Open library environments

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Governments appear to be in thrall to 'open'. Social sharing and exchange has emerged as a new and significant factor that competes with conventional market modes of production. Higher education (HE) and its libraries are exploiting the shift in the information economy and increasingly exploiting the opportunities derived from open source software, open data and open content. However, being open is a means not an end. Re-use leading to impact is the goal and the evidence of re-use is patchy, and especially weak for open data. Commercial non-open approaches such as iTunes are reasserting themselves and finding that users will pay for the convenience even if there are open and free alternatives.

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This article derives from my presentation at the 2011 UKSG conference. It is not an attempt to deal comprehensively with all the 'open' aspects of library environments. Instead I will unravel just a few threads of the overall tapestry.

Being open

'Open' is certainly in the air. Governments from the UK[1] to New Zealand[2] appear to be in thrall to open. Indeed, put open in front of almost any noun and it provides a more positive warm edge: open government; open access, open educational resources. Neither is the business world immune to the lure of open. Back in 2003, Henry Chesbrough talked about a shift to openness in the business innovation paradigm: 'Open innovation assumes that firms can and should use external as well as internal ideas. Open innovation assumes that internal ideas can also be taken to market through external channels'.[3] This theme was picked up and popularized by Tapscott and Williams in 2006 with the bestseller *Wikinomics*: 'Leading firms are opening up pertinent information ... because they reap significant benefits from doing so'. Commercial software applications often rely on open source components such as the Apache web server or Linux operating system. In the library sector commercial discovery services such as Primo from ExLibris and Summon from Serial Solutions use the same underlying applications as their open source competitors such as VuFind and Blacklight.

'Social production'

Yochai Benkler, Professor of Law at Yale University, sees open source projects such as Apache and Linux as manifestations of a much wider and deeper shift in the information economy: 'One of the aspects of this new economy is the rise of a new 'mode of production' – 'social production'.' He goes on to say: 'Enabled by cheap computing and fast pervasive networks people are giving their time individually or in collaboration with others to produce goods for free'.[4] Before the cost of communication dropped precipitously, Benkler suggests that it was too expensive to have a decentralized social production exchange system. The economy was characterized by what he describes as three major 'transactional frameworks' for exchange. These were a:

- price system: a decentralized, market-based exchange system
- firm hierarchy: a centralized, market-based exchange system
- government/non-profit: a centralized, non-market-based exchange system.

Today, however, he makes the claim that social sharing and exchange is emerging as a significant and sustained factor of production.[5] This new social production creates a new form of competition for firms:

- peer-to-peer file sharing is competing with the recording industry

- free and open source software is competing with traditional IT companies
- IP telephony is competing with traditional telecoms industry.

Social production therefore represents a new, fourth transactional framework. Benkler argues that social production is not a fad. While it does represent a new form of competition for incumbents, it also represents a new source of opportunity for everyone.

Openness in higher education (HE) and libraries

One sector that is taking increasing advantage of open is higher education, and for some there is now no turning back. 'Now that increasing numbers of universities, including some of the most prestigious, are using technology to let the world into their precincts, it will never again be possible to lock the gates'.[6] As an integral part of HE, libraries are not immune from the changes. 'It appears that there is a mix of trends circling around cloud computing, open source software, e-science, digital humanities, and open data that all point to a shift in how libraries define and provide services. Although still in its early stages, distributed computing models have already seen widespread adoption in libraries and are positioning our organizations to change how we approach service.'[7]

The benefits of open in HE

Let us look at the motivations and benefits behind three major stands as they apply in higher education: open data, open content and open source software.

Open data
According to Nigel Shadbolt from Southampton University, the factors that make open data attractive include the 'unlocking' of innovation. He puts it this way: 'Open data provides a platform on which innovation and value generation can flourish. If governments publish their data and get out of the way, the applications that people want will emerge.'[8] He goes on to say that: 'If you release your data then others will develop applications that make best use of it – providing new services

that benefit you directly, like all of those free travel apps that the travel companies didn't have to write, but which nevertheless drive people onto the transportation network'. The message is gaining strength within libraries and related organizations. In June 2011 the 'Discovery' initiative was launched with the aim to 'help to mobilise and energise the community, engaging stakeholders to create a critical mass of open and reusable data, and explore what open data makes possible through real-world exemplars and case studies.' It has developed open metadata principles which have been endorsed by a number of individuals from key organizations such as the British Library, the Open University and the M25 Consortium.[9]

Open content
One of the key shifts in HE over the last few years has been the move to making more content open. In part this has been a response to what some have seen as an increasingly 'closed' environment in scholarly communication. The EnablingOpenScholarship (EOS) organization has characterized the situation in the following way: 'What was once a system of open and shared scholarly communication, owned and managed by the academy and associated scholarly societies, has transformed into a 'Closed Access' model where ownership resides largely outside the academy in the hands of commercial companies and with the scholarly research record quarantined behind access-barriers that only those who have the money to pay for subscriptions, licenses or purchases can traverse'.[10] The open access movement has spawned open access (OA) journals and open educational resources (OER). The key benefit is increased access. 'Bills are not paid by readers (or by the library) 'and hence do not function as access barriers'.[11] It is claimed that free access and openly sharing content increases impact. Open.Michigan initiative 'encourages researchers, learners, and instructors to maximize the impact and reach of their scholarly work through open sharing'[12] In this way they hope to achieve their aim 'to enable faculty, students, staff and others to share their educational resources and research with the global learning community'.

Open source software
Open source 'guru' Eric Raymond describes one of the key benefits of open source software as 'lower costs'.[13] A survey in 2010[14] reported: 'Low cost has helped open source endure the economic down-

turn and emerge even healthier. For the third year, survey respondents said that low costs are the most attractive aspect of open source technology'. However, other benefits are increasingly coming to the fore. The same survey identified 'rapid innovation' as perhaps the most exciting new driver. Buyers specifically recognize that open source can deliver innovation faster than proprietary software. In a library system market which has seen slow rates of innovation, libraries may be drawn to an open source environment that can 'create and release new features immediately by the people and organizations that need them'.[15] The frustrations of (US) higher education institutions were expressed in a 2006 Ithaka report[16] that spoke of market failure and a 'historical disconnect between producers of software and HE users, who have complex, unique, and poorly understood needs'. It went on to say: 'We are convinced that collaborative efforts to build open source applications can produce software that better meets the needs of partner institutions and also has the potential to benefit the broader community'. Although the report was not specifically concerned with library software, it lead indirectly to the creation of the Open Library Environment (OLE) project which has progressed into Kuali OLE 17 which 'intends to deliver nothing less than an enterprise-ready, community source software package for academic and research libraries'.

Business models

'A business model describes the rationale of how an organization creates, delivers and captures value.'[18]. Where software code and scholarly content is open and available with no revenue accruing from it how can a sustainable business model be built? How can organizations 'capture' the value? After all, there are costs in running these initiatives so how can they be sustained over the long terms? Commercial companies such as PTFS-Europe help to sustain open source products not by charging a software fee but instead adding value for libraries in terms of implementation, support and development. Organizations such as the Open University, MIT or Michigan justify 'giving away' content as part of an educational mission that is supported to a large extent by government, donor or charitable funding. Wikipedia is funded by the Wikimedia Foundation which is a

non-profit charitable organization 'dedicated to encouraging the growth, development and distribution of free, multilingual content, and to providing the full content of these wiki-based projects to the public free of charge'. The people who create and edit the content for free are members of Benkler's social economy. Gold open access shifts the costs of producing journal articles to the author (or their institution or research funder) rather than subscription fees. Many OER initiatives have obtained 'seed resources' from private foundations and public authorities.

Challenges

Being open presents challenges as well as opportunity. Re-use is perhaps the key success factor. There is some evidence that open access has a positive effect on re-use and impact of journal articles.[19] However, much – probably most – open metadata and open content simply does not get reused. The Open Knowledge Foundation lists a large and growing number of open data sets in the Library Archive and Museum (LAM) domain but most have little or no evidence of re-use. Many open source projects and communities fail. Despite taking an upbeat stance on open source, a survey in 2010 by Accenture[20] found that just 29 per cent of organizations are willing to share their own developments with the rest of the community.

Clearly it's not enough to make software or content open. It has to have value to the end user. End users also value convenience, and simply putting a 'SPARQL end point' on your open data does not make it convenient to use. 'We'll pay for convenience and reliability, which is why iTunes can sell songs for 99 cents despite the fact that they are out there, somewhere, in some form, for free. The iTunes toll is a small price to pay for the simplicity of just getting what you want.'[21]

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