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Strengthening Resource Sharing through Community Driven Development and Innovation

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Abstract:

Resource sharing is an area in libraries with intense focus on cooperation and innovation. Libraries dedicate themselves to sharing collections to enhance access far beyond what any one library could offer. Resource sharing involves connecting not only users to collections, but connecting many different library technologies. An effective and innovative resource sharing group requires both a commitment to community, but also a commitment to developing technology that can help achieve the group's goals. The IDS Project is a community-based resource sharing development cooperative whose members are tightly connected through professional development and high-level support initiatives such as the Online Learning Institute and the Mentor Program. Also, the IDS Project serves its members through software development based on deep understanding of community needs. As a development cooperative, the collective expertise of the group is integrated into building new technologies that solve major resource sharing issues. To effectively connect the disparate technologies needed to make resource sharing effective, a new resource sharing platform, IDS Logic, was created to harvest the knowledge and expertise of the engaged community and connect technologies including ILLiad, OCLC services, Integrated Library Systems, and other vendor and library platforms.

Keywords: IDS Project, IDS Logic, Software Development, Resource Sharing

Introduction

The IDS Project began as libraries in New York State were facing major challenges, and found that the major software infrastructure needed to solve problems and facilitate cooperation was inadequate. To develop good technology, a community that understands the complex problems of libraries and is willing to invest in developing shared solutions is needed. Specifically, resource sharing is an area in libraries with intense focus on cooperation and innovation. Resource sharing involves connecting not only users to collections, but connecting many different library technologies. An effective and innovative resource sharing group requires both a commitment to community, but also a commitment to developing technology that can help achieve the group's goals. The IDS Project is a community-based resource sharing development cooperative whose members are tightly connected through building member expertise and high-level support initiatives such as the Online Learning Institute and the Mentor Program. Also, the IDS Project serves its members through software development based on deep understanding of community needs. As a development cooperative, the collective expertise of the group is integrated into building new technologies that solve major resource sharing issues. To effectively connect the disparate technologies needed to make resource sharing effective, a new resource sharing platform, IDS Logic, was created to harvest the knowledge and expertise of the engaged community and connect various technologies related to libraries and resource sharing.

About the IDS Project

Out of desperation for resources and the realization that libraries could not afford to meet the needs of their users in a financially sustainable manner, the IDS Project was born under the direction of Ed Rivenburgh in the fall of 2003. Mr. Rivenburgh, then director of Milne Library at the State University of New York (SUNY) at Geneseo, met with twelve SUNY Library directors to overcome barriers to resources by establishing universal free reciprocal borrowing among these libraries and future IDS Project members. The initial idea behind the concept of IDS Project was "Your library is my library and my library is your library," which later developed into a purpose statement, "A unified community of trust and support built around a critical and clearly understood purpose: effective resource sharing." Both of these concepts continue to be clearly articulated in the programs and initiatives of IDS Project.

The first meetings brought together the Interlibrary Loan staff members and their library directors to review local policies, procedures, and workflows in order to identify barriers that affected quick delivery times and access to collections. Out of these meetings, solutions were developed to increase Interlibrary Loan efficiency and communication among members, which later extended to the broader community by processing requests and delivering resources at a faster rate to all libraries. Throughout the continuous development of IDS Project, enhanced community outreach initiatives and technological innovations grew to serve member libraries and the general Interlibrary Loan community. These initiatives include the Mentor Program, the Annual Conference, the Regional User Group meetings, the Online Learning Institute, and distributed community-based Technology Development.

Community Outreach

The IDS Project Mentor Program was formed in 2005 to effectively teach new member libraries about IDS Project best practices and enhanced workflow procedures that were required to be met before the library could be announced as a full member ready for sharing

among the cooperative. IDS Project Mentors are volunteers from member libraries who work within Interlibrary Loan and have a passion for sharing best practices and helping other Interlibrary Loan practitioners provide exemplary service to patrons. A mentor is assigned to a new member library after the IDS Project Executive Director coordinates with the library liaison and contractual agreements are made, and mentor assignments are supported through administration by the IDS Project Coordinator of Mentors. Each mentor uses various assessment tools with the library's Interlibrary Loan staff in order to determine the needs of the new member library, including assessments for Borrowing, Lending, and Systems.

Various technology solutions are used to ready new member libraries for the IDS Project community. In order to list tasks, assignments, and due dates for new members, the web-based project management software BaseCamp™ is used to facilitate communications between the ILL staff, the IDS Project Mentor, the IDS Project Creative Technologist, the IDS Project Coordinator of Mentors, and the IDS Project Executive Director. Throughout the process of making member-specific modifications to workflow, various communication modes are used between all parties invested, including email, web conferencing software, and in-person library visits. After all specific adjustments to workflow and the new member library feels ready to begin their participation within the membership, the IDS Project Executive Director announces the new library to the cooperative through the IDS Project listserv.

Each year IDS Project hosts an annual conference in various regions of New York State to bring new information to members from experts in the field of Interlibrary Loan and to strengthen the IDS Project community by providing an opportunity for everyone to share thoughts and concerns on policies, procedures, conduct, best practices, and technology. In 2012, the IDS Project Regional User Groups (RUGs) were created as an extension of the Annual Conference to provide an opportunity for professional development and community relationship building during the Fall, Spring, and Summer of each year. Attendees are provided with updates on IDS Project initiatives as well as informational and procedural needs expressed by the IDS Project community and ILL community as a whole. Mentors and RUGs chairs plan and present information at three regions of New York State, termed the Western, Eastern, and METRO regions. Resources created for these meetings are freely available to the public through the Regional User Groups website (http://idsproject.org/usergroups.aspx). To further extend IDS Project's mission of effective resource sharing, the Online Learning Institute was created in 2014 to freely share best practices through online courses in Borrowing, Lending, and Copyright to all ILL practitioners, regardless of a library's affiliation with IDS Project.

IDS Technology Development Methodology

The development of technology has always been focused on the needs of the IDS Project community and the Interlibrary Loan community as a whole. One of these developments was the Getting It System Toolkit (GIST) that allowed staff to "easily route requests between ILL and acquisitions depending on a number of factors, such as user recommendations, the borrowing cost versus the purchase price, regional library holdings, and more" (Pitcher, Bowersox, Oberlander, & Sullivan, 2010, p. 224). Another development focusing on user needs for ease of discoverability across siloed member catalogs was the consortial catalog IDS Search, providing users with an "intuitive search experience which enables libraries to easily customize the search interface and add geographic search limits" and allowing for an almost instant submission of ILL requests for items held at regional libraries (Oberlander & Rivenburgh, 2012, p. 79). ILLiad™ Addon Development has also been focused on the needs of the Interlibrary Loan practitioner, allowing for faster ILL request processing time by

connecting separate systems and platforms to provide the information necessary for making intelligent processing decisions. For the purposes of this paper, we will be focusing on IDS Logic, the newest project created to meet the needs of the community by automating complex processes and completing tasks that would normally be repetitious actions of the practitioner.

Review of Software Development by Libraries

In the past several years, there have been many examples of individual libraries using Application Programming Interfaces (APIs) or web services to address issues, streamline work, or enhance library functions. Additionally, library vendors are beginning to include access to data within systems through APIs, and to allow for connections to systems via web services and APIs. However, beyond developer networks such as OCLC's developer's network (https://www.oclc.org/developer/home.en.html) or the Ex Libris Developer network (https://developers.exlibrisgroup.com/), which are meant for sharing ideas and code, there is not a large community based on technology integration and development. The IDS Project brings together a community with ideas and strategies about how to improve libraries, and connects them with a platform and development expertise to integrate systems and foster innovation.

Recent examples of system integration through application and software development reveal how much effect software solutions can have on library functions. In 2011, Wayne State University created an application that connected data from its two systems, ILLiad and ArticleReach, and submitted orders to the Copyright Clearance Center (CCC) API, saving over 500 staff hours per year spent paying royalties (Sharpe & Gallagher, 2011, p. 137). Services such as CCC Rights Payments and the global library cooperative OCLC are ripe for integration, and the positive effect in saved time is evident, even with applications that are limited in scope.

As OCLC systems and services overlap with many other systems, whether they are cataloging, resource sharing, or discovery such as WorldCat, the OCLC web services are key resources to leverage for system integration. Sarah Johnston (2015) at St. Olaf College developed Perl scripts to drive an application that uses the WorldCat Metadata API to create a "do-it-yourself" reclamation project, comparing local catalog records with OCLC holdings for the library (p. 1). The project at St. Olaf allowed for a high level of automation for a reclamation of roughly 500,000 holdings, with only minimal staff intervention (Johnston, 2015, p. 5). Terry Reese (2014), at Ohio State University, provided a thorough analysis of the OCLC Metadata API, seeing the creation of the API as "a welcome shift in how libraries are able to interact with their data, and a set of opportunities to develop new collaborations and workflows around the library community's metadata operations" (p.9). The API is a major shift from the environment that is "tightly controlled and coupled to the client software OCLC has provided to the cataloging community," which has resulted in "a lack of innovation and integration of workflows, as the need to work with WorldCat hamstrung those efforts" (Reese, 2014, p.10). The ability to integrate changes how libraries can operate and frees them to work more effectively.

As resource sharing and library cooperation expands, especially outside of North American Libraries, there will be an increased need to connect disparate resource sharing and library management systems as there are more systems used by international libraries. As OCLC has expanded resource sharing in Spain and other countries, Rodriguez-Gairin and Somoza-Fernandez (2014) identify a need to connect OCLC's WorldShare Management platform with the GTBib-SOD Interlibrary Loan system already in use in Spain (p. 487). Further, the method identified by Rodriguez-Gairin and Somoza-Fernandez (2014) is to use web services and APIs

to connect the two resource sharing systems and remove the need for duplicate work in systems (p. 487).

In the International library software market, systems that allow and encourage interoperation are becoming prevalent, especially Library Services Platforms (LSPs). With LSPs becoming more open, there is an opportunity for further development and cooperation, in much the same way that OCLC web services have allowed for development and innovation. Breeding (2014) sees APIs as one of the primary ways to connect and unify library services and software (p. 22). The library technology environment involves maintenance of many different systems, "often with overlapping spheres of functionality or data" (Breeding, 2014, p. 22). And, for libraries, "such a matrix of interrelated products and services brings considerable complexity as libraries manage each separately, while attempting to fit them into a coherent technology strategy" (Breeding, 2014, p. 22). But, with more major library systems offering APIs, "rather than considering each system as isolated and self-enclosed relative to how data flows in and out, the use of APIs opens the possibility for more dynamic interactions that are beneficial both in terms of more efficient operations behind the scenes and a more elegant presentation to patrons" (Breeding, 2014, p.24). Breeding sees the two-fold benefit of API usage as "Libraries benefit from APIs when they are able to perform tasks that are not possible through the bundled user interfaces or that automate tasks that otherwise might be performed through manual or batch processes" (Breeding, 2014, p.23). Improving the user experience and greatly optimizing staff capabilities or automation is at the heart of API usage. In his 2015 NISO white paper, Breeding goes further and indicates "there is a window of opportunity for a set of cross-vendor APIs to be defined within each of the areas of intersection among products" (p. 34). This "ecosystem of interoperable APIs might not be codified as standards, but instead as recommended practices that can be validated with compliance assessment" with defined cross-platform operations that should be available via APIs (Breeding, 2015, p.34). A task group proposed standards of API based interactions from an ILS to a discovery system, which would allow interoperability between ILS and discovery systems (Breeding, 2008, p. 18). Although library API standards have not been fully implemented, there still is a high degree of interoperability via APIs, and standards proposed such as Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) are now widely in use.

Although not an Integrated Library System, the software platform that allowed the most customization and optimization has been ILLiad, developed by Atlas Systems, and supported by OCLC. In many cases, ILLiad has been extended beyond its core purpose of being a complex hub for resource sharing into a core system that libraries have integrated into many areas and departments. And, with the experience developed by many libraries, and the IDS Project, of integrating LSP components, OCLC services, and ILLiad and other software systems, the potential is great for further development within the next few years.

As the IDS Project developed a community of highly talented librarians and staff, and systems matured to become more open to integration, there is now the ability to connect "mission critical" systems that will "support better, more informed decisions and free employees to undertake higher-value tasks", which will ultimately "offer the capability to unlock talent and time" (Oberlander, 2012, p.15). The promise of freeing time and talent through improved systems was at the core of many of the software projects that have come from the IDS Project, which has resulted in staff who have more time for professional development, are more engaged with an innovative community, and can contribute more to their individual libraries and the IDS Project community.

IDS Logic as Connecting Platform

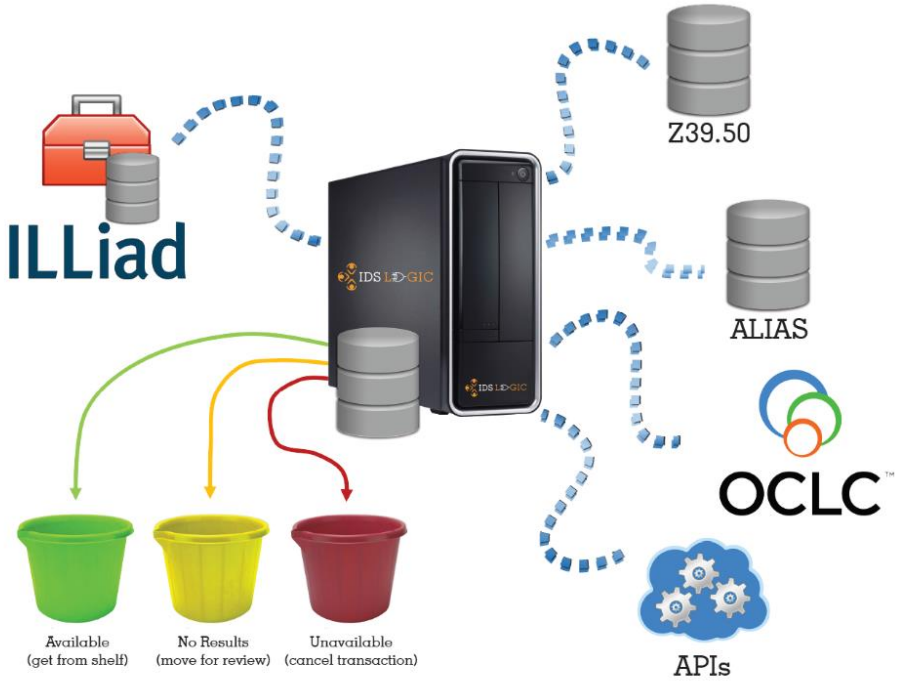

FIGURE 1: IDS LOGIC

As IDS Logic serves as the platform that integrates multiple systems, determining a way to streamline maintenance of electronic holdings information and license information with the resource sharing workflow was necessary. ALIAS, the Article License Information Availability Service, was one of the first functions to be integrated into IDS Logic. Taking the approach that maintaining holdings in multiple systems isn't beneficial, ALIAS harvests data regarding electronic holdings that libraries already have in their knowledgebase software such as EBSCO's Full Text Finder or Serials Solutions 360 Link. ALIAS and IDS Logic harvest and accumulate this data for all 85 member libraries, and use this as the basic local article availability lookup and article direct request system. Thus, libraries have less maintenance, and benefit from identifying items they own, and sending requests only to libraries who can deliver the article they need. Rather than create a separate system, ALIAS uses OCLC for sending these requests, which keeps more transactions in one workflow. Since ALIAS uses OCLC, if IDS Libraries do not hold an article that is needed, which is rare, this request can then be sent to a broader set of libraries using OCLC article direct request process.

Another major service that highlights how IDS Logic functions as a platform that connects systems is Lending Availability Service. A major task of many resource sharing departments is looking up call numbers and availability for books or other materials requested. Essentially, this task involves three major components: looking up information in a library catalog, applying policies based on sub-collections or other criteria, and then acting upon the information in ILLiad to either route for searching or cancel. Lending Availability Service pulls information from the citation in ILLiad, and then sends this to IDS Logic, which then queries the library's Z39.50 server or availability API if the library is using a Library Service Platform such as WorldShare Management Service or Alma. The Z39.50 or availability API typically returns all needed information for libraries to cancel or route for pulling from the shelves.

A major initiative begun in 2016 that features the depth of what is possible with IDS Logic is the Article Gateway (AG) workflow. The AG workflow streamlines and automates fixing of citations, copyright clearance, and when needed, checking multiple article vendors for best prices, ultimately leading to an unmediated delivery. To ensure that copyright checking is as accurate as possible, borrowing articles all must have ISSN's, and have fairly consistent citations. To achieve an all ISSN process without forcing staff to open many requests, simple citation data is sent to the PubMed web service and to the Worldcat and OCLC xID web service to harvest ISSN's, PMID's, and other citation information that is then ultimately inserted back into the transaction. Additionally, queries such as the "Rule of 5" query checks to see if five requests from the same ISSN have been filled within the past year. If copyright limitations have been reached, then the AG checks Copyright licensing fees, pricing from CCC's Get It Now service, and Reprints Article Galaxy service. Whichever option offers the best value is then selected, and the request is fulfilled with no staff intervention or delays. Whether a request has an incomplete citation, lacks an ISSN, or is for an article where a copyright payment is needed, Logic and AG work to facilitate almost instant delivery.

There are other IDS Logic services and workflow enhancements that can be discovered on the IDS Logic site (http://rulekit.idsproject.org/) that automate and enhance resource sharing processes, freeing staff to perform higher value work. IDS Logic continues to be developed to solve problems that the IDS Project community presents, freeing staff to engage in other tasks that will provide more value to their libraries and the IDS Project Community.

Conclusion

Technology plays an ever increasing role in the work of libraries, specifically in areas that cover both public services and manage library resources. To fully take advantage of the expertise, creativity, and ideas within libraries, establishing and utilizing a community of practice based on mutual trust is the most effective way to create innovation in libraries using technology that leverages staff. Through the IDS Project, libraries and staff are connected to a user-focused community with mutual resources to enable solutions to problems and create positive change throughout libraries and in the lives of library users.

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