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The 3rd SPARC Japan Seminar 2015

"Challenges and Possibilities of Emerging Research Information Platforms"

Tuesday, January 19, 2016: National Institute of Informatics
12th floor conference room (Attendees: 87)

The purpose of the latest SPARC Japan Seminar was to provide an overview and grasp of recent developments and emerging trends in scholarly communication platforms, illustrated by real-world examples of how researchers are putting these tools to use, and to discuss the possibilities and challenges these platforms present for research and how university libraries can engage with the new technology.
See the SPARC Japan website for presentation abstracts, handouts, and other details (http://www.nii.ac.jp/sparc/en/event/2015/20160119en.html).

Presentations

Outline

Shinji Mine
(Faculty of Humanities, Law and Economics, Mie University)

Until recently, scholarly publishers and academic societies have performed the role of preserving and communicating research results via service portals, access platforms, and terminal platforms. But in recent years new platforms have emerged one after another: social networking services (SNS) for scientists, Google Scholar, and ReadCube are just a few examples. A survey by the journal Nature found that many researchers use a variety of these platforms. But others take a much more conservative, skeptical stance, questioning their trustworthiness and their relevance to the heart of research. How, then, should libraries engage with these platforms?

The Slow Revolution in Scholarly Communication and How Libraries Can Adapt Their Perspective

Jeroen Bosman
(Utrecht University Library)

I was born in 1964, the same year as the Shinkansen, and I have always been very interested in Japan as a leader in advanced technology. I believe that new technology can contribute to scholarly communication as well. In the course of our survey (101 Innovations in Scholarly Communication), the number of available research tools soared from 20 to over 100 in a period of a few months. Researchers make use of such tools for searching the literature, analyzing data, writing, publishing, outreach, and evaluation. As of now, there are more than 600 research tools in existence. Although the first scholarly publishing and communication platforms were developed by publishers, many of the newer tools are the creation of researchers, yet they are open platforms that anyone can use. As a way to think about these tools and their utility, we adopted a simple model we call G-E-O (good, efficient, open). The key points to consider are whether they enhance openness (O), efficiency (E), and fairness or reproducibility (G). Of course, it will take time, but objective assessment serves to combat fraud and misconduct. The important thing is that conferences like this event are taking place all around the world, and the discussion is moving forward.
Another way to look at these tools is from the standpoint of workflow. The basic phases of the research cycle are preparation, discovery, analysis, writing, publication, outreach, and assessment, though in practice the workflow is more complex. The advent of open science is altering the

workflow. Nowadays researchers can get feedback from the public while their project is still in its planning stages, and they can publish their research one section at a time. This can enhance research credibility. The tools can also be linked in different ways to create different workflow models (traditional, modern, innovative, experimental).

The preliminary results of our survey have shed light on how researchers are using these tools. As of the end of 2015, we had received 8,028 responses. On the question "Do you support open access?" the results varied by country, and the highest rate of support came from Venezuela, though more analysis is needed to explain why. Once all the data has been gathered, we plan to enlist a lot of people to analyze it more closely part by part. For outreach, early-career researchers were more likely to use Twitter than senior researchers. In Japan, EndNote was the most widely used reference management tool, followed by Mendeley and "others."

I have listed ways in which libraries can be of use at each stage of research, and I'd like to discuss the role of libraries going forward. In addition to building on our traditional strengths, it's important for libraries to tap human resources for development of new platforms. Our platform Dashboard can help institutions make use of the data from the 101 Innovations project. Also, I am calling on libraries to play an active role in the distribution of our survey. We have received only 250 completed surveys from Japan so far, and the response from some other Asian countries has been minimal. The survey can be conducted at the individual level, so please contact us if you are interested in cooperating. What we have done so far is not the goal line but a starting point in terms of getting a handle on the current situation and future directions.

A Brief Review of 'Social Networks for Scientists'

Keita Bando
(Coordinator for the Online Platform for Scientific Communication)

Today I would like you to join with me in thinking about social networking for researchers from the library perspective. SNS for scientists lagged behind business and personal networks by several years, but today sites like ResearchGate, Academia, and Mendeley—all three launched in 2008—are quite popular among researchers. ResearchGate is the most widely used among scientists, according to an August 2014 survey. ResearchGate is also used by many scholars in the social sciences and humanities, but Academia is popular as well. In the 101 Innovations survey (as of June 2015), the majority of respondents indicated that they use institutional repositories to archive and share research, but it seems that librarians made up a large percentage of the respondents. ResearchGate seems to have about as many users as institutional repositories.

I'd like to talk briefly about the use of social networks for archiving, collaboration (annotation), and rating or scoring of researchers and institutions. As repositories, social networks have been criticized from the standpoint of reliable long-term archiving, and some are of the belief that we should stick with institutional repositories. In terms of annotation, the "open annotation" movement has been picking up momentum, and many publishers have signed on. In this context, it will be interesting to see what develops with academic SNS that are promoting their own annotation functions. There is a lot of opposition to these sites' use of metrics to rate scientific impact and reputation. Unless users understand the pitfalls of these rating systems, they could find them a double-edged sword. From the standpoint of altmetrics (alternative metrics), it can be argued that more data is needed to create valid metrics. Libraries need to start thinking about ways to link institutional repositories and research information systems with SNS for scientists.

SNS for Researchers: ResearchGate

Fujio Toriumi
(Graduate School of Engineering, The University of Tokyo)

I'd like to talk about ResearchGate from my own perspective as a user and as a researcher studying social media. Here are some of its convenient features. (1) The "Stats" feature allows one to keep track of evaluations of one's work on a daily basis. (2) The Upload function is a convenient way of sharing papers. (3) With "Request Full Text," one can ask for the full text of articles that are not open access. (4) One can share experimental data as well as papers. (5) The Jobs section has information on job openings worldwide. (6) The Questions function allows one to ask, answer, and view

questions about research. (7) One can automatically create a CV from one's profile, which is quite helpful.

What makes a social media successful or unsuccessful? What determines whether people use it? The value comes from the fact that users share their information with everyone. A network's success or failure can be expressed in terms of the public goods game, i.e., *cooperation* versus *defection*. In some cases, the rational outcome is for everyone to defect. Networks try to attract users by getting as many people as possible to cooperate. What seems to work best is rewarding those who cooperate and also rewarding those who reward the cooperators. Seen in this light, ResearchGate appears to have developed a superior system for encouraging cooperation.

Are Blogs Useful for Research? How?

Jun Tarui
(Graduate School of Informatics and Engineering, University of Electro-Communications)

An interesting example of the use of scholarly blogs in the field of mathematics occurred in 2010. Vinay Deolalikar's claimed proof that P $\neq$ NP became the focus of an intense online discussion lasting about five days after it was introduced by Richard J. Lipton on a computer science blog. The post elicited a lively debate, with users posting about 200 comments a day, and of these about 100 comments were from serious mathematicians. In the end, the discussion concluded that the proof contained a crucial flaw. A positive comment early on by Turing Award winner Stephen Cook had a big impact. Terence Tao and Timothy Gowers participated in the online discussion, and Tao's Wiki page helped summarize the debate. It was gratifying to see so many lay people interested in such a discussion. It helps tremendously when the mainstream media join in with commentary. European and American science journalists are very quick to pick up on science news. The idea of a "multidisciplinary proof" and the participation of star researchers created a major brouhaha that attracted media attention.

Science blogs are useful for keeping up with the latest news, grasping ideas quickly and efficiently with the help of presentation videos, and connecting with others in the field, which is gratifying. The downside is that they are distracting. I think they could also be useful for publishing alternative proofs.

Panel Discussion

Moderator and panelist: Kazuhiro Hayashi (National Institute of Science and Technology Policy)
Panel members: Jeroen Bosman (Utrecht University Library) / Keita Bando / Fujio Toriumi (The University of Tokyo) / Jun Tarui (University of Electro-Communications) / Shinji Mine (Mie University)

HAYASHI: SPARC Japan has already held a number of seminars dealing with social media and new scholarly communication services with such guests as Victor Henning, who developed Mendeley. In an earlier essay, I outlined three stages in the development of scholarly publishing and communication services. Stage 1 was the digitization of functions previously performed by print media. At stage 2, they added value incrementally. But stage 3 introduced discontinuous or disruptive innovation to carry out the original purpose of the service. An example of discontinuous or disruptive change is the experiment of conducting open post-publication peer review. As one involved in the governance of an academic society, I saw SNS as a threat because they had the potential to suddenly replace societies as a vehicle for scholarly communication. Mr. Bosman's presentation showed me that, for better or for worse, change in that area is proceeding less rapidly than I anticipated. It seems that today's researchers fall into one of two categories: those that embrace the new tools and services enthusiastically, and those that use them very little. One senses a kind of technological divide in the area of scholarly communication. Mathematicians have been using blogs and such for quite a while, so I wonder if they feel a need for newer tools? How is it in the Netherlands?

BOSMAN: In some disciplines, there is more use of online repository functions. In physics and economics, there's a preference for sharing via print media. But this could

change as new tools emerge.

HAYASHI: Are there any signs of the next generation of research information platforms?

TARUI: When it comes to social networking, there may be added value, but the mechanism isn't transparent. There's a sense that simpler is better.

TORIUMI: People of all generations are basically lazy. They only use platforms because they have to. SNS provide a little more incentive for engagement.

HAYASHI: Do you think public-goods theory could be applied to improve institutional repositories?

MINE: Institutional repositories don't have the feedback mechanism, so there's no motivation.

HAYASHI: I suppose you could say this underscores the weak point of institutional repositories. Are there any questions from the floor?

FROM THE FLOOR 1: Is it all right to post a paper on an SNS? I ask people to check with the publisher first regarding copyright policy. Perhaps one merit of institutional repositories is copyright management?

HAYASHI: As long as there is mutual compliance, it should be a win-win situation.

FROM THE FLOOR 2: You can't post a paper on an SNS unless the paper is open access. Along with copyright issues, it raises problems in terms of tracking usage. Groups of publishers have drawn up copyright guidelines. In the future, it would be great if SNS groups could enter into agreements with the publishers.

BANDO: It seems to me that users would like to make free use of SNS. On the other hand, it takes time and effort to deposit outputs in repositories. Don't repositories themselves create a barrier? Can't it be part of the library's job to address copyright issues?

BOSMAN: As users come to take SNS for granted, the incentives will cease to serve as motivation. I wonder if we don't need to think about a metric for evaluating researchers?

HAYASHI: So, how should we move forward under the circumstances?

FROM THE FLOOR 3: Scientific information systems are basically geared to researchers. I think library services should be geared to all kinds of people. The big challenge is finding ways for SNS and repositories to work together.

HAYASHI: What about the vendors in the audience? Do you have your own take on the topics we've discussed today?

FROM THE FLOOR 4: I belong to a company that makes a variety of research tools. For us, it's become harder to anticipate the needs of researchers.

HAYASHI: Mr. Bosman, would you like to comment as someone who has looked at 600 tools?

BOSMAN: Looking at what already exists is important in anticipating future needs, but it's also important to imagine the future from a visionary perspective.

HAYASHI: The story you hear behind a lot of these tools is that individual scholars created them to meet their own needs.

FROM THE FLOOR 5: I've been seeing revolutionary changes in the world of software development. As soon as the developer saves a program, it's checked for bugs and then released. Workflow is automated. That could be applied to research in some situations. Did the 101 Innovations program identify tools to support communication within the research process?

BOSMAN: There is a joint authoring tool, but it's only recently been launched. There are tools that provide literature alerts as soon as you write down an idea and others that provide corrections in style.

HAYASHI: The pace of change as we've seen it today is just so rapid. I'd like to ask the audience: Should we try to keep up with these trends, or should we wait until we understand the situation better?

FROM THE FLOOR 6: It seems to me that people who are lacking the must-haves are jumping at things that are just nice to have. I think the discussion should be grounded in an awareness of what's really essential to researchers.

HAYASHI: Finally, I'd like to ask each of our panelists to say a word or two summing up your thoughts on our discussion today.

BOSMAN: The focus should be on what you're trying to do, not the tools themselves. It's important to talk about that.

BANDO: I'm glad I got to hear about how researchers are actually using these resources. I want to stay current regarding the digital tools people are using and what they're still lacking in terms of practical research needs.

TORIUMI: Scientists do this sort of thing because they want to conduct research, not because they like to use tools. The reason they use tools is that they have to, or else that it makes things easier. It would be nice if the tools accommodated themselves more to the researcher.

TARUI: Researchers want to improve their efficiency. We'll jump at anything that makes our work easier. I don't think anything has come out over the past five years that makes our work dramatically easier. One of these days, something will appear where we least expect it. And when it does, we'll go with it! For a scientist, there's nothing to be gained from submitting your paper to an institutional repository! In the United States, they seem to have fizzled out. You should ask your researchers if they really find them helpful.

MINE: The discussion brought home to me the importance of staying power for services of this nature. So maybe it's important to continue improving existing services at the same time that we're creating new ones.

Summary by Shoji Komai
(Nara Institute of Science and Technology)

--Attendee feedback----------

(people affiliated with university libraries)
- Next time a faculty member asks me if I know about such-and-such a tool, I think I'll be able to discuss it in general terms. It was something new to hear scientists talk about being gratified by the response from others.
- I think it was very meaningful to hear about these platforms from the perspective of scholars, including the speaker who described how he uses ResearchGate.
- I was able to learn (hear) about the situation both from a panoramic perspective and from the standpoint of the individual researcher, so I feel that I've begun to grasp (albeit dimly) the main issues.

(corporate and other attendees)
- The discussions we've been having at the office have been like the proverbial frog in the well. Things have been changing so much faster than we supposed. I'm going to think about ways we can leverage our drive as a business to improve our own services as a company.
- It was extremely helpful to listen to first-hand accounts by scientists who are actually using these tools in their research.
- The librarians that I usually mingle with only talk about paid services like Mendeley, so I didn't realize that ResearchGate and Academia.edu have a lot more registered users than Mendeley. I would be interested to know how many active users there are in Japan.

(other library staff)
- I didn't have any idea of how to make use of social media, but now I realize we need to start thinking about it, because social media is becoming an integral aspect of scholarly communication.
- It gave me a lot of food for thought on what makes researchers' work easier and what we should offer as library staff. What are must-haves and what are nice-to-haves? This is what we need to think about when providing services.
- I learned how scientists make use of SNS in their research, and it gave me something to think about in terms of how libraries should engage with social media going forward.

---------Afterword----------

The seminar reaffirmed for me the role of scholarly communication platforms in research activity and the importance of responding to the needs of researchers. Although the focus of the seminar was social media services, much of what was said about their place in the research process and the needs of researchers applies equally to the platforms built by university libraries (institutional repositories, etc.), so it provided quite a few useful hints.

Shinji Mine
(Mie University)

This turned out to be one of SPARC Japan's more unconventional seminars. It was especially valuable to hear the honest opinions of the two young scientists on the program. From the products we've seen to date, it is clear that tools or services that are fun to use may attract some researchers, but they only acquire staying power when they become essential to the research process. It occurred to me that all stakeholders should be thinking about how we can bring forth the vital research products and services of tomorrow from the 600-plus tools now in existence.

Kazuhiro Hayashi
(National Institute of Science and Technology Policy)

As a university librarian, I believe it is important for me to understand how researchers access and utilize information in order to provide better support to our faculty. I feel this seminar was a very valuable learning opportunity, since it made me aware of the large number of research tools that have already emerged, how they are being used, and what research needs still remain unmet. At the same time, since it seems doubtful that all of these tools are necessary, the seminar impressed on me the importance of identifying which tools are fundamentally needed by researchers in any given discipline or area, given the nature of the field and the type of research involved.

Keiko Yokoi

(University Library, the University of Tokyo)