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50 East Huron Street, Chicago, Illinois 60611-2795, USA

Smarter Libraries through Technology:

Unified Discovery and Management of E-book Content and Lending

By Marshall Breeding

The lending of e-books continues to be an activity of critical interest in public libraries. As e-books gain ever wider popularity by the general public, libraries have been steadily working out the many problems related to offering e-book services similar to those offered for print materials. As e-book content increases relative to libraries' other collection components and services, libraries increasingly want more integration into their existing strategic patron interfaces and management systems rather than treating e-books as an isolated service.

The lending of e-books has primarily been offered by public libraries through subscriptions to specialized services, with Overdrive standing as the largest provider. Other providers include 3M, which entered the library e-book lending arena only recently with its 3M Cloud Library (see June 2011 issue of *Smart Libraries Newsletter*) and Baker and Taylor with Axis 360 introduced in 2011 with the King County Library System in Washington as its first installation.

The established model for e-book services involves a library licensing a selected set of e-books, which can then be lent to their patrons, using a process managed by the platform of the e-book provider. The library can select specific titles individually or may subscribe to bundled packages of content. In order to access the library's e-book collection, patrons search and interact with the e-book provider's branded platform instead of using the interfaces that the library provides for discovery and access to its other print and digital collection components. This process artificially separates the library's physical and digital collections and their associated fulfillment services.

The lending of e-books involves a variety of technical limitations and considerations. E-book lending platforms support specific types of reading devices. The major e-readers such as the Amazon Kindle, Apple iPad, the Nook from Barnes and Noble, and the Sony Reader tend to be widely supported, but there may be some limitations. The file format for e-books must also be considered. EPUB is an XML-based format that has become increasingly supported, though not by the Amazon Kindle, which uses its own proprietary format. The digital rights management infrastructure also imposes requirements that complicate patron access to content, such as registration of devices and separate usernames and passwords.

The prevailing concern as libraries have gained from their experiences in offering e-book lending to their patrons surrounds issues of complexity. Commercial environments make it quite simple to

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ISSN 1541-8820 May 2012 Volume XXXII Number 5

purchase an e-book, but borrowing one from a library so far has been a multi-step process that frustrates library patrons. Many efforts are underway to simplify process both through reduction of the steps involved on the platforms of the e-book lending providers and through integration with the library's infrastructure for patron services.

Library E-Book Lending Services

How libraries accomplish e-book lending varies. Some libraries may simply offer a link on their Web site to an external service to which they subscribe for access to e-books. Library users exit the library's Web site and connect to the e-book provider's platform to search the catalog of available e-book titles the library has licensed, and can initiate a lending transaction to transfer a title of interest to their e-book reading device. This approach to e-book discovery and lending can be seen as a complete hand-off to the external service. While that service might convey some level of branding for the subscribing library, the patron interacts completely with the e-book service's platform, not that of the library. Once on the e-book service platform, patrons are able to search only for the materials licensed from that service, not the library's complete collection of materials in other formats or even e-books acquired from other sources. Once an e-book has been checked out, the interface may lack an obvious path for the patron to return to the library's website.

Discovery of E-Books through MARC Record Sets

To achieve at least a minimal level of integration, a library can include its e-book holdings in its online catalog or discovery service. The library may load MARC records for titles licensed through its e-book service into the index of its discovery service or into its integrated library system. Then users searching the catalog will find e-book content in addition to the print materials and other items managed in the library's automation system. These records will be configured with an 856 field that will link the user with the title on the e-book platform, where a loan can be carried out if desired. This approach does not actually bring the functionality of the e-book lending service into the library's regular online catalog. It does provide a convenient means for users to search a more comprehensive view of the library's print and electronic book titles and to link out to a title on the e-book service.

In support of the interest of libraries to search their e-book holdings from within their online catalogs, most of the e-book service providers will offer an option to deliver MARC record sets corresponding to the titles licensed. Delivery of these MARC records usually involves an additional fee. MARC records may not be available as book titles are added to the library's collection. Given the quantity of titles accessible through these e-book collection sets, individual record-by-record cataloging may not be feasible.

A number of projects are underway to create more complete integration where patrons are able to discover and access e-book content through the same interfaces the library provides for its other collections and services.

The Library Corporation has recently partnered with OverDrive to provide a service to provide high-quality MARC records to libraries, with prompt delivery as the library acquires its initial collection and as it extends its collection. This service, announced in January 2012, is available to libraries subscribing to OverDrive e-book services whether or not they use one of The Library Corporation's automation products. The Library Corporation has a long history of providing bibliographic services. One of its earliest products, BiblioFile, was a very popular tool for acquiring or creating MARC records and continues today through the BiblioFile OnDemand service.

Full Integration of E-Books into the Library's Environment

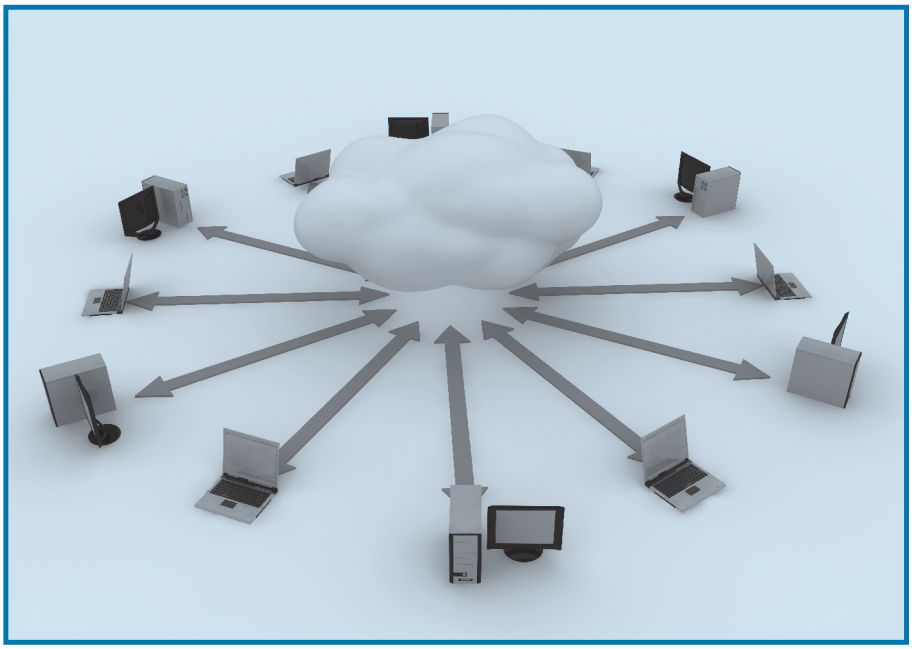
The ability to search e-books from within the library's catalog or discovery service provides only a superficial layer of integration. To borrow an e-book, the patron will continue to interact with the e-book provider's platform and not the library's interfaces for patron services. A number of projects are underway to create more complete integration where patrons are able to discover and access e-book content through the same interfaces the library provides for its other collections and services. Examples include BiblioCommons work to integrate OverDrive's e-book lending into its discovery interface and Polaris' recent work to integrate the 3M Cloud Library e-book lending service into its patron facing interfaces. In this issue of SLN I will take a closer look at these two projects and explore some of the technical and business issues related to the technology of e-book lending.

Polaris Delivers Full Integration with the 3M Cloud Library

Collaboration between Polaris and 3M has resulted in a full integration of e-book lending within the PowerPAC or MobilePAC patron interface of the Polaris Library Management System. This integration enables patrons of libraries using the Polaris automation systems to search and access e-books using the same interfaces offered for other library materials.

The availability of MARC records representing the library's e-book collection sets makes it possible to search this content along with other library materials. Polaris has included filters that allow patrons to search all materials, or they can opt to view only e-books. Libraries that subscribe to enrichment services , such as Syndetic Solutions, will also be able to present cover art corresponding to the e-book and print holdings. Unlike other scenarios where e-book lending transactions then take place through a hand-off to an external platform, e-books can be borrowed or requested directly through the library's own Polaris online catalog interface.

The integration with the 3M Cloud Library allows Polaris to present e-books in the PowerPAC or MobilePAC online catalog along with print materials, along with the appropriate services. In other words, print and electronic editions of books will be interfiled in the results listings of a catalog search. Print materials will display the usual status indicators with the ability to place holds or requests for materials that might currently be charged out to another patron. E-books represented in the search will include service buttons that allow the patron to immediately check out the item if it is available or to place a request for notification if no copies are immediately available.



This integrated environment performs an e-book check-out for the patron with minimal effort. Clicking on the "Check Out" button on an available item displays a confirmation page asking "Check out this e-book for your 3M Cloud Library reader?" The title will then appear on the bookshelf of the patron's e-book reader and their account within the Polaris ILS will be updated. As libraries check their account status subsequently, they will see their reading history and status of all the materials that they have borrowed, including both print and electronic and can perform renewals or holds as allowed.

This integrated approach also provides better support to the library for reporting and other management tasks. Lending of e-books can be included in circulation reports along with that of traditional materials, giving the library a more comprehensive view of how patrons make use of its collections. These combined reporting capabilities can help inform decisions and strategies regarding collection development and other operational issues. By bringing e-book lending into the patron account managed by the Polaris ILS, the library is able to offer patrons the ability to place holds on e-books and receive the standard notification of availability. These capabilities allow the library to treat e-books in the same way as they do other materials, rather than to provide access and management through entirely separate processes and infrastructure.

Polaris has been able to create this integration by taking advantage of application programming interfaces (APIs) made available in the 3M Cloud Library. These APIs allow an external developer, such as Polaris, to programmatically access content and execute transactions to bring those features into their own interfaces instead of requiring their users

to interact with 3M's platform. Matt Tempelis, 3M Cloud Library Global Business Manager, said, "Creating these APIs is another way of adding value to our service and is an integral part of the way 3M works as a digital e-book lending service."

3M has implemented the complementary integration in their 3M Cloud Library platform. Library patrons will also be able to search and place holds on physical materials from the 3M Cloud Library interface.

The 3M Cloud Library simplifies the e-book lending scenario by eliminating the need for library patrons to register an account within the DRM environment, such as the Adobe ID on the Adobe Content Server. The 3M environment is able to rely only on the patron's barcode number and PIN already established in their account in the library's automation system to transparently manage an ID on their behalf behind the scenes. As implemented in the Polaris interface, patrons access e-books using their regular sign-in and account features.

This new functionality is currently in beta testing will be included in Polaris 4.1, which is expected to be released around June 2012. The partnership between Polaris and 3M is not exclusive. Polaris expects to develop similar integration with other e-book providers; 3M expects to work with other developers of integrated library systems or discovery interfaces.

The 3M Cloud Library moved into production in early library sites on April 2, 2012. Beta development partners are participating along with 25 of the 40 additional libraries that have subscribed to the service. The integration with Polaris will be placed into beta testing in May of 2012, with production use expected by June 2012. 3M also continues to expand the content available, working with additional publishers to add titles that have not previously been available for library e-book lending.

— Marshall Breeding

BiblioCommons Lauches E-Book Lending Integration

BiblioCommons announced in January 2012 a major initiative to integrate e-book lending into its socially-oriented library discovery platform.

The goal of the integration involves bringing the entire e-book lending experience into the library's online catalog, including discovery of e-book and other digital content within the catalog and the ability for patrons to borrow and download content items currently available or to place holds. Rather than offer e-book collections and lending as a separate facility, BiblioCommons aims to deliver to library patrons a more unified experience across all library materials and services. BiblioCommons President Patrick Kennedy reported that they have surveyed their customers and found an overwhelming interest in providing a unified discovery environment for their patrons, including access to e-book lending.

BiblioCommons completed an initial version of its integration of e-book content involving OverDrive's services for three of their large public library customers —Boston Public Library, Seattle Public Library, and New York Public Library (NYPL)— successfully providing access to the libraries' e-book collections through a unified patron experience. This functionality was offered as a live service for a limited period in early 2012.

This integrated interface, however, was withdrawn after a short period at the request of OverDrive. At that time, OverDrive did not yet offer APIs into their platform. BiblioCommons engineers were able to accomplish the desired integration using a Web proxy that essentially intercepted the HTML stream between the library and OverDrive's servers to extract the data needed to bring these features into the BiblioCommons interface. This technique was implemented as an interim measure until it could be reworked using the more standard procedures of executing calls to the APIs after they were released by OverDrive. The Web proxy approach increased resource demands on OverDrive's servers, however, and no business agreements were in place to govern this type of access. The integrated approach was suspended until these issues could be resolved.

In February 2012, BiblioCommons and OverDrive resolved the server load issues using a hybrid approach of Web Proxy and APIs. As of April 2012 the original three libraries that implemented this integrated interface—NYPL, Boston Public, and Seattle Public —were working with OverDrive to reinstate the integrated interface. As OverDrive completes the release of the full set of its APIs, BiblioCommons will transition away from the interim Web proxy methods and will then be able to offer OverDrive e-book integration to any interested customer libraries. The transition will not only involve technical changes, but also one of establishing a legal framework for access to the OverDrive APIs, where the libraries themselves gain access to the APIs or provide access to organizations such as BiblioCommons or other third parties to operate as agents for the library to implement functionality on their behalf.

The work to create the interfaces, APIs and other technical

infrastructure for the integration with OverDrive will pave the way toward working with other content providers. BiblioCommons anticipates the development of similar capabilities with other e-book providers such as the 3M Cloud Library or Access 360 from Baker and Taylor, though no specific announcements have been made to date.

— Marshall Breeding

OverDrive Prepares to Release API for E-Book Lending Integration

Until now, OverDrive has delivered its service through its own hosted platform, taking advantage of the limited capabilities of established protocols such as SIP2, Remote Patron Authentication, to integrate its services into third-party applications. In response to the increasing demand for interoperability and integration, OverDrive has announced its plans to deliver a set of application programming interfaces (APIs) to allow the developers of other related products, typically integrated library systems, online catalogs, mobile app developers, or discovery interfaces, to incorporate OverDrive's e-book discovery, lending, and management functionality. These APIs will be available to libraries that partner with OverDrive and to approved third-party vendors. Access will be controlled through license keys issued by OverDrive, a typical arrangement for business applications that offer APIs. Use of the OverDrive APIs will require the third party's development environment to offer where appropriate reciprocal APIs to allow users to also access selected services of the discovery layer through the OverDrive platform.

The OverDrive API development environment will be delivered over the course of 2012. The initial phase will involve the availability of a Developer Portal, including tools for applying for APIs, documentation, and sample code. The APIs themselves will be rolled out by functional categories:

- Metadata: to retrieve a metadata record of a single item of digital content, including basic fields such a title, author, and description
- Availability: retrieve the status of a single item of digital content regarding current number of copies acquired, availability for check-out, and pending holds
- Search: simple and advanced search and retrieval functions, including filtering and sort options
- Content: A cluster of functions to enable online catalog or discovery layer integration, including search and availability, as well as the ability to check out a title, download a title, place or remove holds, add or remove items from wish lists
- Single Sign-on: pass authentication between the library's ILS and OverDrive

Whether or not an automation environment or a content service, such as an e-book lending platform, offers APIs will increasingly drive procurement decisions.

- Acquisitions: a cluster of services that enable the ability for the library to place orders for new OverDrive content from external business systems such as the acquisitions module of their ILS
- Reports: two-way exchange of patron and content use data between OverDrive's Content Reserve and the library's business automation environment

Once completed, these APIs will expose all essential functionality of OverDrive's e-book, audiobook, music, and video lending platform to enable full integration with third party platforms such as a discovery service or the online catalog of an integrated library system. Taking advantage of this functionality will require investment of development resources by the creators of those third party applications. Such efforts, however, can result in a more unified environment for library patrons where the discovery and use of e-books can be executed within the same interface as other library materials. These APIs also allow the creators of integrated library systems to bring the acquisition and management of e-books from OverDrive into the business environment used for other library materials.

Demand for APIs has become a critical capability in today's library automation arena. Many other vendors in the industry have initiatives in place surrounding their API offerings, including Ex Libris CodeShare, OCLC with the App Gallery of the WorldShare Platform, the Polaris Developer Network, the SirsiDynix Developer Community, and Innovative Interfaces with the Sierra Platform's emphasis on APIs and Web Services. The availability of APIs for extensibility and interoperability of applications has become an increasing expecta-

tion by libraries as they advance their technology strategies. Developers of library automation systems increasingly want to be able to offer their customer libraries more comprehensive capabilities. Whether or not an automation environment or a content service, such as an e-book lending platform, offers APIs will increasingly drive procurement decisions. Those with more open environments that can be fully integrated into other library services will hold advantages over closed and isolated systems. Seen in this way, OverDrive's launch of APIs is critical to maintaining its position as the leading supplier of digital content to libraries.

The interest in the OverDrive APIs is already pressing. BiblioCommons, as noted above, is working with its customer libraries such as New York Public Library, Boston Public Library, and Seattle Public Library to integrate OverDrive's e-book lending service into their discovery service. An initial version of this integration was accomplished based on a pragmatic technique of Web proxy, intercepting the stream of HTML to extract data, in the absence of an API. This effort has been suspended pending release of at least a subset of the OverDrive APIs. The libraries involved continue to be interested in enabling this capability expeditiously. We have also noted the full integration of the 3M Cloud Library with the Polaris ILS enabled through APIs, highlighting a competitive positioning relative to this newcomer in the e-book lending field.

— Marshall Breeding

OverDrive Acquires Booki.sh

On the business front, OverDrive announced in March 2012 that it had acquired the Australia-based company Booki.sh (https://booki.sh/), a portfolio project of Inventive Labs (http://inventivelabs.com.au), a small consulting and software development firm founded by Joseph Pearson and Virginia Murdoch. Following the acquisition of Booki.sh, the remaining consulting business will combine with Icelab, another Web consulting firm.

Booki.sh has developed a cloud-based environment for the distribution and reading of e-books by Web browsers, without the need for specialized apps or plug-ins. The basic concept involves storage of books in the Booki.sh cloud environment, though they are cached to the user's device so that they can be read when not connected to the Internet. Booki.sh relies on the Monocle Reader developed by Inventive Labs as an open source e-book reader that runs on current Web browsers, including Chrome, Firefox and Safari, which in turn operate on a wide range of mobile devices, tablets, and personal computers.

The founders Booki.sh and one additional employee, Peter Haasz will join Overdrive, establish a company office in Australia, and work to integrate their technologies with Overdrive's offerings. This acquisition adds an important set of technologies to OverDrive's arsenal, including management of e-book content through cloud storage and an elegant set of browser-based e-book reading software to complement its current capabilities based on dedicated e-book readers. OverDrive indicates that it will work with its Australian customers to deliver the ability to read e-books through Web browsers in schools and libraries.

Overdrive Background

OverDrive was founded in 1986 by Steve Potash and is based in Cleveland, Ohio. Potash serves as the company's President and CEO. The company has been involved with a variety of technology and content products through the course of its history, ranging from those delivered on CD-ROM in its earlier days to its current offerings based on the management and access to digital content, including e-books, audiobooks, music, and video. The company currently ranks as the dominant provider of e-book and other digital content services to libraries. OverDrive has developed publishing platforms that securely deliver content and fulfillment services using DRM and other technologies. Its customers include libraries, schools, publishers, and retailers.

In March 2012, OverDrive announced its plans to build a new headquarters facility in Garfield Heights, Ohio. This 95,000-square-foot facility will accommodate the company's current workforce of around 100 personnel, with capacity to support up to 300. Investments in extending its technical infrastructure, in new facilities for its operations, and an initial foray into business acquisitions reflect a company positioned for growth.

— Marshall Breeding

Library Technology News in Brief

Excerpted from Press Releases Posted on Marshall Breeding'sWebsite (http://www.librarytechnology.org/).

NISO Publishes Revised Recommended Practice for RFID in U.S. Libraries: Step Toward Interoperability

Baltimore, MD, April 3, 2012 - The National Information Standards Organization announces the availability of RFID in U.S. Libraries (NISO RP-6-2012), a revision of the 2008 Recommended Practice that provides a set of practices and procedures to ensure interoperability among U.S. RFID implementations in libraries. By following these recommendations, libraries can ensure that an RFID tag in one library can be used seamlessly by another, assuming both comply, even if they have different suppliers for tags, hardware, and software.

Since the publication of the original Recommended Practice, the International Organization for Standardization (ISO) published in 2011 a three-part international standard on RFID in Libraries (ISO 28560) defining the data model and the encoding of data on RFID tags for item management in libraries. The revised NISO Recommended Practice has been updated to reflect changes in technology and security and privacy measures, and to serve as a U.S. profile for the ISO standard.

"The international standard offers two different encoding options and many optional data elements, so it is critical that U.S. implementers adopt a common approach for implementing the ISO standard," explains Paul Sevcik, Lead Product Development Specialist at 3M Library Systems and co-chair of the NISO RFID Revision Working Group. "RFID in U.S. Libraries recommends a common subset of the data elements to be placed on library tags in the U.S., as well as selecting the preferred encoding and formatting of that data."

"Adoption of this Recommended Practice will ensure that U.S. libraries can procure tags and equipment from different vendors, merge collections containing different manufacturers' tags, and, for the purposes of interlibrary loan, read the tags on items belonging to other libraries," states Vinod Chachra, CEO of VTLS, Inc. and co-chair of the NISO RFID Revision Working Group. "Standardization will allow the RFID tag to be used in the entire lifecycle of physical library materials, including the upstream processes of acquisition and distribution."

"This revision included input from RFID hardware manufacturers, solution providers, content distributors, and libraries," said Todd Carpenter, NISO Managing Director. "Libraries that have been holding back on implementation now have the standard approach they need to protect their investments in RFID."

The Recommended Practice is available for free download from the NISO website at:www.niso.org/workrooms/rfid/. Libraries, publishers, distributors, system providers, and tag manufacturers are all encouraged to review and adopt the recommendations.

The June issue of *Library Technology Reports* will be RFID in Libraries: A Step Toward Interoperability, by Lori Bowen Ayre.

EBSCO Publishing releases EBSCOhost Collection Manager

IPSWICH, Mass., April 10, 2012 — EBSCO Publishing (EBSCO) released the new EBSCOhost Collection Manager (ECM), which allows library staff to search for e-books and audiobooks and add them to their collections with. ECM can be used to search or browse for e-books and audiobooks by title, author, publisher and more or make selections from the Subject Sets or Featured Collections created by EBSCO's collection development experts. ECM can also help libraries create and manage lists of titles they want to expose to patron drive acquisition (PDA), manage deposits and determine which ownership models to apply to the various e-books and audiobooks in their collection.

EBSCOhost Collection Manager allows staff to be designated as selectors or approvers and lets them build lists and modify their requests based on their budgets. ECM can be used to determine which titles to purchase outright through the available access models and to select which titles to expose to end users through PDA.

ECM users can establish lists based on subjects and allow the collection development staff (selectors) to specify which titles are needed while the approvers maintain the right to make purchasing decisions. Since ECM is also used to set up and maintain a library's PDA program and manage the deposits, librarians can use it to add additional content to the library catalog and allow patron interest to drive acquisition.

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May 2012
Unified Discovery and Management of E-book Content and Lending

Smart Libraries Newsletter

Smart Libraries Newsletter delivers hard data and innovative insights about the world of library technology, every month.

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Production and design by the American Library Association Production Technology Unit.

Smart Libraries Newsletter is published monthly by ALA TechSource, a publishing imprint of the American Library Association.

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