Open source software at the Montana State University Libraries Symposium

This one-page essay outlines what open source software (OSS) is and how it can be applied to some of the computer-related problems facing libraries. In short, it characterizes open source software as a community-driven process, describes it as “free as a free kitten”, compares it to the principles of librarianship, and finally, outlines how it can be exploited to develop “next generation” library catalogs.

OSS as a process

Open source software is the result of a particular computer program development process. It begins with someone who has an “itch” -- a computing problem that needs to be “scratched”. The person brings together the necessary resources (people, time, computers, etc.) and outlines a plan for solving the problem. Next, they put the plan into action and implement a solution. Third, the solution is “freely” shared with wider communities, under the assumption other people have the same “itch”. Finally, an effort is made to foster a supportive community around the software thus lowering ongoing maintenance costs. All along the way input, often in the form of additional computer code, is garnered, fed back into the process, and begins anew with Step #1.

The activity of writing computer code is only one small part of the whole activity. Just as important, if not more important is the subprocess of building the community. This community includes people who write documentation, do usability testing and quality assurance, provide technical support, and market the solution. In such a process everybody has something to offer and no one person stands above the rest. Without this community-building aspect the software will not grow, thrive, nor continue to be a vibrant solution to the computing problem. Like the building of library collections and reference services, software development is never done.

Free as a free kitten

The third step in the open source software process -- “free” distribution -- is the differentiating characteristic when compared to traditional computer software creation and maintenance. In this case the word “free” should be equated with the word “liberty” and not necessarily “gratis”. Under the distribution rights of open source software you are free to modify the source code and use it however you desire. You are “free” to make changes to the way the computer program works and operates.

I like to compare the “free” aspect of open source software to “free” kittens. You see a sign saying, “Free kittens!”. You take a look and become enamored with a warm, fuzzy, and adorable animal. You take it home. It purrs. It plays with a ball of string. You buy it a cat toy, and the kitten is fun. You are happy. You then buy a litter box, cat food, and take it to the vet to get if vaccinated. After that the cat claws your furniture. Worse, the kitten escapes outside over night only to return the next morning looking to be fed.

While the kitten was “free” it did not come without expense. There were real monetary expenses as well as emotional expenses. The same is true with open source software. To put open source software into practice you will need computers to host the application, people to maintain the computers, and additional people to oversee the “care and feeding” of your implementation.

Much of the same holds true for commercial software. You still need the computers and the people, but with open source software you can try before you buy. You can read all the documentation. Kick the tires, and even modify things if you desire. If you don’t like the solution, then no money was lost, just time. On the other hand, with commercial software, because you spent real money, you may feel compelled to continue with your purchased solution because you’ve made an investment and you don’t want to see your money wasted.

Open source software is not a perfect solution. Where you don’t spend money making a purchase you might spend money on personnel. In general, these personnel require more advanced computer expertise not normally found in libraries, namely, systems administration and computer programming skills. Yes, these are expensive, but at the same time, these are investments in personnel -- and ultimately your own institution instead of a corporation’s. They will pay off because your institution gains experience that can be used over and over again. More than commercial software, open source software is standard’s driven, and the skills developed through open source software are transferable to other applications.

Kindred spirits

OSS and librarianship are kindred spirits. For example, people who work on open source software are not in it for the money. Neither are librarians. Instead both sets of people do the work they do for levels of personal satisfaction. Contributions to society. Making the world a better place to live.

Both OSS and librarianship value peer review. There is a saying in the open source software world, “Given enough eyes, all bugs are shallow.” This means that if the code is examined by enough people, then all the code’s faults will be identified. The same principle is true when it comes to the examination of scholarly publications.

To some degree both the library community and the open source software community are examples of "gift cultures". Such societies measure their wealth and status not so much by how much they own, but by how much they give away. In libraries, the more people that come and us our services the more important we seem to become. Similarly, the more people who use and literally take advantage of open source software, the more the particular open source software community is valued.

Community and collegiality are very strong values in both open source software development and librarianship. Without the community-building aspects of open source software the whole process would collapse. Libraries have a very long tradition of collaboration dating back to the beginnings of catalog card sharing and running through the consortial agreements of today.

OSS and "next generation" library catalogs

There is absolutely no doubt in my mind that there can be an open source software solution to the problem commonly articulated as the "next generation" library catalog. At the same time, to ensure the solution is viable and long lasting there needs to be a strong measure of political will and leadership, greater collaboration between libraries, more pooling of financial and human resources, and a general increase of computer knowledge within the profession. The successful end-product of such a process will not only be a useful tool for our patrons but an increased sense of self-reliance and control over our computer environment.

The library profession has more or less identified the "itch" it wants to "scratch", but the profession is not quite sure about how to go about doing the scratching. "What are the problems we want to solve, and what are some of the proposed solutions?" This is where the leadership comes into play. Somebody needs to step up to the plate, articulate the problem succinctly, and outline a vision resonating with large numbers of stakeholders. This person (or more likely group of people) needs to communicate their message to an increasingly wider and wider audience including librarians, users, and "resources allocators" (administrators). Such a communication process will jump-start the community-building process.

Libraries (whether they be public, academic, special, etc.) have more things in common than they have differences. Their constituents may be different but in the broadest sense their goals are similar. An acknowledgment of this fact can lead to a greater willingness for collaboration. As stated previously, the profession already has collaboration in its history, it just needs to ratcheted up a notch or two.

Once there is more collaboration, there needs to be a pooling of financial and human resources. There is a lot of interest in solving the problem of a "next generation" library catalog, whatever that may mean. We can build on this enthusiasm and identify volunteers who want to work on such a project. Again, everybody's skills are required. User services personnel. System's administrators. End-users. Catalogers and metadata specialists. Administrators and team leaders. Get all of these people together. Give them the necessary resources along with sets of expectations that they help define. The resources will include mostly time, some travel, a little bit of leeway for team building, and a relatively tiny bit of computer hardware. The expectations include squishy deadlines and deliverables like regular progress reports, focus group and survey results, usability studies, graphic designs, computer schematics, and sets of increasingly detailed documentation.

The successful open source software implementation will also require an increased understanding of computer technology by the library profession. No, everybody does not need to know how to write a computer program any more than everybody needs to know the intricacies of MARC records. At the same time, there needs to be an acknowledgment that library work is increasingly computerized and an understanding of what computers can and can not do will make the whole process easier. For example, we need to understand that relational database are the way to maintain and report on lists of data. Similarly, we need to understand that indexes, not databases, are the most useful tools for facilitating search. Databases and indexers are two sides of the same information retrieval coin. Furthermore, we need to understand that MARC pales in comparison to XML when it comes to transmitting data from one computer to another. It is not so much the "what" of MARC records that needs to be changed. It is more like the "how".

Given the time, energy, will power, and sets of realistic expectations a viable and sustainable solution can be implemented. At first glance the process may seem expensive and risky, but in the long run it will be lesser expensive because you will have increased the skills of your staff and the confidence in what they can accomplish.

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