

## Trends in scholarly use of online social media<sup>\*</sup>

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As online social media sites rapidly become more mainstream, numerous studies have been conducted on how the public is using these technologies; however, there is still scant research into how scholars are using these technologies. To address this gap, we are conducting a comprehensive study to find out if, how, and why scholars are using social media for knowledge and information dissemination (KID). In this research, we address six main questions: 1) Why are scholars starting to rely on these new media? 2) What is the geographical reach of these media? 3) What is the actual adoption rate for these media among scholars? 4) What is the perceived, actual and potential utility of these media in the context of KID? 5) Do these media help to improve KID? 6) Do these media help or hinder the ability of researchers to publish or present their work in more traditional media such as journals and conferences? This position paper is a starting point in our research. This preliminary literature review will list some of the social media tools that have been adopted by scholars and how scholar are currently using them in their work.

The emergence of web 2.0 technologies is changing the way scholars work in almost every aspect of their professional lives. Social media are of particular importance because of the collaboration and communication they facilitate between peers (Avital et al, 2006). More and more scholars are realizing the potential benefits offered by these sites and are incorporating them into their work. For example, when Dr. Deolalikar claimed to have solved the P versus NP problem (one of the most difficult problems in Mathematics and Computer Science) and posted a proof on his website, within just a few hours other computational theorists started a number of wikis and blogs to debate the credibility of this proof. This level of fast-paced collaboration was unprecedented in the mathematical field (Markoff, 2010) and was only possible due to the ubiquitous access to online social media.

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## Popular Social Media Tools for Scholars

Online social media tools such as blogs, microblogging sites, and wikis are increasingly being used by scholars for disseminating information, informal communication and interaction with peers. *Blogs* were among the first modern social media tools adopted by scholars. Currently there are a number of dedicated scholarly blogging platforms such as <http://scienceblogs.com> and <http://scientificblogging.com> where scholars not only discuss current research, emerging initiatives, and scientific news, but often also post personal stories about scientists starting to work in the field, or provide tips for new researchers (Charbonneau, 2010). By connecting with new scholars these blogs are successful in forming a community of scholars, which in turn inspires further collaboration and connections between peers. Due to the growing popularity of scholarly blogging, a conference has been formed, the Science Blogging Conference; the last meeting of which attracted almost 200 delegates (Bonetta, 2007; Bukvova, et al, 2010).

*Microblogging* sites have also been discovered by scholars and are also being used for dissemination and communication purposes. Twitter for example, is becoming a must have conference communication tool for sharing links and information about the real-time events at the conference (Davies, 2007; Young, 2009). Twitter is also frequently used by scholars to communicate with their peers, promote the scholar's own, or a peer's work (Letierce et al, 2010). Due to the popularity of Twitter, new microblogging sites that specifically target scholars are also emerging. One such example is <http://sciencefeed.com>, a microblogging tool designed for scientists and scholars in the science fields (Fenner, 2010; Nuthall, 2010). This is an excellent example of how scholars are not only making use of existing social media and networking sites, but are altering them and developing new tools to fit their needs.

*Wikis* are other popular social media. The collaborative nature of wikis makes them a great tool for scholarly use and communication. Wikis enable a team of peers to easily and quickly contribute to a group project with a minimum amount of technological expertise or equipment required (Bialeck, 2005). Sites such as <http://scholarpedia.org>, <http://citizendium.org>, <http://open-site.org>, and <http://knol.google.com> are all examples of wikis which are geared towards scholars. They all emphasize the reliability of their information by having a group of scholars act as editors of the site (Izhikevich, 2006). This has inspired many scholars to join these sites. For example, <http://scholarpedia.org> has a membership of almost 5,000, including 15 Nobel Laureates and 4 Fields Medalists (Izhikevich, 2006).

## Why Do Scholars Use Social Media Sites?

Many of the prior studies on why scholars use online social media and networking tools often cite their need to communicate with each other (e.g., Barjak, 2006; Bonetta, 2007; Gardiner, 2006; Letierce et al., 2010). Additionally, many scholars confirmed two unintended benefit of using social media tools, the ability to spark and expand new ideas just from the direct interaction between the (micro)blogger and his/her readers (Collins et al, 2010; Kirkup, 2010) and even occasionally replaces the scholar's need to publish in traditional paper publications, such as scholarly journals (Bialeck, 2005; Kirkup, 2010).

Another frequently cited benefit that encourages scholars to use these new social media and networking tools is the ability to create and maintain a community or network of scholars (Biernholtz, et al, 2009; Letierce, et al., 2010). The development of a scholarly community is created by attaining 'awareness' between scholars and their respective work. Social media technologies facilitate this 'awareness' by increasing the visibility of scholars and remove barriers that traditionally that separate scholars from their peers. The communities created by these social media may inspire increased collaboration and information dissemination between scholars.

One of the most interesting and surprising trends concerning the adoption of these sites by scholars is the age groups who are most likely to use social media tools in their professional life. Senior faculty and researchers have been described by some studies as being the most frequent and early adopters of social media and networking sites (Biernholtz, 2009). This has been attributed to the more secure professional positions they generally hold, and the likelihood that they have already established a strong reputation in their field through traditional publishing and networking sources. These positions grant them more security to experiment with new publication methods, information sources, and collaboration tools. Junior scholars are more dependent on publishing through more traditional 'recognized' academic sources such as journals or monographs.

It is also interesting that scholars in the sciences use social media technologies earlier and more frequently than their counterparts in the humanities (Dubini, et al., 2010; Gardiner, 2006; Maron, et al., 2008). It is not clear whether this is because they have a better understanding of the technologies or a greater need to use them, however it may not be a coincidence that *scientific* scholarly communities are cited as relying on peers more heavily for knowledge information dissemination, collaboration, and

support (Cronin, 2010; Maron et al., 2005). These tools allow them to continue to rely on their peers, while facilitating faster, more interactive, and more frequent access to their colleagues.

In sum, although some hesitations and limits exist with the use of these resources, we expect that as these tools grow so will scholarly adoption rates and use. We are currently in the process of conducting an online survey and a series of interviews designed to learn more about scholars' use of online social media sites. The results of this research will enable better understanding of changing scholarly communication and publishing practices online and measure the impact of scholars' postings on the public and mainstream media.

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