

E-Commerce for Libraries

E-commerce, or electronic commerce, is the exchange of transfer of funds via the Internet or a local area network. For most of the past decade, it was the sole domain of businesses offering goods and services via the Internet and accepting online payments by credit/debit cards or secured accounts. In the past few years, an increasing number of libraries have adopted e-commerce to place online orders with vendors; accept the payment of fines and fees by library patrons; and/or collect funds for access to electronic resources, the sale of books, or any other product or service a library chooses to offer.

While some would argue that the mounting of libraries' patron access catalogs on the Internet beginning in the 1980s was an early example of e-commerce by libraries, virtually all definitions of "commerce" emphasize that it involves buying and selling, not just providing online access.

Before committing to e-commerce, a library should decide what it hopes to achieve:

1. Improve the efficiency of dealing with suppliers to the library
2. Greater staff productivity
3. Reduced cost
4. Improved patron service
5. Increased revenue

Vendor E-Commerce

The first three of these can be examples of vendor e-commerce, also known as b to b (business to business) e-commerce. It involves the interfacing of a library's integrated library system with those of book jobbers and serials subscription agencies for online ordering and claiming, and receipt of vendor reports and invoices.

A typical vendor e-commerce scenario might involve searching a vendor's database by ISBN or other search keys for a record to download, creating the order record in the library's integrated library system, transmitting the order directly to the vendor's fulfillment system, sending an electronic claim if nothing has been received after a library-specified period of time, receiving an electronic report, and finally receiving an electronic invoice. EDIFACT is the current U.S. and international standard for online ordering, claiming, reporting, and invoicing.

All major vendors of integrated library systems now offer online ordering and claiming, however, most offer BISAC online ordering and EDI x.12 online claiming, rather than EDIFACT. The major reason is that most North American book jobbers and serials subscription agencies do not support EDIFACT. Vendors of integrated library systems reason that it makes more sense to support superseded standards that are in widespread use than to support a current standard that is not yet widely adopted.

A few vendors of integrated library systems do support EDIFACT online ordering and claiming. Endeavor and Ex Libris, which focus on the academic library market, offer EDIFACT because the European book jobbers and serials subscription agencies used by many academic libraries have adopted EDIFACT. SirsiDynix's Horizon product comes with a choice of EDIFACT, enhanced EDI, and XML-based online ordering—the last a protocol it developed called Vendor Integration Protocol (VIP). Innovative offers a choice of BISAC or EDIFACT online ordering. SirsiDynix's Unicorn has a multi-protocol EDI transaction manager that supports both BISAC and EDI x.12 sets.

In negotiation, vendors that do not offer EDIFACT will almost always agree to no cost migration from BISAC or EDI x.12 to EDIFACT when it is more widely adopted.

Online reporting is more often done using e-mail than EDI or EDIFACT. Online invoicing is more common internationally than domestically and usually is done by e-mail attachment, rather than with EDI or EDIFACT.

Far less important than online reporting and invoicing per a standard is getting online ordering and claiming on one standard. Vendors of automated library systems share libraries' frustration that many book jobbers and serials subscription agencies have not adopted the latest standard, but are continuing to support the superseded BISAC and EDI x.12 standards. It is, therefore, not possible to offer a single solution that meets every library's needs. Unfortunately, uncertainty about whether XML or EDIFACT in XML or Web services will displace EDIFACT is responsible for a muddled picture that may last for several more years.

Vendors of integrated library systems are not convinced that most libraries consider online ordering, claiming, reporting, and invoicing important. Online ordering and claiming is specified in a minority of RFPs, and online reporting and invoicing in almost none. This despite the fact that a computer-to-computer interface between a library's system and a book jobber or serials subscription agency's system can reduce turnaround time and labor costs for both. It may not be until book jobbers and serials subscription agencies extend discounts for orders and claims submitted online that libraries will elevate vendor e-commerce to a high priority.

Patron E-Commerce

Patron e-commerce enables library patrons to make electronic payments for fines, program fees, facilities rentals, printing/copying, interlibrary loan, access to electronic content, etc. When outside a library, the access is via the Internet; when inside a library it may be via the Internet or via the library's LAN (local area network). Patrons increasingly expect to utilize e-commerce with libraries because they do so routinely not only with businesses, but also with municipalities and state government agencies. Examples are payment of parking and traffic tickets, permit fees, garbage fees, and auto tag renewals. Patron e-commerce is self-service. The ability of library staff to accept credit and debit cards at a service desk is not e-commerce.

Online payments can include payment for goods and services delivered in the library

as well as that delivered online or by mail. Patron e-commerce can not only improve staff productivity and reduce costs to the library by reducing the handling of cash, but can improve service to patrons.

Even book purchases can be handled through patron e-commerce, either directly from the library or indirectly from an online bookseller accessed through a library's patron access catalog. Amazon.com has been a particularly enthusiastic partner to libraries. This can add an important new revenue source for a library.

A library need not limit itself to the sale of books. One public library has negotiated agreements with more than 200 merchants to feature their products on the library's Web site. Every purchase initiated through the library generates a commission for the library. That commission ranges from .5 to 7.5 percent of the selling price.

Payment can be by credit or debit card—in which case, the library has to contract with a credit/debit card processing service. That can be a bank or a third-party agent such as Verisign. Card processing services typically charge \$.25 per transaction plus a percentage of the value of the transaction. The percentage typically is 1.5 to 2.5 percent.

Smart cards are another option. Extensity has been supporting smart cards for payments of fines and fees in Belgium and the Netherlands for several years, and CARL.Solution has been supporting smart cards in Singapore. Smart cards are not yet popular in North America; therefore, the focus of the vendors of integrated library systems is on the support of widely carried credit and debit cards.

A library can also choose to be its own "bank." That eliminates fees to a payment processing service, but it does require that the library develop policies and procedures, implement a secure Web-server, issue its own debit card or smart card, and assign staff to handle customer services issues that may arise. This approach is not worth it unless the amount a library expects to collect is in the tens-of-thousand of dollars annually.

The ease of navigating an e-commerce site is a major factor in patrons' decisions to take advantage of the service. The majority of the early efforts by libraries were not popular and did not result in the anticipated volume of activity. Difficulty in navigation also resulted in more calls for library staff to provide assistance. Given that most patrons expect e-commerce to be available 24/7, that posed serious public relations and/or financial issues for libraries. Only in the past year or so has patron e-commerce begun to equal the user friendliness of Amazon.com.

Authentication of users and a secure connection are essential components of patron e-commerce because identity theft is a serious problem in the online environment. While a stored value card usually has no more than \$10 stored on it, a credit or debit card account that is compromised can result in the theft of thousands of dollars. The card holder's liability may be limited to \$50, but the card issuer will incur a loss that it will seek to recover from its entire customer base.

Back-end processing of the financial information is also an important component; both an interface to the library's accounting system and the production of reports. RFPs that specify patron e-commerce rarely mention back-end processing, but the few libraries that have implemented patron e-commerce say that reconciling all of the information on a daily basis and at the end of each month is very labor intensive. Particularly important is the reconciliation of the monthly statements of the credit card processing service and the bank into which the deposits are to be made. Rules and fees differ among Amex, Discover, MasterCard, and Visa. Transactions post at different intervals. Some libraries have found significant discrepancies, with the deposited amounts claimed by the credit card processing service greater than the deposits recorded by the bank.

As libraries collect cash as well as receive credit card payments, integrating all of the financial transactions can be a real challenge, one that no back-end processing component of available e-commerce solutions had adequately addressed as of mid-2006.

The perception of most vendors of integrated library systems appears to be that libraries think of patron e-commerce as a service to patrons, rather than both as that and as a potential cost saving to the library. For that reason, the product development emphasis has been on the payment transaction itself, rather than the entire e-commerce process. Libraries that are concerned about back-end processing of patron e-commerce transactions should include that requirement in their RFPs, but should expect that to be offered as a future enhancement.

The pace of development of patron e-commerce has been agonizingly slow for some libraries. For that reason, a number of them developed their own e-commerce systems or purchased software from companies such as Baan, Commerce One, and PeopleSoft beginning in 1997. Unfortunately, in-house development is expensive, as is the purchase of software that was designed to support large commercial enterprises.

The first general release of a patron e-commerce product from a vendor of integrated library systems did not become available until mid-2004. It was introduced by Innovative Interfaces and supported only the payment of fines, fees, and donations. As of mid-2006, it had not yet been enhanced to allow patrons to purchase books from the library, an affiliated vendor, or products from other partner merchants. E-commerce is integrated with the “My Millennium” feature in the patron access catalog. The financial data can be output to an accounting system. At least 70 III customers are using it. Pricing is based on library size.

Polaris introduced its Polaris Payment Manager in early 2006 as part of Polaris 3.2. It can be used by patrons to pay fines and fees, and to donate to the library. It does not support purchases from other vendors. The solution is only available to users of Polaris systems. No separate server is required. Polaris also offers a third-party product from Active. It can be interfaced not only with Polaris, but also with integrated library systems from other vendors. This solution is a complete general accounting system designed to interface the integrated library system with a general accounting system. As of mid-2006, two Polaris customers used it.

SirsiDynix introduced an optional product called OneStop in the first quarter of 2006. It is an integrated solution for full self-service, including patron charge and discharge, payment of fines and fees, adding value to a library-issued debit card, and PC reservation. It is interfaced to the vendor's integrated library systems using SIP2. It can, therefore, be interfaced to the integrated library systems of other vendors. Sales and pricing information were not available as of mid-2006.

TLC introduced its Personal Payment System (PPS) in late 2005. It offers patrons the ability to pay fines and fees, as well as to make donations to the library. It is configured on the vendor's CircIT self-checkout system. The interface to the integrated library system is through the SIP2 protocol. For that reason, it can be interfaced with integrated library systems from other vendors. As of mid-2006, the vendor had sold PPS to four of its customers.

VTLS has a, in the past, customized an e-commerce capability for one of its customers, but has not released a full-fledged product. However, all libraries using its Virtua integrated library system can accept payments for fines and fees online.

By mid-2006, several other vendors had a patron e-commerce product in various stages of development.

Now that vendors of integrated library systems are actively developing e-commerce products, libraries should write specifications and solicit responses before considering in-house development or the purchase of these major software products. The specifications should be started only after determining what the reasons are for a library to pursue e-commerce.

Prepared by Richard W. Boss, August 9, 2006

