community about future needs and solutions. They can act as the voice of the academy in the ongoing dialog with other stakeholders in the scholarly communication process. Librarians are well placed to reach out to publishers and other service providers to achieve the desired outcomes for the academic community.

**Make access to information the top priority** In every future, there is more information and improved access through various web-based search services and tools. Business models might move away from 'owned' content in any scenario; what are the implications for libraries? Even if content acquisition and collection development become less important, facilitating fast, easy access to the right content with the best tools across platforms and devices will deliver high value to the community.

**Commit to transformation** How does a library transition from the old to the new? Inevitably, there are functions that are currently in high demand but will most likely diminish in value over time. Determining which current services are of relatively low value and high cost will help identify those that can be eliminated in order to free up resources to develop higher value-add capabilities. For some functions there may be outsourcing options or an opportunity for a single library to support multiple institutions. Continuing to develop new initiatives and pilot projects today, as many librarians already are, can inform and facilitate some of the tough decisions that may need to be made to achieve transformation for tomorrow.

## Conclusion

Active consideration and preparation for the future of scholarly communication is essential. Libraries and publishers are key players, as are the scholars themselves, the institutions, societies and associations that support them and the providers of the many services that enable the process. We can all take positive steps now to prepare for a range of possible future scenarios – developing relevant skills, activities and capabilities, and maintaining an active antenna for early indicators of change. Further discussion and debate about the future will produce ideas and collaborative opportunities for us all, to enable us to maximize our various contributions to the advancement of scholarly communication.

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