The Changing Role of the Publisher in the 21st Century

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The role of the publisher has radically changed in recent years, accelerated by the speed of the delivery of content via the internet and the changing user behavior across a wide spectrum of disciplines. This paper will examine the circumstances in which the functions of the publisher of scholarly information have changed and the implications for the publisher of the future. The author will also analyze a number of recent market surveys on the key aspects of the changing landscape of scholarly publishing, including end-user study, higher education textbook market, industry and market trends.

The New Normal

In the Information Industry Outlook 2013 report,[1] the author described the destructive forces that are pervasive in the information industry as the New Normal which can be characterized by the following factors:

- political and government intervention,
- the delivery of content that is integrated into electronic workflow solutions, and
- new business models and strategies leading to the widening gap in talent in the information industry.

The last point highlights the changing skill set required for publishing individuals who are now expected to be equipped with both technological and analytical skills.

The report also emphasized the trends that are already embedded in the fabric of the information industry, namely:

- The freely available content on the web changes the traditional publishing model of content creation and is forcing publishers to rethink their business models without losing to their competitors.
- Publishers and information providers are increasingly aware of the need to build some form of social networks around their content, thereby tailoring their services to the targeted customers.
- The delivery of content and data will eventually be embedded into a handful of workflow tools. “Ignoring the new reality as simply a lost opportunity will put every publisher in peril as the evolution to workflow results in the fragmentation of content delivery and an explosion in the role and complexity around information intermediaries.”[2]

Under the New Normal paradigm, new product and services will be extracted from the ever increasing big data and “the New Normal is an expectation that everything can and will be measured to determine its relative value in the information industry’s value chain.”[3] The report estimated the total revenue for the information industry worldwide reaching $554 billion in 2014,

[1] *Information Industry Outlook 2013: The New Normal. December 20 2012. Outsell.* http://www.outsellinc.com
[2] *Information Industry Outlook 2013: The New Normal.* December 20 2012. Outsell, p.14. http://www.outsellinc.com
[3] (*Information Industry Outlook 2013: The New Normal.* December 20 2012): 7. http://www.outsellinc.com

4.4% growth from the previous year. The STM market segment is considered a major portion of the scholarly information market, amassing US$32.5 billion in 2013 and estimating at $33.9 billion in 2014, a 4.3% growth.[4]

Some ten years ago information scholars had already pointed out the development of scholarly communication process was no longer a "simple linear chain from author to publisher to reader, but one of constant refinement and improvement involving the author as a central player". The emphasis was on the author/researcher and the understanding of the research workflow.[5]

In his paper "The Changing Role of a Publisher and the Publisher of the Future" published in 2007, Dr. Stephen R. Heller commented that the Internet was beginning to 'force' an environment for a new business model for scientific publishing. He described the way in which scientists, who having had communicated their results for hundreds of years, would inevitably change, and forward thinking publishers would have to develop new products to meet the changing needs of the scientists to communicate in a new and different way. Dr. Heller predicted that "publishers who move towards analyzing and processing the information in scientific manuscripts are the ones most likely to succeed in the future."[6]

A more recent study on the scholar and professional journals in the digital environment, the findings showed that these journals have adapted well in the digital environment but focus should be on the new digital consumers, their user behavior that will eventually dictate the future digital agenda of the journals.[7]

Indeed, it is observed there are five trends that pervade across user's behavior globally:

- Open Access

  Most publishers nowadays have open access options; for example, author pays, author archiving, open publisher archives. The open access market is estimated at $176M and growing at 21%.

- Mobility

  Mobile devices have become one of the main research tools – 49% of faculty and 61% students conduct research on mobile devices

- Personalization & Technology

  Devices are increasingly built to understand user environment, including location, proximity, lighting, speed, acceleration, and gyroscopic movements to render appropriate information

- Enriched Content

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[4] *Scientific, Technical & Medical Information - 2014 Market Size, Share, Forecast, and Trend Report. September 25 2014. Outsell.* http://www.outsellinc.com

[5] Ashling, J., 2005. The web and after: The future of scholarly E-publishing. *Information Today*, 22(6), pp.33-34

[6] HELLER, S.R., July/August 2007. The Changing Role of a Publisher and the Publisher of the Future. *Drug News Perspect,* **20**(6), pp. 413

[7] Nicholas, D., August 2010. Scholarly and professional journals in the digital environment. *Records Management Journal*, 20(3), pp291-300

Publishers are creating highly intuitive, interactive rendering environments in which to engage users

- Google

  2.2 trillion searches are performed on Google each year, up from 4 million in 1998. 94% of students cite Google as 'very likely to use" for research.

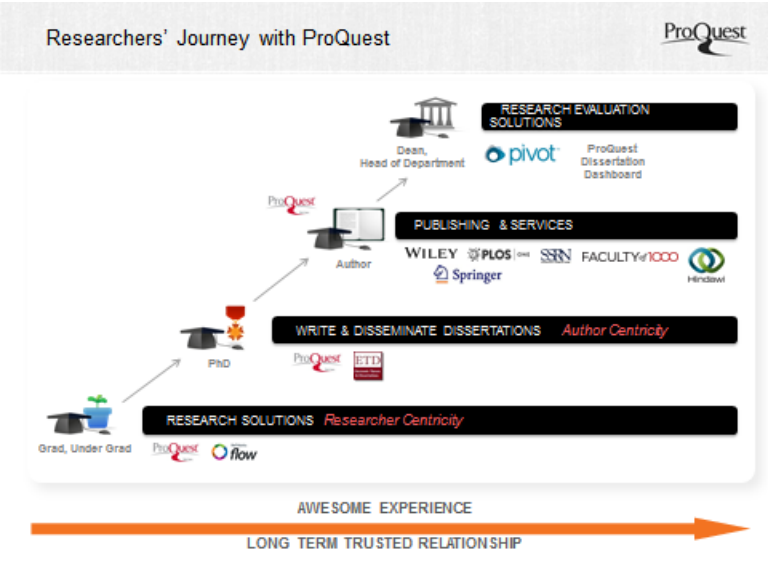
Accordingly, it is no longer acceptable for publishers/content providers to ignore the information needs of the users and their behavior as part of the business and product development process. The results of a recent study on the end-user in the scholarly information market in North America have identified the following as the top obstacles in accessing information by the end-users (faculty members and students):[8]

- Not enough time
- Hard to determine the quality/credibility/accuracy of information
- Information is not timely/not updated often enough
- Lack of staff support; that is, people who can search for information for me
- Not enough budget to pay for it

The study shows that faculty members require trustworthy teaching and research material that can be reliably accessible quickly. Further, to enhance the speed and accuracy of searching the relevant content, publishers and content providers need to ensure their content can be discovered easily in the digital world.

Understanding the workflow of researchers

Today, publishers/content providers of scholarly information must have a clear understanding of the user behavior and their needs during the research journey in order to tailor the products and services to the different segments of the market. The diagram below illustrates the researcher's worklow:



[8] Outsell's End-User Study: Faculty and Students. February 18, 2014. Outsell, p.6. http://www.outsellinc.com

As the findings of the end-user study show, researchers need discovery tools to help them quickly locate the information needed for their research. On the other hand, publishers need to ensure that metadata of the content is built in the product process so that it can be easily indexed in the discovery platform, such as ProQuest Summon, EBSCO EDS, Ex Libris Primo. As part of the research solutions, technological enhancement to the discoverability of the library resources has become a welcome feature in the researchers' workflow.

Another important part of the researcher's journey involves the publication of their research papers and data. Traditionally the publisher would publish the content under a publishing agreement with the author whereby the publisher undertakes to produce and market the publication, hopefully for a profitable margin. In recent years, this business model is slowly being threatened by the open access model which is being recognized by the researchers as an established trend of scholarly publishing.

Open Access

In recent years government policies around the world have mandated government funded research data be accessible, discoverable, and usable by the public. For example, a 2013 memorandum from the White House Office of Science and Technology Policy requires that all government funded research output be publicly available.[9] Similarly, the UK Research Councils published their policies requiring that publicly funded research outputs be made available.[10] Elsewhere in the EU, the European Commission organized a public consultation on open research data in July 2013 in which 130 participants participated and 45 contributions were received on questions about open research data.[11] The Horizon 2020[12] - the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – makes it mandatory for all scientific publications resulting from their funded projects be openly accessible. In a recent H2020 pilot to open up publicly funded research data, researchers in projects participating in the pilot are required to make the underlying data needed to validate the published results available for use by the public.[13]

In Australia, similar developments have taken place. The Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC), the two main research funding bodies in Australia, have in recent years adopted new funding rules which require that grant recipients disseminate open access copies of publications arising from their grants.[14] Effective on 1 January 2013, the ARC requires that "any publications arising from an ARC supported research project must be deposited into an open access institutional repository within a twelve (12) month period from the date of publication". Likewise, NHMRC recently updated their policy that "any publication arising from NHMRC supported research must be deposited into an open access institutional repository and/or made available in another open access format within a twelve month period from the date of publication".

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[9] http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf

[10] http://roarmap.eprints.org/671/1/RCUK%20_Policy_on_Access_to_Research_Outputs.pdf

[11] *Report of the European Commission Public Consultation on Open Research Data. 2013. European Commission.*

[12] http://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020

[13] *Commission launches pilot to open up publicly funded research data. 16 December 2013. Brussels: European Commission.*

[14] http://arc.gov.au/applicants/open_access.htm; http://www.nhmrc.gov.au/grants/policy/nhmrc-open-access-policy

In the light of the open access requirements by the funding bodies, the Australian universities have begun implementing the policies and are progressing in various stages. Below are some examples:

- UNSW has launched the new publications system called Research Output Systems (ROS) to replace ResPubs. It is planned to incorporate open access requirements in ROS during the second quarter 2014. https://research.unsw.edu.au/open-access
- QUT's institutional repository, QUT ePrints, can assist ARC and NHMRC fundees in complying with these new policies. An alternative option is to publish the article in an open access journal (the 'Gold OA' option) and deposit just the bibliographic details in QUT ePrints. http://libguides.library.qut.edu.au/scholarlypublishing/openaccess
- University of Queensland researchers are required to make publications arising from their research openly available via UQ's institutional repository, UQ eSpace, as soon as possible following acceptance of the publication, taking into account any restrictions imposed by the publisher. http://ppl.app.uq.edu.au/content/4.20.08-open-access-uq-research-outputs#Policy
- The Australian National University (ANU) requires a copy of the research outputs (as defined in their policy statement) to be deposited in the University research repository. Access will comply with publisher agreements, legal and any embargo restrictions. https://policies.anu.edu.au/ppl/document/ANUP_008802
- According to their policy statement http://www.library.usyd.edu.au/publish/openaccess/downloads/UoS_OA_policy.pdf Syndey University will provide internal access, within the University of Sydney domain, to publications deposited for HERDC reporting for research use, with provision for opt-out or embargo on reasonable grounds (such as ethical or confidentiality grounds) and, provide external access to University research publications after HERDC reporting, as appropriate, including consideration of opt-out and rights provisions. However, the University acknowledges that the shifts toward open access may take considerable time.
- Macquarie University will make all refereed, revised, final draft research manuscripts openly accessible and available to anyone on the Internet, except where this is restricted by publisher policy. These manuscripts will be deposited in the Macquarie University Digital Repository after their acceptance for publication. Books or chapters in books may be self-archived at the author's discretion. http://mq.edu.au/policy/docs/open_access/policy.html

Against this background, a special meeting of a group of leaders in data stewardship took place in February 2014 to discuss "What can publishers do to promote the work of libraries and institutions in advancing data access and availability?" The recommendations for publishers were submitted for public consultations and the final report incorporating public endorsements was published in October 2014.[15] The recommendations call for the publishers to take on a

[15] LIN, J. and STRASSER, C., October 2014. *Recommendations for the Role of Publishers in Access to Data.*

critical role in the future information ecosystem in which research data is considered an integral part of scholarly communication, and data sharing is a fundamental practice. The recommendations for publishers to increase access to data are:

1. Establish and enforce a mandatory data availability policy.
2. Contribute to establishing community standards for data management and sharing.
3. Contribute to establishing community standards for data preservation in trusted repositories.
4. Provide formal channels to share data.
5. Work with repositories to streamline data submission.
6. Require appropriate citation to all data associated with a publication – both produced and used.
7. Develop and report indicators that will support data as a first-class scholarly output.
8. Incentivize data sharing by promoting the value of data sharing.

More recently in October 2014 Copyright Clearance Center hosted a roundtable event, bringing together representatives from academic institutions, publishers and vendors to discuss the challenges they are facing as the number of article processing charges (APC) increases and to explore ways to making open access work. The roundtable concluded that currently APC management is highly fragmented, inefficient and undermined by differences of approach between nations and academic disciplines. They recommended improvements in data-sharing and development of common identifiers and vocabularies.[16]

Wiley, one of the major international scholarly publishers, conducted a survey[17] into researcher views of data sharing in early 2014. The preliminary findings show that 52% of respondents said they had made their data publicly available. The survey also reflects the factors that most strongly motivated researchers to share their data publicly, in particular the impact of journal requirements in increasing public access to data. On the other hand, the survey also reviews the reasons researchers gave for not making their data publicly available; more than 40% of respondents cited IP or confidentiality concerns as reasons for non-sharing.

Publishers, such as Wiley, are well aware of the emerging trends of open access publishing models but these models are expected to remain a small portion of the overall industry revenue in the near future. It was estimated in 2013 that open access revenues to be less than 1% of the overall STM $32.5 billion market, and projected to grow at a CAGR of 27% from 2012 to 2015, representing approximately 1.3% ($336 million) of the STM market in 2015.[18] Recently in December 2014 Macmillan Science and Education announced a groundbreaking decision to allow content from nature.com to be freely shared. This bold move by the publishing company to challenge their own business model will be closely watched by the industry players.[19]

Transitioning from Print to Digital

The forces of change within the publishing industry have arguably impacted the most in the delivery of content, from print to digital. Publishers who used to manage production of only print format and unwilling to embrace change are facing the prospect of being forced into early

[16] Johnson, R., 2015. Making open access work for authors, institutions and publishers. Copyright Clearance Center. http://www.copyright.com/content/dam/cc3/marketing/documents/pdfs/Report-Making-Open-Access-Work.pdf

[17] FERGUSON, L., 2014. *How and why researchers share data (and why they don't).*

[18] *Scientific, Technical & Medical Information - 2014 Market Size, Share, Forecast, and Trend Report. September 25 2014. Outsell.* http://www.outsellinc.com

[19] http://www.nature.com/press_releases/share-nature-content.html

retirement. As Lichtenberg described in his paper on the progressive evolution of publishing in the age of digital abundance, "as this decade begins, publishing finds itself in the midst of a phase shift (like water to ice) from print to a complex new world of digital, where the dimension of the change, its speed, and its extent are unknown."[20] The traditional business model of book publishing - including trade, higher education, K-12, children's, university press and professional and scientific - have in various degrees taken suitable measures to adapt, though the pace of change depends on the business needs and culture of each type of publishing mentioned above. For the purpose of this paper, the following section will focus on the education textbook market (include K-12 and higher education).

According to a recent market report, the global education textbook market (which includes print textbooks, digital textbooks, and whole course solutions) was valued at US$22.6 billion in 2013, with a CAGR of 5.7% for the overall textbook market between 2010 and 2014.[21] The report shows that there is slow revenue decline in print textbook but growth is expected in replica e-textbooks and whole course solutions markets. The report makes a prediction that by 2017-18, global print revenues will fall below 50% of the total textbook revenues, while growth will be driven by digital replica textbooks (2015-2020 CAGR of 11.1%) and by whole course solutions (2015-2010 CAGR of 19.4%).

So, what are the opportunities for publishers? Although the prospect for print textbook business looks grim as the revenue decline in print is inevitable, it is not a death sentence in the near future. In the End-User Study[22] it is shown that faculty (71%) and student (78%) prefer the print format. Of faculty, 79% prefer to access textbook content in print. While print will still have a role to play in the education market, its revenue base will slowly be eaten up by replica e-textbooks and whole course solutions. The same study also indicates that replica e-textbooks are not the ultimate e-solution for the students. Instead, interactive and integrated solutions would be the product of choice for the user in the future. Accordingly, publishers will need to focus more on the user-behavior and their needs that form the bases for product and service development.

The 21st century publisher will need to demonstrate the ability to create digital solutions, for example, combining legacy content with technological resources to create new user experience for the customers. The publisher will also need to have excellent communication skills to work with people with diverse backgrounds such as IT specialists, government officials, intellectual property officers, content providers, researchers, librarians and authors. A recent job advertisement has shown these skills as top requirements for a publisher post.[23] No doubt the role of the publisher will continue to evolve so long as the end-users in the scholarly information market expect changes to the traditional business model to catch up with the revolutionary advances in the digital world.

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[20] Lichtenberg, J., 2011. In from the edge: the progressive evolution of publishing in the age of digital abundance. *Pub Res Q* , 27, pp 101-112

[21] *Digital Textbooks: The Evolution Continues*. March 21, 2014. Outsell. http://www.outsellinc.com

[22] *Outsell's End-User Study: Faculty and Students*. February 18, 2014, p. 12 http://www.outsellinc.com

[23] https://www.linkedin.com/jobs2/view/29276973?trk=vsrp_jobs_res_name&trkInfo=VSRPsearchId%3A2319011514189781885 18%2CVSRPtargetId%3A29276973%2CVSRPcmpt%3Aprimary