The Reach & Impact of Research Articles Beyond the Academy
Introduction

Promotion and dissemination of academic works has been a core publisher function for the last several hundred years of scholarly communications. Today, publishers are under more pressure than ever to reach readers beyond the traditional confines of journals and faculty tenure cycles. Sources of research funding and the voting public expect access to knowledge and discoveries that impact our wider society and global communities. This demand is pushing publishers to master new tools, new partnerships, and new information channels to push publications beyond the “ivory tower” — and often outside our comfort zones.

Above and beyond expectations from our existing institutional readers and customers to leverage new and ever-changing technologies to ensure the highest possible usage and citation rates, publishers must also communicate advanced scientific findings to a diverse public audience with varying language skills and scientific literacy. Funders of STM research require proof that the results of their investments reach a broad audience, often including policymakers, innovators, and other stakeholders, increasingly with the stipulation that research efforts are focused on national interests and outputs are not too esoteric (Deng, 2015).

These forces are creating conflict around the traditional concept of the scholarly record, which no longer satisfies funder mandates for broad distribution to wide and diverse audiences. Disconnects between funder objectives and researcher or author goals deepen this divide, often putting pressure on universities and publishers to bridge the gaps.

In this paper, we examine what Learned Publishing contributors have been saying in the last decade on this topic and what thought leaders propose for bridging the divide between the prevailing concept of the scholarly record and the broader access required by the public and funders of research.
Within our industry, the impact of scientific publications is often measured by rates of usage and citations. However, the value of those papers to the broader public often depends on their reach, accessibility, and applicability to pressing everyday problems. Some studies cited in Learned Publishing point to upwards of 50% of published articles that are never read and even more that are never cited (Sommer, 2017) — which means an even smaller fraction are making their way into the hands of policymakers, innovators, and the general public. Research funding bodies are anxious to drive improvements in health and prosperity through research, but find themselves battling trends that stymie progress and impact, such as high rates of studies funded by the European Union without article outputs (Williams, 2016).

Funders are investing in the broadest possible reach for the findings of their sponsored research, leaving the logistics of dissemination and communication to publishers. It is beholden on us as publishers and scholarly societies to overcome limitations in access, variations in language and culture, and creatively push content through appropriate channels to accelerate the influence of scholarly research. Once published, subscription paywalls and database accessibility are often cited as barriers to public access to relevant scientific literature. However, merely lifting authentication restrictions via open access (OA) publishing has proven to not be the silver bullet that would rocket content to the broadest population or, for that matter, to the most impactful readers. Research shows that readers employ myriad “pathways” when seeking information and OA papers do not automatically appear in all appropriate venues simply due to unmetered access (Dove, 2017). These discovery pathways range from search engines and library catalogs to personal websites and profiles on sites like academia.edu. There is no consistent correlation between discovery pathways used and the access rights to high-impact content.

Demands are coming not just from research funders; outputs of scientific discovery are of value to “users in business, charitable and public sectors, and to the general taxpaying public” (RCUK, 2013). Some see a moral obligation to making publicly funded research available to anyone and everyone with interest, as a public good. Yet, others see this as a rhetorical device and an unrealistic utopian vision of free information. Still others believe that scientific literature should be rewritten in “lay” language for broader dissemination beyond traditional academic or expert readerships in order for it to have broad societal impact (Nunn & Pinfield, 2014).
The science of communicating science

Complicated and jargon-heavy scientific and technical language is often cited as a barrier to scholarly literature being successfully read and applied outside the academic contexts. Whether we aim to improve patient access to medical literature or ensure new technology start-ups have received the latest informatics research, publishers are challenged to communicate works to diverse readers at varying levels of education, all with unique needs. Some publishers are experimenting with models for in-house or outsourced composition of high-level summaries to accompany the release of funded research papers, for example, eLife’s plain-language summaries. Some look to the news media for help in communicating new discoveries.

The journal receives funding from European projects, universities, charities, and other funding bodies to create educational content and courses around themes in oncology and cancer research (Foxall & Nailor, 2016).

For some academics, the idea of rewriting scholarly papers at “lower” literacy or intellectual levels can be viewed as insulting or a waste of time. Some see any promotional activity by scholars as “noise, ephemerality, a distraction, not a noble enough pursuit” and, generally, a distraction from doing great research (Williams, 2016). Other authors acknowledge that “publishers have limited resources to help promote every article they publish” and they readily engage with publishers as well as editors, funders, societies, and their institutions, in programs such as Kudos, to collaboratively promote broader reach and understanding of their work beyond academic bounds (Sommer, 2017).

Regardless of the method, promotional activities are often required by funders for good reason: Effectively communicating and promoting scientific publications via lay media have measurable benefits in higher usage, citations, and overall reach to both the general public and wider, inter-disciplinary research communities (Mathelus, Pittman, & Yablonski-Crepeau, 2012). While some scholars reject this method as “dumbing down” science, customizing the communication of new medical discoveries has been proven to improve patient access to valuable insights that can both reduce costs and improve health outcomes (Nunn & Pinfield, 2014). Publishers are getting creative and learning to scale new methods of “mediating” funded and OA research to improve its reach and access beyond traditional venues.

Scientific and scholarly societies have a role to play here as well. Many organizations maintain practitioner-focused journals or magazines as part of their portfolios, which seek to fill the gap between research and practice. For example, the eCancerMedicalScience journal involves itself directly with medical research projects, usually as the dissemination partner, but also through its education initiatives.

…coverage of medical research in the popular press amplifies the transmission of medical information from the scientific literature to the research community.
Mathelus, et al., 2012

“Treating a journal as part of an overall enterprise rather than as a stand-alone business contributes significantly to its sustainability
Foxall & Nailor, 2016
Paradigms shifting

One inspiration for this white paper is the quantifiable growth in Learned Publishing papers that advocate for publishers to take a more active role in promoting scholarly works to non-academic readers. Contributors are noting that in a “post-truth” world with declining faith in scientific progress, publishers are beholden to play a leading role in the clear communication and promotion of scholarly research. Vicky Williams observes these tensions to push funded works beyond the academy are forcing a “mindset shift” in many publishing houses. This shift includes the integration of storytelling into publisher marketing campaigns and incentivizing authors to create video abstracts and other contributions to create an engaging “bank of collateral that attaches itself to the academic record” (Williams, 2016) and extends the reach of scientific works.

John Dove notes that the uneven distribution of openly available content across the myriad relevant search and discovery platforms calls for a more active, innovative publisher role in ensuring the success of OA and funded works. David Sommer further explains that accelerating the reach and impact of articles requires “a culture of holistic discoverability” and is a shared responsibility across publishers, societies, authors, funders, and intermediaries.

This paradigm shift will also be driven by the next wave of researchers. Early career researchers (ECRs) bring new attitudes and digitally native behaviors to scholarly communication. In their year-one report on an ongoing longitudinal study, David Nicholas and his CIBER team observed that ECRs universally agree that gold OA is a worthy enterprise and whereas there was some distrust of the model in earlier years, it is becoming accepted as a normal journal model — and indeed is being perceived as a desirable model — a change to findings a decade ago (Stevenson, 2004). Willingness aside, however, ECRs in this study (from five countries) did not prioritize publishing in OA journals for greater impact, nor did they regard archiving their research work in repositories as a priority — despite the opportunities to showcase their achievements that might lead to career advancement (Nicholas et. al., 2017).

Journals are selected by more authors from “periphery countries” than those in the central research-producing countries (Kienc, 2017). Furthermore, reputation within traditional academic institutions continues to be a driver for ECR activities. Until tenure and promotion committees evolve to include non-traditional scholarly outputs and prioritize research impact in addition to research publication, the development of new avenues for impact may need to come from other stakeholders.
These inspirational calls to action highlight a basic truth for furthering any new idea and championing change, that “everybody needs to take responsibility” (Sommer, 2017). Whether we aim to create impact via citation metrics or downloads, whether we promote greater patient engagement and self-management of chronic disease, or whether we envision the world of information freely available, we cannot go it alone.

David Sommer defines the term “impact resonance” as something that happens when systems and stakeholders work together harmoniously to achieve far greater results than they could through isolated efforts (see Fig. 1). Looking at the research landscape, there are many siloed members of the academic value chain that need to collaborate for an article to have real resonance. Imagine these players working toward the same goal of research impact and all that might be achieved with interconnected efforts.

Research is showing that successful efforts to make science more accessible and understandable to the wider public requires funders, researchers, and publishers working together to efficiently produce assets like “lay” summaries of new research (Nunn & Pinfield, 2014). No single constituency within the publication lifecycle should entirely carry the burden of these communication initiatives. And, as Dove points out earlier this year, critical advancements, such as metadata standards and data exchange protocols, cannot be forged in isolation and demand a collaborative approach (Dove, 2017).

We need to generate impact resonance and maximize the chances of an article being found, understood, read, and applied. To achieve this, authors, co-authors, publishers, institutions, societies, and funders need to play their part and take joint responsibility.

Sommer, 2017

Case Study – Globalization and Research Impact

One of the challenges of working together with the shared goal of research impact is not only the different roles we all play in the research landscape, but the different areas in the world within which we increasingly collaborate. Issues of institutional research reputation in emerging regions and non-English language research bear new meaning through the lens of impact.

In a case study about Pakistani academic researchers, Kanwal Ameen describes some of the challenges of trustworthiness in the research process. Researchers require publication in indexed journals for their professional career, but when it comes to using published content, the key factor was peer review. Credibility was given to journals that meet these criteria, and not to the level of access (open or toll) of the journal. Factors such as international reach and being highly cited were important to authors – the results of this study indicate that impact within the academy is critical for these researchers, and little mention of communication beyond the academy was made. There’s a great deal more to explore about research impact beyond academic institutions in emerging regions.

One of the barriers in any form of communication is a shared language. Through analysis of Web of Science indexes, Weishu Liu identifies some key language trends that we can extrapolate to explore impact outside of the academy. In most subject areas, English has been the dominant language in scholarly communication, though in some applied fields a larger number of non-English papers can be found. When compared with English, papers in other languages receive fewer citations. With English as the lingua franca of scholarly communications, the application of research may be more challenging in some regions of the world. Indeed, many non-English papers can be found in some applied disciplines like medicine and veterinary sciences.

When it comes to translating research articles into the lay public — whether via the media or other intermediaries — language is crucially important. Though English may dominate much of our global media outlets, there are still regions that cannot access the latest research and scholarly communication. The same regions that may also struggle to gain credibility to contribute to scholarly communication, as we saw in the Pakistan case.

Figure 1: Scholarly communication ecosystem (Sommer, 2017)
Conclusion

Reviewing the body of research on scholarly impact outside of the academy, it is clear that this is an area of inquiry still in development, calling for further examination. There is much discussion of the various roles players in the research landscape might play. There’s also discussion about the different ways research impact might be achieved, whether through media intervention, open access, lay summaries, or a combination therein.

We call on you to engage with these questions and contribute to the advancement of the research community:

1. How can we align the goals of publishers, funders, authors, societies, and academic institutions to center the idea of research impact?

2. Where do we share ambition? And where do we diverge?

3. What steps need to be taken to create a more inclusive research community in terms of access and knowledge barrier removal?

4. As industry leaders, how can societies and publishers explore new content formats and communication opportunities to reach audiences outside of the academy?

There are no simple answers to these questions. What is most heartening, though, is growing evidence of commitment from many different groups, who together have the potential to heighten the impact and value of the research we publish. The world of communications has been transformed and new technologies enable faster, more efficient connections and knowledge sharing. Expanding the reach of research articles to influence practice and policy, and inform medical patients, voters, and other groups, requires an ongoing willingness to translate and contextualize science. Driving us forward is a shared vision that research can create a better future.

References


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Our mission is to connect, inform, develop and represent the international scholarly and professional publishing community.

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