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Free as in Freedom, Not as in Beer:
Free and Open Source Software ILS and the
Library Community

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Abstract:

Over the past decade there has been an increasing interest in Free and/or Open Source Software (FOSS) in libraries— especially in FOSS Integrated Library Systems (ILS). Libraries across the globe are implementing programs such as Koha and Evergreen[1]. Like any topic in the Library and Information Science (LIS) field today, there are several voices weighing in on FOSS ILS, coming from differing epistemologies based in theory and philosophy, and practice. In an ideal world, these voices would inform each other in a circular pattern, perpetuating a fruitful development of practice based in theory and theory based in practice. In real life, there are always tensions. This paper will explore FOSS ILS using the philosophical as well as practical perspectives present in the larger discussion.

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[1] For an interesting series of Google maps by David Friggens showing the global distribution of libraries using FOSS ILS programs (and which program they are running), see Nicole C. Engard's blog post "Libraries using an Open Source ILS Mapped," ByWater Solutions, November 28th, 2009.

Toward a Critical Understanding of Library Technology

It is often taken for granted that in the world of libraries and information, more technology is better. As information technology becomes a pervasive player in library culture and practice, it is important for professionals to continue to examine this trend with the goals and ethics of libraries in mind. In his dissertation "Re-Envisioning Libraries in the Information Society: A Critical Theory of Library Technology," Ajit Kumar Pyati argues:

> "In the context of the technological determinism and techno-capitalism of the information society and the often uncritical assumptions about information technology in the field, I propose what I call a "critical theory of library technology" framework for examining the role of ICTs [information and communication technologies] in libraries and which offers a more progressive and democratic vision for information technology in libraries. A critical theory of library technology, however, is also at its core a critical theory of library goals, functions, practices, and services. Critical theory helps to bring about a critical re-examination of the power dynamics in libraries and is a challenge to re-envision more democratic and progressive roles for libraries.
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> This concern with power dynamics in libraries leads to a reassessment of technological instrumentalist and determinist positions within LIS. A critical theory of library technology envisions wider community input and participation in library technology development, exposing the contradictions of techno-capitalism and its impacts on libraries. This critical theory framework helps libraries to embrace new roles in an information society to counter the techno-capitalism of the information society. Some of these new roles can include more active participation in grassroots and new media technology efforts to re-envision an information society from community-based standpoints. One such grassroots movement with worldwide appeal and an ethic of developing an information society "from below" is open source software." (Pyati, 2007)

Pyati is describing an approach to technology in libraries concerned with power dynamics, community building, and striving to remain in line with the goals LIS professionals espouse. For the author, this means considering the model of open source software as libraries build their tool boxes.

Libraries can use critical theory to look at their current systems and those they consider for purchase or installation. Examining who holds the power in the potential scenarios can aid in deciding whether or not a piece of technology fits their mission. If a library chooses a proprietary ILS, the power (and responsibility) of maintaining and updating that system rests with the company selling the software. If a library is using FOSS ILS, the power can be more diffuse and grassroots, lying in the technical support chosen. The degree of decentralization is dependent on whether the system is maintained by a staff member of the library, the online community of users/developers of the program, or a support company with which the library holds a contractual agreement. The community of users of the program who are continuously developing that program and sharing their knowledge and code with other libraries are the most illustrative of this diffuse power dynamic. This is not always the case, but the point is that it *can* be the case; libraries can have more control, more flexibility, and agency in choosing their support provider with FOSS ILS if they choose to use it in such a way. Many libraries are choosing to install FOSS ILS as supported by a vendor (such as Koha as supported by Liblime) and use it much like a proprietary system, but at a lesser cost and with the option of hiring (or firing) that support company to implement the features and aesthetics that their users and staff need and desire.

What is FOSS?

It may be helpful at this juncture to define what free and/or open source software actually is. Several aspects of Free and Open Source Software, as defined by The Free Software Foundation, Inc. and cited by Nicole C. Engard, can be found in Table 1 on the following page.

Integrated Library Systems (ILS) software can be a huge expense for libraries, so it is not a surprise that libraries would be interested in the opportunity to obtain an open source system for free when some proprietary packages can cost anywhere from tens to hundreds of thousands of dollars (Eyler, 2003) which can be a cost-prohibitive barrier to entry to automation for small libraries. But, as

Free Software gives users four essential freedoms:	Open source software must follow these six criteria:
• Freedom to run the program, for any	• Free redistribution

purpose • The Freedom to study how the program works and change it. Implies access to the source code. • Freedom to redistribute copies • Freedom to improve the program and then share those improvements (Engard, 2010)	• Source code must be made available in useable form • Modifications and derived works must be allowed in the license • Protections on the integrity of the author's source code (re: modification and subsequent distribution) • No discrimination against persons or groups • No discrimination against fields of endeavor (ex: for-profit use, genetic research, etc.) (Engard, 2010)

Table 1. Essential qualities of Free Software and Open Source Software (Engard, 2010)

Michael Sauers explained in his Nebraska Library Commission online presentation, it is important to bear in mind that "free" in this case does not mean "free as in beer," but rather, "free as in kittens." While the initial software may be available at no or low cost, there are often other costs associated with using the software that need to be considered. FOSS requires upkeep and may require modification to meet a specific library's needs, which requires input of money and/or time (Sauers, 2008). The question lurking below the surface is: "Just how expensive will the free software turn out to be?" I argue that although there are still costs associated with using a FOSS ILS, the economic model is more in tune with the LIS profession's values and goals.

The Cathedral and the Bazaar: OSS as an Alternative Software Development Model

In Erik S. Raymond's work "The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary," the author describes how the parallel models of software development which exist in the proprietary and the Open Source community can be described using the metaphor of a Cathedral and a Bazaar. The proprietary software industry's development model is very hierarchical, very structured, and has a top-down cascade of management. The open source community, on the other hand, is a more grassroots, bottom-up model, where many developers are simultaneously working to improve a piece of code that anyone can access. As such, the bazaar model facilitates very frequent releases of the program and often (but not always) a quicker response to bugs, more innovation, and increased documentation. While the analogy that Raymond proposes isn't always universally true (for

examples see criticism in "A Second Look at the Cathedral and the Bazaar" (Bezroukov, 1999)), it is useful for the critical examination of library systems software.

The LIS profession is steeped in the dogma of the cathedral, yet there are cracks where the bazaar's chaos and bottom-up ethos are allowed to seep in. "Radical catalogers" such as Sanford Berman et al. have "revolted" against rigid and outdated Library of Congress subject headings to replace outdated, racist, homophobic, and other types of generally offensive terms (*Radical Cataloging*, 2008; Roberto, 2003). Patron-driven acquisitions are rising in popularity. Listservs, blogs, Twitter feeds, and other iterations of Web 2.0 allow for informal international conversations between librarians. New metadata standards are frequently open standards – publicly accessible and with a lower barrier to entry than MARC records, which require extensive expertise to comprehend outside of the simplified user interfaces presented to the public (Corrado, 2005).

Throughout the course of the semester we have brought up the level of professional anxiety that exists in the LIS field. There is a competing Catch-22 wherein librarians espouse the commandments of information for all, equity of access, and freedom of information, yet want to retain control over aspects of libraries that they feel only professionals with expertise should carry out. Only a few, high up in the hierarchy, anointed with MLIS degrees, possess the secret knowledge, as well as the skills to do some jobs right. Yet we continue to outsource many tasks in the profession to vendors as budgets are cinched in tighter and tighter and everyone must do more with less. I think that for libraries, the open source software model can be a way to appease both of these drives, by hiring staff members who are designated FOSS ILS developers/implementers. This could be a way for libraries to contribute to increasing jobs for librarians with programming experience as well as to keep the level of professionalism and attention to user-needs high.

FOSS, Libraries, and Gift Cultures

It has been asserted in the literature that open source software makes a good ideological match for use in libraries because the culture surrounding it holds many aspects in common with library culture. Both of them can be considered "gift cultures" (Eyler, 2003; Morgan, 2000; Raymond, 1999). One of the most widely implemented FOSS ILS programs is Koha, which was written in New Zealand and first used in the Horowhenua Library Trust (Eyler,

2003). Koha is a Maori word for a gift or donation (Engard, 2010). There is an interesting connotation to the word however, which carries with it the expectation that although the gift is free, the receiver is expected to give back or pass on the gift in some way. This fits perfectly with the FOSS model wherein improvements are shared back with the user community. It also describes library culture, where users receive services for free or low cost from the library, with the expectation that they will support the library in local government, and/or by paying their taxes or tuition. You can have the Koha software for free, but there is the expectation that to make the software meet your needs, you will need to create or sponsor specific developments which you offer back to the community, participate in the online communications forums (listserv, message board, blogs), and follow the ethics of FOSS.

Pat Eyler, a programmer on the Koha management team, delineates several more reasons that librarians make excellent allies and participants in the FOSS development sphere. They are trained in information architecture, they have been fixtures in the academic community for longer than computer programmers, they are generally good editors and could help improve the documentation that is essential to good FOSS code, they tend to be more in touch with their user base than programmers, as a profession they are politically engaged, and traditionally they are good at engaging the public and are seen as a trustworthy figure in the information universe (Eyler, 2003). Eyler suggests that programmers work to build relationships with the library community in order to form a formidable network of skills and ideals. Perhaps the programmer-librarian could encompass the best of both worlds?

In the Cathedral and the Bazaar, Raymond discusses the concept of "egoboo", or ego-boosting as a primary motivation for seemingly altruistic behavior in OSS development communities (Raymond, 1999). While this can be seen as true in library IT as well, I find Nicole Engard's argument in "Practical Open Source Software for Libraries" more believable. She suggests that the main motivation for many good OSS projects has been a personal itch that a programmer developed to create a system that functioned better than what was currently available in the proprietary offerings (Engard, 2010). "Scratching" that personal itch, appeasing that "I could do this better" voice, is still a form of egoboo, but it comes from a different place, driven by making your job easier, by enabling the provision of better services to patrons, and of giving that gift back to the library community (Engard, 2010).

Although hierarchy does exist in the bazaar model of development (Who accepts and implements the patches? Who defines the direction of the software?), the bazaar hierarchy is much more relationship-based rather than power-structure based (Bezroukov, 1999). Instead of

a cascade of power, the power is more diffuse, and while still concentrating in certain areas, the egoboo comes from a different kind of place. Programmers in the OSS ILS world may not be donating their time or code, they are most likely working for a library or a support company with which the library has contracted.

These contractual arrangements have proved problematic in the library community's eyes, as they do not always preserve the "gift culture" ethics of the library world. In the summer of 2009 there was a great uproar on the listservs and in the blogosphere concerning LibLime's actions regarding their Koha developments, which they were choosing to keep private and only share with libraries contracting with them for a proprietary custom version of Koha (West, 2009). While this action was well within their rights according to the FOSS guidelines, the library and OSS community were outraged as this behavior blatantly betrayed the reciprocal and generous culture that they presumed went hand in hand with the software use. From LibLime user listservs (Lovely, 2009) to blogs (Greenhill-Fremantle, 2009; Ransom, 2009; West, 2009), including the Library Journal blog (Tennant, 2009), librarians decried this behavior. Notable programmer Nicole Engard left LibLime to work for another support company during the fiasco (Greenhill-Fremantle, 2009). I think that a lot of these tensions are going to exist whenever libraries take an open source product and treat it like they traditionally use a proprietary system. Only by preserving the grassroots nature and community-driven spirit of the work will it continue to act as a healthy OSS community. For OSS, the community of users is one of the greatest assets. They can function as tech support, a source for advice and the voice of experience, and a source of new innovations. By privatizing a portion of this system, important social links are broken.

First they came for the cataloguers….

This creates some dissonance for me as a labor rights ideologue. I feel that people should be compensated for the work that they do, and that giving things away for free that would otherwise cost money tends to devalue them. The conflict in my mind is that between fair compensation for those exerting the effort, and the gift-giving spirit on which FOSS has been based.

It is commonly cited that the demand for library jobs has surpassed the number of library jobs available (Maatta, 2011). Additionally, since the advent of consumable bibliographic records and catalog cards, more and more library work has been outsourced to vendors and other companies. MLIS programs and iSchools are churning out fresh batches of tech-savvy

graduates with programming experience who need jobs every year. Could FOSS be the solution to some of these problems? I think that developing paid positions within libraries specifically for programmer-librarians not only fosters good labor practices, but also allows for the incorporation of library ethics of customer service and the "free as in wifi," or "free as in library books" type of arrangements librarians are used to. It prevents further outsourcing of previously specialized library work. If technology and vendors can make cataloguers as the profession knew them nearly obsolete, which department is next? In a Martin Niemöller-esque scenario: Who will be left in the library if this becomes the trend? Creating more jobs instead of funding outsourcing supports a sustainable "power with" rather than a "power over" model, and I think that if we are incorporating critical theory as we examine library software use, this discussion is an essential one to have. With freedom comes the responsibility to make choices in line with our goals and values.

Slowing Down Our Budgets: the Cathedral and the Bazaar of Finance and Agriculture

FOSS could be implemented using the example of two successful movements within the sustainable/organic agricultural community: Slow Money, and building food systems that reflect sustainable agriculture's ecological knowledge and values. These models reflect making choices in line with values, goals, and knowledge. The current state of agriculture in the U.S. can be translated to a "Cathedral and Bazaar" model. Corporate "Big Ag" (the Cathedral), represented by companies such as DuPont, ConAgra, Monsanto, Cargill, and Beyer, is a very hierarchical model where those at the top earn most of the income. It relies on huge farms which necessitate large amounts of farmer debt to secure the infrastructure necessary to farm at this scale. Everything is mechanized, reducing labor inputs, and proprietary technology is a necessity. The farmer is lowest in the hierarchy, and has the least amount of power. In sustainable agriculture's typical approach (the Bazaar), the farmer has the most power over their situation and their financial situation. Relationships and connections are more highly valued than proprietary technology and expensive infrastructure, and farmers have more agency and produce more innovations, instead of receiving them from above. Free information sharing is highly valued and encouraged in this context.

Woody Tasch, a former venture capitalist, has been evangelizing the concept of "Slow Money" in financing agriculture (the name draws an intentional parallel to the "Slow Food" movement). He draws many of his ideas wholesale from *Small is Beautiful: Economics as if People Mattered* by E.F. Shumacher. Tasch proffers: "There is such a thing as money that is too fast, companies that are too big, finance that is too complex. We must slow our money down—not all of it, of course, but enough to matter." We must decide what kind of world we want to live in, and invest in a "nurture capital industry" (Tasch, 2008). Going local is not the answer to every problem, and we would be operating with dangerous blinders on to think so. But it *can* create ripples of change. When community members invest in a local business they would like to patronize (Tasch works with examples in the sustainable agriculture realm, but the model is extensible), these investors get the services they support, plus the guilt-soothing/egoboo that accompanies socially responsible investments. The farmer/borrower is financially supported in their business, and as they repay their loans and build a successful enterprise, are able to contribute to a healthy, thriving local economy. This model is about reducing the scale of production and increasing the relationships involved in commerce, building social accountability and social capital (Tasch, 2008).

Entire small-town, rural economies have been revolutionized and remodeled using ideology similar to this framework in rural Vermont where the High Mowing organic seed company is located. I listened to the founder, Tom Stearns, speak at the MOSES (Midwest Organic and Sustainable Agriculture Education) Farming Conference last winter, and he spoke about how his community was able to rebuild its food system using these spending and investment practices. Children of farmers who grew up in the tiny rural town are leaving for college, and then *returning* to their town where they are finding satisfying jobs and quality of life, and a thriving local economy (Stearns, 2011). This is unheard of in the greater agricultural United States (Carr, 2009).

I think that these frameworks, which enable investment in local people, local relationships, and reduction of scale, can be applied in libraries as well. Instead of investing (because every expenditure carries with it an assumption of values and priorities) in companies outside of a community who may or may not prioritize the same goals, why not spend that money on a salary for a staff member who will provide similar services (managing and customizing an ILS program), enabling them to participate in their local economy and meet the specific needs of their library and its user community. I think that open source software can facilitate these kinds of sustainable economic decisions within libraries.

The Voice of Practice or, "What Would Margaret Mann Do?": a Case Study of Central Kansas Library System's Pathfinder

"I'm still a big believer in open source software, but I don't want to see libraries choosing software solely for philosophical reasons. Given the investment of time that some technology projects require, it's imperative that libraries choose the best tool for the job, based on their specific requirements and limitations. " – Meredith Farkas, 2011

"Please trust that an Iowan is not doing anything that's not practical." – Dr. Jim Elmborg, in response to Olivia Madison's chairing of the IFLA FRBR committee, and perhaps equally applicable, if not more so, to Kansans and Nebraskans in the following instance

Meredith Farkas presents practitioners with a reality check in her October 2011 article, "Open Source, Open Mind." Despite the eagerness to love open source software for the ideologies it represents, the question remains whether or not it is the right choice for a given library. FOSS ILS can foster increased freedom in library automation: libraries can gain more control over the features of their software, have agency in choosing a support provider that effectively meets their needs, have increased freedom with their data, and specify their interface and features to better meet their user needs. This increase in agency does not come without costs however, so it is important for libraries to consider all of the facets that implementing a FOSS ILS would incur. Farkas provides some excellent criteria echoed throughout the literature by other equally practical (and often Midwestern) librarians (Rapp, 2011; Rippel, 2008; Sauers, 2008).

To illustrate these decision-making tools, I think it is valuable to consider the experience of the Central Kansas Library Systems's (CKLS) decision to use Koha as supported by LibLime for their consortium. Kathy Rippel presented on the system's decision-making process at the Nebraska Library Commission's Statewide Open Source ILS Symposium in 2008, and a recording of the presentation is available from the NLC's website. Rippel and her colleagues began looking into a different ILS program when their previous software had been bought out and discontinued by the vendor. They began by evaluating the local needs and assets of the library and the community it serves (Rippel, 2008). It is important to consider what features a

library needs and wants in an ILS program, and to identify those features they are not willing to operate without (Sauers, 2008). The library needed a system which would meet new metadata sharing standards (Z30.50, Zip2) necessary for their participation in statewide inter-library loan (ILL) programs. As Rippel puts it, they weren't interested in the "bells and whistles"; they were interested in a user-friendly system that was compatible with their small libraries. They were also concerned that it be staff-user-friendly as well. The staff's highest level of education varies widely from high school diplomas to dual master's degrees, and the consortium was adamant that their technology solution be accessible to all of their staff users.

They identified four programs in their price range (three proprietary and one open source supported by a third-party company). The open source option was Koha as supported by LibLime. It is important for libraries to make a decision about whether or not they should use an open ILS simultaneously with the decision from where their technical support would come. The three options for technical support for the software vary by program, but generally include in-house technical staff, the broader community of the program's users/developers who connect via the internet, and/or third-party businesses with whom libraries can contract (Farkas, 2011; Sauers, 2008). If the library does not plan to contract with a support company, it must have someone on staff with enough expertise to maintain and customize the ILS to fit the library's needs. The staff person must also have the time in their workweek to accomplish these tasks, and thus the library must have the financial resources to devote to their time and staff development, if necessary. (Farkas, 2011; Sauers, 2008) Additionally, if the IT personnel on staff already are not in favor of FOSS, or there is a strong resistance to change within the organization, FOSS may not be the ideal option (Sauers, 2008). The consortium had one IT staff person already at this time, but his schedule was already overbooked and he was not a programmer, so they identified their need of a third-party support company, and chose LibLime based on reports from other libraries (Rippel, 2008).

Another factor in the decision to go with a support company was that LibLime would host the program and the library's records as part of the support fee, eliminating the expense of the computer hardware and administration this would otherwise necessitate locally (Rippel, 2008). When evaluating a piece of software itself, libraries should consider the technology necessary for implementation. FOSS can often run on older hardware than proprietary software, so that may provide savings in the long run. However, it may require a library to run their own server, which they may not have done previously. (Sauers, 2008) Depending on the system a library is currently using, there may be costs associated with migrating or accessing old data, such as

purchasing records from the current provider or cleaning up data, as the CKLS found (Rippel, 2008).

Rippel and her team convinced the program vendors to let her staff experiment and test the software before a sales representative visited their libraries. The decision team presented side-by-side tasks on the OPAC to the librarians using each program, and let everyone submit their input on the software—allowing for bottom-up feedback and decentralizing some of the decision-making power, while centering user needs. The librarians voted to go with Koha as supported by LibLime (Rippel, 2008). The final selling points for Rippel and colleagues were the opportunities for innovating features instead of creating work-arounds, ability to incorporate search features based on popularity, the aesthetic, and the ease with which records could be downloaded or exported in a plethora of metadata formats. Additionally, this system would provide the libraries with the interoperability necessary to work well with the state systems, and it was much less expensive than the proprietary systems they were using before (even accounting for the partial grants received and the fact that more libraries automated their collections for the first time with the switch to Koha). They have fashioned a "sliding scale" payment system for their consortium libraries depending on size and budget, which means the larger libraries pay a little more than the small libraries (whose yearly cost is only $200 a year!) but can also afford to do so. (Rippel, 2008)

The Nebraskans must have been sufficiently assured by Rippel's experiences, as the Nebraska state union catalog is now hosted on Koha, and their experiences and successes are regularly shared on their blog, "Pioneer Koha" (Nebraska Library Automation Consortium, 2011). This can be considered part of the online user/developer community, as they share solutions with the public so that other libraries may benefit. This brings up the important point that if a support company is not to be used in conjunction with FOSS ILS software, research should be undertaken to ensure that there is a strong and thriving user/developer community supporting the project. For example, does the project have a wiki, listserv, message board, etc.? Are they rolling out new patches and updates frequently? (Farkas, 2011) Additionally, it is important to point out that these case studies come from fairly large consortia made up of many small, rural libraries. Their ILS needs are unique, as are the needs of any library system.

Summary

This paper has presented a very exploratory look at Open Source Software Integrated Library Systems from both a philosophical as well as practical perspective. In conclusion, libraries should examine their implementations of technology using critical theory in order to ensure that they are not being caught up in techno-capitalism pervasive to our culture and that the technology use coheres to their goals and values. A de-centralized power structure, open source software communities, and "slow money" type investments in local labor could all promote the welfare of the library and make it more sustainable in the face of economic crises. While the philosophical underpinnings of FOSS are generally agreeable to library culture's sentimentalities, the realities of practical implementation mean that FOSS may not always be the right choice for every library, and there are a number of aspects libraries should consider before implementing a FOSS ILS program.

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