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From the Field

Pressing Forward in Scholarly Communities: Synthesizing Communication Technologies with the Researchers Who Utilize Them

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Abstract

Digital communication technologies have dramatically changed the ways in which scholarship is accessed, discussed, and shared. Joining the traditional journals and manuscripts are new ways to distribute and consume research, including blogs, podcasts, white papers, and more. There is more information available and more ways to access it than ever before, which presents new sets of challenges and opportunities. PressForward is free, open-source software that responds to these needs by combining the features of content aggregation, discussion, and publication into a single, user-friendly dashboard. Acknowledging that collaboration and networking is increasingly important in research development and funding, PressForward has built-in, flexible user roles and workflows that allow communities of any scale to contribute in multiple ways. This article will review the history and features of PressForward, as well as describe the community partnerships that both utilize the software and influence the progress of the project.

Introduction

The 21st century is an exciting time to be part of a research endeavor. Information moves at the speed of light, scholarship is being produced at rates far greater than ever before, and networking with peers has become one of the most important elements of scholarly communication.[1,2] The "Age of Information" is a time of wonders, but all of these monumental strides introduce new questions and tensions between tradition and innovation. Whether he or she likes it or not, every scholar participates in ongoing conversations in at least two separate arenas: their own discipline as well as scholarly communication processes generally. Reading and publishing the research in one's field is a form of participation. The venues and methods that all researchers choose for those exchanges shapes the nature of the scholarly communication landscape with which they engage.

These are the reasons that motivated the development of PressForward, a software solution for the discovery and sharing of scholarship online. While the volume and breadth of information available online continues to explode, scholarly communities seek ways to efficiently facilitate content filtering, contextualization, and conversation. PressForward is an open-source plugin for the WordPress content management system that responds to these needs by combining the features of content aggregation, discussion, collaboration, and publication into a single, user-friendly dashboard.

The creation of the software and its features are irrevocably tied to a perpetual iteration of research and collaboration. Developing a scholarly communications platform requires a thorough understanding of not only the technology upon which it is built, but also of the manners of the communities that will benefit from its application. As one of the primary objectives of the project, the PressForward team of digital scholarship experts and open access advocates have

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committed to an ongoing relationship within the scholarly communications ecosystem.

The Challenge

Scholarly communication is an ongoing and iterative process; evolving to accommodate new users and new ways of utilization. Journal articles or scholarly monographs are not the only means to broadly exchange ideas and concepts, and they are certainly not the most rapid. The Internet has changed how scholars read, write, discuss, publish, and share. However, institutions generally do not have codified processes of scholarly communication that replicate the speed of these developments. The development of new scholarly communications tools is not an attempt to definitively respond to this need, but a commitment to interact with researchers as a means of introducing new concepts to the community and collaboratively build upon them.

This information overload is observed due to the convergence of three interrelated issues. Information, including scholarly output, is created and shared much more rapidly than before, new communications technologies increase the number of channels and range of accessibility available for that output, and a growing number of industries and communities are reliant upon constant access to accurate information in order to succeed.[3] The interplay between these three issues creates myriad challenges for the scholarly communicator in the digital age.

First, the increasing breadth and dimensions of access do not necessarily increase the usefulness of all of the available information. Despite the abundance of information and sources, many are decentralized and difficult to discover. This often leaves content "orphaned," and therefore not useful for much of the potential audience.[4]

Second, this same decentralization can make it difficult to effectively contribute to the conversations within a given field. With information deriving from so many sources and a diversity of platforms, developing a consistent interaction and increasing community engagement is time-consuming and can affect willingness to contribute.[5] This splintering also makes opportunities for collaboration, which are increasingly valuable and even necessary in research, more difficult to find and manage.[6]

Third, researchers are also seeking out information in new ways. It is becoming increasingly common for students and researchers to use social networks and blogs to find a trail of recommended sources and content, and at least some of that content isn't found in the traditional journals.[7] While these are valid methods of pursuing answers, it may unintentionally circumvent important voices and any form of review.

The Response

PressForward, a project of the Roy Rosenzweig Center for History and New Media at George Mason University and funded by grants from the Alfred P. Sloan Foundation, is a response to the proliferation of impactful, meaningful intellectual conversation that appears outside of the traditional scholarly publication outlets. The new mechanisms for scholarly interaction include many avenues, including: blogs, podcasts, streaming video, and white papers. There is a clear opportunity tied to this growth, as more ideas than ever before can be shared in more ways and more quickly. But the opportunity is not without risk.

PressForward is a tool and a model of scholarly communication that approaches these barriers by providing a built-in workflow that not only facilitates the filtering of the most impactful content and resources, but also properly attributes and contextualizes this content. A free, open-source plugin for the WordPress platform, the software works by acknowledging the importance of three separate elements of scholarly communication: technology, communication, and community.

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All of the relevant sources for the discipline or project can be added via RSS/Atom feed or a single item can be added using the built-in bookmarklet. This has the appearance of any other aggregator on the web, but the human factor comes into play in the curation process. Unlike a typical aggregator that publishes all of the content that comes through, a community of researchers can collaboratively read, discuss, nominate, and publish the content that is the most useful or salient for their unique audience. Instead of a process that attempts to integrate disparate tools for reading, editing, discussion, and publishing, PressForward assists in this process by bringing content into a WordPress dashboard. Users can utilize one tool for aggregation, discussion, and curation, while audiences can forego reading dozens of sources for a single centralized one.

The nature of collaboration can be determined by adjustable user roles and workflow options. Each function of PressForward can be customized so that only users with particular permissions can utilize them. This allows projects to cultivate large communities of contributors who can engage with, share, and influence content while keeping final decisions, site preferences, and formatting in the hands of a smaller team of senior editors.

But the technology and flexible workflow are only part of the PressForward model. Responding to a common issue of republishing and sharing content on the web, pieces published in a PressForward publication are not designed to pull attention or metrics away from the original source. Rather, it provides new ways for the content to be found by an audience of their peers. Each piece of content published through PressForward maintains all of the metadata of the original source, and by default the audience will be directed to that original source after a framing or introductory paragraph. This assures that all republished content is attributed and bounced to the original source. Redirecting readers to the source is not only healthy community participation; it is also community mobilization. Researchers who have their work acknowledged by their peers are more likely to participate in the extended conversation, a crucial element of scholarly communication on the web.[8]

Centralization makes it much easier for researchers to follow developments and opportunities in their field, but PressForward is not merely a recompilation tool. The workflow facilitates a different way of looking at peer review, where the experts in the field work together to guide and contextualize the conversation. In addition to the source metadata, PressForward can make the selection and editorial process as transparent as possible. These are not unique considerations, but an important step in developing community trust and providing the benefit of visibility for editorial participants.

The Communities

Scholarly communication tools are often defined by the communities that utilize them. Recognizing this is vital, but working to understand and collaborate with communities is an organic process that can be very different with each stakeholder group or environment. There are consistent resources and methods across all of them, while there will also need to be unique considerations for many. The development of the PressForward technology is dependent on observing and communicating with the diverse scholarly communities that use the software and then integrating features and capabilities that reflect those uses.

Digital Humanities Now

PressForward is built on learning and adaptation. These are not only goals of the project, but also major themes that run throughout development. Before work even began on the PressForward software, the project team began researching the state of scholarly communications on the

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web and the tools used to manage them. Presented through a series of accessible white papers and blog posts, they outlined the state of discoverability and availability of open access "gray literature" online.[9]

At the time of these evaluations, there was a noticeable lacuna between the resources made available by research communities in the sciences and those provided by their peers in the humanities. Whereas science associations and communities had existing portals for peer-reviewed journal articles and native digital content, organizations in the humanities had fewer and less diverse offerings. Observations also included an encouraging growth in the number of projects that facilitated the aggregation and discussion of scholarship on the web, but also the lack of a flexible tool that would allow other communities to adopt a similar model.[10]

The convergence of these findings, the need for adaptable curation tools and the lack of humanities content discoverable on the web, led directly into the establishment of the first PressForward pilot project. *Digital Humanities Now* <digitalhumanitiesnow.org> would accomplish two goals simultaneously; centralize and curate the most impactful humanities content from all around the open web while mobilizing the digital humanities community to take part in the process.

In addition to the software, *Digital Humanities Now* also piloted a unique interplay of technology and group dynamics with a new workflow. Digital humanities, as its name implies, is a community that has a great deal of discourse, content, and resources on the web. This activity has led to the rapid growth in the amount of content that *Digital Humanities Now* brings in from fewer than 300 feeds in 2011 to more than 500 now.

The curation of this content takes place in two stages (see Figure 1). The first stage is performed by a worldwide community of several hundred digital humanities researchers and practitioners who have volunteered to serve as editors at-large. Each week, seven or eight editors spend about an hour a day reading and discussing the content, eventually nominating the strongest or most useful pieces for consideration. In the second stage, an editor-in-chief reviews the content that the community nominated and the discussion surrounding it. The content that received the most nominations or inspired the most dynamic conversations is then selected for publication.

The editor-in-chief also ensures that the content is republished responsibly. Only a "teaser" paragraph or abstract is posted to the *Digital Humanities Now* site, along with the link leading directly to the source. Not only is the source clearly attributed, but the community of contributors is as well. Each republished article also reveals all editors who were active during the selection period, which provides a visible affirmation of their collaborative activities.

The efforts of the *Digital Humanities Now* staff and volunteers have not gone unnoticed. On Twitter, a platform where the digital humanities community is increasingly active, the *Digital Humanities Now* account has increased its number of followers eight-fold since the first year of publishing. The curation model and success of the publication led other publications, like *Global Perspectives on Digital History* and *dh + lib*, to adapt the software to their own communities and audiences. The early proliferation of PressForward demonstrated that a flexible aggregation and curation tool could provide a unique, collaboration-driven solution to information overload on the web, while also creating the space for growth and learning in completely new frontiers.

PressForward Partners

The growth of the PressForward user base is vital to the project, but that is not where our jour-

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ney ends. Instead of only providing the software, PressForward partnered with 15 research organizations to assist in technological application and community mobilization. As with any partnership, this is a symbiotic relationship. While the partner organizations receive assistance in the development of their new projects, the PressForward team researches the ways in which these new communities interact with the software and with their audiences. These observations are integrated into the future updates of PressForward and discussed with the broader scholarly communication community.

Because of the importance of this dialog, partners were carefully considered. Following the successful idealization of a humanities community through *Digital Humanities Now*, the PressForward team turned toward projects in the sciences that were seeking collaboration tools. A community-based recruitment strategy led to the selection of partners that are diverse in goals and methods, as well as leaders in their respective fields.[11]

Examples include the Public Library of Science (PLOS), one of the leading publishers of open scholarship, which uses PressForward to curate its own archive into topical categories. The senior editors of the various PLOS journals, who are most familiar with the literature, have made browsing for interesting and relevant content a more comprehensive experience for experts and general audiences alike. Topics found in *PLOS Collections* range from public engagement of science and altmetrics to the Zika virus and climate change. In the same vein, the Marine Biological Laboratory at Woods Hole Oceanographic Institute features content shared by their faculty and collaborators through many platforms, including blogs, YouTube, and Twitter.

Another popular science destination on the web is Zooniverse, a platform for dozens of "people-powered" research projects. These projects succeed due to the efforts of the public, citizen scientists who contribute their time and energy to producing and gathering data on projects that are identifying galaxies and transcribing the letters of Shakespeare. The senior staff of Zooniverse and citizen science experts from around the globe decided to face a lens inward and produce a publication about these extraordinary volunteers with *Citizen Science Today*. The publication highlights research about the motivations and practices of citizen scientists, the methods of successful crowdsourcing projects, and the appearance of these projects in the media.

In a similar introspective project, the University of Wisconsin is developing a collaborative publication that is itself about collaboration and community. Diversity in the sciences remains a topic of much discussion, but progress on solutions has been slow.[12] *The STEM Diversity Network* will not only centralize these conversations, it will also provide relevant resources for students, faculty, and staff on campus. By bringing the barriers to and opportunities for diversity into the light, they hope to mobilize the STEM community and provide a model that other institutions can adopt.

Following in the tradition of *Digital Humanities Now*, several partners are producing community-curated publications that activate and utilize their community of practice. Research institutes like the Rachel Carson Center for Environment and Society, university research laboratories like Jonathan Eisen's Lab at University of California, Davis, and scholarly societies like the Deep Sea Biology Society have each developed publications that keep their peers informed of the best research and important announcements.

Other publications have found new applications for PressForward. A new publication from the Environmental Studies program at Lewis and Clark College appears to operate like others, but it is simultaneously a teaching tool. The primary

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editors of their publication, *Situating the Global Environment*, are exceptional students in the program. The students develop parallel skills in evaluating the sources and content in their subject area and writing accurate and compelling contextual pieces for their audience, as well as collaboration in digital spaces, all vital abilities in the 21st century workplace.

Through their upcoming publication, *Arceli*, the Harvard-Smithsonian Center for Astrophysics is providing a solution for a unique need in the field of astronomy. Astronomers communicate important ideas and data outside of traditional publishing, like blog posts and comments. This is a natural development in the rapid scholarly communications environments on the web, but it often presents challenges when citing or indexing these efforts. In combination with Zenodo, a research data repository, *Arceli* will use PressForward to curate these communications and assign to each of them a digital object identifier (DOI) so that they can be cited properly in the future. While working in support of the astronomy community, *Arceli* is also becoming part of a growing conversation about where scholarly communication ends and informal communication begins.

General audiences are rarely reading about science from the original source. Researchers are most often writing for their peers, utilizing a specialist lexicon that is not understandable or usable for a most readers. Instead, audiences experience developments and discoveries of science through the filter of science writers who transform the impenetrable jargon of science into compelling stories while maintaining the accuracy and integrity of the original work. The Council for the Advancement of Science Writing (CASW) has been supporting this process and these writers for decades. Now, with the deployment of the PressForward software, they are showcasing the very best work coming out of their community. The prominent science communicators from the CASW board of directors will not only share premier articles about science, but also discuss and demonstrate why they are exceptional and how they effectively communicate complex topics. This is not only beneficial to the original authors, but also to the aspiring science writers and the scientists who wish to learn more about how their work is discussed in the public sphere.

Part of the Conversation

As the web continues to impact scholarly communication, it has become clear that the medium in which information is disseminated is not the only change that will take place in the broader research enterprise. Collaboration has become increasingly important to successful project funding and execution, and the way in which collaboration is discussed and visualized has become a crucial point of discourse.[13] Several partners are on the forefront of these conversations, providing an opportunity for PressForward to take an active role in development of the understanding of community building and dynamics in research.

The PressForward team has had a continued presence on Trellis, a social platform specifically for researchers and practitioners in the sciences to engage with one another. Trellis is a project of the American Association for the Advancement of Science (AAAS), the largest science community in the world. When researchers join, they gravitate to communities that orbit around topics that interest them. Users develop their professional networks, find new resources, and have opportunities to share and discuss their own work. The PressForward team has worked primarily with a group called "Communities for Science Communication." This group is composed of community builders and focuses understanding on how communities in science develop, collaborate, and organize on Trellis and beyond. This has been an ongoing interrogation that has evolved through survey development and dissemination, discussions featuring experts

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in the fields of science communication and community management, and the sharing and annotation of new research. Through this process, PressForward will hopefully develop opportunities to enable more dynamic activities involving relevant literature and content.

The fate of the scholarly communication industry itself is the topic at hand for the Open Scholarship Initiative (OSI). Funded and supported by the United Nations Educational, Scientific, and Cultural Organization, OSI is a unique community-building effort that brings representatives of all of the stakeholder groups that are the creators of or dependent upon scholarly communication together in a series of annual meetings over ten years. From university administration and libraries to publishers and national governments, OSI is facilitating conversations that rarely occur organically. The PressForward team has been involved with the project since its inception, and has worked extensively with planning the event and media coverage. Following the inaugural meeting in 2016, the PressForward software has been one of the tools facilitating the continued communication and sustained momentum of this important and diverse community effort.

The PressForward partners are the beginning of this new community of users. Throughout the next year, the PressForward team will appear at conferences and events across the country. These are opportunities to not only demonstrate how the software is benefitting scholarly communities, but also to frame how and where it fits into the scholarly communication landscape. We will share what we have learned through examining and producing literature about communicating research on the web, discuss how the software is changing to meet the needs of various communities, and hypothesize what the future of scholarly communication may hold.

Conclusion

Scholarly communication weaves throughout all of research and higher education. Community mobilization, public engagement, and network development are no longer secondary concerns for many researchers, even if the demands for traditional publishing methods have not subsided. Despite the difficulties of keeping pace with the abundance of research available on the web, researchers are discovering ways to share their work and be part of the spontaneous conversations with their communities that can only occur in these environments. PressForward has been part of this facilitation for some of the foremost research institutions in the world, and extended interaction with these communities continues to mold a dynamic and responsible scholarly communications tool.

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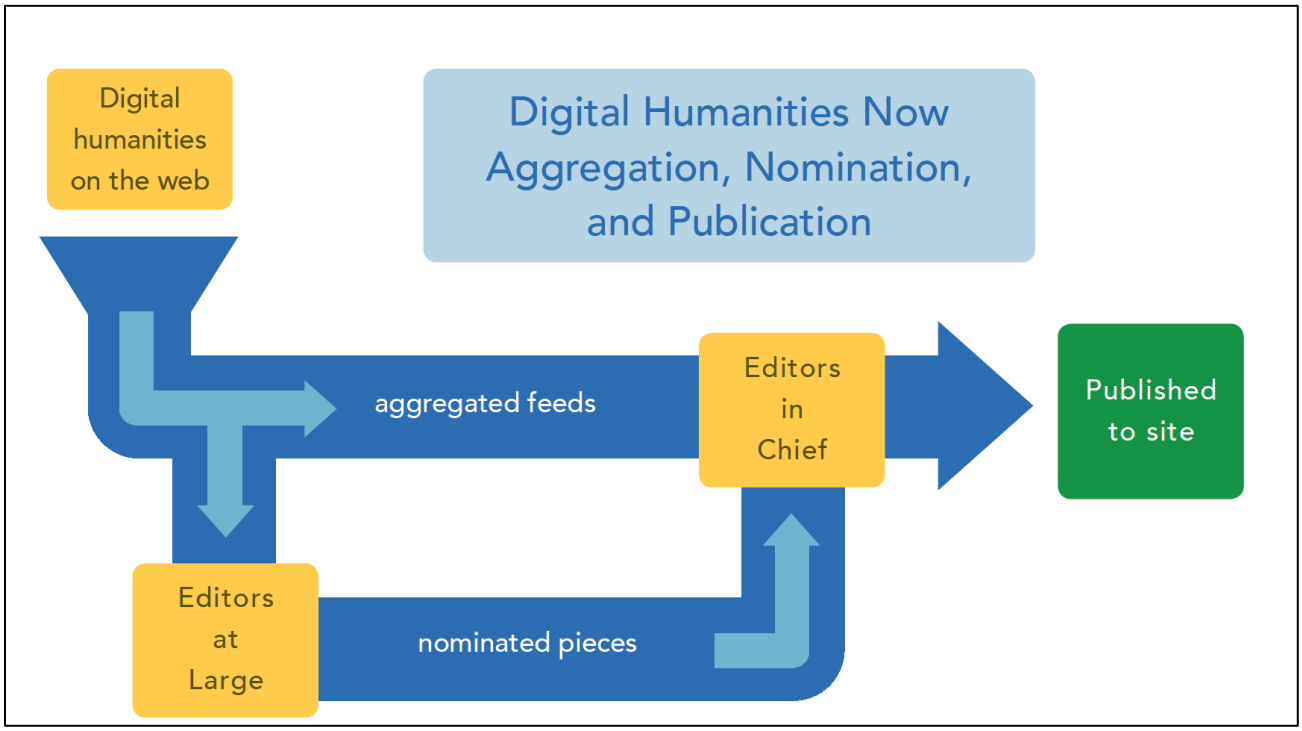
Figure 1. Illustration of the *Digital Humanities Now* workflow



[1] Lutz Bornmann and Ruediger Mutz, "Growth Rates of Modern Science: A Bibliometric Analysis Based on the Number of Publications and Cited References," *arXiv:1402.4578 [physics, Stat]*, February 19, 2014, http://arxiv.org/abs/1402.4578.

[2] Ashkan Ebadi and Andrea Schiffauerova, "How to Receive More Funding for Your Research? Get Connected to the Right People!," *PLOS ONE* 10, no. 7 (July 29, 2015): e0133061, https://dx.doi.org/doi:10.1371/journal.pone.0133061.

[3] Bryan Alexander et al., "Report from the Information Overload and Underload Workgroup," *Open Scholarship Initiative Proceedings; Vol 1 (2016)DO - 10.13021/G8R30G*, April 19, 2016, http://journals.gmu.edu/osi/article/view/1383.

[4] Joan Fragaszy Troyano, "Discovering Scholarship on the Open Web: Communities and Methods," *PressForward.org*, April 1, 2013, http://pressforward.org/discovering-scholarship-on-the-open-web-communities-and-methods/.

[5] Xigen Li, "Factors Influencing the Willingness to Contribute Information to Online Communities," *New Media & Society* 13, no. 2 (March 1, 2011): 279–96, https://dx.doi.org/doi:10.1177/1461444810372164.

[6] Ebadi and Schiffauerova, "How to Receive More Funding for Your Research?"

[7] Stefanie Haustein, Cassidy R. Sugimoto, and Vincent Larivière, "Social Media in Scholarly Communication," *Aslib Journal of Information Management* 67, no. 3 (May 18, 2015), https://dx.doi.org/doi:10.1108/AJIM-03-2015-0047.

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[8] Li, "Factors Influencing the Willingness to Contribute Information to Online Communities."

[9] Caitlin Wolters, "Survey of Scholarship Available on Scholarly Association and Community Websites," *PressForward.org*, May 10, 2013, http://pressforward.org/discovering-scholarship-on-the-open-web-communities-and-methods/.

[10] Troyano, "Discovering Scholarship on the Open Web: Communities and Methods."

[11] Doug McKenzie-Mohr, *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*, 3 edition (Gabriola Island, BC: New Society Publishers, 2011).

[12] Allie Bidwell, "STEM Workforce No More Diverse Than 14 Years Ago," *US News & World Report*, accessed July 5, 2016, http://www.usnews.com/news/stem-solutions/articles/2015/02/24/stem-workforce-no-more-diverse-than-14-years-ago.

[13] Barry Bozeman and Craig Boardman, *Research Collaboration and Team Science*, SpringerBriefs in Entrepreneurship and Innovation (Cham: Springer International Publishing, 2014), http://link.springer.com/10.1007/978-3-319-06468-0.

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