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Abstract

Determining if items are available is a major part of Interlibrary Loan work. Many libraries try to minimize staff time spent on determining availability by investing in circulation based resource sharing systems that require a major investment in time and funds, and then work only for the libraries within the circulation based system. The IDS Project created a new solution, Lending Availability Service, to automatically determine availability through software that is integrated within the resource sharing software, ILLiad. The Lending Availability Service determines availability for any requests a library receives, and can automate portions of the ILL workflow that require determining whether an item is on the shelf or in a collection that can be lent. The Lending Availability Service is highly configurable and was designed with ILL workflows in mind, and overcomes problematic areas in workflows to allow for highly optimized resource sharing through automatic lookups of availability.

Advancements in Real-Time Availability in Interlibrary Loan

Although there has been a large amount of technological development in libraries over the past decade, especially in the area of resource sharing, basic issues such as determining the availability of items for loan via Interlibrary Loan still present significant problems for most libraries. Existing availability software usually exists as a closed system, and will only work with other libraries using the same system, or requires availability to be checked at the point of request by the patron. As availability checking is often the one area of resource sharing that is not consistently automated, availability leads to higher costs in Interlibrary Loan. With the ability to automate availability checking for ILL requests regardless of what library they came from, libraries can decrease ILL costs. To meet the needs of reliable and comprehensive availability checking, and fill the gap in software that can work with a variety of systems and can focus on automating availability when the library is a lender, the IDS Project created the Lending Availability Service application.

Literature Review

Though library consortia partner together to ensure that resource sharing is most effective among its members, according to Thomas Bruno (2013), “they still suffer from the same basic problems that libraries using Worldcat Resource Sharing experience, such as lack of real-time availability” (p.47). Bruno goes on to chronicle how many consortia have addressed the issue of real-time availability: shared or union catalogs (2013, p. 47). Real-time availability and the ability to offer unmediated access to collections is crucial to extending access to the collections of other libraries, and there are multiple programs such as Borrow Direct and the Committee on Institutional Cooperation libraries that utilize Circulation standards such as the National Circulation Interoperability Standards (NCIP) (Bruno, 2013, p. 48). Bruno identifies one

problem of circulation based systems that determine availability and facilitate resource sharing as "consortial borrowing/lending operations often exist in isolation from traditional interlibrary loan or document delivery operations, patron expectations may not be adequately managed when transitioning from one service to another" (Bruno, 2013, p. 48). In short, libraries use separate systems to provide the same service, depending on what library owns the material, mostly for the sake of efficiency, as availability and other circulation actions are managed by circulation-based consortial resource sharing.

The need for complex real-time availability will be increasingly important as the strategies for coordinated shared collections and other areas of collaboration will continue to change and evolve in the next decade. Increasingly, libraries will adapt to an access model of collections, and the collections that they focus on building will be largely special collections, which may not be available for lending via Interlibrary Loan. As Michael Levine-Clark asserts, "Libraries will focus more on special collections and divide up remaining print collection responsibilities within a consortium" (2014, p. 435). If libraries shift print collection building to consortia, and only collect special materials within their individual libraries, being able to determine availability and to provide circulation like efficiency for sharing consortial print collections, and to effectively restrict or manage complex rules regarding lending special collections will be an area that resource sharing will need to focus on both presently and in the future.

There are other systems that will help to provide availability information, one of them the Relais ILL system, which can "automatically search a range of catalogs via Z39.50 and use the results to automatically build a routing list" (Guadagno, 2005, p. 84). However, the Relais' system's availability is checked once, and the routing list moves along, not factoring in changes

in availability as the transaction moves from library to library. Relais uses a number of factors to determine whether or not an item can be requested through the Relais D2D system (Relais, 2015). The first step in determining "requestability" is to identify if the patron placing the request is eligible to use the Relais system aligned to a specific partnership consortia based on the patron type returned in their patron profile. Next, specific parameters set up by a lending library using Relais D2D are analyzed to determine if an item is able to be requested. A lending library is able to set specific requestability criteria for item format, shelving location, and call number range. For item format and shelving location, a lending library must provide a list of formats and shelving locations that have been determined as requestable. If the format or shelving location is not contained within the list stored within the Relais database, then those unlisted formats and locations are identified as unrequestable. Determining the requestability of items based on call number operates in an opposite listing method. If desired, lending libraries can list the beginning letters (or words, such as "micro") that would be unrequestable. If the alphabetic portion of the call number for the requested item is not contained within the list, then that item is identified as requestable. Finally, item availability is decided by checking the lending library's catalog to determine if the requested item is out on loan.

Another system that allows for automatically determining the availability of library collections is the Rapid Returnables, or "RapidR," system. RapidILL began in 2013 first offering book chapter requests as part of its direct request system for ILL articles. Initially, the pilot of book chapter requesting only automated look up of the materials and sending of requests, and did not factor in availability, as "the lack of real time availability checking of the shelf status of the book, nearly a year's worth of experience has shown that this is not an undue burden on suppliers nor is it a delay to the requesting library's patron in receiving the chapter requested"

(McWaters, 2013, p. 89). However, RapidILL has since added more availability functions as it has added Rapid Returnables (referred to as RapidR), which uses the Rapid Manager to look up availability and holdings information at the point of creating a borrowing request (Natale, 2014). But, currently, RapidR is only available to RapidILL members, and is not integrated with OCLC resource sharing functionality.

Some libraries, who have focused on building collections that are responsive to user requests or to filling special needs of the library are using Interlibrary Loan or Holds and Recalls to dictate what they purchase, and then use OCLC Local Holdings Records to deflect these items from being lent to other libraries due to higher demand at the library. Indeed, this method is a way of solving one issue of availability: heavily requested material that is consistently cancelled because it is in use. For example, Gerrit Van Dyk provides a rationale and template for how to use circulation functions such as holds to create a demand-driven acquisitions program, part of which is using Local Holdings Deflections in the OCLC records to prevent other libraries from borrowing via ILL (2014, p. 306). The Local Holdings Record (LHR) Deflection as a method for denying ILL requests in the MaRC record is “traditionally used only for serials, but it is extremely effective” (Van Dyk, 2014, p. 306). Many libraries use LHR deflections for frequently requested titles they do not want to lend, but “these titles must be reviewed frequently,” especially as the “titles may drop in demand and be eligible to lend to another institution in time” (Van Dyk, 2014, p. 306). The process of changing LHR lending permissions is time-consuming and must be done on a title-by-title basis, so it is not a sustainable practice on a large scale without a large amount of staff time dedicated. Also, as Van Dyk discusses, the inability of merging circulation and Interlibrary Loan data seamlessly creates problems for automation and decision making for ILL staff: “ILL and holds personnel should meet often to

discuss what titles are popular. The ILL borrowing team will need to keep up with these titles to know that they should not try to borrow in most cases." (2014, p. 306). As volume of ILL borrowing and other operations increases and staff time availability decreases, there will be more need to have information such as the item status of "hold requested" or how many holds requested factored into the ILL workflow without staff intervention.

As the economic environment for libraries has changed, resource sharing has been affected greatly, serving as a method to supplement local collections. However, with the increase in resource sharing, there are also increased expectations for turnaround times. For physical items, "libraries continue to ship physical materials, in some cases using expensive expedited methods to meet consortia expectations for turnaround." (Kress and Leon, 2012, p. 82). As resource sharing volume continues to increase, the "need to know the current costs of performing ILL" is important (Kress and Leon, 2012, p. 82). Also, "Technology has benefited interlibrary loan by automating many processes that were once manual," but many of these technologies are cost-prohibitive (Kress and Leon, 2012, p. 82). In examining the costs of sharing print material, and the areas that were not yet automated by ILL technology, real-time availability is the one area that is not yet widely automated, especially in a manner that is efficient, flexible, and easy to maintain.

In reducing the amount of staff time required to fill or cancel lending requests, one of the largest costs of lending via ILL can be mitigated. The National Library of Australia (2001) found that of the average of $17.03 per request cost in lending, 61.2 percent of the cost of the request was for staff time, with the second largest as shipping costs (cited in Kress and Leon, 2012, p. 86). Equally as important, the costs of unfilled and filled requests were broken out in the 1997 cost survey conducted at Wichita State, which found that a filled lending request cost

$2.47, while an unfilled request cost $1.36 (Kress and Leon, 2012, p. 85). For Wichita State, "The low cost of lending for this institution results from student assistants performing the majority of work in the lending unit" (Kress and Leon, 2012, p. 85). Thus, figuring out ways to eliminate processes that involve staff time is essential. Kress and Leon's study, compared with previous studies, show that staffing costs continue to be the major component of ILL lending costs, although the percentage of cost related to staff has reduced from the 2002 ARL study from 75 percent to Kress and Leon's 63 percent (2012, p. 92). The 12 percent reduction is largely related to continued improvements in software and technology related to ILL, especially the rapid development of the major ILL management software ILLiad, developed by Atlas Systems and licensed by OCLC. However, as the processes that involve staff require application of policies, discovering ways to program and configure policies to facilitate automation was an essential step in development of Lending Availability Service.

One of the areas in Kress and Leon's cost study most relevant to availability was the difference between ILL and "Circ to Circ" borrowing and lending. The difference in cost between Circ to Circ borrowing was most striking, with Circ to Circ borrowing costing $2.22 per request, and ILL loans costing $6.86 (Kress and Leon, 2012, p. 91). Likewise, Circ to Circ lending, at $3.58, was much less than ILL lending loans, at $4.73 (Kress and Leon, 2012, p. 91). Likely, a major difference between Circ to Circ lending and ILL lending is the need for staff to look up request information, cancel requests that are not available, and often require staff to apply policies. Although availability is not a widely considered major issue in resource sharing, the IDS Project identified availability as a major area for increased automation, efficiency, and cost savings.

Discussion

Through Lending Availability Service, The IDS Project Technology Development Team (TDT) sought to make lending physical items and book chapters less expensive while not requiring a cost-prohibitive technology to do so. In short, Lending Availability Service brings the cost savings of consortial circulation without the large cost invested for a major software package and union catalog, and provides a more flexible technology that would work with other libraries sending requests who do not belong to the consortia using the availability software. The time and cost savings could be generated regardless of where the borrowing request originated.

About the IDS Project

The IDS Project, created in 2004, is a cooperative that has provided tools and support to make efficient and effective resource sharing possible for all libraries, regardless of size and financial status. Specifically, the IDS Project has created many different software tools that have connected many of the existing software systems and services that libraries already subscribe to in order to solve important issues in resource sharing and other areas of libraries. One of the first tools that the IDS Project created was the Article Licensing Information Availability Service (ALIAS), which connected open URL resolver holdings information, a centrally managed license database, and integrated these tools seamlessly into ILLiad. The result for ALIAS was a change from Project libraries filling only 33 percent of electronic article requests to 64 percent of electronic article requests (Sullivan, 2014, p. 217). In 2009, the IDS Project created the Getting It System Toolkit (GIST) as a tool that libraries can use to connect acquisitions and resource sharing. GIST was created to “transform the business of borrowing, buying, and accessing library materials in two important ways,” integrating “ILL and acquisitions into one flexible workflow,” and “automating the integration of data to support librarians’ decisions (Pitcher et al.,

2010, p. 224). GIST and ALIAS are both key examples of the IDS Project's ability to "combine data from various vendor Web application programming interface (API) services" with workflows and software platforms such as ILLiad allowing for better services and tools for patrons and staff (Pitcher et al., 2010, p. 225). The IDS Project, in 2010, created IDS Search, which relied on multiple API services and connected to libraries' Z39.50 services as well, which began the IDS Project's connection of availability of items and creating innovative tools to factor availability for ILL workflows.

IDS Logic

During 2013, the IDS Project Technology Development Team (TDT) created Lending Availability Service, which through a connection to the library's ILL system with an ILLiad server addon, automates determining availability of lending loans requested via Interlibrary Loan. To create a real-time dynamic method to determine availability and to automate actions in ILLiad, the IDS TDT created IDS Logic, which can communicate with ILLiad via a server addon, inserting information from a variety of sources into ILL transactions and send information to external sources such as OCLC via the ILLiad system. Through the IDS Logic server addon, the actions staff would typically take to determine availability can be fully automated.

Server addons are a method for libraries to interact with their ILLiad databases, and to send commands to update OCLC ILL requests, and automate parts of the ILL process. Server addons run via ILLiad's System Manager and can be used to send emails, cancel transactions, insert information into transactions, and perform a variety of functions in ILLiad without the need for staff to open ILL requests. Staff only need access to the ILLiad Customization Manager (access to the Customization Manager is typically given to library managers and staff) to install

server addons, making powerful automation available to many users. As the IDS TDT developed server addons, the iterations through different addons and the inability to effectively troubleshoot issues led the team to pursue other methods to use server addons not to perform complex work, but to facilitate the connection between the ILLiad database and other automation services. Thus, IDS Logic uses only a basic connection to the ILL system via the ILLiad server addon, and communicates to middleware on the IDS Logic server to pass information and functions between a variety of systems and web services such as the library's catalog and OCLC web services. IDS Logic also provides the ability to set up complex configurations of rules to apply to situations where staff previously needed to open requests and determine what actions to take based on library policies. IDS Logic makes the connections between the ILL system and other external services and also stores that library's policies and configuration to be used to automate both simple and complex decision points in resource sharing. IDS Logic pulls a variety of different information from various web services and then applies the library's unique configuration for workflow decisions to processes. Through Logic, libraries can choose to automate several parts of their ILL process, or just a few, depending on local policies, procedures, and eagerness to automate services. Through consultation with IDS Project members, new automation and efficiency services are continuously added to IDS Logic.

Lending Availability Service

In the case of Lending Availability Service (LAS), there is a connection to the library's Z39.50 server or web service holding availability information, which then returns availability, call number, location, and other relevant holdings information. The IDS TDT created an XML schema that allows for customized mapping of information and MaRC data from the Z39.50 server or availability service to accommodate different systems that do not use the same fields, as

well as to accommodate for non-standard cataloging practices using different MARC fields for similar purposes. Custom mapping of information returned by the Z39.50 server or availability web service is also particularly helpful when staff want to make automation decisions based on local notes and unique cataloging practices.

The IDS TDT surveyed technologies that would allow for real-time availability lookups, and found that some technologies such as those afforded by the NISO Circulation Interchange Protocol (NCIP) were very good for our use, but usually required libraries to spend large amounts to purchase licenses, and usually could not be used if the requesting library did not use the NCIP protocol. However, the ability to use the Z39.50 server or availability web service that libraries use to provide access to their online public access catalog was something that virtually all libraries had, and with the ability to take cataloging and availability information that was non-standard and map it to regularized fields for libraries made the reliance on Z39.50 and existing availability web services the best choice as there would be no extra cost to libraries, and accommodation for non-standard information could be handled. As more libraries expressed interest in Lending Availability Service, more methods of determining availability were also added. For example, libraries using OCLC's Worldshare Management System (WMS) relied on an availability API that the IDS Logic middleware interacts with and passes information between WMS and ILLiad after applying complex rules. Similar connections were made with Ex Libris' Alma and other Integrated Library Systems that may not rely on Z39.50 technology.

The Lending Availability Service finds all the relevant information needed to either import the information for staff to pull the books, or to cancel the request in both ILLiad and OCLC resource sharing. This leads to much faster cancellation times from lending libraries who cannot lend a book that is checked out or in a restricted collection, improving patron services to

all. This also leads to less staff time spent cancelling requests for items that they cannot lend, and improves speed of finding and delivering loan requests.

As the Lending Availability Service can find all temporary or permanent location information within the catalog, there is much more refined deflection capabilities than those offered in OCLC Policies Directory Deflections, which are dependent upon format types, publication age, and other broader criteria that is held in OCLC holdings. The deflection abilities in LAS allow for deflection based on collections (e.g., Rare Books Room) or temporary locations (e.g., Course Reserves), statuses (e.g., Missing, Lost), or any other information that the library's Z39.50 server contains.

In addition to checking whether an item is checked out or not, the Lending Availability Service also applies several availability "rules" to each ILL lending request, which factor in the many variations in local systems and cataloging practices. One of the rules bypasses availability checks, which is useful for items such as media or other items that may be booked or reserved in another system outside of the library's integrated library system. This is helpful for items that need to be flagged for review by staff and require decisions that can't be programmed efficiently. Another rule allows libraries to make items that always show via local catalog policies as unavailable as available to lend via ILL. So, if a library would lend via ILL a non-circulating collection, these could have the call number and location inserted, but return a positive availability when the system would normally return unavailable. The last type of rule allows for automatic inclusion or exclusion of collections, item types, locations, or temporary locations. These types of exclude or include rules act as refined deflections for libraries who do not want to loan specific groups of items, or know that they may have cataloged items differently, which affects availability. An example of an inclusion rule is libraries that do not fully catalog to the

item level government documents, which would not allow for item-level availability in any system, so the library would need to check the shelves for availability. Exclusions could include course reserves, new book shelves, or other permanent collections such as college archives or special collections. If libraries have multiple copies in their collection, the LAS will check all copies to try to determine if any are available, and will prioritize which location the library has set as their preferred collection or location.

Lastly, many libraries determine availability differently for libraries within specific groups, and many will lend restricted collections to some groups, but not others. A major example of a group that most libraries expand lending privileges for member libraries is the OCLC Research Library Partnership: SHARES. SHARES libraries, among many other benefits, try to lend as much as possible to each other, and to treat each SHARES request as a special case and try not to summarily cancel. In these cases, LAS is able to factor in groups that libraries belong to and apply different policies to these libraries. So, if a library wanted to deflect special collections for everyone except SHARES Libraries, LAS could facilitate group based exceptions such as this.

Once an item has been determined as available, specific criteria is used to determine the due date for the item requested. A basic configuration allows for libraries to set a standard due date for all items sent to a borrowing library. More complex configurations allow libraries to set specific due date days based on information returned by the MaRC record of the item requested. For instance, LAS could make adjustments to the due date day interval if a lending library had a local policy of lending A/V materials for a shorter period of time in comparison to monographs. Any other information included in the MaRC record, including local notes, could also be used to differentiate the due date of the requested item. In addition, LAS has the ability to set specific

due dates for determined groups of libraries and can accommodate for multiple lists to allow for different due dates for each group.

There are also several predictable problem areas in the lending loan workflow in ILL/ILLiad that Lending Availability helps staff to identify and flag for careful processing. The first issue is identifying the correct ILLiad lender address that the request should be attached to. Those who have used the ILLiad interface on a regular basis will understand the frequency and amount of times that staff are required to manually select lenders in ILLiad, as well as the shipping issues caused by incorrect lender selection. When a lending request is analyzed by LAS, it identifies whether the library's ILLiad database has multiple lender addresses for this OCLC symbol or not. If there is only one lender address that can be adequately matched, the lender address is set by LAS, and the transaction is routed or cancelled as necessary. If there are multiple lender addresses and an adequate matching record is not found, this transaction is flagged for staff to review. Since the frequent selection of lender addresses that have no issues or don't need to be updated are now handled by LAS, staff can now more critically view the lender selection for requests that they must manually process, which helps reduce shipping errors.

In addition to multiple lenders, LAS also determines when a lending loan request is for a title that has multiple volumes or multiple items. LAS looks in the fields in the Z39.50 or availability web service information used to determine volume information for titles and inserts information indicating that the title is multivolume and routes to a custom ILLiad queue, if desired. As often multiple volume requests are problematic since the borrower may not indicate what volumes he or she would like, this functionality flags transactions that need special attention or review. Also, if there are collections or item types that often create false multiple

item requests, such as compact disc collections, these can be bypassed from the multiple item/multiple volume check.

As automating a process as simple as determining the availability and location of lending returnables is fraught with potentials for error, the IDS Project TDT worked with staff at several libraries to analyze the ILL workflow to identify as many areas that needed checks and quality control, and developed additional configuration and ILLIad addon functions to address these issues. One such development is the "MaxCost Reviewer," which normalizes the non-standard information that borrowers often insert into the maximum cost field in ILL requests, and then compares this amount against the library's maximum cost, factoring in group and individual agreements for libraries to provide reciprocally free services. The goal throughout development of Lending Availability Service has been to identify whenever there was a need for a request to be opened, and develop ways to remove that need, or to make the decisions as quick as possible after opening the request.

As development of the Lending Availability Service has grown, the IDS Project Technology Development Team has expanded availability automation to book chapter requests as well. During initial phases of development in which librarians and staff working in ILL were surveyed to determine how differently they treated scan or chapter requests versus loans, it became clear that most libraries were much more liberal in scanning versus lending. To create the book chapter availability look up, the same custom mapping of Z39.50 or availability web service fields is used to determine if the item had a number that matched an ISBN's general characteristics in the correct MaRC fields, and then connect this with other parts of the MaRC record to determine that the item is a chapter request. Rather than rely on item type definitions (e.g., using "monograph" as the only type checked for this), a more refined approach was created

that would handle all of the different item types that can be used to catalog a material that would be considered a “book chapter” request in ILL.

Borrowing Availability Service

Having developed an availability service that was functional for lending, the TDT then moved on to availability checking in Interlibrary Loan borrowing, creating the Borrowing Availability Service (BAS). Although ILL borrowing, for many libraries, is meant to supplement local collections, for many libraries loan requesting in borrowing has become a second copy service. More liberal circulation policies, in addition to improved service in ILL has increased the percentage of ILL borrowing for items that the library already owns, but are checked out. For example, from 2012-2014, Syracuse University’s ILL borrowing was often for materials owned locally. Syracuse patrons received 6,493 of locally owned items via ILL, which was 31.6 percent of the 20,546 total ILL loans from that period. From those 6,493 requests, 5,054 were unique titles. As these statistics were gathered by matching OCLC numbers for requests against the OCLC fields in the local catalog, the numbers of locally owned materials requested may be even higher considering alternate editions may have been requested for some locally owned materials, and additional requests were cancelled due to being held in reserves collections as well. With the number of unique titles, and the high percentage of requests that are held, but not available, the issue of real-time availability in borrowing is one that has a large impact on the amount of time staff spend processing borrowing requests.

The ability to check the local availability before sending ILL requests out automatically via OCLC’s “Direct Request” service for loans is a crucial part of automating more borrowing requests. To check local availability, all borrowing loan requests are automatically checked to determine if they are checked out. If the item is found to be available, the request is

automatically sent to a document delivery queue in ILLiad, requiring only student assistant time to pull from the shelves. If the item is owned, but not available, the request will be sent via Direct Request. As the BAS can also determine local collections and temporary statuses, libraries using this service can also stop textbook or reserve collection requests from going out via Direct Request, which is a persistent issue for Interlibrary Loan departments. One of the main settings in a library's Direct Request Profile is whether or not to review locally owned materials. Although some libraries choose to allow any requests that are locally owned to be sent to other libraries without review, many manually review requests that are held locally before sending via ILL, and BAS offers an automated way to check availability locally without forcing staff to open ILL borrowing requests needlessly. BAS, as with other IDS Project tools, seeks to make the tool configurable enough to meet local needs so that automation tools will be used to their fullest potential, rather than being deactivated, circumvented, or used minimally.

Case Studies of Effect of Lending Availability Service

The Lending Availability Service (LAS) is currently being used at most of the IDS Project Libraries and some libraries outside of IDS Project, which range from small Community Colleges to Comprehensive 4-year and Master's Granting Institutions, to large research institutions.

At the State University of New York at Geneseo, primarily a comprehensive 4-year college with a full-time enrollment of approximately 5,600 students, Lending Availability Service processed 2,777 requests of total 2,954 lending loans from June 1st to December 31st, 2014. From the transactions that the Lending Availability processed, 1,236 requests were automatically cancelled without staff mediation. About half of these requests were cancelled because the item was not available on the shelf (622 requests), and the other half were cancelled

due to collection level deflections (614 requests). None of the cancellations could have been handled by OCLC Policies Director level deflections as the cancellations were based on availability and collection status. Lending Availability Service determined that 1,420 requests (48 percent of the total lending loan volume) were for items that were available to be shipped, and of those requests, 99 percent (1,410 requests) were shipped to the borrowing library. Lending Availability Service found that 86 requests did not contain the matching requested ISBN or OCLC number within the catalog, and an additional 49 requests returned an unknown availability, meaning that 49 requests contained an ISBN or an OCLC number and the catalog did not contain an item record for the requested item, or the title contained within the request was less than a 60 percent match to the title within the catalog. In comparison to the total number of ILL requests handled at Geneseo, Lending Availability Service automated 94 percent of lending loan requests (2,954 total requests), 36 percent of lending requests (7,650 total requests), and 13.6 percent of all interlibrary loan requests (20,395 total requests).

Understandably, the larger the institution, the more effect that Lending Availability Service will have in saving time and improving services. At Syracuse University, from June 1st to December 31st, 2014, the Lending Availability Service processed 11,743 requests. Of these, 2,557 were completely automated, as they were cancellations, and no staff ever opened the request. Of the 2,557 cancellations, 2,038 were for items that were checked out, with 483 items being cancelled because of collection level deflections. The Lending Availability Service automated all but pulling and marking as "shipped" 8,523 items, making the processing of these items largely student level work. Only 389 were identified as "Bypasses," which required that staff manually process due to complex policy interpretation. Interestingly, as LAS runs every 2-3 minutes, the potential to automate another 1,231 was missed as staff opened up transactions

and manually processed them before the automation could run. For the period of 6/1/2014-12/31/2014, the total ILL volume for Syracuse University (including Borrowing, Document Delivery, and all Lending) was 42,369, which means that LAS automated or partially automated over 27 percent of the total volume for ILL requests at Syracuse University.

The number of cancellations by LAS at Syracuse University and Geneseo demonstrate the time savings that availability checking can have at a library. Further time savings can also be demonstrated with availability look ups being automated in borrowing. Additionally, the large number of cancellations due to items being checked out or in restricted collections also shows that ILL requests are often for items that are in high demand or in specialized local collections such as course materials or special collections.

Conclusion

Since the creation of Lending Availability Service, IDS Logic, and later Borrowing Availability Service in 2013, over 100 libraries have implemented the IDS Project's availability automation tools, saving a great deal of time in processing availability and looking up call numbers and locations. These libraries have benefitted from this automation without the need for implementation of a union catalog or comprehensive circulation based ILL system. Instead, Lending Availability Service can be easily implemented and is designed to be integrated with any requests coming into the ILLiad system, with highly configurable settings. Libraries have varied from hundreds of local collection deflections to just a few collections that are not allowed to lend. Each installation of the Lending Availability or Borrowing Availability Service has been unique, with IDS Logic serving to create flexible automation of ILL workflows.

Although innovations in determining real-time availability may not be as high profile or exciting as advancements in discovery or other areas in libraries, it is an issue that has large

repercussions in the ability to efficiently deliver high-quality resource sharing services in a cost-effective manner. In creating real-time availability tools that can be refined to fit ILL workflows and policies, a large percentage of ILL work can be automated, freeing resource sharing staff to focus on the time consuming, but rewarding public service aspects of Interlibrary Loan. In sum, by freeing staff from the need to determine shelf availability, they will become more available to serve patrons.

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