

# Adoption of Web 2.0 tools among STM publishers. How social are scientific journals?

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## Abstract

*The use of social media has increased dramatically among scientific researchers, due to their free availability and ease of use. Consequently, publishers have now embraced Web 2.0 features to promote and share the content of their publications and to enhance their visibility and use, as these Web tools are a powerful marketing and promotion channel. Publishers also aim to create a closer relationship with their audience by providing tools to facilitate communication between users of their platforms. Due to the rapid evolution of Web 2.0 technologies, there is little data available on the adoption of these tools among publishers. The purpose of this study is to examine the availability of social media tools by science publishers.*

**Key words:** social media; Web 2.0; science publishers.

## Introduction

The internet has today become an essential tool for scholarly communication and has offered scientific publishers the possibility of experimenting with a wide range of innovative features and services. Recently, publishers have embraced so-called Web 2.0 features to promote and share the content of their publications and to enhance their visibility and use. These tools can be a powerful marketing and promotion channel, thanks in part to their free availability and ease of use, and their resulting rapid adoption by researchers. Nowadays scholars experiment widely with Web 2.0 tools, challenging the traditional article format by including blog posts, interactive graphics and video and, perhaps most significantly, moving informal scholarly conversations to social media platforms such as Twitter [1]. This trend has been highlighted by some recent papers that try to analyze the use of social media by scientists [2, 3] and librarians [4] but there is little data on the adoption of social media tools by publishers. Discussions on the potential of Web 2.0 in the publishing area are rare: more common are generalized analyses of the benefits of Web 2.0 in the scholarly communication field.

Publishers' interest in these new media can be situated in the context of a changing scholarly publishing process: nowadays publishers are

expected to actively promote what they publish and, on the other hand, to reinforce their attractiveness to authors in order to induce them to publish in their journals [5]. The influence of social media on scientific publishing can be seen also as the result of the rise of altmetrics, an alternative way of measuring the impact of scientific publications based on the number of mentions of scientific papers in social media.

The purpose of this study is to examine the use of social media tools by science publishers: which tools are in use, and how widely used they are.

## Methods

In our analysis, we focus on how, and to what extent, scientific publishers utilize social media tools. In order to do so, a selection of 76 STM (Science, Technology and Medicine) publishers, specialized in the biomedical field, both commercial and open access, was compiled from the membership directories of the Open Access Scholarly Publishers Association (OASPA), the Association of Learned & Professional Society Publishers (ALPSP) and the International Association of Scientific, Technical & Medical Publishers.

The websites of these publishers were examined to measure the implementation and usage of selected Web 2.0 tools: social bookmarking tools, Facebook,

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Twitter, RSS/ATOM feeds, blogs, podcasts and Youtube. Regarding the social bookmarking tools, even when publishers provided a great number of them, the analysis was conducted only on the most popular: Mendeley, Citeulike, Delicious.

The analysis was conducted by reviewing the homepage of each publisher and a recently published article (to find implementations of Web 2.0 tools at article level). In practice, STM publishers use a single web platform for all of their titles, so a title-by-title analysis would be senseless. As publishers engage with social media both to connect with the public and to share their content, trying to enhance their visibility, we have grouped our findings on their use of social media into two different headings: social media as dissemination tools and as sharing tools. As an example, it is possible to find on the same webpage the Facebook icon to follow the publisher, and receive news updates, and the icon to share the contents of that page with one's colleagues.

## Results and discussion

Determining exactly the extent of publishers which are utilizing social media was surprisingly challenging, due to the intrinsically heterogeneous nature of social media, and to the experimental approach of the publishers themselves. It is common among publishers to experiment with a new prototype service making it available to a wider audience, in order to test the users engagement and receive an early evaluation, and then, if the response does not reach a sufficient level of use, to discontinue it. As an example, we report a statement of the Nature Publishing Group (NPG) regarding the termination in 2013 of their platform Nature Network:

"We started Nature Network back in 2007, as an experiment in using social media for science, and to provide a home for researchers to communicate with each other. Social media is now part of our day-to-day lives, and services like WordPress, Facebook, Twitter and Google+ now provide capabilities far beyond what was available in 2007, and what we built for Nature Network. These services evolve constantly, as technology and creativity make new things possible. Our site has dated and, like many social media services, has

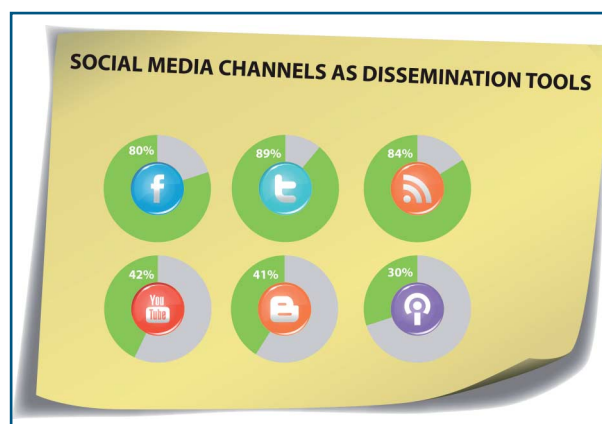
suffered from spam in recent months. We know that it is no longer fit for purpose nor provides the level of service that we wish for our users [6]"

Alongside with experimental new tools, we noticed that publishers tend to use established social media to foster their presence because "everyone is already there" [7].

## Social media channels as dissemination tools

Our findings show that virtually every publisher analyzed is experimenting with social media in order to create a closer relationship between them and their audience utilizing tools that are immediate and easy to manage, even if they give information at a more general level.

Most of them prefer to use social media that are popular in society at large such as Facebook or Twitter: 89% of them have set up a Twitter account and 80% a Facebook page to promote and share their contents and to enhance their visibility and use (Table 1).



**Table 1.** Percentage of publishers utilizing social media to disseminate their content.

Examining their Twitter accounts more closely, we observed that the most featured topics were news, articles, conference and job announcements. Usually, the biggest publishers have a main account, in order to spread their news, and many other different accounts, associated with their main journals, specific topics (for example Cell Press Projects, SpringerMath or Wiley OpenAccess) or addressed to a specific audience such as Taylor and Francis' Library Lantern, focused on librarians, or Springer AuthorZone, featuring tips on writing and publishing.

As of January 2015, the most followed account among the sample under consideration was that of the journal *New Scientist* (which itself defines this and its Facebook accounts as “The best place to find out what’s new in science – and why it matters”) with 1 and a half million followers, followed by *Scientific American*, with 962,000, and *Nature’s News and Comments* with 791,000.

We have also noticed a strong publishers’ presence on Facebook, where they mostly publish news, features, and discussions. Here also, *New Scientist* and *Scientific American* have the largest number of page likes (“likes” can be compared to Twitter followers): 2,340,076 and 2,084,359 respectively. The reason for this great quantity of followers is to be found in the fact that these are multidisciplinary journals, which also appeal to an audience of non-experts.

When examining cumulative totals for all accounts belonging to a specific publisher, the NPG is seen to be the most active on these two social media.

84% of the publishers analyzed use RSS feeds to keep their users continuously updated on their contents/activities, thus facilitating information dissemination. In all cases of publishers who use only one of the tools under consideration, that tool was an RSS feed.

YouTube, Blogs and podcasts are utilized respectively by 42%, 41% and 30% of the publishers analyzed, probably because their management represents a time consuming task for publishers.

The *British Medical Journal* (BMJ), *PLoS* and *NPG* have a strong blog presence. BMJ has more than 30 blogs in different categories (<http://blogs.bmj.com/>). Similarly, *PLoS* journals (<http://blogs.plos.org/>) and *NPG* (<http://blogs.nature.com/>) have a number of issue specific blogs and individual researchers blogs. Their objective ranges from providing platforms for discussion to highlighting articles from their own journals.

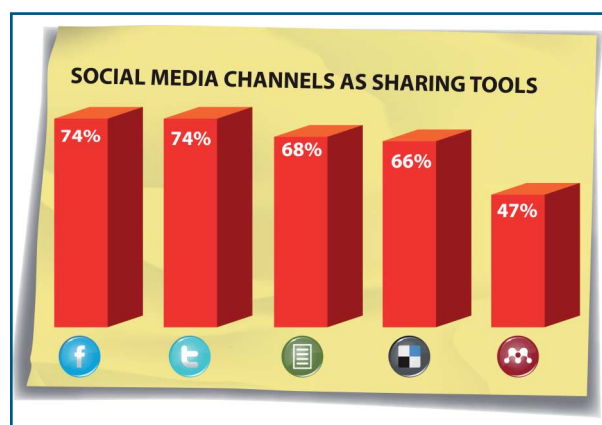
### Social media channels as sharing tools

As collaboration is central to research, most of the publishers analyzed provide readers and authors with the capability to directly share and recommend journal content through social networks and social bookmarking tools.

Many publishers are also starting to encourage their contributors to use social media and offer guidance

on how to use different kinds of social media for dissemination [8, 9]. Some journals are also starting to require authors to provide a tweetable abstract for their papers [10]. On the other side, due to the ubiquity of social media tools in websites of all types, readers expect to find these sharing tools also in the scientific publishers platforms.

Analyzing the data, 74% of the publishers include a direct link allowing readers to use Twitter and Facebook to suggest journal articles and discuss them with their peers (Table 2).



**Table 2.** Percentage of publishers providing social media to share content.

More than half of them make available, at article level, social bookmarking tools (Delicious, Mendeley, CiteUlike) to save, organize and share citations/links (the recent acquisition of Mendeley by Elsevier is indicative of the growing importance given by the publishers to these new tools).

Most of the publishers use third-party services, such as ShareThis (<http://www.sharethis.com>), for grouping all of these tools and to add social-networking features to their journal articles.

Social media tools have also a great potential for open access publishers. Not only these tools can be used to promote and share content, but, for open access journals, anyone following the shared social media content will be directly linked to the full text of an article [11].

There are many unanswered questions related to the sharing of online articles: first of all, it is still early to quantify how much of the activity on these sites involves a real engagement, and how much is just passing curiosity [2]. Additionally, although it is more than plausible that usage and access rights

have a dramatic effect on sharing patterns, there is much confusion about the nature of this effect. The International Association of Scientific, Technical and Medical Publishers (STM) has just opened a community-wide consultation (running from 9th February until to 10th April 2015) to gain a better understanding of the current landscape of article sharing through scholarly collaboration networks and with the aim to provide a core set of principles in order to set feasible standards for usage rights, and assert the important role of the publishers as facilitators in the scholarly research dissemination [12].

## Conclusions

Outcomes suggest that science publishers are deeply interested in new web technologies.

Publishers are at different stages of development in their implementation of Web 2.0 technologies with the aim of becoming “scientific communication facilitators” in the near future and, in many cases, they have been behind many of the higher-profile attempts at social networking for scientists.

Nonetheless, these technologies are already quite widespread, indicating that most scientific and technical publishers are investing in social media, experimenting with new services and evaluating their impact on the scientific community.

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