

## Access to Scientific Research: Challenges Facing Communication in STM

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by *David J. Brown*

Walter de Gruyter

Berlin

2016

423 p.

(Hardcover \$140.00)

hardcover

ISBN: 9783110376169

**Review DOI** [10.1108/EL-01-2018-0004](https://doi.org/10.1108/EL-01-2018-0004)

This valuable book, written by David J. Brown, describes the current state of scholarly communication and points out the transformative process from the traditional print-based communication system to the digital world, as well as the need for new models of knowledge dissemination that are capable of meeting the information needs of all end users. In addition, the author reports the challenges that publishers, librarians, researchers, etc. are facing in the changing business environment, and possible solutions are discussed as well.

The book encompasses 28 chapters each of which is devoted to one important topic such as the main stakeholders in scholarly communication, unaffiliated knowledge workers (UKWs), business models, forms of article delivery and future communication trends. Chapter 1 contains a background of the issues discussed in the book, followed by a short chapter containing definitions of key terms such as citizen and amateur scientists, knowledge workers and learned societies. The book has taken a range of quantitative and qualitative methods, such as interviewing experts, academics, publishers and librarians who could contribute to the better understanding of the current state of art of all aspects of scholarly publishing (Chapter 3, pages 17-21). The last chapter remarks the research questions addressed in the book. The author has added many informative figures (for instance see, pages 14 and 26) and tables (for instance see pages 269, and 322) and has smartly chosen attractive subheadings for each chapter. For instance, subheadings in Chapter 14 include “tragedy of the commons”, “the tipping point”, “the long tail”, “freemium”, “wisdom of the crowd”, “cult of the amateur”, “collective intelligence”, “designed serendipity”, “cognitive surplus”, “the fast food generation”, etc.

The book focuses on different aspects of scholarly communication from a commercial point of view. It assesses the dominant business models and suggests practical changes that should occur in the dissemination of scientific research output. Brown discusses a variety of practical solutions and implications for the challenges that main scholarly communication stakeholders encounter and emphasizes the importance of evaluating the viability of new ways of communications in a digital world. As such, the book covers the different views of



different stakeholders – publishers, librarians, and scholars, etc. One reason for such practical viewpoint of the author is probably his numerous years of working experience in the area of scholarly communication in the UK. Although the focus of the book is on the communication of research in the UK, the practical implications could somewhat be applicable to other countries too.

One of the main concerns of the author is open access, which is extensively discussed throughout the book in many chapters. Brown emphasizes that over recent years, controversies existed around making science open to meet the information needs of not only subscribed users but also those who are not able to pay high subscription. He believes that some of the major barriers for consensus on a straightforward open access model are different attitudes toward open access and the political considerations in the UK.

Brown challenges the inability of current subscription systems in meeting the current and future needs of UKWs. UKWs is defined as researchers outside academia and research institutions who need the output of scholarly research. However, the focus of the book is mostly on professionals, small and medium enterprises and armchair scientists or citizen scientists (Chapter 19). To show the important role of UKWs, Brown compares the very low number of scientific journals subscription (e.g. Elsevier and Wiley) with social media sites such as Facebook, Instagram and Twitter, with millions of users, where UKWs are more active. Brown believes that this group deserves further detailed investigation. He notes that toward whatever direction the scholarly communication is moving, the needs of UAWs should be considered. As no strategy exists to allow UKWs free access to research output or let them buy information services in a low affordable price, heavily discounted price or openness are mentioned as some potential solutions. He also condemns the scientific community for the lack of a clear strategy for translating the high-level knowledge to an understandable content for citizen scientists. The book asserts that we lack the mechanisms that allow creators of scientific information and end users of science such as citizen scientists to interact in a structured and sustainable way.

The book challenges the dominant paradigm in scholarly communication system where publishers are the key players. It reminds us the overlooked role of creators and consumers of scientific knowledge, despite their profound influence in scholarly communication process. He believes that contrary to current established scientific publishing routines, these are the publishers who should follow and adapt the business models created by scholars, the main producers of scholarly documents. If the current and future needs of end users require the open accessibility of articles, publishers and decision-makers should find new business models to meet such needs. Otherwise, end users would probably find the new ways of disseminating scientific knowledge opposing the established scientific publishing systems. The book proposes some alternatives to current ways of scholarly communication because of the internet and electronic publishing developments. One of the new scholarly communication models, which takes place outside the traditional system, is the author-to-author direct communications, which to a great degree has undermined the need for high-priced subscriptions (Chapter 15, p. 92). Arxiv is a good example of such models adopted by disciplines such as physics, which implements most of the scholarly communication process functions, such as registration and archiving (Sompel *et al.*, 2004).

He notes that a rapid change is underway in which publishers are pushed toward new scholarly communications systems by the beneficiaries of research output such as UKWs. “New delivery options and new pricing models may be necessary to attract UKWs,

including more personalised and customised approaches” (Brown, 2016, p. 296). For example, recently as a result of such tensions, five German editors of the journals published by Elsevier resigned from their editorial positions to convince Elsevier to make all papers authored by German researchers available publicly (Singh Chawla, 2017).

Brown mentions that the focus of the book is on the UK; however, it is essential to solve the current issues of scientific communication from a universal point of view. Many of the issues discussed in the book are more noticeable in developing countries, mostly because of the budget constraint. The challenges of disseminating scientific research in developing countries are discussed by Salager-Meyer (2008). She emphasizes on the necessity for a universal will to make progress in this area. It seems establishing a worldwide justice in knowledge dissemination should be taken into consideration, specifically by commercial publishers. Salager-Meyer (2008) notes that when talking about scholarly publishing, a number of concepts should be addressed such as “the science itself, publishers, the role of nation states, the world power structures, and the researchers themselves” (Salager-Meyer, 2008, p. 1). Such issues are somewhat addressed in Brown’s book.

The book points out the discipline culture (Tenopir and King, 2007) and the new platforms (i.e. mobile devices) as determinants of how the scientific information is disseminated, which might in turn lead to the changes in individuals’ reading habits. He also explores the implications of neuroscience literature and its impact on STM publishing. It is emphasized in the book that the brain is giving individuals the ability to adapt and meet the demands of the new socio/technical infrastructure. Changes such as social networking have changed end users’ needs for what the publishers currently offer. “New business models to keep publishers in the loop need to be fleshed out” (Brown, 2016, p. 127).

In conclusion,

The heart of this project is to come up with recommendations for those agencies which produce and disseminate scientific information in the digital age to adjust their business practices to satisfy the needs of a greater number of people” (Brown, 2016, p. 20).

Everyone would benefit from reading the book, as it encompasses thorough analysis of current and future challenges of scholarly communication (Budd, 2017) and presents practical implications. The general belief that we should cope with the business models offered by publishers is criticized extensively and altering current models that restrict open access is recommended. He emphasizes that this in turn would determine different roles for all groups involved in scholarly publishing – libraries, funding agencies, scholars and publishers.

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