More Than Just Access: Delivering on a Network-Enabled Literature

Cameron Neylon*
Advocacy Director, PLOS, Cambridge, United Kingdom

By any measure it has been a huge year for the open-access movement. At the beginning of the year, it looked possible that the public access policy of the US National Institutes of Health (NIH) might be rolled back by the Research Works Act, a legislative attempt supported by Elsevier and the Association of American Publishers to make such policies illegal [1]. But as we move towards year’s end, the momentum behind open access looks unstoppable with the announcement of major policy initiatives in the United States, the European Union, Denmark, and the United Kingdom (see Table 1). Nevertheless, there is still much to be done and the challenges remain large, but the remaining questions are largely ones of implementation, not principle.

Each year, a range of open-access organizations support Open Access Week (http://www.openaccessweek.org/), a global event that provides the research community, funding agencies, policy makers, and open-access publishers with an opportunity to discuss, publicize, and advocate for open access. With this year’s successes, it is also a good time to reflect on and to consider how we ensure that the promise of full open access throughout its history [11]. In September 2011, 10 years after the original BOAI meeting, the BOAI10 group released a new set of recommendations [12], which explicitly describe the use of CC-BY as best practice. The policies of funding agencies are also increasingly raising the issue of licensing [5,6]. But why focus on an esoteric legal instrument? Why does licensing matter if we are within sight of making sure that the public can access and read research articles?

Mere access is not enough to deliver on the promise of a truly network-enabled research communication system. The Creative Commons license says that: “You are free: to Share…to Remix…to make commercial use of this work” [9]. This is a “liberal” or “permissive” license, meaning that it does not place any restrictions on the forms of re-use that are allowed. This is consistent with the Budapest Declaration: “The only [...] role for copyright [...] should be to give authors [...] the right to be properly acknowledged [...]”. Anyone can read the article, but they can also re-use it, in whole or in part for any purpose, including commercial use.

People sometimes struggle with this idea of someone else commercially exploiting their research, and many publishers expressly forbid it. It is sometimes difficult to stomach the idea of allowing others to profit from our work, but the reason it is important to enable commercial re-use helps to illustrate a deeper principle about optimizing our use of the web for publishing research. There are at least two realities to the commercialization of academic research. The first is that it is far more likely that someone other than the original research team has the best opportunity to make money out of a specific piece of research. The human genome project generated US$141 for every dollar spent [13], but this immense return is widely distributed as a result of thousands of people’s work. It is rare for research teams to have both the academic and business expertise required for commercial exploitation, and they typically require a commercial partner. Open-access publishing effectively increases our chances of finding those potential partners. If we restrict their capacity to use our research by restricting commercial use, we limit the chances of partners, commercial or otherwise, finding and contacting us.

The second reality is that most commercial products are based on multiple pieces of research, not just one. This renders untenable the argument that noncommercial licensing terms are acceptable because a potential commercial user “can always...
ask”. The same argument is often advanced about data sharing. But most people just won’t bother asking. In many cases, innovation comes from combining many data sets. It doesn’t take too long before it becomes impossible to ask every data holder personally for their permission. Would you want to answer every query? How many could you deal with? One a week? One a day? One an hour?

The whole point of the web is that it exists on a massive scale and the potential value of a network rises as the square of its size [14]. If we want to exploit the web fully for research, we have to think about exploiting its full scale. And that means asking whether the mechanisms we have in place can work at that scale. Personally asking for and granting permission on a case-by-case basis does not.

We need to move from controlling access and permissions to assuring people that they have access and permission with systems that don’t require our intervention. The focus should be on enabling and encouraging unexpected uses and re-uses of our research. Making things accessible is a necessary step to make this happen, but it is not sufficient. We must also give potential users the confidence that they have sufficient rights to do what they want. The Creative Commons Attribution license is a good way of achieving this. Even so, providing assurance of the rights to re-use research is still not sufficient.

We also need to ensure that re-use is technically easy. Here there is a significant opportunity to do better. At PLOS we provide all our content in the form of machine-readable XML, but we generally provide figures in flat image formats, reducing the opportunity for data mining. The whole industry could do better by agreeing on standard tag sets and shared systems for the annotation of papers. And we need to do a whole lot better on describing and linking to supplementary data.

When we have these three elements, accessibility, rights, and ease of use, at web scale, then amazing things can happen. When resources and information are embedded in worldwide networks, new kinds of research become possible. Participatory science projects like Fold-It (http://fold.it) and GalaxyZoo (http://www.galaxyzoo.org/) are commonly used examples, but others, such as the explosive growth of bioinformatics as a result of online accessibility of public domain data, are often forgotten. And there are many smaller stories of new connections and projects that have been made possible only because research is easily shareable and useable.

These are really only glimpses of what is possible. The utter transformation of commerce and media that we have seen over the past decade is just starting to take hold in our research work and publishing systems. To realize the full potential, we need to move our agenda beyond merely making things accessible and readable to ensuring that re-use rights are clear, and that technical usability is continuously improving.

And we need to start today. We need to start because the success of open access means that more research is accessible than ever before. It is incumbent on us to show real benefits from that availability. The rapid growth in the number of open-access articles we have seen over the past few years is only going to accelerate as policy initiatives kick in. We will soon have the critical mass of accessible literature that could support the true transformation of scholarly communication.

Mere access is not enough to deliver on the promise of a truly network-enabled research communication system. As open access moves beyond an aspiration to reality, we need to ensure that what is accessible is truly usable, both legally and technically. As we celebrate the gains, and they are real and serious gains [15], let us also keep our eyes on the horizon so that we deliver what we have promised. We need to ensure that licensing is addressed in funder and institutional policies. We need to keep challenging ourselves to improve the technical usability of our publishing platforms and to enable others to experiment. Above all, we need to understand and appreciate what it means to build networked systems that scale to exploit the web. We have promised the world. Now it’s time to deliver.

### References

1. Wikipedia (n.d.). Research Works Act. Available: http://en.wikipedia.org/wiki/Research_Works_Act. Accessed 18 September 2012.
2. Wikipedia (n.d.). Federal Research Public Access Act. Available: http://en.wikipedia.org/wiki/Federal_Research_Public_Access_Act. Accessed 18 September 2012.
3. European Commission (2012). Scientific data: open access to research results will boost Europe’s innovation capacity [press release]. Available: http://europa.eu/rapid/pressReleasesAction.do?reference=IP/12/790. Accessed 10 September 2012.
4. Research Information Network (2012). Finch report. Available: http://www.researchinfnet.org/publish/finch/. Accessed 18 September 2012.
5. Research Councils UK (2012). RCUK announces new open access policy [press release]. Available: http://www.rcuk.ac.uk/media/475532012/20120906-Pages/120716.aspx. Accessed 18 September 2012.
6. Wellcome Trust (n.d.). Open access policy. Available: http://www.wellcome.ac.uk/About-us/Policy/Policy-and-position-statements/WTD002766.htm. Accessed 18 September 2012.
7. Danish Agency for Science, Technology and Innovation (2012). Open access-politik for offentlige forskningsråd og fonde. Available: http://www.fi.dk/raad-og-udvalg/det-frie-forskningsraad/open-access-politik/open-access-politik-for-offentlige-forskningsraad-og-fonde. Accessed 18 September 2012.
8. Chan L, Cuplinskas D, Eisen M, Friend F, Genova Y, et al. (2002) Budapest Open Access...
Initiative. Read the Budapest Open Access Initiative. Available: http://www.soros.org/openaccess/read. Accessed 16 September 2012.

9. Creative Commons (n.d.) Attribution 3.0 Unported CC BY 3.0. Available: http://creativecommons.org/licenses/by/3.0/. Accessed 16 September 2012.

10. Creative Commons (n.d.) Creative Commons history. Available: http://creativecommons.org/about/history. Accessed 16 September 2012.

11. Carroll MW (2011) Why full open access matters. PLoS Biol 9(11): e1001210. doi:10.1371/journal.pbio.1001210

12. Budapest Open Access Initiative (n.d.) Ten years on from the Budapest Open Access Initiative: setting the default to open. Available: http://www.soros.org/openaccess/boai-10-recommendations. Accessed 16 September 2012.

13. Gitlin JM (2012) Calculating the economic impact of the Human Genome Project. Available: http://www.genome.gov/27544383. Accessed 18 September 2012.

14. Wikipedia (n.d.) Metcalfe’s law. Available: http://en.wikipedia.org/wiki/Metcalfe%27s_law. Accessed 16 September 2012.

15. Wikipedia (n.d.) Open access. http://en.wikipedia.org/wiki/Open_access. Accessed 18 September 2012.