

Integrated Library Automation Systems

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STUDY GUIDE BS-LIBRARY AND INFORMATION SCIENCES

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Course Organization

This study guide has been organized into nine units. The study guide is aimed to help a student in completing the required course work. Each unit starts with an introduction that provides an overall overview of that particular concept. The introduction part is followed by objectives in each unit that describes basic learning purposes. The objectives of each unit explains that how a student, after reading the unit, should be able to explain, compare, and analyze the concepts studied in that particular unit. Hence, this study guide is intended to be a concise appetizer and learning tool in which the course contents are briefly introduced.

The study guide is based on the prescribed reading materials. For each unit, these prescribed reading materials have grouped as compulsory and suggested readings. Students are expected to study the materials for the successful completion of the course. Self-assessment questions and activities are incorporated at the end of each unit. The self-assessment questions and activities facilitate self-learning assessment.

For this course, a 5-days workshop and four tutorial classes are arranged. These tutorial classes are informal study discussion forum. The classes create a conducive environment in which students and tutor can interact through one-to-one, one-to-many, and many-to-many mode. So, a student should prepare and enlist the discussion notes before attending a tutorial class. However, student attendance is optional in the four tutorial classes. For three days' workshop of each course, a student must attend classes with at least 70% attendance.

After studying the first five units, a student should complete first assignment. The second assignment is due after the completing the study of units 6-9. These two assignments are assessed by the relevant tutor. As per the University policy of plagiarism, every assignment is checked in Turnitin for plagiarism. Thus, students are advised to be careful and avoid plagiarism while doing the assignments.

Course Study Plan

As you know the course is offered through distance education so it is organized in a manner to evolve a self-learning process in absence of formal classroom teaching. Although the students can choose their own way of studying the required reading material, but advised to follow the following steps:

Step 1: Thoroughly read description of the course for clear identification of reading material.

Step 2: Read carefully the way the reading material is to be used.

Step 3: Complete the first quick reading of your required study materials.

Step 4: Carefully make the second reading and note down some of the points in notebook, which are not clear and needs fully understanding.

Step 5: Carry out the self-assessment questions with the help of study material and tutor guidance.

Step 6: Revise notes. It is quite possible that many of those points, which are not clear and understandable, previously become clearer during the process of carrying out self-assessment questions.

Step 7: Make a third and final reading of study material. At this stage, it is advised to keep in view the homework (assignments). These are compulsory for the successful completion of course.

Assessment/Evaluation of Students' Coursework

Multiple criteria have been adopted to assess students' work for each course, except Research Project/Project, as under.

- a) Written examination to be assessed by the Examination Department, AIOU at the end of each semester = 70% marks (pass marks 50%). AIOU examination rules apply in this regard.
- b) Two assignments and/or equivalent to be assessed by the relevant tutor/resource person = 30% marks (pass marks 50% collectively).

All the matters relating to Research Project/Project will be dealt with as per AIOU rules. However, the pass marks for Research Thesis is 50% both in evaluation of research report and viva voce examination separately.

Course Introduction

This course consists of three credit hours. The course has been divided into nine units. The introduction at the start of each unit explains contents briefly within that unit. The students should study every unit carefully. The brief description, self-assessment questions, and activities at the end of each unit would support students for the completion of written assignments, and final exam. For easy conceptualization of communication skills for information professional, a brief introduction is presented in the following paragraphs.

Selecting an integrated library system is the most important and crucial purchase one can make for the library. The integrated library system (ILS) affects every aspect of the library's daily operations—from circulation and cataloging to the library's ability to deliver resources and services via its Web site and public-access catalog.

When a librarian is become responsible for recommending or approving the expenditure of the institution's funds, it becomes necessary to learn about ILS software, hardware, and its impact on staff and network resources. This guide will help you gain an overall knowledge about selecting and implementing ILSs whether or not you purchase and install the software and hardware yourself or hire an outside consultant to assist with the project.

Integrated Library Systems: Planning, Selecting, and Implementing walks the reader through the process from start to finish. This guided is organized into nine units. The first unit begins with an explanation of the types of ILSs available: turnkey, stand-alone, hosted, software-as-a-service/cloud computing, and open-source. Unit 1 also covers how to evaluate your facility and use a cost-benefit analysis for the different types of integrated library systems. This will assist the reader in analyzing the best choice for his or her institution.

Unit 2 discusses researching and evaluating ILS software and includes a comparison of features grid for modules and services offered by vendors. Unit 3 covers the basics of the hardware needed for both the ILS and peripheral devices. This discussion also covers backup options and network security. Unit 4 covers the process of working with sales consultants and has sections about the seven stages of this relationship: Introduction, Questions and Answers, Demonstration of ILS, the Request for Proposal Process, the Contract, the Invoice, and After the Sale. Further, it provides helpful insights into the demonstration process and includes a product demonstration form for staff to use.

Project planning is covered in unit 5. A quick-scan timeline illustrates the implementation of the ILS from start to finish. There is also a detailed implementation time line providing explanations for each step.

“Planning and budgeting” is the title of Unit 6; the focus is on writing a strategic plan that will bring stakeholders/administration on board for purchasing an integrated library system. Unit 6 also covers the technology plan that details all the necessary software, hardware, other equipment, and costs for the installation of the ILS. Unit 6 discusses constructing the budget and writing a justification statement. A vendor price-comparison grid is included in Unit 6 to assist the reader in comparing price quotes from vendors on a product-by-product and service-by-service basis. The justification statement is a necessary component of the budget. It explains the facts behind the budget numbers to those who are not familiar with the benefits of an ILS and how it can improve services in your institution. The justification statement is written for the benefit of the board or the administration that approves the budget. A sample justification statement is included in Unit 6.

Unit 7 provides detailed insights into constructing a request for proposal that will best serve your institution and create the basis for the contract with the vendor. It also provides a sample RFP evaluation tool and gives important coverage to the contract process.

Unit 8 discusses the installation of the ILS, from network considerations to retrospective conversion to implementation meetings with staff to “going live” and ending with information regarding the final payment to the vendor. The appendices include an ILS vendors and features comparison grid, a sample strategic plan, a sample technology plan, and a sample request for proposal.

Unit 9 discussed about Koha integrated library system (ILS) as fully featured open source software (OSS). The Koha ILS is the first OSS and a very famous and commonly used software in the libraries of the world. Koha has extensive features, which made it popular among library professionals. Although Koha possessed all required functions/features but library professionals must increase their knowledge about the Linux operating system, the installation process, data migration and use of Koha’s modules. In this regards conducive sessions of trainings and workshops are required for library professionals.

Objectives of the Course

After studying this course the students will be able to understand:

- Develop understanding of the types of integrated library systems (turnkey, stand-alone, hosted, SaaS/cloud computing, and open-source)
- Helpful to take the right selection for library automation
- Will able to develop automated library environment at their own library
- Well aware about the involvement of vendor
- ILS defines hardware purchases, hardware purchasing principles
- Backup plans and devices
- Working with the sales, seven stages of the working relationship
- Basic concepts of strategic plan, technology plan and preparing the Budget for approval
- Writing the request for proposal and reviewing the contract
- Network installation and upgrades, installation of hardware ILS software and staff training sessions
- Teaching the internet, computer troubleshooting, and keeping up with changes

Compulsory Readings

Webber, D. & Peters, A. (2010). *Integrated library systems: Planning, selecting, and implementing*. Santa Barbara, Calif.: Libraries Unlimited. Available at: https://books.google.com.pk/books?hl=en&lr=&id=uqgpxajvAsQC&oi=fnd&pg=PR7&dq=integrated+library+systems+by+Desiree+Webber+and+Andrew+Peters&ots=K4zEHf66jY&sig=dRN8CtXytX38nDFrEgvjED8p0Ao&redir_esc=y#v=onepage&q=integrated%20library%20systems%20by%20Desiree%20Webber%20and%20Andrew%20Peters&f=false

Sirohi, S. & Gupta, A. (2010). *Koha 3 library management system: Install, configure, and maintain your Koha installation with this easy-to-follow guide*. Birmingham: Packt Publishing. Available at: <https://library.nitrkl.ac.in/guide.pdf>

Additional Readings

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UNIT NO. 1

INTRODUCTION AND GETTING STARTED

1 Introduction

Reading through the chapters of this book will give readers an overall scope of planning, selecting, and implementing an integrated library system, from the first steps through the last. This book is designed for librarians or information-technology staff members who find themselves involved with migrating to or purchasing for the first time an integrated library system (ILS). Selecting an ILS is a major undertaking whether you are affiliated with a small, medium, or large library system. It is all relative. No matter whether your library is small or large, or what type of library you are with, purchasing an ILS is a substantial investment of an institution's funds and staff time.

“Any savvy consumer knows the importance of researching major purchases before investing. This is doubly important when you are dealing with your institution's somewhat larger budget and recommending and approving the purchase of software, products and services on which your staff and users must rely. . . .” (Gordon, Rachel Singer. *The Accidental Systems Librarian*, 2002, p. 96). When you are the one responsible for recommending or approving the expenditure of the institution's funds, it becomes necessary for you to learn about the ILS software and hardware along with the impact on staff and network resources.

Educating yourself about ILSs will enable you to understand and speak the jargon when you interact with vendor representatives, speak with IT staff, read the literature, or confer with colleagues. You must be able to think, speak, and interpret information about ILSs in order to intelligently assess your facility against what is available in the ILS arena.

This first chapter will discuss the types of integrated library systems available—the software/hardware architecture platforms—along with evaluating your institution so that you can determine the best type of system for your requirements and budget. The first terms to discuss are “integrated library system” and “automation system.” You will read both terms in the literature and when speaking with vendor representatives.

The two phrases are interchangeable and mean the same thing. An automation system and integrated library system (ILS) are terms used to describe the software that operates the circulation, cataloging, public-access catalog, reports, and other modules that do the work of typical library operations. When libraries moved from a card-based system (card catalog, shelf list, etc.), staff would state that they had “automated” their circulation and catalog processes, hence the term “automation system.” Their books had bar codes instead of book pockets with book cards, and their customers searched for materials using a computer screen and keyboard instead of perusing polished wooden drawers full of three-by-five catalog cards.

Over time, more and more functions of the library are being automated, and the software is continually improving. Libraries currently have automation systems that manage their serials, track and process their interlibrary loan requests, acquire materials from vendors, and provide patron authentication for remote access to the electronic databases on their Web sites. Most vendors use the term “integrated library system” instead of “automation system.” The former better describes that the computerized functions or modules are interconnected and dependent on one another. For example, staff can use the circulation module to search the catalog, add items to a bibliographic record, and even catalog materials “on the fly.” Another example is the electronic databases to which many libraries subscribe and make available on their Web sites. Remote access to a library's online databases uses the patron database within the ILS software to “authenticate” that the person is a library customer before allowing entry into the database. This Unit elaborates the following points as:

- Researching integrated library systems
- Types of integrated library systems
- Open-Source ILS software
- Evaluating library facility and staffing
- Cost-benefit analysis worksheet

Every library needs an integrated library system. The software utilizes the patron and bibliographic records to perform a host of efficient functions due to the processing speed and power of computers. Just as an automobile depends on an engine to engage the axle and turn the wheels in order to drive, a library needs an integrated library system to move forward in its daily operations. And, just as there are different types of car engines—gas, diesel, and electric—there are different types of ILSs. It is important to find the system that will fit both the institution’s needs and its budget. So the first steps are (1) to educate oneself about the field of integrated library systems, and (2) to evaluate the needs of your facility. These steps are necessary whether you are purchasing an integrated library system for the first time or migrating to another system. Researching information about integrated library systems and evaluating your facility is a two-pronged approach toward selecting the best ILS for your library.

There are differing opinions as to which step to take first: evaluating the library’s collection, staffing, customer base, technology needs, access to technical support, and budget, or researching integrated library systems and what is available. Those who follow trends in technology and the ever-changing field of integrated library systems will be able to assess their institution and write a request for proposal (RFP), view demonstrations, and make a purchasing decision. Those who are new to selecting and implementing an ILS, or have not delved into this area for several years, will want to first research what is available.

1.1 Researching integrated library systems

Dania Bilal writes in her book *Automating Media Centers and Small Libraries*, “Staff who engage in an automation project must possess adequate knowledge about a wide range of topics including evaluating, selecting and implementing an automated system. . . .

Learning about automation is vital for the success of the automation project” (Bilal, Dania. *Automating Media Centers and Small Libraries*, 2002, pp. 9, 10). Even if you were involved with the installation of the library’s current automation system and are migrating to a new integrated library system, it is important to learn what has changed in the industry since the library last acquired its ILS. For example, does one stay with the traditional hardware-based system with an on-site server or does one select an Internet-based model in which the software is located on an off-site server? Which system(s) will best serve your customers? Which system offers the best cost-effective decision for your institution? Which companies are financially stable but are also researching technological innovations for the future? Some might contend that it is necessary only to evaluate the needs and requirements of the library before writing an RFP to purchase an integrated library system. After the RFP is issued, vendors selling integrated library systems will respond to the RFP and demonstrate their product to staff. However, it is hard to write an effective RFP if one is not aware of the types of systems available (turnkey, software-as-a-service, hosted, and/or open-source) along with the array of modules, features, and services from which to choose. Unless you closely monitor the ILS software industry, it is difficult to just simply evaluate your library, write the RFP, and then view demonstrations. A lot of valuable staff time will be mishandled if the process is not narrowed by first researching the types of systems and companies that will best serve the facility. Why spend valuable and limited time

sitting through demonstrations of integrated library systems that do not provide the features you need, will not work well for your staff or customers, and are beyond your budgetary constraints? The field of library automation is rapidly evolving and increasingly complex due to technological innovations in software, delivery of services, mergers, and competition. Marshall Breeding, Director for Innovative Technologies and Research for the Jean and Alexander Heard Library at Vanderbilt University, writes extensively on integrated library systems and future trends in this arena. Each April, Breeding covers the automation marketplace in *Library Journal*. This annual coverage discusses industry trends along with company profiles and contact information. Sometimes the company profiles will discuss whether its customer base is public, school, academic, or special and whether or not its focus is on small- to medium-sized libraries or large libraries. *Computers in Libraries* provides an annual Buyer's Guide in its July/August issue that covers library automation with company listings, product reviews, and company contact information.

Directory of Library Automation Software, Systems, and Services, edited and compiled by Pamela R. Cibbarelli, also lists vendors, automation consultants, a bibliography of books and serials, and related products and services such as retrospective conversion. A helpful feature of this directory is the details it provides for each integrated library system:

- Gives hardware requirements for servers and clients along with the operating systems and recommended Web browsers.
- Lists what modules and applications are available (circulation, cataloging, online public access catalog [OPAC], Z39.50, acquisitions, serials, etc.).
- Gives details on MARC formats and interfaces, such as whether or not the software can import or export full MARC, has a graphical user interface for the OPAC, etc.
- States the type of libraries for which the ILS is recommended: corporate and government, public, school, and university libraries.
- Provides initial installation date, total number of installed sites, and a sampling of current customers.
- Lists system and component prices (along with the caveat that prices are subject to change).
- Supplier comments are given at the end of each description.

Directory of Library Automation Software, Systems, and Services is published every two years, so some of the information will change, but it is a solid reference tool that every library should own. You can review the ILS companies listed in the directory to gather information on vendors you may want to visit at an upcoming conference or to contact for further information. When reviewing information about integrated library system vendors, you may note terminology about the type of software or “architecture” of the system the company delivers. The terms to be familiar with are “stand-alone,” “client/server,” “hosted,” “software-as-a-service (SaaS),” “open-source,” and “cloud computing.” The system architecture describes how the ILS software works between servers and workstations and is utilized by the library. For example, client-server architecture means that the ILS software is stored on the library's on-site server and interfaces with the library's client workstations located at the circulation desk, reference desk, public-access catalog, or self-checkout stations.

Following is a list of the basic types of integrated library systems currently available at this writing. It is important to be knowledgeable about the different types of architecture available so that you can select the right system for your library and narrow the choice of vendors offering the type of system you want. It is also vital to understand that technology is never static. Vendors will blend terminologies such as “hosted” and “software-as-a-service.” The following

definitions will help you communicate with vendors when discussing and researching their products.

1.2 Types of integrated library systems

Turnkey: A turnkey implementation refers to purchasing from a single vendor an integrated library system that includes both the software and the hardware. The server(s) may arrive preinstalled with the software or the vendor's staff will install the software on-site. In addition, the vendor will install the server(s) for the library and connect to the network. It is a hardware-based system referred to as a client-server architecture. The ILS software and the patron and bibliographic data are stored on the server and communicate via the network with the client workstations located within the library at the circulation desk, reference desk, public-access catalogs, and so forth. This option requires that the library house the server(s) on-site and manage the client workstations and network.

In a turnkey arrangement, the vendor's technical support staff can act in the capacity of a system administrator for the library, if needed. The vendor's staff can access the server(s) remotely, troubleshoot software problems, and install software upgrades. If the server fails, it is the vendor who handles the service calls to the hardware manufacturer. One or more library staff members are trained by the vendor to perform minor duties such as ensuring that the backup of data is performed each night. Designated library staff will also provide on-site assistance for the vendor's technical support, who will occasionally need physical hands and eyes to help them. No special expertise is required of the library staff, who most likely have other responsibilities besides managing the ILS, but the staff member interfacing with technical support needs to be familiar with computers and the operating system (Windows, Mac, or Linux).

One of the benefits of turnkey systems is that small libraries are able to purchase powerful, complex integrated library systems without the necessity of having a system administrator on staff. Libraries will pay more in hardware costs when purchasing servers from the vendor, but that is the tradeoff of having the company fill the role of system administrator. It is important to note that a network administrator is still needed to operate the network for the library (cabling, router, firewall, DMZ, switches, security, troubleshooting, etc.). If the library has Internet access for its staff and public workstations, then it has a network in place. The network administrator, whether a contact or on staff, will work with the ILS vendor in the installation of the IL server(s) to the existing network.

Stand-alone installation: Stand-alone installations describe systems in which the hardware and software are purchased separately and the system administrator or library staff installs the client-server software him/herself. Stand-alone implementations occur in all types and sizes of libraries. At this writing, the majority of installations implemented are stand-alone and turnkey installations. Stand-alone installations can be on a single computer workstation in a very small library or on a local area network (LAN)/wide area network (WAN) in a client-server architecture.

Hardware may or may not be purchased from the vendor. The system administrator/ staff member installs the ILS software onto the server(s) and/or workstation(s). The ILS vendor provides technical support when called upon, but the system administrator maintains day-to-day operations, troubleshoots problems, installs software upgrades, and may customize features to suit the library. One benefit of the stand-alone installation is that the library has an in-house expert to oversee the network, hardware, and ILS software, allowing other library staff members

to focus on their primary duties. In a small library, the downside to a stand-alone installation is that the library has one person, usually the library director or media specialist, to oversee the network, hardware, and ILS software along with the myriad of other responsibilities he or she must perform. Managing a stand-alone ILS requires attention to issues as varied as:

- Regular backups of patron and bibliographic data.
- Maintaining the ILS server and database.
- Creating and running reports.
- Technical support for ILS users.
- Customizing the display of the public-access catalog.
- Managing access to and setting up security for staff modules.
- Installing client software on staff workstations.
- Serving as the liaison between the library and the ILS vendor.
- Keeping current with new versions and features and coordinating any needed software upgrades.
- Testing connections between the ILS and any linked external databases.
- Setting up policies in conjunction with other library staff.
- Implementing new or additional modules.

Hosted system: In this type of integrated library system, the vendor hosts the library's ILS software, bibliographic records, patron records, and sometimes the library's Web site on its server farms. Sometimes vendors will use the term "hosted" when they mean software-as-a-service (SaaS), which is described in detail in the next section. If the vendor describes a "subscription price," then the vendor is describing SaaS. If the library purchases the software but the vendor hosts the software on its servers, then the vendor is describing a hosted system.

Hosted systems are cost-effective choices for libraries that do not want to invest in server hardware or that do not have adequate space to house a server. It can also be a good choice for libraries that want or require minimal interaction with software issues. The vendor's technical-support department troubleshoots any software problems and installs all updates at its location. A dependable, high-speed Internet connection is required so that the staff workstations and public-access catalogs can communicate with the vendor's servers.

Depending upon the ILS product, there may be client software that needs to be installed on the library's staff workstations and public-access catalogs in order to communicate with the vendor's server. This software may be installed remotely but staff interaction may be required in assisting technical support with this process. Sometimes the workstations access the ILS software simply through a Web browser, and often there is a mixture of both PC-based and Web-based modules. For example, the circulation module may be PC-based with client software loaded onto the workstations at the circulation desk, but the reports module is Web-based and is accessed by typing in a URL, such as <http://www.yourlibraryreports.com>. The latter is password-protected so only library staff can access the module.

One benefit of a hosted system is that libraries can purchase robust integrated library system software and save on the cost of purchasing a server. It also saves staff time because the vendor is responsible for troubleshooting all problems related to the software and the server hardware. The library will still have to troubleshoot, maintain, and repair any problems with the network and Internet connection (router, cabling, switches, firewall, and an Internet service provider). The downside to hosted systems is response time in conducting transactions and searches due to the Internet service provider, bandwidth, workstation hardware, or server capacity. Poor response

time is frustrating for circulation staff who are checking materials in and out, and for library customers who are searching for materials on the online catalog. Check with other libraries that have purchased hosted systems. (This is covered at the end of Chapter 2.) It is important to clarify in the vendor contract whether or not the hosting service involves a dedicated server or a virtual server. There should be details stating that the applications will work during peak utilization times as this affects the speed and dependability in the delivery of software and data (Breeding, Marshall. “The Advance of Computing from the Ground to the Cloud.” *Computers in Libraries*, November/December 2009, p. 23). Other considerations include the security of the library’s data, how the ILS software and library’s data is stored on the vendor’s servers, and who owns the library’s data. If the library migrates to another system in the future, will it retain ownership of its data?

Software-as-a-service (SaaS): SaaS refers to a subscription service for Web-based software. Unlike a hosted system, the library does not purchase the ILS software. Instead, it pays an initial fee for the ILS software along with an annual or monthly subscription fee to the vendor. The vendor uses the Internet to deliver software functionality instead of installing software on the library’s hardware. Staff access the modules—circulation, reports, cataloging, and the like—via a Web browser. The bibliographic and patron data are stored on the vendor’s servers. A specialized form of SaaS is “cloud computing.” (Many times, the two terms are interchangeably.) Technically, cloud computing refers to the way the vendor structure services. In a SaaS environment, the vendor installs a separate instance of the software for each library subscriber. In a cloud-computing environment, the vendor runs a single instance of the software for all libraries and manages the separation of all the data by configuration within the software itself. As of this writing, the Online Computer.

Library Center (OCLC) is testing this architecture with several libraries. It is a form that may be very competitive and appealing in the future because the vendor may be able to offer services much less expensively and with greater ease of operation while also offering the advantages of sharing information among libraries and library consortia. Marshall Breeding writes, “The days of client/server systems are waning. We’re now in an age of web-based cloud computing” (Breeding, Marshall. “Moving Forward Through Tech Cycles.” *Computers in Libraries*, May 2009, p. 20). Some SaaS vendors provide a Web site for the library, and some offer to host the library’s Web site for a fee. The vendor performs all software upgrades and maintenance duties at its site. The vendor also has responsibility for the security of the library’s data, including sufficient backups. Bandwidth can be the biggest concern for the libraries, choosing SaaS or cloud-based integrated library systems. The cost of increased bandwidth should be considered in figuring the total cost of these systems in comparison with other architectures. Some vendors state that they are utilizing or will utilize browser-based technology, remote desktop, and thin clients to minimize the amount of bandwidth needed to operate their systems. In any case, libraries must possess sufficient bandwidth for fast and effective transactions during peak times of usage.

One of the benefits of SaaS is the ability to purchase ILS software and save on the cost of purchasing and maintaining a server, not to mention the savings in staff time dedicated to troubleshooting server and software issues. Points to consider when working with a vendor offering SaaS/cloud computing: (1) Does the library have the ability to migrate to another system in the future? (2) Does the library own the data and have the ability to retrieve its data at no charge? One should also weigh the annual subscription fees of a SaaS system against a

system in which one purchases the software upfront and pays annual licensing and technical support fees.

Open-source software systems: Open-source software (OSS) is software in which a program's source code is available for individuals to use, copy, modify, and redistribute. This is opposed to closed software in which the program's source code is not publicly available. Most integrated library system software is closed. Examples of well-known open-source software are the Firefox Web browser, Linux operating system, Koha, and Evergreen integrated library systems.

1.3 Open-Source ILS software

Open-source ILS software is software that has either been developed by communities of libraries, such as Evergreen, or is a product in which its source code can be accessed and adapted by others. In all instances, the open-source ILS software is freeform libraries to download, use, and modify. OPALS is an example of an OSS in which the library does not pay for the software but pays an annual subscription fee to use it. Open-source software is available in the architectures listed before under "Types of Integrated Library Systems;" that is, stand-alone, hosted, and software-as-a-service. Some of the more well-known OSS integrated library systems are Koha, Evergreen, and OPALS (Open-Source Automated Library System). If you go to Evergreen's Web site at <http://www.evergreen-ils.org>, there is a link to download the ILS software for both the server and the client. If you go to the Web site for Koha at <http://koha.org>, there is a link to download software to the server. OPALS, at <http://www.opals-na.org/>, however, is an Internet-based system. There is no software to download. Instead, there is a set-up and annual subscription fee to use the software.

Open-source software is being developed specifically for research and academic libraries in the open library environment (OLE) project (<http://oleproject.org>). "A \$2.38 million grant from The Andrew W. Mellon Foundation to Indiana University will be used to develop software created specifically for the management of print and electronic collections for academic and research libraries around the world. IU will lead the Kuali OLE (Open Library Environment) project, a partnership of research libraries dedicated to managing increasingly digital resources and collections" (<http://oleproject.org/2010/01/11/mellonfoundation-awards-2-3-million-for-ole-development>). Academic library staff can visit the Web site to seek more information or to become involved in a regional design group. Some OSS ventures have a community of users. One can join the OSS community to share modifications to the software, share information, and keep abreast of changes and new features. While open-source communities are supportive, it is vital for standalone systems to have staff with sufficient expertise to perform the installation and migration plus deal with ongoing troubleshooting and maintenance. If a library wants to use OSS and does not have the knowledgeable staff to install, migrate the data, provide training, download software upgrades, and troubleshoot the ILS, then a library can contract with companies to perform these functions at a cost. The software is free, but if your library needs assistance managing the system, then you will need to contract with a commercial vendor to manage the product.

Eric Lease Morgan writes, "People often advocate open source software because it is free. While you will not pay for the source code directly, open source software is only as free as a free kitten. . . First you buy a collar. Then you buy food and a food bowl. Next you take it to the

veterinarian and they charge you a fee for shots. Alas, the kitten starts to cost money” (Morgan, Eric Lease, December 12, 2004, <http://infomotions.com/musings/biblioacidE/>).

OSS is a growing field and one reason is that there are commercial companies that market and support ILS software. “Although in theory any library can implement an open source ILS completely on its own, the vast majority of libraries choose to work with commercial companies” (Breeding, Marshall. “The Viability of Open Source ILS.” *Bulletin of the American Society for Information Science and Technology*, December 2008/January 2009, Vol. 35, No. 2, p. 21). This relationship also includes the development of features or modules by libraries paying commercial vendors for the software development (“sponsored development contract”), and then the feature or module becomes available at no charge to other libraries using the same software. One of the benefits of open-source software is the cost savings. One is not paying for software developers because the developers are employed by libraries that share their knowledge and expertise within the library OSS community at large. On the other hand, if something goes awry, there is no one to contact unless, of course, you are paying a company to manage your OSS integrated library system. Check to see what features are available within the different modules and explore what companies sell add-ons that interface with the open-source software that you are considering. Open Source Systems for Libraries, at <http://www.oss4lib.org>, maintains a listing of free software and systems designed for libraries and tracks product updates. One of the benefits of open-source software is the cost savings. One is not paying for software developers because the developers are employed by libraries that share their knowledge and expertise within the library OSS community at large. On the other hand, if something goes awry, there is no one to contact unless, of course, you are paying a company to manage your OSS integrated library system. Check to see what features are available within the different modules and explore what companies sell add-ons that interface with the open-source software that you are considering. Open Source Systems for Libraries, at <http://www.oss4lib.org>, maintains a listing of free software and systems designed for libraries and tracks product updates.

1.4. Library facility and staffing

After reading the section entitled “Types of Integrated Library Systems,” the next step is to evaluate your library and determine which system(s) will work best for your facility. This evaluation process will be twofold: (1) overview of facility, staff, and collection; and (2) cost-benefit analysis.

In the overview of your facility, consider the following questions:

- Do you already manage a server and a network for the library? If so:
 - a. Is this a burden on your existing staff members?
 - b. Does an on-site technical support staff member handle the network, server, computer hardware, and existing integrated library system?
 - c. Does a contract IT company handle the network and computer repair? Is it a reliable or unreliable company?
- Is the library operating a LAN that is part of a larger network, such as a campus-wide WAN? If so, do you need to work with the WAN system administrator in selecting the type of ILS?
- What is the composition of your staff? If you were to select a turnkey system, do you have
- someone with the skill sets and knowledge to work with the ILS vendor’s technical support staff?

- Do you have reliable, high-speed Internet access? This would be necessary to access software-as-a-service Web-based modules or to connect with the vendor's server with a hosted system.
- What is your comfort level in not having the ILS software located on your institution's server?
- What is your comfort level in not purchasing the ILS software, but instead paying a subscription fee each year or each month?
- In addition to staffing considerations in managing a turnkey or stand-alone system, would your institution realize substantial cost benefits in not having on-site servers? The cost benefits could include a savings in utility charges for not only running servers, but also cooling the room in which they are housed.
- What are the opportunities in your area to form or join a consortium with other similar type libraries, or even multi-type (school, public, academic, and special) libraries in which the costs for a software, hardware, wide-area network, and system administration personnel are shared?
- What is the composition of your collection? Do you have serials, journals, online resources, special collections, artwork, or titles in multiple formats?
- What modules will you need and what modules can you disregard? For example, if you have a small number of serial and journal titles in the collection, you may opt not to purchase a serials module.
- Who are your customers, and what are their needs in accessing information? One of the challenges of purchasing an ILS is meeting customer demand for services. "Today patrons may wonder why, in addition to knowing that a library owns a particular item, a library system cannot suggest other titles of interest based on their previous borrowing habits and the title they are searching at the moment" (Dougherty, William C. "Integrated Library Systems: Where Are They Going? Where Are We Going?" *The Journal of Academic Librarianship*, September 2009, Vol. 35, No. 5, p. 482). Amazon provides suggested titles based on previous viewing and buying habits, but libraries struggle with privacy issues. "If the library cannot match what users have access to on the outside, users will and do move on" (Bertot, John Carlo. "Public Access Technologies in Public Libraries: Effects and Implications." *Information Technology and Libraries*. June 2009, p. 84). It is especially important to have a Web site and online public-access catalog that offers features that library customers want.

After casting a critical eye over your library's operations, staffing, and collection, the next step is to consider the costs involved with each type of integrated library system. By this reading, you probably have an idea of which type of system systems would work best for your institution now and in the future. The following cost-benefit analysis worksheet will provide assistance in inserting costs for hardware, software, and personnel. The worksheet is a template for you to plug in your own information, quotes for hardware, and personnel salary. Benefits of the software will also need to be inserted, as this will vary among libraries. What is seen as a benefit by one institution may be of no interest to another institution.

Cost Benefit Analysis Worksheet

Type of ILS	Costs	Benefits	Considerations
Domain controller server	(insert cost of server)	Manages e-mail, network printing and other software that is utilized within the library's work.	Adequate space for housing equipment. Equipment room needs to be kept cool to prevent equipment degradation. At least one designated staff member needs to manage the LAN or interface with the contract network administrator
Data server	(insert cost of server)	Data server manages ILS software, patron and bibliographic data.	Libraries can sometimes combine the domain controller server, data server and Webserver. Speak with ILS vendors regarding recommendations.
Web server	(Insert of server)	Web server manages the library's Web site.	Libraries can sometimes combine the domain controller server, data server and Webserver. Speak with ILS vendors regarding recommendations
Client hardware	(insert cost of staff workstations, public access catalogs)	Client software, such as the Circulation module, can operate if server is down.	Client software updates are managed by vendor.
ILS software	(insert cost of software)	ILS software is managed by vendor.	Vendor installs software updates and manages problems remotely.
TOTAL START-P COSTS Annual software maintenance and licensing.	(insert cost of software plus 3% increase per year)		

with a turnkey system the hardware and ILS software are on-site. Libraries are able to purchase robust integrated library systems without the need of a fulltime system administrator.

STAND-LONE Domain controller server	(insert cost of server)	Manages e-mail, network printing and other software that is utilized within the library's network.	Adequate space for housing equipment. Equipment room needs to be kept cool to prevent equipment degradation. At least one designated staff member needs to manage the LAN or interface with the contract network administrator. Depending upon the size of the institution, may need a fulltime systems administrator to manage the ILS software, hardware, and network.
Data server	(insert of cost server)	Data server manages ILS software, patron, and bibliographic data.	Libraries can sometimes combine the domain controller server, data server, and Web Server. Speak with ILS vendors regarding recommendations.
Web server	(Insert of cost server)	Web server manages the library's Web site.	
Client hardware	(insert cost of staff workstations, public access catalogs)	Client software, such as the Circulation module, can operate if server is down.	
Technology personal	((insert salary, benefits, continuing education costs)	May need in-house technical expertise to administer the library's network, hardware and software.	Automation systems for small libraries will not require technology person on staff. Designate a library staff member to interact with vendor on troubleshooting software issues.
ILS software	(insert cost of software)	ILS software is on-site.	
Annual software maintenance and licensing.	(insert cost of software plus 3%increase per year)		

Cost Benefit Analysis Worksheet (Continued)

Hosted system Client hardware	(insert cost of staff workstations, public access catalogs)	Client software is loaded on library's workstations. Client software communicates with ILS software on vendor's servers.	Client software updates are managed by vendor.
ILS software	(insert cost of software)	ILS software is managed by vendor.	Vendor installs software updates and manages problems remotely.
TOTAL START UP COST Annual software maintenance and licensing.	(insert cost of software plus 3%increase per year)		
With a hosted system, ILS vendor hosts the library's software, patron, and bibliographic data on their servers. Libraries are able to purchase robust integrated\ library systems without the need of a full-time system administrator.			
SOFTWARE-SERVICE/ CLOUD COMPUTING Library workstations	(insert cost of staff workstations, public access catalogs)	Software is delivered via the Internet.	
Software initial start-up fee.	(insert cost of initial start-up fee.)		
TOTAL START-P COSTS Software annual subscription fee	(insert cost of annual subscription fee.)		
With SaaS, library pays subscription fee for software. ILS vendor hosts the library's patron and bibliographic data on their servers. Some vendors also host library's Web site for a fee.			

1.5. Cost-benefit analysis worksheet

Update the cost-benefit analysis worksheet as you evaluate the ILS software, which is covered in the following chapter. For example, a SaaS open-source system may be less costly but it may not offer the modules that your institution needs. It is important that you select software that will benefit your facility even if it requires additional funds.

Investing in an integrated library system is a time-intensive project that requires careful inquiry, study, and critical analysis. By researching what is available, evaluating your facility, and looking at your ability to integrate future technological innovations, you will be able to select and implement a system that will grow with your library and benefit your users for many years.

Objectives

After reading this unit you would be able to explain:

- Researching integrated library systems

- Types of integrated library systems
- Open-Source ILS software
- Evaluating library facility and staffing
- Cost-benefit analysis worksheet

Self-Assessment Questions

1. How software-as-a-service can benefit is reducing the costs of software?
2. Explain the difference between the stand-alone and distributed ILS systems.
3. How subscription of software is different from licensing and hosted systems?
4. Differentiate open source and shareware software? Which one is better to reduce costs? Why?
5. How cloud computing can help in reducing data storage costs?

Activities

1. Investigate open source software for data and web servers you want to implement for your ILS assignment?
2. Search the availability of SaaS services in your area? How you will subscribe SaaS services for reducing the costs in an ILS project?
3. Evaluate various software costs for an ILS in the view of benefits and decide which solution is more suitable for your ILS project? Hint: If costs are extremely highly compared to benefits one can go for open source solution.
4. Why spend valuable and limited time sitting through demonstrations of integrated library systems that do not provide the features you need, will not work well for your staff or customers, and are beyond your budgetary constraints?
5. Evaluate your library and determine which system(s) will work best for your facility in terms of facility, staff, and collection; and, cost-benefit.

UNIT NO. 2

EVALUATING INTEGRATED LIBRARY SYSTEM SOFTWARE

Introduction

Once you have an understanding of the types of integrated library systems (turnkey, stand-alone, hosted, SaaS/cloud computing, and open-source) that can be implemented, the next step is to evaluate the software modules, features, applications, and add-ons available. Selecting the right software and the right vendor or open-source community is one of the most important decisions you and your organization will make for the library.

‘The cost of acquiring an ILS represents a huge investment. Therefore, libraries take the selection process seriously. This Unit will focus on following points which are listed below:

- Chart of ILS Vendors
- Meeting with Sales Consultants
- Product Demonstration and Evaluation of Software
- Contacting Other Libraries for Information

It is vital that you find software that will serve your library users now and in the future. Those patrons will utilize your institution, whether they are students, faculty, parents, children, attorneys, scientists, adults, or teens. The methods your patrons use to search for and find information will be the guiding beacon to evaluating ILS software. ‘While designing systems and services, the primary factor to ponder over is users—their information needs and wants.

To view a variety of systems in an effective, economical manner, it is recommended that you attend one of the national conferences, such as of the American Library Association (<http://www.ala.org>), Public Library Association (<http://www.pla.org>), Special Libraries Association (<http://www.sla.org>), Association of College and Research Libraries(<http://www.acrl.org>), or American Association of School Librarians (<http://www.aasl.org>). This will give you the best opportunity to visit a wide variety of companies in a short span of time.

The benefit of attending a national conference is having access to a broad spectrum of choices. It is well worth the investment in travel and hotel costs to view demonstrations in person and speak with many vendors or open-source communities in one location. The American Library Association, for example, has two major conferences per year, one in January and the other in June. At a national conference, you can spend two full days visiting the vendors who sell integrated library systems, viewing demonstrations, and speaking with sales representatives. Repeat visits over the course of the conference will be common as you learn more information and develop new questions. Sales representatives serving your geographic region will want to speak with you—and that is a good thing. Sales representatives can be an important resource. Attending professional conferences to see integrated library systems in person and to speak to vendors or OSS communities needs to become a regular activity.

Conferences give you the ability to research products and keep current with new developments. If it is just not possible to attend a national conference, other options are to invite sales representatives to your library or request a Web-based demonstration. Some ILS companies have links for webinars on their Web sites. Following is a chart of integrated library system companies and open-source software communities. Following is a chart of integrated library system companies and open-source soft-ware communities.

Chart of Major ILS Vendors

Product Name	Company	Types of Systems
AGent VERSO	Auto-Graphics, Inc	Stand-alone; hosted
Aleph	Ex Libris Group	Stand-alone
Apollo	Biblionix	Software-as-a-Service
Atrium	Book Systems, Inc.	Stand-alone; Software-as-a-Service
CyberTools for Libraries	CyberTools, Inc.	Standalone or Software-as-a-Service
Evergreen	Equinox Software	Stand-alone or hosted. Open source
Koha	Katipo Communications	Open-source; stand-alone
Library Solution	TLC (The Library Corporation)	Turnkey, stand-alone, Software-as-a-Service; hosted
Mandarin M3	Mandarin Library Automation	Stand-alone
Polaris	Polaris Library Systems	Turnkey; hosted
Virtua	VTLS	Stand-alone; Software-as-a-Service
Voyager	Ex Libris Group	Stand-alone. Centrally installed or hosted

Meeting with sales consultants

The sales representatives for each company will ask some basic questions about your library in order to determine how to best match their products with your facility. These questions will include what type of library do you represent (academic, public, school, or special), what are your annual circulation statistics, how many titles and items are in your collection, are you currently automated, and, if so, with what company, and so forth. It is best to come prepared with information about the library along with data about the library's network, Internet access, and hardware. Following is an example of the information you should provide to the sales consultant. You can use this sample chart to document information about your own facility.

Product Demonstration and Evaluation of Software

Ask for demonstrations over the following main features and take detailed notes of functionality and costs. A sample form entitled "Integrated Library System Vendors and Features" may be found in Appendix A. Use this form to keep notes on each vendor along with the modules, add-ons, features, and services that are offered. It is a visual method to compare apples to apples. For example, Company A has support-desk hours Monday through Friday, 8:00 A.M. to 5:00 P.M. Central Standard Time, and Company B has support-desk hours Monday through Saturday, 7:00 A.M. to 9:00 P.M. Eastern Standard Time, plus emergency support after hours seven days a week, including holidays.

Record any features that will help the library operate in a more efficient and cost-effective manner. Look for modules and add-ons that can save money and staff time, such as automated e-mails or telephone notification systems that notify library users of reserved materials or overdue items. These latter features save paper, envelopes, post-age, staff time, and printer cartridges.

Saving money on supplies and postage, along with the reallocation of staff responsibilities to other important duties, are points to drive home when justifying the expense of purchasing an integrated library system.

The following is a list of suggested information to seek when viewing a demonstration of ILS modules and add-ons:

System Administration:

- ✓ What type of architecture(s) does the company offer: turnkey, stand-alone, hosted, SaaS/cloud, open-source, or a hybrid of more than one type?
- ✓ If on-site servers are needed, how many and what types of servers (data server and/or Web server) are needed to operate the system?
- ✓ If the library has a domain-controller server to manage its network, can the ILS software be loaded on the domain-controller server, or does the ILS software need its own server(s)?
- ✓ How is the system managed?
 - a. Does the library need a systems administrator to manage the ILS?
 - b. Does the vendor provide hosting services in which they manage the ILS software? on their servers?
 - c. If the library wants to own its own servers, does the vendor provide remote access
 - d. for troubleshooting and installing software upgrades?
- ✓ What is the average response time to requests for technical assistance?
- ✓ What is the maximum allowable time that technical support must respond to a request?
- ✓ How are emergencies handled? If your circulation system fails to start up, how quickly will technical services respond to your problem?
- ✓ Do support employees specialize in the repair and operation of different products? If so, is there more than one employee for each product? For example, if there is only one support employee who works with the telephone notification system module, what happens if he or she is on vacation when your telephone notification system fails?
 - List of Current Customers:
- ✓ Ask each vendor what libraries in your state (or surrounding states) use their system. If the sales consultant cannot provide that information at the conference, he or she should be able to follow up with this afterward.
 - Cost of Maintenance:
- ✓ How much are the annual maintenance fees?
- ✓ What type of support is provided? Are there tiered levels of support? What are the costs of the various tiers?
 - Third-party add-ons:

While you are shopping for an ILS, you may want to consider other products that work with each integrated library system. Ask the sales consultant for a review of equipment and software that works in tandem with the ILS. Some of these add-ons may include:

- Telephone notification system: This piece of equipment and software calls a borrower and leaves a prerecorded message notifying that: (1) reserved material is at the library waiting for the borrower to retrieve and/or (2) overdue materials need to be returned to the library. Notification systems also allow borrowers to renew their materials by phone. Telephone notification systems allow staff time to be reallocated to other responsibilities and saves paper, envelopes, and postage. This is an add-on that should be considered in your budget.

- a. Ask the sales consultant what equipment is needed to operate the telephone notification system, such as a dedicated computer workstation and dedicated phone line(s).
 - b. Does the ILS vendor install the equipment and software?
 - c. Does the ILS vendor provide technical support for the equipment and software? If so, what is the additional charge for this support?

- Computer reservation system: Library customers log onto public computer workstations directly or reserve time on a public workstation. This eliminates the need for staff to monitor time limits and whether or not someone is an authorized user in good standing. The computer reservation system may interface with the ILS to authenticate library users. Customers log onto the reservation system using the barcode numbers on their library cards and/or a PIN number.
 - a. Ask if additional equipment, such as a stand-alone workstation, is needed to operate the system.
 - b. Ask if there is an additional charge for the patron-authentication software.
 - c. Is the software installed remotely or on-site?
 - d. Is staff training provided? If so, what is the fee?
 - e. What are the annual maintenance fees?

- Print-management system: This system manages print jobs originating at the public computer workstations. Customers pay for printing with credit cards, account deposits, or cash payments before their requests are printed. This eliminates customers printing sheets that they do not want. Libraries may see a decrease in wasted paper and an increase in revenues.
 - a. Ask the sales consultant what equipment is needed to operate this program, such as a dedicated computer workstation or server.
 - b. Does the ILS vendor install the equipment and software remotely or on-site? The former requires someone at the library to assist in the installation.
 - c. Does the ILS vendor provide technical support for the equipment and software? What is the annual maintenance fee for this service?

- Acquisition module:
 - a. Check for functionality and ease of use.
 - b. What transmission protocol does the ILS vendor use to communicate with suppliers such as Baker & Taylor, Brodart, Ingram, BOT (formerly called Books on Tape), Midwest Tapes, and others? Do the ILS vendor name particular distributors that interface with their acquisitions module? Are these the same companies that you currently use or would consider doing business with in the future? (Be sure to speak to your suppliers to obtain their opinion of a particular acquisition module. Ask if they have any problems in receiving orders or working with the ILS company.)
 - c. When viewing the demonstration, look at the records being displayed. Are you able to determine from the descriptions which are trade editions, library editions, large print, paperback, audiobook, DVD, and so forth?
 - d. Most acquisition modules set up purchase-order accounts for different suppliers, encumber funds, and track packing slips and invoices. If you have more than one person who orders materials, ask how order lists are kept separate. Is there a method to create

an order and then have it move through a supervised approval process before transmitting it to the distributor?

- e. Look for acquisition modules that connect to your local catalog and multiple suppliers simultaneously. That is, when you search for a title, such as *Treasure Island* by Robert Louis Stevenson, you are able to connect with Baker & Taylor, Brodart, Ingram, and your local catalog with one typed request. This will ensure that you do not order a book that the library already owns, and you can compare prices and formats among distributors.
 - f. Another nice feature on an acquisition module is the ability to download on-order records into the PAC. Customers can see that a particular title has been ordered and, if allowed, place holds to be notified after the item has been processed.
- **Inventory:** Tracking materials in the library can be simplified by utilizing an inventory module. This module allows staff to input items straight from the shelf and then run reports from the resulting list to generate reports as to what items are miss helved, what items have not filled a waiting request as they should, and what items are missing (not on the shelf or checked out). Ask the vendor if the library can be inventoried collection by collection and, if necessary, across multiple locations. RFID technology makes the inventory process even easier.
 - **Serials:** This add-on allows the library to acquire and manage the most troublesome of printed formats: periodicals, serials, and standing orders. The serials product should have all the typical acquisition functionalities of budget tracking, order placement, and invoice processing, but with the ability to submit claims when issues do not arrive on schedule. An “automated claims” feature tracks the arrival of each issue, and when a particular issue does not arrive, the system automatically transmits a notice to the vendor. Entry of the individual titles and issues is also an important feature. Customers and staff must have the ability to see what individual issues are in the library at any time.
 - **Interlibrary loan management:** At this writing, many interlibrary loan programs are proprietary and can communicate only with other libraries that own the same or a compatible ILS. This is an important consideration when deciding whether or not to purchase an interlibrary loan (ILL) add-on. Library staff will also need to decide whether or not customers will have the ability to place their own ILL requests, or if all requests must go through staff. If customers place their own requests, the interface needs to be intuitive and easy to use. Customers viewing union catalogs or other libraries’ catalogs need to be able to determine what titles are available locally versus what is available to borrow from another location. Ask the sales consultant how ILL materials are managed within the integrated library system so that items can circulate and overdue notices can be issued if necessary.
 - **RFID (radio-frequency identification):** Instead of using bar codes and bar code readers, some libraries employ RFID technology to circulate books and other materials. RFID tags are attached to library materials, and when items are placed at an RFID station, the antenna reads the RFID tags and transmits the information to the circulation module. Circulation clerks do not need to take the time to scan each time. The RFID station is able to read a stack of books or DVDs at one time.

- a. This functionality is often provided by one or more third-party vendors. Inquire as to which third-party companies the integrated library system will support.
 - b. Ask the sales consultant what equipment is needed to operate this product.
 - c. Is the equipment and software nonproprietary, using the latest ISO standards (15693, 18000-3, etc.)? If not, keep in mind that you will be tied to the proprietary system and any changes could involve costly equipment replacement and retagging.
 - d. Does the ILS vendor install the equipment and software remotely or on-site?
 - e. Is the hardware built into the cabinetry, or is it a detached model? The former requires carpentry and other planning assistance with furniture installation.
 - f. Is the library required to purchase the computer workstation from the vendor?
 - g. Does the ILS vendor provide technical support for the equipment and software? If so, what is the annual maintenance fee?
- Self-checkout stations: A library does not need to have RFID to have self-check stations but it is the common route to take in providing this service. If the library has space for self-check stations, this option has the potential to relieve staff for other duties. Patrons also enjoy the privacy of checking out their own materials. Ask the vendor what equipment, software, and furniture are needed to provide a self-check station.
 - How does the self-check work? Does it utilize touch screens, receipt printers, bar code scanners, or RFID technology?
 - a. Does the product require the library to purchase the computer hardware or cabinetry from the vendor?
 - b. Can library staff easily install, or does the vendor install?
 - E-commerce: This add-on allows borrowers to pay fines, lost book charges, and print charges with a credit card or debit card. The software is Web based so patrons can pay charges from the public access catalog or from their home computers.
 - a. E-commerce requires some type of patron-authentication software. Ask how the vendor allows for third-party authentication.
 - b. Library staffers make arrangements with a bank that can provide e-commerce services. The library's e-commerce software communicates directly with the bank, which approves and handles each transaction, making a direct deposit to the library's account.
 - c. Ask the vendor what equipment, operating systems, and browser versions are required.
 - Collection agency: This third-party add-on automatically sends delinquent borrower accounts to a collection agency that manages delinquent borrowers owing a certain amount of charges. Delinquent borrowers are notified by the collection agency to settle the account or to bring materials back to the library. Borrowers are notified several times and have a timed deadline to clear their account before a credit report is filed. The potential credit report is a strong incentive to return materials.
 - You will need to make sure that the ILS has a module that interfaces with the chosen collection agency. The ILS should generate a regular report of borrowers that is automatically transmitted to the collection agency. The collection agency, in turn, transmits return files that

are uploaded into the ILS to clear records, amend amounts owed, and so forth. The collection agency will invoice the library for the number of records processed, but it is advisable to add that dollar amount as a processing charge to the delinquent borrower's record. It is assumed that the collection agency's charges are offset by the materials and fines that are recovered that would not have otherwise been.

- **Material-vending machines:** If your library is considering adding vending machines to circulate books, DVDs, and CD-ROMs at a remote location, then the library will need to employ RFID technology, a communication protocol such as SIP2 (Standard Interchange Protocol, version 2), and compatibility with the integrated library system. The Contra Costa County Library in California implemented "Library-a-Go-Go" in which commuters on the rapid-transit system or those living in underserved areas of the county were able to utilize material-vending machines to borrow items. Susan Kantor-Horning wrote about the project in the August 1, 2009, issue of *Library Journal* (pp. 16–19). Check with ILS vendors to see if they are able to support this emerging opportunity to reach patrons at shopping malls, public-transportation centers, or other locations away from the main library. Vending machines are also a secure solution for the troublesome DVD format, whether in a remote location or in the library itself.

Contacting other libraries for information

As mentioned earlier in the chapter, you will want to ask sales consultants for a list of customers. It is helpful for this list to include libraries that are of the same type and serve a similar-size population. So if your facility is a school media center, you will want a list of customers who are also located in media centers that serve a similar-size student population.

If you are migrating from one type of automation system, you will want to speak to other libraries that also migrated from the same system. These individuals can give you an account as to how smooth the migration process was and if they experienced any problems. A vendor that is unable to produce a list of current customers of similar size and type is a sign that the company does not have experience working with a library such as yours.

When you call one of the contacts, ask to speak to the library director if the vendor has not given you a specific contact name. Identify yourself and the reason you are calling. The director may be able to answer some of your questions but he or she may forward you to the staffer directly involved with the network and the ILS. In any case, thank the director for his or her time and assistance. If you discover that most or all of the people you are speaking with migrated five or more years ago, you should contact the sales consultant and ask for a list of recent customers who migrated from the system you are currently using. The people you want to speak with should have purchased their ILS in the past one to three years. Customers who purchased their system several years ago may not be running the same software version that you viewed in the demonstrations. Important questions to ask other libraries include:

- When did you migrate to the (name of integrated library system)?
- What version of the software are you operating?
- From which ILS did you migrate?
- Do you have servers on-site, or did you purchase a hosted system?
- Is the system stable, or do you have server or connection problems? (If it is a hosted system, ask about the reliability and speed of the connection. Do they experience downtimes or slow connection speeds at certain times during the day?)

- If the library migrated from the same ILS you are using, ask about the migration and data-conversion process. What problems, if any, did they encounter? How were issues resolved? How long did the process take? How much downtime was experienced in the transition?
- Did the vendor create your Web site? If so, may I have your Web site address? Are you pleased with the Web site the company designed for you?
- In what ways was the ILS company knowledgeable, helpful, and professional?
- Were there any instances or issues that you wished the company would have handled differently?
- Do the modules operate as you thought they would? Are staff satisfied with the system?
- Can you provide any overall advice or comments?

If you are searching for copies of RFPs, then you should ask the person to whom you are speaking if he would be willing to share a copy of his or her RFP. Most librarians and MIS administrators are open to sharing their RFPs. After all, these individuals are in the information-sharing business and they were once in the same position of shopping for an ILS.

Time invested in researching the types of integrated library systems available, and the vendors who provide ILS products and services, will help you make the right decision in choosing the best system for your library. Communities grow and technology changes, so it is vital to choose an ILS that is flexible and can support add-ons when the library is ready to make additional purchases.

Objectives

After reading this unit you would be able to:

- Learn key software and hardware elements of automation system and integrated library system (LIS).
- Know criteria for selecting effective software for an LIS.
- Identify influential LIS stakeholders and ways to approach them for designing and implementing automation systems?
- Know how to contact with other librarians and take their response on library software.

Self-Assessment Questions

1. How preparing chart of ILS vendors play a role in selecting appropriate library software?
2. How meeting with sales consultants can help you to fulfill the LIS requirements? Do you think LIS venders can give important feedback in implementing library services?
3. How product demonstration can help in the requirement analyses for establishing an LIS?
4. How software evaluation can help mitigating the potential problems to the academic library users? What features of LIS should be included for the evaluation of good software?
5. How contacting other libraries are useful in ensuring the quality of library automated services?

Activities

1. Prepare a chart of important vendors in Pakistan who are providing software and hardware related to LIS systems.
2. Visit a university library cataloguing section. Conduct an interview of a cataloguing librarian how does he/she narrate the importance of automated library environment.
3. Transcribe the discussion and present in your class for feedback from your class tutor.
4. Why is a MARC record necessary? And what areas could be part of it?
5. Visit an automated university library and do practice on circulation interface, observe is it appeal to you? Make your own experience instead of circulation employees and determine the ease of use, functionality, and appearance. Evaluate the library software using the checklist provided for Section 2.3.
6. How Library activities and functions have undergone changes over the years especially in this pandemic? OPAC is a gateway to access the library resources and service how describe in details?

UNIT NO. 3

SELECTING THE HARDWARE AND ADDED FEATURES

1.1 Introduction

The first step in selecting hardware is deciding what type of integrated library system will be purchased. This crucial decision determines not only what equipment needs to be acquired but also who will be responsible for administering day-to-day operations, software upgrades, troubleshooting, and hardware maintenance.

- ILS Determines Hardware Purchases
- Hardware Purchasing Principles: Servers
- Hardware Purchasing Principles: Workstations
- Peripheral Devices
- Backup Plans and Devices
- Networks and Network Security

1.1.1 ILS determines hardware purchases

If a turnkey or stand-alone integrated library system is chosen, then the library will need to purchase servers, workstations, and network equipment either from the ILS vendor or from a third party. Purchasing the equipment from the vendor affords the advantage that the vendor is then responsible for resolving all problems surrounding the efficacy of the ILS. Purchasing the equipment from a third-party vendor may have cost savings, but you must be sure to follow the specifications required by the ILS vendor. In addition, the servers and network equipment will be housed on-site. This means that the library director will assign or hire staff that will be responsible for operating the system and maintaining backups and server hardware, along with troubleshooting problems with the ILS vendor.

In a stand-alone purchase, the library hires a system administrator who manages both the integrated library system software and all the hardware. “The local management of an integrated library system is known as system administration. Tasks include managing the hardware, internal and external access to the system, security, backing up the databases and daily transactions on a regular basis, troubleshooting, performing system upgrades, and communicating with the vendor support staff” (Wilson, Kate. *Computers in Libraries: An Introduction for Library Technicians*, 2006, p. 32).

In small libraries, the library director or other staff person will also serve as system administrator, depending upon the complexity of the ILS software. In a turnkey arrangement, the library purchases the hardware and software from the vendor, who installs it. In addition, the vendor assumes the major role in troubleshooting software and hardware issues and provides or remotely installs software upgrades.

A turnkey system is the choice to make when a library wants its equipment and software on-site but does not have the in-house expertise to develop and enhance the software and hardware. The library is still responsible for staffers, who operate and maintain the ILS system hardware and software; however, those staff can rely on the ILS vendor for assistance and technical support, both for operational and upgrade activities. For example, staff will monitor backup media each day to ensure that the servers are backing up the data correctly. (Refer to the section at end of this chapter, “Backup Plans and Devices.”)

Servers should be rebooted at least each month for general maintenance. In addition, at least two staff members should be trained to report software issues to the vendor's technical support. Many small libraries operate turnkey systems without a dramatic impact on staff time because the vendor has the major responsibility for resolving problems. However, the person who interacts with the vendor must be comfortable working with computers and should have some expertise. Beyond the normal expectations of e-mail and office operations, staff will learn the special operations and processes that come with an ILS.

If the library chooses a "hosted" system or a software as a service (SaaS) system, then the library will not need to purchase servers but will be responsible for the work-stations or thin clients and the network needed to communicate with the vendor. "Thin clients are very low-cost computer stations that have very few resources of their own and rely on a server to provide the majority of their storage, memory and processing capabilities. They are basically a new form of the old-fashioned 'dumb terminals'" (Bolan, Kimberly, and Robert Cullin. *Technology Made Simple: An Improvement Guide for Small and Medium Libraries*, 2007, p. 40). In a hosted or SaaS system, the library needs to stipulate in the contract with the vendor who is responsible for managing the daily operations, performance expectations for the system, data security (backup) guarantees, expectations for scheduling software upgrades or running reports, disaster procedures, and network management issues, including network bandwidth specifications and network outage procedures. By choosing a hosted or SaaS system, the need to manage server hardware or to hire skilled staff is alleviated.

It should be noted that a network administrator is required in all instances: turnkey, stand-alone, hosted, and SaaS. The network administrator is responsible for the library's local area network (LAN). "Typically, a LAN is a network that is used by a single library or perhaps by a single college campus. The speed limitations of the cabling used for the LAN make it difficult to extend the network beyond a single organization or a small geographic area" (Burke, John J. *Neal-Schuman Library Technology Companion: A Basic Guide for Library Staff*, 3rd edition, 2009, p. 77). If a library has branches, then the network administrator is responsible for the wide area network (WAN), which uses existing communication networks. Libraries that cannot or do not wish to have a network administrator on staff can contract for these services. Someone has to install and maintain the Internet connection, which includes the router, switch(es), firewall (for network security), and cabling, and install workstations onto the network. The workstations communicate with the library's servers via the LAN or WAN or with the vendor's servers via the Internet. If the library has a system administrator to operate and manage the ILS, it is common for that person to also manage the network. If the library does not have a system administrator, then it is not unusual for the library to contract with an outside provider for this service. If the library opts to contract with an outside provider, a separate service agreement is advisable. The service agreement will stipulate the library's needs for installations, response time, and problem resolution, particularly for times when the library is open beyond normal business hours. If the network goes down on Saturday morning, the service agreement must state how problems will be resolved without exorbitant after-hour charge.

1.1.2 Hardware purchasing principles: servers

If the library decides to purchase a turnkey or stand-alone system, the library director will need to purchase at least one server to house the ILS software, the bibliographic records, and the patron records. If the library plans to manage its own Web site or to make the public-access

catalog available online, then a Web server is required. For security reasons, the Web site and the online public-access catalog (OPAC) should be housed on a separate Web server and not on the same server as the ILS software, unless one utilizes hardware virtualization, which is discussed later in this chapter. The Web site and the OPAC are open to the public and therefore are at risk to hackers. It is vital that the library's ILS software and records be protected from unauthorized entry. To protect the network, one needs to purchase a firewall and "demilitarized zone" (DMZ). The DMZ is a section of the network that is exposed to the Internet so that the public has fewer restrictions when accessing certain library services (such as searching the catalog), while managing more secure access to other library services.

The ILS vendor may offer to sell servers and other hardware. To select the right server and workstations, the prospective ILS vendors will ask how many borrowers are being served, how many titles and items the library owns, and what is the annual circulation. Through the request for purchase (RFP) process, vendors will provide their recommendations for minimum server specifications, such as the speed of the processor, memory requirements, workstation requirements, and other elements specified by the library. When selecting hardware, there are two basic principles. First, buy as far into the future as you can afford to and, second, consider purchasing hardware from the vendor, especially if this is your first experience working with this company.

Whether you are purchasing servers or workstations, focus on the following three items: (1) select the highest processing power/speed, (2) purchase the most random access memory (RAM) you can afford, and (3) purchase the largest amount of hard disk memory that fits your budget. By getting as much as possible, not only will the server last longer, but your system will also function faster. The server should be a "server-class" machine for better durability and processing capabilities. Servers with dual-core or quad-core capabilities are preferred. Keep in mind that the number of processors multiplies the processing speed, so that a 2.2 MHz dual-core machine is far faster than a 3.0 MHz single processor. Quad-core will last longer than dual-core. The recommendation to get the most you can afford relates to all three of the factors noted before (processing speed, RAM, and hard disk memory), but if your funds are limited, then some prioritization is necessary. In other words, rather than spend hundreds more to go from a 2.13 MHz dual-core processor to a 2.4 MHz dual-core processor, it may be better to get additional gigabytes of RAM. Hard disk space is relatively inexpensive and easy to upgrade, but it is still wise to purchase as much hard disk space as possible when placing the initial order.

A large hard drive will not only extend the life of the system, but the server will also operate faster and create a more responsive system. At the same time, it is advantageous to have multiple hard drives for better data security and increased space. It is advisable to have a fast boot up drive (10,000 or 15,000 rpm) even if it is no more than 40 to 80 GB of space for the operating system, and then have a much larger second drive to provide the space for data. This configuration is different if you choose to have a RAID array as the method for backup (see "Backup Plans and Devices"). As of early 2010, increase the CPU to be at least a dual-core processor that is over 2.0 MHz in speed, if that is more than what your vendor has suggested. Then add as much RAM and hard drive space as you can afford, focusing on RAM first.

In addition to buying as far into the future as you can afford, the second basic principle is to buy hardware from the vendor. The advantage of making a single phone call to resolve all integrated library system problems can be a compelling reason to purchase hardware from the system vendor. If the discrepancy in costs is not too great, it is usually best to at least begin with a new ILS by purchasing hardware from the vendor. With this type of scenario, troubleshooting all

hardware problems is the responsibility of the vendor's technical support staff, who contacts the hardware manufacturer.

It can also be advantageous to purchase hardware from the vendor due to the possibility of special pricing, warranty, and advantageous maintenance agreements. This is especially true of peripherals, such as bar code scanners and receipt printers, but it also holds true for workstations and servers. For example, you may be offered a deal in which all the hardware comes bundled for a better price than if you were to buy equipment separately from other companies. In addition, when purchasing hardware and peripherals from the vendor, there should be no question that the equipment will work in tandem with the software. Later, when you need to replace or add receipt printers or bar code scanners, it may be more cost-effective to purchase from another company who specializes in those peripherals. The library should track the current pricing for hardware in order to be able to compare market prices with vendor costs.

The server purchased for the library's integrated system might also provide additional functionality depending on the size of server purchased and the functions desired. For example, large libraries might require one large server for processing circulation and cataloging work, another server to provide public-access catalog services, another server to provide the library's Web site, another server for business office accounting, and yet another for e-mail hosting. A small library may be able to consolidate several major functions on a single large multiprocessor server by creating "virtual machines" within that single hardware unit.

A virtual machine is a software structure, including an operating system, which operates within a larger software environment. The larger environment may even consist of a different operating system, and can "host" several virtual machines, each running a different application at the same time on one hardware platform. Through virtualization (with software like VMware, for example), a library can have one physical server that runs an e-mail server and business applications (accounting and personnel software) at the same time. In this scenario, the hard drives of the server are partitioned, and each partition operates as if it were a separate server. Consolidating applications through virtualization can save hardware costs and reduce space requirements.

Differences in the functional needs, budgetary constraints, and staffing expertise of every library make for the need to individualize configurations to achieve the greatest effectiveness and efficiency. If the library selects a virtual server, it is recommended that you verify in writing with the vendor that the selected server will be able to manage other functions without interfering with the ILS functions. You do not want a situation in which the ILS vendor blames you for ILS software problems because of the other functionality you are performing on the server. Availability of low-cost and immediately accessible out-sourcing providers for any of the functionality should also be considered. For example, there may be local businesses that could provide Web services or e-mail for the library.

1.1.3 Hardware purchasing principles: workstations

Decisions made when purchasing servers are similar to decisions made when purchasing staff and public workstations. You may consider buying hardware from the vendor but only if it yields advantages of reduced costs for quantities and ease in troubleshooting hardware issues. Purchasing hardware from the vendor is not as important for workstations as it is for servers, since workstations throughout the industry have a lot of basic similarities. In fact, so long as you buy workstations that exceed minimum specifications provided by the ILS vendor, it is likely you will be able to spend less on workstations purchased from other computer manufacturers. It

is advisable to purchase workstations that are exactly alike insofar as that is possible. Workstations that are alike are also easier to maintain, because the parts are alike and less time is required for learning the maintenance associated with a variety of platforms. Purchasing computer hardware through government consortia contracts can save a lot of money. Quantity discounts provide even deeper savings.

In library technology departments, one of the “best practices” is to replace from one-fourth to one-third of the institution’s desktops every year. This means that every workstation will have a three- or four-year life cycle. This may seem to be wasteful at first, given that computers may last longer than three or four years, but the amount of money saved in maintenance and staff time in working with old computers is well worth the continual investment in newer technology, not to mention the improved performance that will be realized.

Besides having a hardware replacement schedule, it is also important to consider the reliability of manufacturers. A local provider or even an individual might be able to build computers for the library inexpensively. The reliability of the parts being used by the local provider should be examined just as carefully as the reputations of machines purchased from major manufacturers. Buying inexpensively today may cost more in maintenance and in more frequent replacements over four to eight years. Another consideration when purchasing from a local business is that it may provide a quicker response time to problems.

As of early 2010, dual processing workstations are the standard. RAM memory is also relatively inexpensive, meaning that a minimum of 2 to 4 gigabytes would be the norm with which to start. Hard drive space is also relatively inexpensive. Purchasing 250 gigabytes would be more than enough space for normal use, but getting more for a relatively small price increase will also mean the computer might last longer and operate faster. A typical workstation configuration might look like this:

Workstation Configuration: PC Specifications

- Processor: Dual processor 2.5 to 3 GHz
- GB RAM
- 2000 Monitor
- A video card that supports having two monitors
- Hard drive: 320GB SATA
- Sound: internal speaker
- CD/DVD: 16x DVD±RW
- Keyboard – USB, Mouse 2-button USB
- Gigabit Ethernet network card MAC equivalent

If you are using Apple products and installing a Mac-based network, there are some Web sites that can assist you. Apple’s support site is <http://www.apple.com/support>. It has the latest information regarding servers, operating systems, RAID, and storage systems. Another site is <http://www.macfixit.com>, which is part of CNET reviews. MacFixIt has links to topics on all things Apple, such as forums, utilities, and the ability to e-mail questions and to have other Mac users respond.

Keyboards and mice are mostly a matter of personal preference, especially for staff workstations. Ergonomic “split” keyboards might be preferred by some staffers; however, others will definitely not want the split effect. One might think the least expensive alternatives would suffice for public-access workstations; however, in times of flu epidemics, there are good reasons to purchase waterproof antimicrobial keyboards for easy cleaning. Specialized mice (more than two buttons) are not usually necessary, but it may be a good suggestion to have a few USB rollerball mice available for those who have difficulty manipulating regular mice.

Twenty-inch monitors are now at a price point that makes them a good alternative. The larger the screen, the more effective the monitor is for the user. For staff members who work with multiple applications or documents simultaneously, multiple screens provide a much more effective workspace, hence the “dual DVI” graphics card in the example configuration above. For a circulation desk performing a single function most of the day, two monitors would be superfluous. Circulation desk personnel want as few obstacles as possible between them and their patrons.

If you are using a Windows-based system, ask the vendor what service pack version needs to be installed on workstations and what browser type and version needs to be installed. Web-based modules and Web-based ILS software will operate at optimum performance only with particular browsers and particular browser versions.

3.4. Diagnosis Peripheral devices

There is a wide variety of additional peripheral devices possible, including cameras, headphones, fingerprint readers for authentication, receipt printers, wide-format printers, bar code scanners, document scanners, RFID antennae, external hard drives, and so forth. It may be a good decision to purchase peripherals, such as bar code scanners, receipt printers, and RFID antennae/scanners from the vendor to ensure compatibility. This is especially true for libraries migrating from one system to another.

Take, for example, Anywhere Public Library and its decision to migrate from System A to System B. The bar code scanners purchased with System A are still operable; so, Anywhere Library is considering keeping the original scanners instead of purchasing new ones from Vendor B. In its research, Anywhere Library discovers that the bar code scanners for System A are made specifically to read System A’s proprietary bar code symbology. If Anywhere Library chooses to keep its original scanners, it will be locked into that technology during the retrospective conversion process to System B. If the library is not able to purchase bar code scanners from Vendor A in the future, it will have to spend additional funds and staff time to correct the problem by bar coding the entire collection. To avoid this type of scenario, library staff should consider purchasing the peripherals, especially bar code scanners and RFID scanners, from the ILS vendor.

3.5. Backup plans and devices

It is vital to include data backup in the planning process right from the start. If something should happen to the data server(s) due to a hardware failure, fire, or natural disaster, the library will lose all of its patron and bibliographic data without backup files available. It is best to include as much in the startup package as possible to get the most for the money spent. Consider one or more of these options: a built-in tape drive, RAID arrays, CD/DVD-writeable media, and flash or external hard drives. It is possible to subscribe to Internet sites willing to provide space for backup data. Such sites are an option, but the total cost of tapes versus subscription costs should

be compared carefully. Also, the security of such sites is an important consideration. Though CD/DVD media are reliable storage for small amounts of data, they transfer data slowly and are not practical for larger amounts of data. RAID (redundant arrays of inexpensive disks) configurations are a desirable option because they provide moment-by-moment backup of work as it is performed and can facilitate faster recovery in problem situations. You will need to explore the possibilities with your vendor, as their system may work better with some backup processes than with others, or even be incompatible with some types of backup systems.

No matter which type of backup media is chosen, it is important to have well-defined procedures that are executed without fail. The data should be backed up daily. It is recommended that incremental backups be done during the day as well. A different tape is used every day so that the backup media is not overwritten immediately. You will also then have several backup copies in the event that one or more of the media devices have data errors. It is also wise to keep one backup off-site in a secure location. The off-site media should be updated weekly. Fireproof safes certified for computer data are a good idea. If tapes are used, do not use them for more than the recommended number of times, usually no more than 50 uses. It is also recommended that tapes be verified once or twice a year to assure viability. Similarly, other backup media, for example, external hard drives, should be verified. Even with multiple backups being made, you do not want to encounter the need to recover data only to find the media you have been using is bad.

Here is an example of one backup strategy using tapes: a library that is open Monday through Saturday would buy seven backup tapes. Label each tape for the day of the week plus label two tapes for Saturday. On Monday, a staff person will insert the “Monday” backup tape in the data server and take the “Saturday” backup tape to an off-site, fire-proof, and waterproof safe. The “Saturday” tape that is already in the safe will be removed and utilized that coming Saturday. The process repeats itself each week. If something happens to the data server, the library will have its patron and bibliographic records saved on its collection of backup tapes. If a disaster, such as a fire or flood, hits the library building, then the library has its data protected off-site on a backup tape. To ensure that the backup tapes are functioning properly, check the backup utility each day to make sure that data is being saved to the tapes. Use the cleaning cartridge every other week to keep the backup tape drive in serviceable condition.

3.6. Networks and network security

The network for most libraries consists of Cat-5 (Category 5) or 5e Ethernet cabling that connects the staff and public workstations to a switch that in turn is connected to the router for access to the Internet. Category 5 (now superseded by 5e) is the designation of twisted copper wiring that is specified to handle data transmission speeds of up to 100 Mhz. Category 5 is able to transmit data of up to 100 Mbits/sec (megabits per second). Cat-5e, while still specified for 100 Mhz transmissions, is capable of gigabit (1,000 Mbits/sec) networks. Category 6 cabling is rated to guarantee 250 Mhz transmissions. Category 6 cabling is backwards compatible with lower categories. The choice of cabling is a matter of cost and plans for the future. Either Cat-5e or 6 will serve the library well into the future. Cat-6 or even Cat-7 may have the capacity for additional services desired by the library but that are outside the scope of this book. The switch may also connect the workstations to one or more servers depending upon the setup for the library. For example, a public-access catalog would be connected to the Web server via the switch.

When selecting an integrated library system, you will research what type of network is needed to operate the ILS. For example, with a software-as-a-service system, the network will consist of workstations communicating with the vendor via the Internet; so the network will consist of Cat-5 (or higher) cabling, switch, router, and a high-bandwidth Internet connection. The vendor will give specifications for the staff and public workstations along with browser specifications to access the software.

If you are purchasing network equipment for the first time or upgrading your network connection, your technology plan should cover goals for the library that could affect network equipment purchases. For example, the library will need a router to manage the network communications between servers, workstations, and the Internet. You should consider whether or not to offer wireless Internet access. If so, then you will need to consider purchasing a partitioned router. One side of the router will handle the library's network traffic and the other side of the partition will handle the public wireless Internet traffic. A partitioned router protects the library's network and prevents access from individuals using wireless laptops and other wireless devices.

To protect the security of the library's LAN, you must have a hardware firewall in place. It will prevent hackers from entering your network and ultimately your servers. It is worth the effort to have someone on staff who is trained to understand the configuration of the firewall. At the minimum, your Internet service provider should be able to either manage your firewall functionality for you or advise you of a knowledgeable network administrator in your area.

If the library is purchasing a Web server for the first time, you will need to configure a DMZ to protect it from unauthorized access. As mentioned earlier, a "demilitarized zone" (DMZ) is a section of the network that is exposed to the Internet. Adding a DMZ will make use of a third interface port on the firewall. This configuration allows the firewall to exchange data with both the corporate network and the DMZ network using network address translation (NAT). NAT allows data received on a specific port or interface to be routed to a specified network. For example, when someone visits an organization's Web site at <http://www.somecompany.com>, the browser is sent to the server where the site lives. If this organization keeps its Web server in a DMZ, the firewall will know that all traffic sent to the IP address associated with the Web site should be passed to the server sitting in the DMZ network rather than directly into the organization's internal network.

If maintaining a LAN is a new undertaking for you, it is advisable that you read a general overview of the infrastructure and maintenance of a network. Even if you contract with a network administrator, being able to understand and communicate with the administrator is advisable. *Networking for Dummies* by Doug Lowe (Hoboken, NJ: Wiley Publishing, 2010) is a well-written, easy-to-understand guide on the basics of a network, servers, backup storage devices, and security.

Through research, investigation, and a close examination of your library's needs within the framework of staff expertise and financial capabilities, you will begin to see which ILS architecture will best suit your situation. Hardware and networking decisions will also begin to be clearer as you define what it is you need and what will help you and your staff function most effectively. In considering these needs and wants, there are other elements that are beyond the basics of an ILS that you may also want to consider. The next chapter describes additional elements that can also enhance your ILS implementation and help you serve your patrons in new ways.

Due to continual innovations in all aspects of technology, from data storage and processor architectures to new developments in Internet services, it is essential for library staff, especially the director or system administrator, to maintain constant aware-ness of technological improvements. It is not too early to forecast the escalation of network access to gigabit network cards. While a network card that communicates at 10 MB/sec or even 100 MB/sec would be acceptable at this time, networks are increasingly moving to faster and faster speeds. Below is a table explaining various network speeds and the capabilities in downloading data:

Type of access	Transmission speed	Time to transfer files
	Kbps ¼ kilobits per second Mbps ¼ megabits per second Gbps ¼ gigabits per second	Word doc ¼ 4 kb to 200þ kb Picture ¼ 250 kb to 4þ mb Mp3 music ¼ 10 mb to 40 mb Movie ¼ 1þ gb
Typical dial-up modem	56.6 kbps (kilobits per second)	Large document ¼ 2 to 5 secs Picture ¼ 30 sec to 10 min Music ¼ 25 min to 1þ hrs. Movie ¼ 2þ hours
ISDN	128 kbps	Large document ¼ 1 to 2 secs Picture ¼ 15 sec to 5 min Music ¼ 10 min to 45 min Movie ¼ 1.5þ hours
Cable Modem	460 kbps	Picture ¼ 5 sec to 2 min Music ¼ 2 min to 15 min Movie ¼ 30þ min
High-Speed Internet	Range from 756 kbps to 6 mbps	(depending on speed) Picture ¼ less than a minute Music ¼ 1 min to 10 min Movie ¼ 15þ min
“T-1” line	1.54 mbps	Picture ¼ 2 sec to 1þ min Music ¼ 1 to 8 min Movie ¼ 20þ min
Ethernet	10 mbps	Picture ¼ Less than 20 sec Music ¼ 30 sec to 5 min Movie ¼ 10þ min
Fast Ethernet	100 mbps	Picture ¼ less than 3 sec Music ¼ 3 sec to 30 sec Movie ¼ 1 to 2 min
Gigabit Ethernet	1000 mbps (1 gbps)	Music ¼ less than 3 sec Movie ¼ less than 15 sec

The functionality of added features may be a primary consideration in deciding which ILS is the best for your facility. Added features will not only allow you to implement significant tasks that expand the operations of the ILS, but add-ons also indicate the viability of the ILS vendor. If an ILS vendor does not offer e-mail and/or telephone notification regarding borrowers’ holds or overdue materials, and does not support third-party add-ons that offer these services, this leaves the library with only a print-notification option. Printing and mailing notices is the most expensive method for libraries to contact customers. Phone calls from staff are labor-intensive

and a costly alternative. However, if an ILS vendor has negotiated with a third-party company to offer e-mail and/or telephone notification, this is a good indication that the ILS vendor is aware of library customer needs and is willing to find solutions.

The customer picks and chooses which added features, if any, he or she wants to include in the initial RFP or to purchase at a later date. If you are planning to purchase the add-ons in the same fiscal year as the integrated library system, you will want to check the legalities of that decision. Your organization may not be able to split the purchases. Ask your business office, administrator, or attorney for guidance.

ILS vendors will sell many of the add-ons but you do not have to purchase the added features from the same company from which you bought the ILS. You may obtain a better price for an added module from another company, but be certain to research compliance with your integrated library system. Acquiring an add-on from the ILS vendor may or may not cost more, and you have the assurance that the product will work seamlessly with your system. Again, you can research compliance by asking how long the vendor has contracted with the third-party company to provide equipment and software, who handles technical support, and whether the vendor is able to provide a list of customers who are currently using the third-party product.

3.7 Online acquisitions module

The acquisitions module is a product that manages the fund management, selection, purchase, receipt, and invoicing of library books and materials. Some libraries are also able to use the budget-tracking feature in the acquisitions module to oversee all of the library's accounts, including personnel and supplies. The module should allow library staff to create budget categories, manage lists of desired titles, submit those lists electronically to book suppliers, track the costs of the materials ordered and received, and send claims for items that have not been received. There should also be an option to allow or not allow the public to view orders in the public-access catalog and to place holds on those items.

Most vendors today offer a Web-based acquisitions module. "Web-based" means that the product is accessed via the Internet and does not reside on the data server in your building. Staffers who perform collection development will log into the module and search for materials, place orders electronically, download MARC records into the catalog, track expenditures, input receivables from packing slips, and pay invoices.

The online acquisitions module should eliminate the need for staff to maintain paper records. You want a product that will streamline your workflow at an affordable price. An effective acquisitions module will contain all information regarding orders. You should have the capability to keep several order lists. For example, you may have two juvenile nonfiction order lists that you are building. One juvenile nonfiction order list is with Distributor A and the other list is with Distributor B. You should have the ability to add and delete titles from these lists until you transmit the orders to the distributors.

You should also be able to search for a title among several distributors in one search entry and be able to compare prices, formats, and availability. So, for example, if you have accounts with Ingram, Baker & Taylor, and Brodart, you should be able to search for a title with all three distributors simultaneously. One distributor may have the title available in large print, DVD, CD-ROM, and MP3, while another distributor may just have the trade and large print editions. It saves staff time to view price and format availability in one search entry and it saves money to be able to compare prices.

Another benefit of an online acquisitions module is the ability to enter information from packing slips, cancellation notices, and invoices. Staff should be able to know at any time the status of their orders: what has arrived, what is pending, and what has been paid. In addition, staff should know what funds have been encumbered, what funds have been expended, and what funds are still available.

Some online ordering modules are complex. You will want to research the type of training and technical support that is available from the company. Staff should be able to perform all the basic functions of ordering, receiving, invoicing, setting up vendor accounts, and opening purchase orders after their initial training. The training program should also cover how to utilize the module's online help function.

Be sure to speak to your distributors and other librarians about the online acquisitions module for each ILS vendor you are considering. Ask if they are experiencing any problems with the product. You will want to have specific examples of concerns and not just generalities. This will help you compare features and speak to the sales consultants about any concerns.

3.8 Serials management module

A serials module is a software component that handles the library's serials, periodicals, and standing orders. Serials are volumes that are issued by a publisher on a regular basis and contribute to the overall body of work. An example of a serial would be *Something about the Author*. Every few months, a new volume is published that adds to the entire product. *Something about the Author* is a collection of biographical profiles of children's writers and illustrators. It is a reference tool for people who want to know about the lives, motivations, and interests of authors and artists. Libraries who collect *Something about the Author* do not want to miss a volume. A serials module would monitor *Something about the Author* and ensure that all volumes are received. This eliminates the need for library staff to monitor whether or not the latest volume has been delivered and to manually contact the publisher if the latest volume has not arrived at the library.

Staff should determine whether or not the periodicals collection is for research or for browsing and entertainment. Questions to ask are: (1) Is it important to account for the location and status of each title? (2) Will customers need to know if the latest issue of the magazine is on the shelf or if it is checked out to another customer? Many libraries today offer periodicals in full text from online databases. If a magazine is available in full text from an online database, then customers can retrieve a specific article from the online resource and the paper version can be available for browsing and circulation. If the latter is the case, then staff may decide that it is not necessary to track each individual issue. Determining a collection philosophy will help you decide whether or not to purchase a serials module.

For facilities having more than 200 periodicals, serial, and standing-order titles combined, the serials module may be a vital component in organizing and maintaining these facets of the collection. If a library contains fewer than 200 periodicals, serials, and standing-order titles, it may not be an effective use of staff time or money to purchase this module. Serial modules are most commonly found in large public and academic libraries.

In addition, check with the periodical agents, distributors and publishers that the library uses, to see which communication protocols are necessary to interface with their systems. Ask if there are problems with any particular serials modules. You will want to select a module that interacts effectively with the companies you utilize.

3.9 Interlibrary loan management

The interlibrary loan (ILL) module allows staff to place ILL requests electronically. They are able to place requests, send materials, and check out the ILL materials to patrons. The work of placing requests and checking out materials to patrons works seamlessly with the integrated library system. With some interlibrary loan modules, patrons are able to place their own requests without staff intervention. Staff will want to consider the financial impact of such a decision. Sometimes it is more cost-effective to purchase the requested item for the collection. If it is an older edition, then Amazon or a used-book dealer is an option for filling the request. What is spent on postage could instead be spent on acquiring the item if the title would be useful to the collection.

The interlibrary loan management module is an area within the field of integrated library systems that is in transition. The main hindrance to purchasing an interlibrary loan module is that it is difficult to communicate with integrated library systems outside of the library's own type of ILS. For example, if the library owns "System A," then it is easy to submit and to respond to interlibrary loan requests from other "System A" libraries. It is not easy, however, to communicate interlibrary loan requests with libraries that do not own or are not compatible with "System A."

Staffers need to determine how they are going to handle their interlibrary loan business. Most libraries are involved with some type of interlibrary loan consortium within their state, region, or with OCLC (Online Computer Library Center). OCLC is a membership-based, nonprofit organization that provides many services, including inter-library loans. Its Web site states that it is the world's largest consortium. When choosing an ILL module or deciding whether or not to purchase this module, you will need to look at the consortium to which you belong. Ask whether or not the ILL module will communicate with the consortium the library is using.

3.10 Automated notification systems

Automated notification systems are services and processes that contact borrowers when they have books that are ready to be picked up and or when they have overdue materials that need to be renewed or returned. Notification systems may include a range of contact options: e-mail, mail, and telephone. Some libraries are beginning to offer a text to cell phone option. Borrowers or staffers select one or multiple avenues of contact.

Staff members need to consider how the methods of contact will impact the budget. Some libraries have completely eliminated the use of mailed notifications to save paper, staff time, and postage. Listed below is information about telephone notification systems, which are normally manufactured by third-party companies. ILS vendors will advertise which product works best with their system.

The telephone notification system is programmed to work with your integrated library system. The reports module generates both a contact list of borrowers who have materials on hold and a contact list of borrowers who have overdue materials. If the ILS software package includes an automatic e-mail notification feature, the phone notification system may or may not duplicate the same e-mail contact list for overdue materials and holds. If it is desired that patrons be contacted by both phone and e-mail, then you will want to list this option in your request for proposal.

The ideal arrangement for a telephone notification system is to have a dedicated computer workstation with its own high-bandwidth Internet connection and dedicated telephone jack. If your library utilizes an internal phone system, you will need to contact that company and notify them that you are adding a telephone notification system. The company will advise you if a line

is available or if you will need to pay for the installation of a new line. You do not want to share a line with the fax machine or another extension, as this will interrupt outgoing calls. You will also need to know if the internal phone system programs a prefix number in order to access an outside line.

With the prevalence and portability of cell phones, some customers keep their cell phone numbers even if the numbers are long-distance numbers for the area in which they are currently living. Library staff will have to decide whether or not they are willing to pay for long-distance charges and if the phone notification system can handle an array of area codes. Encouraging library patrons to give an e-mail address for e-mail notification will solve this issue; however, not everyone will be willing or able to give an e-mail address.

Libraries may also purchase telephone notification systems that have an automated renewal feature. These systems require an additional dedicated incoming phone line for patrons to call to renew their items. The automated renewal system will tell patrons if their items have been renewed or have not been renewed and need to be returned to the library. If the items are renewed, the system gives the new due dates.

Depending upon the size of your customer base, you may need to install more than one incoming and outgoing line for the automated phone notification system. A dedicated computer workstation is definitely required for libraries with a system that allows automatic renewals because patrons will call at their convenience, so the system needs to be available 24 hours a day, seven days a week.

3.11 Federated searching tools

Federated searching is software that allows customers to search across multiple resources simultaneously using one search tool, usually the online catalog. Libraries, especially academic and large public libraries, are experiencing an increased demand for e-resources (electronic resources), and federated searching helps patrons acquire search results across the library's collection of print and non-print resources. "A paradigm shift in library collections has occurred in which e-resources are now the major component of new library materials, requiring new ways to manage and display them" (Wolverton, Robert E., and Jane Burke. "The OPAC is Dead: Managing the Virtual Library," October 2009, pp. 247–252).

In addition to searching a library's e-resources, patrons also have the ability to search other libraries' online catalogs. Take as an illustration the Anywhere Public Library, which subscribes to BigTime Premier database and has an agreement with the nearby Distant Public Library to include access to its online catalog in federated searching. A patron searching for information on ocean mammals types the search term "whales" into the Any where's public access catalog search box. The search results display book titles available at both the Anywhere Public Library and the Distant Public Library, along with DVD titles and links to electronic magazine articles in the BigTime Premier database.

Not every library uses federated searching to allow patrons to view other libraries' catalogs. A library may use federated searching solely for integrating its online database subscriptions with its online public catalog. Federated searching modules may be expensive, so consider asking a company about its pricing options. A vendor may offer a discounted price for libraries subscribing to fewer than 10 online database titles. This is an affordable option for small libraries and school media centers that want to offer their patrons this powerful method of accessing information.

The library should carefully consider what other library catalogs, if any, are included in federated searching. This may increase interlibrary loan requests, which will impact staffing and postage costs. You need to make sure you have agreements with the libraries whose catalogs you want to add to the federated searching module.

3.12 RFID and self-checkout

RFID stands for radio-frequency identification. This technology uses radio waves to read the numbers assigned to items and then transfers that information to the circulation module for checkout and check-in. These numbers are the same numbers that are encoded into the bar codes of the items in the system, so that the process of RFID-tagging items involves scanning the bar code into software that then transfers the same number via radio waves into the RFID tag. The RFID tag contains the item number as well as a digit that manages the security status. The latter is used with security gates and other theft-prevention devices. RFID simplifies the circulation of materials because staff no longer have to scan each individual bar code, but can place a stack of materials on the RFID reader (antenna). It also simplifies self-check circulation with interfaces that can easily identify the items for checkout. Companies that provide RFID tags also provide self-check stations and all related equipment.

Opening a new library utilizing RFID technology is relatively easy to implement. If staff members have to convert an existing collection to RFID technology, it can be a lot of work and expense. At this writing, RFID technology is utilized by medium to large libraries. As RFID tags become less expensive, this technology may become a reasonable alternative for more libraries. Self-check equipment that includes specialized soft-ware and touch screens may also be cost-prohibitive for some libraries. Touch screens simplify the interface for patrons and can help make access to the network more difficult. Patrons also prefer the convenience of going through the process and answering questions by just pressing buttons on the screen.

If you plan to convert to RFID technology, here are some suggested tips:

- 1) Closing your library may facilitate faster tagging, although many libraries have implemented RFID tagging without closing.
- 2) Develop some method to designate which items have already been tagged (a dot on the spine) so staff can glance at a shelf and know what items have not been tagged.
- 3) Hire additional temporary staff to tag everything on the shelves with RFID tags. Temporary staff may also be used to tag items as they are returned to the library until the majority of the collection is converted and regular staff can deal with the remaining stray items.
- 4) It is not unreasonable to expect individual staff to tag at a rate of three to five items per minute, or 200 to 300 items per hour. A team of three or four people, two or three consistently tagging, with one managing supplies and the transfer of items back and forth to the shelves, can achieve higher rates. Such a team could be expected to tag a collection of 25,000 items in a week.
- 5) As with the development of most technologies, the cost of RFID technology is becoming more reasonable every year. Five years ago, RFID tags cost about a dollar each. Today, they are less than 35 cents each. Tags can be as large as a credit card or small enough to fit on CDs or DVDs.
- 6) RFID technology has inspired a variety of new appliances and pieces of equipment. There are sorting machines that will automatically check in items as they go through a book drop and sort them into ready-for-shelf and a number of other categories depending on how many bins are chosen. Wands that read RFID tags can help with shelf inventory. The “antennae” that

read RFID tags can be purchased separately like bar code scanners or any other input device. The panels that staff will use at their desktops cost a few thousand dollars. There are even little RFID devices that attach to PDAs or other hand-held devices.

- 7) Self-checkout and self-check-in machines can be relatively expensive if specialized cabinetry is desired. Touch-screen monitors that make the user interface easier are also expensive, but worth the cost. The landscape of what is possible is ever changing and always improving, so you should allow some time for evaluating options.

Once the majority of the collection is tagged, install antennas at the circulation desk and self-check stations for circulating materials. Bar code scanners are still a necessity at the circulation desk and self-check stations for library cards utilizing bar codes instead of RFID technology.

Some type of cabinetry or desk is needed for the self-check stations. Libraries can purchase furniture from the companies selling RFID equipment, build their own, or use existing desks. Self-check units purchased from the vendors may be expensive. Libraries can save money by using existing tables, desks, or cabinets. Purchasing the touch-screen monitors and related software is highly recommended.

Automated RFID check-in utilizes sorting bins, but this may be a cost-prohibitive option due to the price of conveyor systems. The workflow process may require that staff manually check in items using RFID readers. This will still be a time-saving method over the bar code-scanning process as staff will be able to read stacks of materials instead of scanning individual bar codes. Some libraries allow check-in at the self-check stations because borrowers like the assurance of receiving a receipt for returned items. The self-check-in process needs to include a slot with the RFID antenna attached. As items are dropped through the slot, they are checked in and the security is reset.

Placement is important when installing self-check hardware. A self-check station may be located anywhere in the library, as long as there is access to a network jack and an electrical outlet. Wireless is an option, but wireless connections can be unstable and unreliable. Planning the placement of self-check stations is an opportunity to examine the public-service strategy of the library. Library staff may want to consider converting a labor-intensive circulation desk into a smaller, centralized patron service station. Employees at the customer-service desk can make library cards and handle other account-related questions while borrowers use the self-check stations for the majority of their circulation transactions.

In addition to circulation duties, RFID technology is also used to inventory the collection. Vendors offer portable RFID inventory stations

3.13 Public computer reservation and print management

Libraries that offer public-access computers usually need some way of managing patron registration and usage statistics. Computer reservation software allows borrowers to reserve the next available computer or to reserve a future time slot. This software allows patrons to make reservations without staff interaction. Users enter the bar code number on their library cards at either a central computer workstation or at one of the public Internet workstations available for use. In some libraries, patrons will go to a reservation computer, reserve a time slot, and receive a receipt telling them which computer to use and what time they can use it.

Computer reservation software is a time-saver for public-service staff. They do not have to monitor whether or not an individual is a legitimate cardholder in good standing with the library. In addition, they do not have to monitor time limits as the software takes care of this process.

Print-management software regulates printing requests generated by patrons at the public workstations. Customers have to pay for their print jobs before the printing takes place. Staff release the print job once the fees are paid. With a coin-operated machine, the print job can be automatically released after the money has been put in. This software program saves ink, paper, and headaches, as staffers do not have to deal with customers who want to dispute charges.

Usually third-party companies, not the ILS vendors, sell the computer reservation and print management software. Some companies have products and pricing for small libraries. The program settings may not be as flexible as the other versions they carry, but it is an affordable option for small libraries.

It goes without saying that you need to choose add-on products that will work with your integrated library system. The computer reservation system needs to access the customer database for patron authentication. This means that the software identifies that the person reserving the computer is a patron of the library. Some software can also determine whether or not the user is in good standing with the library and can block individuals with overdue materials, lost materials, or excessive fines from using the public workstations. These types of blocking or notification parameters are set by a library's computer-use policy.

Computer reservation systems can also limit the maximum number of hours a person can use the computer each day. This allows more customers to utilize the library's resources. Again, the type of parameters one can set on computer reservation system varies from one company to another.

3.14 E-commerce

E-commerce encompasses the many ways libraries allow patrons to electronically manage payment for services. Customers can pay for their fines, printing, and other charges either by using a credit card at a service desk or by accessing a secured Web-based procedure. E-commerce can also include deposit accounts and smart cards that allow patrons to deposit money in advance of future charges.

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Objectives

After reading this unit you would be able to learn about the following terms:

- How to determine hardware purchases for an ILS?
- What are the major principles and guidelines for purchasing servers for quality ILS services?
- What are the major principles and guidelines for purchasing workstations for quality ILS services?
- How to determine and purchase peripheral devices?
- How to prepare effective plans for data backups and server maintenance?
- How to establish networks and ensure network security?
- How to search "Federated searching"
- What are the advantages of automated notification system?

Self-Assessment Questions

1. Why ILS Determines Hardware Purchases?
2. Why bar code scanners and RFID scanners are used in ILS? Would you replace these devices while moving your system from one to another configuration?
3. Why it is important to consider the reliability of manufacturers besides having a hardware replacement schedule?
4. Why the Web site and the online public-access catalog (OPAC) should be housed on a separate Web server?
5. Why it is the best practice to replace from one-fourth to one-third of the institution's desktops every year?
6. Why you need specifications by the ILS vendor while purchasing software?
7. How RFID technology (radio waves) read the numbers which assigned to items (books, serial etc.) and then transfers that information to the circulation module?

Activities

1. Identify which ILS architecture will best suit your situation through research, investigation, and a close examination of your library's needs within the framework of staff expertise and financial capabilities.
2. What kind of measures you take to enable security for the library resources (e.g. data servers, software) in the LAN network?
3. Make a complete strategy for the data backups using tapes.
4. Consider your library has decided to install a virtual server. What kind of measures you will take for efficient and effective management of ILS?
5. Consider your library has opted to contract with an outside provider? What kind of measures you will take for ILS security and privacy?
6. Visit any automated library and develop a method to designate which items have already been tagged (a dot on the spine) so library staff can look at a shelf and know what items have not been tagged.
7. Consider yourself an academic librarian and try to know that how the methods of contact will impact the budget. Emailing which is time saving, money saving and staff time too OR telephone notification systems through telephone.

UNIT NO. 4

WORKING WITH THE SALES CONSULTANT

It is important to develop and maintain a good working relationship with the sales consultant assigned to your geographical area. Unless you encounter some kind of problem, you will work with this individual from the moment of introduction through the request for proposal (RFP) stage. After the RFP process, you will work with the sales consultant of the winning bid through the final steps of the sale.

It is important to remember that sales consultants are paid by how much they sell and for what price. Each individual is eager to create a good working relationship with you. He or she is either building a reputation or keeping his reputation polished and glowing. It is vital that you speak favorably of him or her to your colleagues so that he or she has the opportunity to make future sales. “If a business is managed poorly, no customer relationship wizardry will help. If managed well, customers will notice and the business will thrive” (Coe, George, “Managing Customer Relationships: A Book Vendor Point-of-View,” 2006, p. 44). Due to the prospect of additional business with you and your colleagues, the sales consultant can be your advocate and may provide assistance down the road if needed.

Often an organization utilizes a fraction of a vendor’s capabilities. If you develop a relationship with the vendor, you can discover all the products and services available through the company. Vendor relationship management is a way of achieving this (Brevig, Armand, “Getting Value from Vendor Relationships,” October 2008, p. 34). It is essential to be mindful, however, that this is a professional relationship, not a personal one.

4.1 Introduction

When you contact an ILS company for the first time or approach an ILS exhibit booth at a conference, introduce yourself and give your library name, city, and state. This will immediately connect you with the sales consultant for your geographic area and/or type of library (public, academic, school, or special). If your sales consultant is not immediately available, someone else will begin the demonstration and answer your questions until your sales consultant becomes available. Remember, he or she has other clients, so you may want to schedule a particular time to come back and meet with him or her.

If you are attending a conference and there are ILS companies that you are interested in visiting, then it would be beneficial for you to contact them ahead of time. You can visit the vendors’ Web sites or call them to find the representative for your area. E-mail or call the person to see if you can make an appointment at the conference to meet. That way you receive 30 minutes or more for a thorough demonstration of the product. It will also establish you as a potential customer—someone the sales person is willing to invest time and effort in providing the information you need.

During the initial visit with the sales consultant, he or she will ask questions about your facility, such as the number of titles and items in the collection, annual circulation, number of borrowers, and number of staff members. This helps the consultant decide whether or not the company is a good fit for your library and if so, what type of system (turnkey, hosted, etc.) would work well for your facility. A good sales consultant can be helpful in providing useful information and guidance.

4.2 Questions and answers

After your initial contact with a vendor, you will have follow-up questions as time progresses. Some of these questions can be answered by visiting the company's Web site. Other questions will require feedback from the sales consultant. He or she may recommend that you participate in a webinar.

The webinar is a demonstration over the Internet. You will need a workstation or laptop with Internet access plus a telephone with speakerphone capabilities. At a scheduled time, you will log on to a designated Web site to view the demonstration. You will also call a phone number to communicate with the webinar presenter.

Webinars are an excellent opportunity to include other staff members in evaluating potential systems. For example, you may want to include a staff member from the circulation desk to view the circulation modules for Vendor X and Vendor Z. You and your staff can view the webinar demonstrations for each vendor and discuss which features you like or do not like. (Refer to the Product Demonstrations Review Form on page 54.) Feedback from staff will help you write the RFP and select circulation features that are workable for your facility.

Remember that the webinar presenters will not be able to present all aspects of their modules. If one vendor demonstrates a feature that another does not, it does not mean that a particular feature is not available in both systems. So if Vendor X says its system automatically transmits e-mail notification regarding holds and overdue but Vendor Z never mentions this feature, it does not mean that Vendor Z does not offer this capability. So if you write "automatic e-mail notification of holds" into your RFP, Vendor Z may respond "yes" to this feature. Of course, you can also ask Vendor Z if the company has automatic e-mail notification, but this can become a time-consuming process. The RFP places the burden on the vendors to tell what features they do or do not have.

Also, when purchasing or migrating to a new system, it is important to involve staff in webinars and demonstrations. A new system will change how processes are done. Employees will experience changes in their routines. For example, a system that issues automatic e-mail notices regarding holds or overdue will drastically reduce the number of phone calls that employees will have to make to patrons. Some staff will worry that if they are not spending time calling customers, then what will they do with their time? Will some of them lose their jobs? Other employees will be glad that they will not have to make phone calls and that they will have more time to provide quality customer service, process materials, register people for programs, and the myriad of other duties performed by circulation staff. Choose a lead employee who is experienced, knowledgeable, and will ask good questions to join in the webinars and demonstrations. A lead employee will help prepare other staff for change and generate excitement about a new system and a new way of doing business. Also, a sharp, intelligent employee will ask good questions and will think of aspects you have not considered. This will prevent pitfalls later on in the process. Do not select a negative employee to participate in the selection process. He or she will only highlight the "difficulties" of installing or migrating to a new system.

Lastly, most sales consultants are happy to answer your questions, but it is advisable that you try to compile a list of questions instead of contacting the consultant each time you have an inquiry.

4.3 Demonstration

There are two opinions on when the vendor demonstrations should take place:

1. When acquiring information BEFORE writing the request for proposal, and

2. AFTER writing the RFP. Only the finalists meeting the RFP parameters will have the opportunity to give a demonstration.

There are several benefits in inviting the vendors to your site before writing the RFP. After visiting the exhibit booths and asking questions, you probably have a good idea of two to four systems that will work at your facility. It is useful to have the vendor visit your site so that other employees can view the product and the sales consultant can tour the facility. The latter is useful because he or she can see the equipment you are currently using and make recommendations.

In addition to purchasing the integrated library system software, it may be necessary to buy hardware and peripherals. You will need to determine if your workstations, servers, bar code scanners, receipt printers, switches, and firewalls will work with a new system. If the existing equipment will not work with the new system, then you need to budget for these items. A sales consultant may not always be an expert in network and hardware issues, but he or she can track down the needed information and provide hardware specifications.

Due to the costs involved with traveling, many sales consultants will schedule their site visits so that they are able to meet with others in the area at the same time. As a courtesy to vendors, do not arrange for a site visit unless you are close to writing your RFP. If you are just at the stage of gathering information for a budget proposal, then use the webinars as a method of extracting more data and introducing the product to staff.

Vendors who offer to make a site visit or agree to a site visit are those who are interested in your business. “Vendors aren’t the only ones who run substantial operations. So do libraries. The complexity of behind-the-scenes library operations is always a surprise to outsiders, who might guess that maintaining an OPAC or mounting a database requires considerable expertise, but who in general would have no idea what it takes in people, processes, systems, and equipment to put a book on the shelf, let alone tens of thousands of books” (Coe, George, “Managing Customer Relationships: A Book Vendor Point-of-View,” 2006, p. 46). Sales representatives understand that no matter the size of the institution, library employees are managing a multitude of processes and services. Companies that display a willingness to invest time and resources in contacting libraries will be more successful in presenting modules, features, and services that fit the library.

During the site visit, the representative will go more in-depth in demonstrating modules than time allows at exhibits or webinars. Most consultants will schedule several hours with you and your staff to cover the circulation, cataloging, reports, and public-access catalog modules, plus add-ons such as federated searching, serials, and acquisitions. The vendor may not be able to demonstrate third-party software such as an automated phone system, but he or she can describe how it will work with the ILS software.

It is imperative to take good notes so that you can remember which vendor offers what features and how those features are visually presented. Following is a suggested review form that can help you document each demonstration.

Product demonstration review form

Product Demonstration Form

Reviewer’s Name _____ System _____ Sales Rep. _____

1. What types of systems does this vendor provide (turnkey, hosting, etc.)?
2. How are MARC records entered into the catalog? How are MARC records imported from another server via Z39.50? How are MARC records imported from book distributors?
3. Is the Circulation Module easy to operate? What are the best features?

4. What are the drawbacks to this module?
5. Will the staff like this module?
6. Why would the public like or not like this the PAC?
7. Is the Reports Module easy to operate? Does the system currently create reports useful to this library?
8. Does the vendor create and maintain a Web site for the library at no charge?
9. Were there any awkward operations within or between functions or modules?
10. What are some of the system functions that would be beneficial for the library?
11. What aspects of the system that would be a hindrance to staff or customers?
12. What do you like best about this system?
13. What do you like least about this system?
14. What are the best overall features of this system?
15. What did you find cumbersome or awkward within or between functions?
16. Were there any problems with the demonstration?
17. List functions or operations that could not be demonstrated. General comments.

Company specifics:

1. How long has the sales consultant been employed with this company?
2. How long has this company sold integrated library system software?
3. What types of libraries does this company mainly serve?
4. How many integrated library systems has the company installed for similar-size public libraries?
5. What comments does the sales representative make about the overall financial health of the company?
6. What is your overall impression of the sales consultant?

[From Integrated Library Systems: Planning, Selecting, and Implementing by Desiree Webber and Andrew Peters. Santa Barbara, CA: Libraries Unlimited. Copyright 2010].

It is important to see how your staff reacts to different products. You want to choose a product that helps staff perform their duties more efficiently and with ease. Again, ask a lead employee to join the product demonstrations.

An on-site presentation gives you an opportunity to visit with the sales consultant. Ask questions about the history of the company and plans for the future. Is the company work-ing on a major upgrade in software, and, if so, when is the scheduled release? This latter question is very important as you may not want to install or migrate to a system that is a recent, major upgrade for the company. This question can also be addressed in the RFP. The upside to purchasing the latest software version is having all the newest bells and whistles. The downside is working with technical support staff who are not fully versed in troubleshooting problems and trainers who are not able to train on all aspects of the software. Other problems include functions that do not work properly or that do not work at all.

Between the time of your initial contact with vendors and the site visit to your facility, you will have contacted other libraries that have purchased the integrated library systems you are reviewing. If at all possible, visit these libraries in person so that you can spend time visiting with employees who use the software. Note any problems or concerns that they experience. Discuss these concerns with the sales representative to see if the company is aware of the issues and if there are plans to address the problem in future software upgrades or patches.

During the product-demonstration period, the vendor may also negotiate with you regarding the price or a discount. Some sales consultants may ask what the dollar amount is for which you must legally issue a bid. So, for example, if your organization has a policy in which all purchases of \$25,000 or higher must go out for bid, anything under \$25,000 can be bought directly from a company without a bidding process. Some ILS companies will offer to come under the bid amount in order to obtain your business. An ILS vendor may also offer a discount, such as 15 percent or more, if the library eliminates the RFP process and chooses to purchase the integrated library systems from them.

Overall, the on-site demonstration is like a job interview. Library staff are interviewing the sales representative because this individual is a reflection of the company with which you may be working. Judge whether or not the consultant operates in an ethical, professional manner. An integrated library system is a major purchase and you want to choose a product and a company of the highest caliber.

4.4 Request for proposal

Be knowledgeable about the laws and policies regarding requests for proposal or “bids” for your organization. Some cities, states, school districts, or universities have laws or internal policies forbidding the acceptance of gifts from companies seeking to do business. Do not accept offers to lunch or dinner. Even if you plan to pay your own way, it can be easy for the representative to insist upon picking up the tab, or to make arrangements with the wait staff to pay the bill. Then you have been placed in a com-promising position of having broken a law or policy. It will damage your reputation and it signals to the sales rep that you can be persuaded to lower your guard.

All sales reps want to create a close working relationship with you. Keep it professional. If your employer discovers that you have broken a policy, you may suffer the consequences, and if another vendor discovers you have broken a law or policy, he or she will cry “foul” and insist that the bidding process is tainted—especially if his or her company is not chosen.

There needs to be ground rules for the RFP process. You want to ensure that all vendors participating in the bidding process are treated fairly and equitably. When issuing the RFP to vendors, there needs to be a statement in the cover sheet about how vendors can contact the library director, media specialist, management information systems director, and so forth, regarding questions and clarifications. Refer to the example given below, which is from the cover sheet for an RFP issued by the Anywhere Public Library.

4.5 The contract

Once the RFP process is complete, the sales consultant for the company being awarded the bid is contacted. As a courtesy, all vendors should be notified and thanked for submitting a proposal for consideration. Some vendors may contact you and ask why their company was not successful. Be prepared to give an answer. (The evaluation process is covered in detail in Chapter 9.) The answer may be as simple as the winning bid met all the requirements and was the lowest price.

Following notification of being awarded the bid, the sales consultant will transmit an electronic copy of the contract. The contract is a negotiation phase among you, your facility’s attorney, the vendor’s attorney, and the vendor’s management. The sales consultant is normally the contact person with whom you communicate questions and your facility’s version of an approved contract. Sometimes the contract process may be lengthy and difficult, but keep in mind that the

sales consultant also wants a successful resolution to the contract process. He wants to move along, issue the invoice, and receive his commission. Once a contract is signed and approved by both parties, the next step is the invoice.

4.6 The invoice

The sales consultant will send you an invoice giving the details and prices for the software, hardware, add-ons, peripherals, and any other items that you are purchasing. Compare the specifications for each item submitted in the RFP and contract to the specifications given in the invoice. Make sure that everything matches. For example, if you are purchasing a data server, compare every specification line by line. If you discover any discrepancies, contact your sales consultant and request a corrected invoice. If your sales consultant cannot provide the equipment or software as detailed in the RFP, then you have a major problem. Do not be talked into something less than what was awarded in the bidding process. You will need to drop this company from consideration and document your reasons why.

The invoice may request partial payment upfront. Check with the finance or business office for your library. In some states, it is illegal to pay for undelivered products or services. Payment can be made only after the system is installed and operating properly. In this situation, the library could order, receive, and then pay for peripherals, such as bar code readers and receipt printers, so that the vendor has some type of commitment from the library before proceeding with the data migration and installation.

4.7 After the Sale

Once the invoice is accepted and the library places the order for the integrated library system, this marks the end of your contact with the sales consultant. A good consultant will explain the process that lies ahead, who will contact you regarding the implementation, and will thank you for your business. Be sure to thank the sales consultant for his time and assistance.

As mentioned earlier, the sales consultant wants to maintain a good working relationship with you so that you will be satisfied with his or her efforts and the system you have purchased. This will help with future sales. Librarians who are pleased with the ILS they have bought will repeat this information to their colleagues. Therefore, if you encounter any problems after implementation and are unable to resolve the issue within the company, you will want to contact your sales representative. He or she may be able to act as your advocate and help to have the problem fixed.

The relationship with a sales consultant is a unique one. A successful and effective consultant will help you find the best system to fit your facility. He or she can provide good advice and options. By nature, sales representatives are friendly and can be a pleasure with which to work. Their personality characteristics are the attributes that make them successful in their chosen profession. That is why it is important to be mindful that sales representatives make their livelihoods on how much they sell; keep the relationship on an equally friendly, but always professional, level.

Objectives

After reading this unit you would be able to:

- Seven Stages of the Working Relationship
- Introduction
- Questions and Answers

- Demonstration
- Product Demonstration Review Form
- Request for Proposal
- The Contract
- The Invoice
- After the Sale

Self-Assessment Questions

1. How a successful and effective consultant can help you in implementing ILS?
2. What is the importance of the Product Demonstration Form before writing the RFP?
3. How Webinars can help in evaluating potential systems? What is its major limitation that you prefer the site visit instead of exhibits or webinars?
4. Why it is recommended to contact other libraries between the time of your initial contact with vendors and their site visit to your facility?
5. What are the rights of vendors that need to be ensured during the RFP process?
6. What is vendor's next step when you accepted the contract?

Activities

1. After receiving an invoice sales consultant giving the details and prices for the software, hardware, add-ons, peripherals, and any other items that you are purchasing, what actions are required from your side as an academic librarian to ensure before making any payments?
2. Your library is going to purchase a new hardware. Write an RFP that will consider PEPPRA rules for procurement in Pakistan <https://www.ppra.org.pk/Rules.asp>
3. What strategy you will follow to answer the questions from bidders against your RFP?
4. As a library staff, prepare a brief questionnaire to interviewing the sales representative.
5. Prepare a vendor relationship management plan to discover all the products and services available through the company.

UNIT NO. 5

TIMELINE FOR THE ILS PROJECT

5.1. Introduction

A timeline is like a road map for the planning, purchasing, and implementing the library's integrated library system. It will help you see what needs to be accomplished at each stage of the venture. The timeline will help you forecast into the future how you will manage your time over the course of the project. A schedule also gives you bench-marks to check off as you progress with the enterprise.

- Quick-Scan Timeline
- Timeline with Details

Nothing better insures success than planning and having the assurance of knowing the road. Unexpected occurrences can happen on any road trip, but knowing that you will depart from Point A and will arrive at Point B helps you navigate through tasks efficiently.

There is not a calendar or time schedule associated with this timeline. The optimum time is allowing 18 to 24 months for the planning process through the installation. Sometimes, manna falls from heaven and we are told that capital project funds are available and need to be spent by a deadline—usually a fast-approaching deadline. When that happens, be prepared for a stressful but exhilarating ride. You may not have to write or update a strategic plan, but all the other steps will need to be followed. Otherwise, the wrong decisions will be made, the network and hardware will not be in place at the right time, or, worst-case scenario, the wrong system for your library will have been purchased.

What follows is a timeline that can be quickly scanned. It can be printed and posted on your bulletin board or inserted in the front of your ILS project notebook. Following the quick-scan timeline is the same timeline but with details and short explanations. The details will give more information on what needs to be accomplished.

5.2. Quick-scan timeline

- Visit Integrated Library System vendors at a professional conference
- Assessment at Library location
 - a) Hardware
 - b) Software
 - c) Network
 - d) Customer needs
 - e) Staff needs
- Planning
 - a) Strategic plan
 - b) Technology plan
 - c) Develop budget
- Research
 - a) Visit other library sites
 - b) Develop list of questions for vendors
 - c) Webinars

- d) Site visit by sales representatives
 - Capital Request to Funders
 - a) Submit budget request with justifications for purchase
 - Prepare Collection
 - a) Weed collection
 - b) Inventory collection
 - Prepare borrower database
 - a) Delete borrowers who have not used their accounts recently
 - RFP Process
 - a) Research RFP samples
 - b) Write RFP
 - c) Review of RFP
 - Evaluate submitted RFPs
 - a) Evaluation Tool
 - b) Presentations by vendors
 - Select vendor for Integrated Library System
 - a) Contract
 - b) Order
 - Implement installation
 - a) Develop the schedule of activities and tasks that need to be completed
 - b) Network installation or upgrade
 - c) Electrical wiring
 - d) Retrospective Conversion
 - e) Bar code Collection
 - f) Hardware
 - ❖ Upgrade existing hardware
 - ❖ Purchase needed hardware
 - a) Add-ons:
 - ❖ Telephone Notification System
 - Phone line(s) for telephone notification system
 - Workstation for telephone notification system
 - Decisions regarding Web site
 - ❖ Appearance
 - ❖ Content
 - ❖ Photographs
 - ❖ Messages from the director and other staff
- Plan marketing of system to customers
- Plan “thank you” to acknowledge funders
- Installation of hardware and peripherals
- Installation of software
- Staff training
- Going live
- Evaluation of migration
- Final payment to vendor

- Celebrate
 - a) Thank funders
 - b) Thank staff

5.3. Timeline with details

- Visit integrated library system vendors at a professional conference:
 - The American Library Association Conference holds two conferences per year (<http://www.ala.org>), one in January and the other in June. Both are well attended by vendors who serve a variety of libraries: academic, public, school, and special.
 - There are also professional conferences for specific types of libraries:
- Academic libraries: Association of College and Research Libraries (ACRL). Information can be found at <http://www.acrl.org>.
 - Public libraries: Public Library Association (PLA). Information can be found at <http://www.pla.org>.
 - School media centers: American Association of School Librarians (AASL). Information can be found at <http://www.aasl.org>.
 - Special libraries: Special Libraries Association (SLA). Information can be found at <http://www.sla.org>.
- Assessment at library location:
 - Hardware: If the existing staff and public workstations are three to four years old, then you will want to consider replacing or upgrading them. Review hardware and specifications from the vendor against the specifications of your current hardware inventory.
 - Software: Note the operating system and check to see if the latest service packs for your operating system have been installed on the workstations and servers.
 - Network: Is your network in place? Do you need to install additional drops for staff workstations or public-access catalogs? If the ILS vendor will remotely access the server(s) to troubleshoot problems or install software upgrades, those server(s) need to be connected to the Internet.
 - Customer needs: Do you have enough public-access catalogs or will you need to purchase more?
 - Staff needs: Are you planning for expansion into the near future, such as installing another workstation at the circulation desk? If so, you need to purchase enough client licenses for all staff workstations.
- Planning:
 - Strategic plan: a long-range plan covering what goals and objectives need to be accomplished over the next 5 to 20 years.
 - Technology plan: a three-to five-year plan on projected technology needs and staff training.
 - Develop budget: calculate costs of the integrated library system plus any hardware, software, peripherals, add-ons, and network needs that are required to make the ILS operable.
- Research:
 - Visit other library sites—ask prospective vendors to provide you a list of similar-type libraries that have the systems you are interested in researching.

- Develop a list of questions for vendors.
- Develop a list of questions for other libraries. s Schedule webinars.
- Schedule site visits with sales consultants.
- Capital request to funders:
 - Submit your budget request with justifications for purchase; justifications should include how the ILS will help provide effective library service to users. It should also include how the new system will help staff use their time more effectively and perhaps save money.
- Prepare the collection:
 - Weed the collection: To prepare for retrospective conversion, it is important to deselect outdated and damaged materials. There is no reason to pay for records you will not use.
 - Inventory: This step is not always a practical one, but in an ideal situation, it is good to inventory your collection to see what is missing before proceeding with the retrospective conversion process.
- Prepare borrower database:
 - Check the instruction manual for your current automation system on how to delete old borrower records. You will want to submit an up-to-date customer database for conversion to the new integrated library system.
- RFP process:
 - Research RFP samples: Ask colleagues for copies of their RFPs. Technology changes rapidly, so if the RFP is more than five years old, it is probably outdated.
 - Write the RFP: After reviewing other RFPs, develop the RFP that will purchase the right system for your organization.
 - Review of RFP: Proofread—ask someone to read through the proposal for accuracy.
- Evaluate submitted RFPs:
 - Evaluation tool: The evaluation committee reads through the bids and scores the results on the evaluation form.
 - Presentations by vendors: Only those who met the criteria in the evaluation stage will need to make a presentation.
- Select vendors for the integrated library system:
 - Contract: Read through the contract that the vendor submits to you. Make changes that protect the interests of the library. The vendor must be contractually liable to information submitted in the RFP. Work with an attorney.
 - Order: Place the order. Double check that the invoice matches the RFP.
- Plan marketing of the system to patrons: Let your library users know that the library is migrating to a new system. Emphasize the benefits to borrowers. Advertise any dates that the library will be closed.
- Plan “thank you” to funders: Think of ways to appropriately thank the people who approved the funding for the capital project, such as a banner in front of the library, a reception to unveil the new system, thank-you notes, press releases to area newspapers, posters, flyers, announcement on the Web site, and so forth.
- Implement installation:
 - Work with the vendor to develop the implementation schedule and communicate the schedule to staff and administration.

- Decide whether or not the library will close for certain events such as bar coding, installation of software, or staff training.
 - If the library closes before “going live,” stagger due dates so that items are not due the first day the library reopens.
- Retrospective conversion: You will work with a cataloguer, so brush up on your cataloging knowledge. Read the Library of Congress’s online document “Understanding MARC Bibliographic: Machine-Readable Cataloging” at <http://www.loc.gov/marc/umb>. Katie Wilson, in her book *Computers in Libraries*, has a helpful chapter on cataloging that covers the MARC record structure, bibliographic utilities, the bibliographic record, the authority record, and the item or holdings record.
 - Bar code collection
 - Hardware and peripherals
 - Upgrade existing workstations, servers, and so forth.
 - Purchase needed hardware and peripherals (servers, workstations, bar code readers, receipt printers, routers, hubs, firewalls, UPSs, and so forth.
 - Add-ons
 - Telephone notification system example
- Phone line for telephone notification system | Workstation for telephone notification system | Uninterrupted power supply
 - Network installation or upgrade: If you are adding more workstations, you will need to run Cat-5 cabling and install jacks. Work with your technology staff to see if the firewall and other equipment will be compatible with the new system.
 - Electrical wiring: Do you have enough outlets (and the proper type of outlets) to handle any new equipment?
 - Decisions regarding the Web site: If the vendor is designing the Web site for the library, you will need to decide on a color scheme, photographs to use, plus the content—what information do you want to impart and how do you want to say it?
 - Appearance.
 - Content.
 - Photographs.
 - Messages from the director and other staff.
 - Which staff will have their contact information posted on the Web site?
- Installation of hardware: Everything has to be ready for the installation of the server(s) and workstations. Do you have UPSs, rack mounts for the server(s), access to the Internet, and other equipment in place?
- Installation of software: The vendor will work with you on the installation of software.
- Staff training: Where is the training going to take place? Do you have workstations set up in the training area for hands-on learning along with laptops and LCD projectors? Feed the staff. This is a stressful time that can be relieved with food. Have snacks and drinks available. Cater in lunch, even if it is ordering pizza.
- Going live: After months of planning, the day has finally arrived. You will want a vendor representative on hand to troubleshoot any problems.
- Evaluation of migration: How did the process go? Were the vendor representatives/trainers helpful? Did you encounter problems with the bibliographic records, patron records, or bar

codes? If so, were issues handled to your satisfaction? If not, contact the vendor's implementation project director for resolution.

- Final payment to vendor: Make sure that everything is operating as promised in the contract.
- Do not make the final payment until all outstanding problems/issues have been resolved.
- Celebrate:
 - Thank funders: see previous page.
 - Thank staff: Your employees have been on the front line. Thank them for their patience, professionalism, and hard work. If possible, keep snacks and beverages on hand for the first couple of days.

Objectives

After reading this unit you will be able to design the following timelines for the ILS project and understand the following terms too as listed below:

- Quick-Scan Timeline
- Assessment at Library location especially hardware, software, networks and customer needs
- Make strategic plan
- Enable to develop technology plan
- Draw Timeline with details
- Develop list of questions for vendors
- Network installation or upgrade
- Decisions regarding the Web site

Self-Assessment Questions

- 1- Why it is not required to associate any time schedule with a timeline for the ILS project?
- 2- You have scheduled meetings with potential funders for your ILS project. What type of timeline details would you carry for your presentations?
- 3- What types of conversions are required to be scheduled in the timeline of your ILS project?
- 4- How you will schedule details of installations in the timeline of your ILS project?
- 5- What are the types of "thank you" you may plan for the funders of your ILS project? How you will place them in the timeline?

Activities

1. Make a Quick-Scan Timeline for your ILS project of the library you are working with. Use the headings for each group of items on the timeline.
2. Make Timeline with Details for your ILS project of the library you are working with. Use the headings for each group of items on the timeline.
3. Identify potential funders of your ILS project and make a concrete plan to approach them.
4. Make a detailed plan for the evaluation of migration you applied to bibliographic records, patron records, or bar codes.

UNIT NO. 6 PLANNING AND BUDGETING

6 Introduction

If the library's current long-range strategic plan does not include the purchase or upgrade to a new integrated library system, then you will need to update your plan. The same holds true for the library's technology plan. These two plans are important to the success in funding and implementing the project. It is essential to convince the library board, city manager, college president, school board, or other funders to purchase an integrated library system; so the ILS must be part of both the long-range strategic plan and the technology plan.

The strategic plan is the business tool to seek approval from those who have the power to approve or reject the project. Your technology plan serves as the road map for the selection and implementation of hardware, software, wiring, and other components needed to operate the integrated library system.

6.1 Strategic Plan

“Strategic planning can be a significant opportunity to unify management, staff members, stakeholders, and customers through a common understanding of where the library is going, how everyone can work to achieve a common purpose, and how the library will measure and report its progress and levels of success. . . . one of the most important perspectives that must be maintained in the planning process is a focus on the customer” (Matthews, Joseph R. *Strategic Planning and Management for Library Managers*, p. 58). While making a business call, students must consider the following instructions.

The difference in strategic planning, as opposed to long-range planning, is that the library is projecting its services and collection far into the future. Businesses create strategic plans that steer them 20 years into the future. Libraries need to look beyond the three- to five-year time frame and visualize past the horizon. Even the smallest library has a multitude of responsibilities to manage, a patron base, an inventory of materials, services, and programs to fund, personnel to supervise, and an administration or board to which it must report. The library must envision its business of serving patrons 10 or more years into the future. And, most specifically in regard to this chapter, the strategic plan must incorporate the integrated library system (the engine of the library) into the library's future goals. Technology is intertwined in nearly all aspects of library service, and technology costs money. The library builds support in providing excellent service and delivery of information on a daily basis. You must ask representatives of those you serve to help with strategic planning in order to learn what patrons want and to ask for their support.

A successful strategic plan is one that is developed by a planning committee. The committee should consist of those who will assist and support the library in moving forward. In a public library setting, this will include members of the library board, friends of the library, active community residents, library patrons, city council officers, and library staff. The group does not need to be large; in fact, a group of 10 or fewer is more effective. The strategic plan will cover all aspects of planning for the library's future, such as staffing levels to meet customer demand, types of services to provide or eliminate, allocation of funds, building upgrades or expansion plans, furniture purchases, and, of course, the acquisition of an integrated library system.

When the planning committee discusses the ILS, the library director or network administrator gives a presentation about an integrated library system and how it will benefit the library and those it serves. The presentation to the planning committee will include:

- a. a description of the integrated library system and the projected outcomes (benefits) if purchased,
- b. the proposed costs for the project, and
- c. possible sources of funds for the system.

A description of the integrated library system must include highlights of the product that will interest the committee. Most planning-committee members will find features that directly benefit library borrowers, or that save money or staff time, as beneficial. An example of this would be an integrated library system that provides e-mail and telephone notifications to patrons regarding materials waiting for them at the library and/or over-due materials. (Some e-mail notification systems also send courtesy notices to patrons before their items are due.) These features will pique the interest of the planning committee as the library director presents not only the customer-service benefits of e-mail/ telephone notification, but also presents how these features eliminate the need for library staff to call patrons, thereby saving staff time. In addition, the library director may point out that e-mail and telephone notification systems will allow funds budgeted for postage, postcards, paper, and envelopes to be reallocated for other purposes.

The proposed budget for the ILS should include a breakdown of software, hard-ware, add-ons, annual maintenance fees, and any other costs affiliated with installing and implementing the ILS. It is important to provide a complete picture of the project to the planning committee so that they are informed about all the costs involved. Refer to Chapter 8 for details on constructing a budget and a justification statement. Planning committee members are your base of support in seeking approval for a new integrated library system. It is vital that members be able to speak in an educated, informed manner to the administration members who will approve the funding request. As the library director or network administrator, you are the expert in choosing the type of integrated library system to purchase for the library (turnkey, hosted, and/or SaaS). Do not provide choices of types of systems to the planning committee—present the specific type or specific system that you want to purchase. If members of the planning committee are familiar with different types of integrated library systems, be prepared to support your choice with comparisons in features, the ability to add components, and the overall costs involved. If you are not able to provide all the answers at a particular meeting, take note of the questions and return to the next meeting with answers.

6.2 Strategic plan example

The following is an example of a long-range strategic plan for a public library that aspires to purchase a new integrated library system. The wording of the plan is not elaborate. It includes the goals, objectives, outcomes, and proposed budget in simple, direct statements. The budget presented in this example is for a medium-sized public library seeking a robust ILS along with a telephone notification add-on.

The purpose of the following example is to give a template for writing the section of the strategic plan that addresses the goal of purchasing an ILS. There are a variety of integrated library systems and a number of price structures. The dollar amounts in the following example should be read as placeholders for the amounts that you will plug in for your own purposes.

Objectives:

1. By December 2013, select, purchase, and implement an integrated library system that includes a telephone notification system.
2. By December 2013, replace the Web server and data server with those that are compatible with the new integrated library system.
3. By June 2014, customers of Anywhere Public Library will be able to manage their personal accounts online from the library's Web site, such as reserving materials and renewing items from home, school, or work.
4. By December 2014, the Anywhere Public Library will have its Web 2.0 technologies available via its Web site.
5. By December 2014, the Anywhere Public Library Web site is the location people access daily for information.
6. By December 2015, add public computer reservation and print management software.
7. Schedule replacement of staff and public computer workstations and software on a three-year basis so that both staff and patrons have access to current technologies.

Outcomes:

1. The library will provide an economic benefit to the city of Anywhere and the Anywhere Chamber of Commerce by hosting a Web site that provides full-text magazine and newspaper articles, community information, a calendar of events, and links to recommended reading lists, news, weather, and ready-reference Web sites. The library's Web site will be visited daily by those seeking current information.
2. The library provides an economic benefit to the community by providing computers, software, and high-speed Internet access for continuing education and job-seeking purposes.
3. Borrowers reserve materials, renew materials, and otherwise manage their accounts utilizing the library's Web site.
4. Borrowers will utilize Web 2.0 technologies such as library blog(s), social network sites, e-mail references, and RSS feeds.
5. Borrowers receive timely overdue reminders by e-mail or telephone notification via the integrated library system. This feature saves paper, envelopes, and postage and uses staff time more effectively for other responsibilities.
6. Borrowers are quickly notified of materials on hold by e-mail or telephone notification via the new integrated library system. Circulation staffers no longer have to call patrons; therefore, their time is used more effectively in assisting customers and performing other duties.
7. Library usage will grow by 3 percent annually due to patrons discovering the wealth of materials available at the library via the new online public-access catalog.
8. Public computer (PC) reservation and print-management solutions will help staff better assist patrons in using the public computer workstations for recreational, business, job-seeking, and continuing-education purposes.

Budget Impact:

1. The initial cost for an integrated library system is approximately \$37,935. This price includes software (\$25,500), a data server (\$7,400), Web server (\$3,565), and a telephone notification system (\$1,470). The data server manages the ILS software, bibliographic and patron records

and the Web server hosts the library's Web site. The library director will seek capital funds from the City of Anywhere and/or utilize state funding for public libraries and seek financial assistance from the friends of the library.

2. The software maintenance agreement for the ILS will cost approximately \$5,000 per year. City and/or state funds will be utilized for this purpose.
3. Approximately \$4,000 per year will be budgeted for equipment (computer workstations, scanners, printers), replacements, and software upgrades.
4. PC reservation and print management software, projected to be added in 2014, will have an initial cost of \$7,500 plus \$2,200 for a reservation workstation and receipt printer. (Network cabling is already in place.)

6.3 Technology Plan

The library's technology plan also addresses the need for an integrated library system. The technology plan covers the goals and objectives in improving library services through computer equipment and software, Internet access, the library's Web site, online resources, electronic-based marketing (such as social networks), and other technology based services. "Since technology is now so tightly interwoven with all library functions, planning for the future of technology means planning for the library itself" (Gordon, Rachel Singer. *The Accidental Systems Librarian*, 2002, p. 169).

Public libraries and school systems are required to write technology plans every three to five years if they apply for federal e-rate discounts. The technology plan should really be viewed as a vehicle to improve library services and should be a formal planning process undertaken by all libraries. It is important that the library strategize how it is going to spend its funds, allocate staffing and training to incorporate technology in operating the library, and serving its patron base. The plan should cover three to five years into the future. Technological innovations make it difficult to write a plan that covers more than five years. Input from the community and library staff can assist in writing the technology plan. Joseph Matthews writes in his book *Technology Planning: Preparing and Updating a Library Technology Plan* that "the critical audience for a technology plan is the library stakeholders and funding decision makers who will determine the fiscal and other resources that are allocated to the library on a yearly basis. These decision-making individuals will, as a result of reading the plan, have a better understanding of how technology is used by the library to deliver services that are designed to meet the needs of its customers and will therefore be in a better position to allocate the necessary resources to fulfill the plan" (2004, p. 3).

A library can host public meetings, lead focus groups, or conduct surveys to acquire information from the community (public, student/faculty, and corporate) that the library serves. In addition, the library director must keep current with technology through books, journal articles, Listservs, blogs, conferences, and interaction with MIS administrators employed by similar-type libraries. Staying current with technology will not only help the library director to write a technology plan, but will also assist the director in seeking approval for the plan. The director is the spokesperson for the library and must be able to translate technological advances into language understandable to staff and administration.

The information that goes into the technology plan regarding the integrated library system, of course, reflects the type of ILS the library is considering. If the library is planning to purchase a software-as-a-service system, then the technology plan will address the network infrastructure,

workstations, operating systems, browser versions, and so forth, needed to implement this type of system.

To ensure a successful implantation, the plan includes all the components that need to be in place for the ILS to operate. These components include the network, security of the network, the equipment room, cabling, electricity, uninterrupted power supplies, the bandwidth of the Internet connection, the computer workstations and their operation systems, the servers and their operating systems, methods for data recovery, browser versions, peripherals, and staff training. Planning for the technological aspects of the ILS helps the library director to think through all the steps that need to be taken and all the hardware, if any, that needs to be acquired.

6.4. Technology plan example

1. The library will investigate the purchase of a new integrated library system (ILS) that will better serve the community.
 - a. The library will work with the City of Anywhere and outside funding sources to purchase an ILS that meets the needs of future challenges.
2. Library staff will research ILS software and prices.
3. The library director will present this plan to the library board of trustees at its February 2013 meeting.
4. The library director will present this plan to the city manager and friends of the library to ask for financial assistance at March 2013 meetings.

Budget impact: The integrated library system that is purchased will be one that best serves the community and can be operated with little impact on staff time. Systems being considered are those in which the hardware and software are located on-site and in which the vendor has remote access to troubleshoot the hardware and software. Estimated soft-ware costs are \$25,000, with \$5,000 in annual maintenance fees.

Evaluation: The Anywhere Public Library's board of trustees approved the library's long-range strategic plan for 2011–2021. This plan calls for the purchase of a new integrated library system with features to better serve the community, along with modules that save staff time and money spent on postage and paper supplies. The Anywhere Public Library will be successful in purchasing an ILS that provides excellent customer service and is easily operated and maintained by the library staff. The library will be successful in attaining the necessary funding through the City of Anywhere and the Friends of the Anywhere Public Library.

- The library will select an integrated library system that will be robust in features but simple in operation and maintenance.
 - a) The ILS software will be housed on-site.
 - The library will replace the existing data server, which is six years old. The library will replace the existing Web server, which is four years old.
 - The uninterrupted power supply will be replaced and upgraded to a better model.
 - Turnkey ILS will be explored in which the library purchases the hardware and software from the vendor. The vendor loads the software on the servers before ship-ping to the library and handles any server issues with the hardware manufacturer.

- The library will work with the city's MIS administrator and the ILS vendor to ensure that the ILS can utilize the current network as the switches, router, and fire-wall are current and in good working order.
 - The ILS will utilize the current staff and client workstations as the operating system, processing speed, memory, and other specifications exceed the vendors' requirements.
 - The latest service packs and browser versions will be installed on each staff and client workstation.
- b) A telephone notification system will be purchased so that library patrons are notified of overdue materials and items on hold for them through an automated calling system.
- The library will purchase the telephone notification system from the ILS vendor to insure compatibility. The ILS vendor will install and maintain the telephone notification system.
 - The telephone notification system software will be installed on an existing workstation in the staff work area. This workstation is currently on the network and no additional changes need to be made. The ILS vendor will install software to troubleshoot the notification software remotely.
 - One dedicated telephone line will be installed at the location of this workstation. The library will work with the phone system company to ensure compatibility with the proposed telephone notification system.
 - The existing uninterrupted power supply will be utilized for the telephone notification hardware and computer workstation.
- a) An automatic e-mail notification system will be purchased so that library patrons receive courtesy notices regarding upcoming due dates, notices regarding overdue materials, and notices for materials on hold.
- The library will select an ILS in which these features do not require staff interaction. E-mails are generated automatically by the ILS software.
 - The library staff will work with the MIS administrator and the ILS vendor to ensure that the city's exchange server and its operating system version are compatible with the e-mail notification system.
 - Library will select an ILS vendor who provides a Web site as part of the ILS package.
 - Borrowers will be able to manage their accounts online: place holds, renew materials, check fine payment history, and so forth.
 - Staff will implement Web 2.0 technologies:
 - The youth services librarian will start and maintain a blog page for teens to discuss books, authors, and programs. Links to blogs will be featured on library's Web page.
 - Library staff will create and maintain a social networking site promoting materials, services, and programs. Link to the social networking site on the Web page.
 - Create a link on Web site for borrowers to e-mail reference questions. Reference librarians will read and respond to e-mailed inquiries.
 - Library staff will work with the ILS vendor to implement RSS feed technology.

Budget impact:

- The library will replace the existing data server and Web server. The library will purchase hardware that allows for future growth in patron records, bibliographic records, and Web traffic. A separate Web server is necessary for the security and integrity of the data server. The library needs to replace the existing firewall in order to protect the Web server from unauthorized access. The estimated cost for both servers is \$11,000 and the estimated cost of replacing the firewall component is \$2,860.
- The MIS administrator for the City of Anywhere will assist the library director in writing the technology portion of the RFP at no additional charge. In addition, the MIS administrator will update any service packs and browser versions at no additional charge to the city or the library.
- The MIS administrator will be on-site for the installation of the new data server and Web server plus the installation of the client software on the staff and public workstations. The latter requires turning off the security software on the public workstations to allow for the installation of new software. An estimated \$2,400 will be budgeted for the services that fall outside of the City's contract with the MIS administrator.
- The library will budget \$1,500 for the purchase of a telephone notification system along with \$200 in annual maintenance fees. The ILS vendor will install the notification system at no additional charge. The ILS vendor will maintain the telephone notification system and work directly with the manufacturer in troubleshooting any software and hardware issues without additional costs to the library other than the annual maintenance fees.
- The library will notify the company that manages the City's phone system regarding the installation of a telephone notification system to ensure compatibility plus the access of another dedicated phone line for the library. Have \$100 budgeted for the installation of a dedicated telephone line.
- A new uninterruptible power supply (UPS) will be purchased for the equipment closet to handle the larger data server and Web server needed for the new ILS. The existing UPS will be utilized for the telephone notification system hardware.

Evaluation:

The new servers will handle growth in patron records, bibliographic records, and Web traffic over the next four to six years. The new Web site, telephone, and e-mail notification systems will move the library into a new level of service for the community. The library will realize a net growth of 3 percent each year in the number of cardholders along with a growth of 3 percent annually in the circulation of materials. Web site usage will increase by 5 percent each year.

Staff training:

- The ILS vendor will provide on-site training for all modules and components. Training will be provided to all circulation, reference, and administrative staff, and a training day will consist of an eight-hour day.
- The ILS vendor will train and advise staff on the daily backup routine for the servers.
- The ILS vendor will train staff on any on-site server maintenance that needs to occur.
- The ILS vendor will train staff on operation and maintenance of the telephone notification system.

Budget impact: Approximately \$4,500 will be budgeted for three full days of staff training along with training instructors on-site for “going live” with the new integrated library system. The vendor will also quote follow-up training costs for a 12-month period following the installation of the system in case additional training is needed.

Evaluation: Staff will receive training that will provide competency in the following areas:

- Operate daily circulation functions with ease: check-in, checkout, add new patron records, update patron records, place holds, and handle fines and lost-book charges.
- Ability to perform original cataloging, copy cataloging, use of cataloging templates, import MARC records from another server using Z39.50, and to import MARC records from vendors. Ability to use authority control functions.
- Working knowledge of public-access catalog, including search strategies, managing patron accounts, and placing holds.
- Working knowledge of utilizing library’s Web site, including accessing electronic resources and other links. Ability to update Web site information.
- Staff are able to perform daily backup routines on servers and is able to confirm that backup functions are operating correctly. Staff are able to perform routine maintenance on servers.
- The vendor will set up the telephone notification system, including recording messages. Staff will have working knowledge of running the notification system for holds and overdue materials and will be able to run daily reports on results of phone contact and attempted contact.

6.5 Approval process

The final step in creating the long-range strategic plan and the library’s technology plan is seeking final approval or acceptance by the administrative body that oversees the library’s budget. This step is vitally important, especially with the long-range strategic plan. Just by virtue of having conducted a planning process and of having written a plan will establish the library director as a leader and the organization itself as a professional entity. This impression of the library director by the administrative body will assist in approving the purchase of the integrated library system and other projects outlined in the strategic plan.

Both plans can also be utilized as garnering support among other departments, in the community, or within the organization. Present the plan in a professional format and, at a minimum, use word-processing software and graphics to create attractive covers for three-ring binders. Do what is needed and appropriate for your type of organization to promote the plan—press releases to the media, speaking to local civic organizations, or making presentations to faculty, alumni, and parents.

6.6 Budgeting

Once you have written or updated the long-range strategic plan and the technology plan, and have had both plans approved by the library board or other administrative body, then the next step is to make the capital request in your annual budget submittal. A capital request is a request outside of the normal, routine funds to operate the library. Operating funds are for personnel, materials for the collection, database subscriptions, office supplies, utilities, Internet access, and building maintenance. Capital funds are one-time requests for special projects such as replacing a roof, purchasing a vehicle, or, as in this example, purchasing an integrated library system and its related equipment, hardware, and peripherals.

Prices for integrated library systems vary widely among vendors and also upon what type of ILS is selected. An effective method for comparing companies is to create a grid.

6.6.1 Vendor price comparison grid

Create a grid that compares prices for the software, hardware, services, add-ons, and training among the companies you are considering. This organized compilation of information will help you write a proposed budget for the ILS capital request. Once you have a good estimate of the funds needed to purchase the ILS for your facility, you can write the budget and the justification statement.

Please note that your board or administrator may want to see a list of vendors you have been researching for the ILS project. This presentation should include only companies from which you want to receive bids. Do not include vendors whose products do not fit your operations. If administrators look solely at the bottom line, the vendor with the lowest price may suddenly become the only choice available to you. Administrators may also think that if you have a vendor on the list, then you must be considering the company as an option.

Prices for integrated library systems vary by 50 percent or more. If you are proposing a budget that is at the higher end, a detailed budget and justification statement must show how the higher price tag will purchase a better system and benefit the library.

6.6.2 Preparing the budget for approval

After you have gathered information about the integrated library systems available and asked vendors for estimated costs, it is time to create a budget to present to the administration or the board for approval. A budget lists all the expenditures necessary to implement the project. This would include the ILS software, the hardware needed to operate the software, preparation of space to house the hardware, the retrospective conversion, peripherals, and subscription fees for copy-cataloging services, installation, maintenance, training, and add-ons such as a serials module, federated searching software, or a computer reservation system.

Present a detailed budget listing the price for each item. This will help to justify the amount of funds you are requesting. It is important to show that you have given thought and consideration to your budget proposal. Any kind of fluff will cause administrators or board members to question the entire document. Another benefit of presenting a detailed budget is assisting in the difficult choice of making cuts if the total amount requested cannot be approved. If the administration is not able to fund the entire amount, a line-item budget will assist you in discussing what features can be set aside for implementation at a later date. Libraries can start with a basic system and purchase additional features later. A detailed budget will also prevent cuts so deep that it keeps you from purchasing the ILS system that is needed. Following is a sample of a detailed budget request for a turnkey integrated library system. The sample budget coincides with the strategic plan and technology plan examples given in Chapter 7. In this illustration, the library director is proposing that the library purchase the ILS software, hardware, add-ons, and peripherals from one vendor. The add-ons include (1) the acquisitions module, (2) a telephone notification system, (3) federated searching software, and (4) enriched content (book jackets, reviews, and summaries) for the public access catalog. The library currently has a local area network with access to the Internet, so equipment costs include only expenses to install the data server and Web server in the server room.

The library director is told that the total budget request is more than the administration can approve at this time. The administration is able to fund the request, with the exception of the Web server, the three bar code scanners, and the online acquisition component. Since a friends-of-the-library representative was a member of the planning committee, the representative asks the group to help with funding part of the project. The library director foregoes the purchase of the online acquisition component until the next budget cycle, and the friends of the library are asked to purchase the Web server and the three bar code scanners. The purchase price for the Web server includes technical support, on-site repairs, and replacement parts for three years. The administration agrees to pay the annual maintenance fees for the bar code scanners.

Due to a budget presentation that included a line item for each component of the ILS, the library director was able to negotiate the needed funds for the project through both the administration and the friends of the library. It is important not to become discouraged if approval for the project does not happen on the first request. Library directors have had to write grants, seek gift money from private individuals, or host fund-raisers to raise the money needed for such projects. Individual schools or school districts can enlist help from their parent-teacher organizations. Academic libraries can solicit help from the development office or form a friends of the library group using alumni as members. Capital funds may be raised to purchase the ILS, but the library director must have a commitment from administration for the annual maintenance fees for the software and hardware.

6.6.3 Justification statement

A vital piece of every budget submittal is the justification statement. Those with the power to approve your budget requests are most likely not experts on integrated library systems and how an ILS affects the daily operations of a library. It is your job to educate them. The justification statement is a one to two-page document that states succinctly why an integrated library system needs to be purchased. This is the opportunity to present the research you have invested into the process and to illustrate how this ILS is going to improve the delivery of library services to your patrons.

A thoughtful, detailed justification statement attached to the capital budget request will help improve your opportunity for approval. A justification statement allows administrators to read the story behind the numbers. It answers the questions of how this capital project will improve library operations and the people it serves. Even if you are given a chance to speak before the budget committee, the finance director, the library board, the college president, or another administrator, not everyone is an effective listener. Having the information in written form gives the board an opportunity to peruse the justifications for the project on their time frame.

Answer the following questions in the body of the justification statement:

- Why is a new integrated library system necessary and why is it necessary at this time?
- Who will benefit from a new ILS—staff, borrowers, or both?
- State if a new system will save money and, if so, be ready to provide figures to support these claims.
- How will the ILS software and hardware be paid for? Are there options for funding sources?

Following is a sample justification statement for a medium-size public library that is seeking approval to purchase a new ILS in order to migrate from a simple automation system to a complex ILS offering more features. The statement begins with the declaration that the library must purchase a new system in order to meet the demands of serving patrons. This assertion is

followed by specific examples of how a new ILS will improve operations. End the justification statement with possible avenues for funding the project such as capital funds, lease options, friends of the library, parent-teacher organization, grants, or donations.

6.6.4 Sample justification statement

The Anywhere Public Library must upgrade to a more robust automation system to handle its circulation, catalog, and online catalog functions. A new integrated library system is necessary because the library has outgrown the product it uses. The current software lacks feature that a busy public library needs. For example, only one staff person at a time can make or a revise a library card. The software does not allow for multiple users to enter customer information, so staff members must wait on others to finish before they can enter the customer database. Staffers make approximately 250 new cards each month and manage a database of 25,000 cardholders. A new ILS would greatly improve the staff's ability to serve borrowers more effectively and efficiently.

Library users are also not able to renew their materials online and this is a feature they request. Approximately 50 percent of phone calls made to the library are to renew materials. Online renewals will free up our telephone lines for other calls and allow the circulation staff to better serve customers at the desk. A new automation system will notify customers by e-mail or telephone that their materials are overdue or that reserved materials are available for them to pick up. This feature will save hundreds of dollars annually in paper, envelopes, and postage because library staffers will no longer mail overdue notices or bills each week. Customers will receive an e-mailed courtesy notice that items are almost due followed by three subsequent overdue notices every two weeks by e-mail or automated telephone notification if materials are not returned.

Another important feature of a quality automation system is federated searching. Federated searching will combine all of our electronic resources with our print resources. For example, if someone searches for information on how to build a barn, not only will they find books about building a barn, but also magazine articles and electronic books. Currently, the library has several databases on its Web site that must be searched individually. Federated searching allows patrons to search the online catalog, the library's databases, and e-books simultaneously—the customer does not know this is happening, he just sees the results.

Another attribute of a quality integrated library system is patron authentication. This feature allows patrons to access electronic resources on the library's Web site remotely from home, work, or the local coffee shop. For example, the library provides two genealogical databases on its Web site but the databases cannot be used outside of the library because the current ILS software does not authenticate patrons visiting the library's Web site. With an upgraded, robust integrated library system, patrons will enter their library card number and password and be able to use all of the electronic resources the library offers on its Web site. This makes information available to library users 24 hours a day, 7 days a week, 365 days a year.

An attractive, easy-to-use Web site is a requirement in today's society. Many ILS vendors create an attractive Web site for the library that is made to specification at no additional cost. It will utilize the city's graphics to make the library's Web site visually compatible with the city's Web site.

The Anywhere Public Library is a busy library with limited staff. The type of ILS that staff recommends is a turnkey system. Hardware and software purchased from the vendor. The company loads the software at its site and, once installed at the library, is able to remotely

troubleshoot both hardware and software issues. Technical support is available 24/7/365 via a toll-free number. The data server comes with four hard drives and therefore patrons and staff should not experience any downtime. For the benefit of all staff, the vendor selected should provide on-site training.

In regards to paying for a quality automation system, the City of Anywhere may be able to enter a lease purchase option if capital funds are not available. Funds for the capital or lease purchase options may include money from the library fund, state aid, donations, or grants. Annual maintenance fees also would need to be considered if the capital project is approved. Details are provided in the attached capital budget request.

In addition to submitting your budget to your administration or board, you may have to make a formal presentation or defend your request. Write a list of questions you may be asked and practice your answers aloud until you are comfortable and know your material. Exhibiting confidence is crucial. Your request is in competition with other departments on campus, other departments within the city, or other facility needs. The administration is dependent upon you to convince them that the project is vital to delivering needed services to library users.

6.6.5. Divulging the proposed budget for an ILS project

Remember that the budget you present for approval may change during the RFP process. For one thing, it depends upon how much time passes between the time you create the budget and when the RFP solicitations are issued. Competitive bidding may cause prices to come in lower, or economic factors may cause prices to rise. In the bidding process, however, vendors who want your business will make every effort to offer their best price.

During your interaction with sales consultants, do not divulge the ballpark budget figure. It will take away your ability to receive or negotiate the best quote. Sales representatives may ask what type of price range their competitors are giving. Play your cards close to the vest. Do not give sales reps information regarding other companies—it hurts your bottom line in the long run.

Some tax-supported organizations, such as a school district, have a dollar amount for which items must go through the bidding process. For instance, Generation X School District must put out to bid any equipment, service, materials, or software that exceeds \$25,000. Some ILS vendors have been known to ask what this dollar amount is and then offer to come in under that ceiling in order to make the sale. If the ILS system is on your list of finalists, you may want to give this company's offer serious consideration.

Objectives

After reading this unit you would be able to:

- Strategic plan
- Strategic plan example
- Technology plan
- Technology plan example
- Approval process

Self-Assessment Questions

1. What is the role of planning committee to create a strategic plan for an ILS project?
2. What is the purpose of operating funds? How would you differentiate them from capital funds?

3. Why strategic planning should be different from long-range planning?
4. How the proposed budget for the ILS should breakdown into different components? Explain possible component for your LIS project.
5. How the Web 2.0 technologies can be implemented for the library staff?

Activities

1. “Strategic planning enables any to unify management, staff members, stakeholders, and customers through a common understanding of where the library is going, keep in mind this prepare a strategic plan for your ILS project.
2. Write a justification statement for the submission/approval of your ILS project that will fairly justify all the costs and benefits of your project.
3. Create a grid that compares prices for the software, hardware, services, add-ons, and training among the companies you are considering for your ILS project.
4. Develop library’s technology plan for your ILS project.
5. Collect the details/specifications about ILS software from different vendors and prepare a budget for small academic library. Discuss it with your tutor in detail.

UNIT NO. 7

WRITING THE REQUEST FOR PROPOSAL AND REVIEWING THE CONTRACT

7. Introduction

The request for proposal (RFP) for an integrated library system is a formal announcement to vendors asking them to respond to your stated needs. The complexity and length of the RFP depends on the specifics that are included within the proposal. Vendors answer whether or not their product can perform all the circulation, cataloging, acquisition, online public access, Web site, automated telephone notification, and other functions that you require and request. The vendors also provide the costs for the software, hardware, installation, data conversion, hosting services, add-ons, training, and other services.

7.1 Overview of the RFP process

It should be noted that not all libraries elect to go through the RFP process. Depending on the purchase policy defined by the board, administration, or state laws, you may have to go through the RFP process. Without those restrictions, some directors negotiate pricing with vendors and then choose the product that they want. Some companies will offer discounts if you purchase from them without going through the RFP process. One of the benefits of an RFP is that you have in writing from the vendor what the integrated library system will or will not do. The RFP can be the foundation of the contract. It should be written into the contract that the vendor will provide the features and services as submitted in its RFP.

For both you and the vendor, the RFP is the culmination of research, demonstrations, and discussions. It is a serious enterprise for vendors because they are competing among themselves for your business. Once the RFP is issued, there are no “do-overs.” For many organizations, it is a legal process that follows strict guidelines. It is vital that the RFP ask the essential questions and provide the necessary instructions for vendors to follow.

This chapter will discuss the details of what information needs to be in the RFP, how the process works, how to handle questions from vendors, and how to evaluate RFPs to select the best bid.

7.2 RFPs from other libraries and vendors

If you have never written an RFP before, it is helpful to look at other RFPs before writing your own. Ask for sample RFPs from similar-type libraries. If you are a medium-sized, single-site public library, then you will want to seek RFPs from medium-to-large, single-site public libraries. If you are a school district purchasing an integrated library system for the media centers in your district, ask other school districts for copies of their RFPs. The same example extends to academic libraries and public libraries.

In addition to asking for RFPs from facilities that are the same size as yours, you should also ask organizations that are somewhat larger than yours for copies of their RFPs. This is especially true if you are in a high-growth area in which you expect to see sustained increases in materials and patrons. Larger organizations tend to have more robust budgets so they are on the cutting edge of technology that you can plan to implement at your facility in the future. It is important to know what larger organizations have requested from vendors in services, software, and equipment. It

never hurts to ask for cutting-edge technology in your RFP, as some companies may provide it at no additional charge.

Sample RFPs may be obtained by calling the library director and asking directly or by posting a request on a Listserv. Chapters 1 and 5 discuss researching different ILS companies by contacting other libraries that use their software. Utilize these contacts to request a copy of their RFPs. Most library directors are more than happy to extend this courtesy as they were once in the same position or have been helped by other directors in the past.

Vendors will also provide a sample RFP, but remember that these sample RFPs are geared toward the benefit of each particular vendor. They do not ask all the questions that need to be asked. Some vendors will later ask not be held accountable for the information placed in the RFP. This exclusion will appear in the contract that is presented by the vendor. This clause makes the RFP worthless and a waste of careful consideration and research. The RFP is an important tool to be used in selecting the best system for your library.

Review other RFPs to gain an understanding of what can be included and the best format to provide it to the vendor. Afterward, you are ready to use your information to write the RFP for your purchase needs.

7.3 Be specific about what you want and how you want it to work

The beginning of the RFP should state what type of RFP is being issued. The following example is the opening statement for the RFP issued by the Anywhere Public Library:

Notice is hereby given that sealed proposals for the purchase, installation, and maintenance of a client-server integrated library system for the Any-where Public Library will be received at the office of the City Clerk, City of Anywhere, 1501 N. Anywhere Road, Anywhere, CA 92590, until 5:00 P.M. Pacific Time, September 25, 20XX.

The opening paragraph tells the vendors that the bids are sealed and must be addressed to the city clerk, City of Anywhere. It also states what type of ILS for the Any-where Public Library is looking. In this particular example, the library is requesting bids for a client-server integrated library system. In the client-server arrangement, the server is on-site and holds the catalog records, patron records, ILS software, Web site, and so forth, and communicates with the client workstations within the library at the circulation desk, reference desk, online public access catalog, and technical services. If the library is interested in software-as-a-service (SaaS), in which the library's bibliographic records, patron records, and so forth, are on an external server, it would be stated here.

Sales representatives view the beginning of the RFP to determine whether or not their companies are able to bid. If a company offers only SaaS, then the sales representative will not bid on an RFP seeking a client-server system.

The library should clarify in the opening statement whom should be contacted regarding questions that arise during the reading of the RFP. There should be only one designated person representing the library, such as the MIS administrator or the library director. The latter may seek clarification from different sources within the library (circulation, cataloging, etc.) but the vendors should deal only with one person when they have questions. You do not want the vendor contacting staff members in various departments, such as circulation, and asking questions. It could create a situation in which the vendor receives the wrong information from a circulation desk member and the person overseeing the RFP process is unaware that the conversation even took place.

This kind of miscommunication can also have legal ramifications. The vendor can claim that his or her company was treated unfairly because its response to the RFP was based on the “incorrect” answer from a circulation clerk. Stating the designated contact person for the library in the RFP protects you legally because that individual is responsible for insuring that the vendors receive answers to their inquiries and that all vendors have access to the same information.

7.4 Writing the RFP

When writing the RFP, be specific about what you want and how you want it to work. To help both you and the vendor, organize the RFP by main topics and modules.

7.4.1 General description and background

- **Statement of Overall Purpose and Objective of the ILS Project**

This is a short, comprehensive statement about what type of system the library is planning to purchase. If you are looking to buy a software-as-a-service system, then you will write that information in this section. If you want an ILS in which the library owns and houses the servers and software, then you will state that request clearly in the “Statement of Purpose and Objective” section. Vendors will read this section and know whether or not they can compete in the RFP process. It takes a lot of time to research and write a response to an RFP, so you want to be clear in your expectations and desires.

- **Overview of the Library, Branches, and Populations Served**

Give a description of the community and surrounding area(s) that the library serves. If your library is located in a rural area that is a growing suburb for a nearby city, you will want to include this information. Include the population of the service area plus the estimated population five years into the future. This will signal that you are in an area serving a rapidly growing population. This type of information will affect the size of the server you choose to purchase or lease. You will want to select a vendor who can provide the amount of memory and RAM that will be needed to handle the circulation transactions and the patron and catalog databases into the future.

If the library has branches, give the number of branches and a description of the area and populations they serve.

- **System Capacity Requirements for the Library**

Provide details on the annual materials budget plus the number of bibliographic records, item records, patron records, staff workstations, public Internet workstations, and online public access catalog. You will want to include your annual circulation figures and any other statistics that will affect or utilize the integrated library system. In addition to providing the most current numbers, you will need to estimate your growth over the next five years.

To determine the projected growth in the number of bibliographic and patron records, review the library’s statistics for the previous five years. What type of growth are you seeing in your collection and the number of borrowers? For the most accurate results, it is important that the library deselect on a regular basis and annually delete borrowers from the database who have not used their cards over the past four or five years or what-ever is the standard determined by your library.

- **Goals of the new integrated library system**
List the functions, attributes, and features that staff are looking for in a new integrated library system, such as catalog enrichment features with book jackets, reviews, main character biographies, and listings of series titles in order.
- **Description of library's computer network, hardware, and software**
Work with your technology person on this part of the RFP. Give information on the library's hardware and software, including the equipment that runs the library's network and current automation system or ILS. You will need to include the operating systems for the servers, staff workstations, and public access catalogs. If you have servers at the library, describe their location. For example, "Servers, routers, firewall, and switches are located in a secure equipment room that is air-conditioned and has access to a T-1 connection. All equipment is connected to an uninterrupted power supply." If you have any special computer security in place, you will want to mention it. The vendor may follow up with more detailed questions, such as service pack and browser versions being utilized. Responding vendors will need to provide information about how their equipment and software will fit within your network.
- **Current ILS or automation system**
Provide details about the current ILS or automation system being used. This will include the version you are running and the basic capabilities on the system. If the collection has never been bar coded and you are not using an automation system, then you will need to provide this information as well. It will require additional time and expense to prepare the collection and patron records. If they will be migrating from an ILS you have been using, they will need to describe how the transition will be made. You should also ask for references for any migrations they have already accomplished from the system you have been using.
- **Timeline for RFP and project**
A timeline for the project gives the vendor an idea of the time frame under which the library is operating. You need to pick deadlines that are workable for the library. Select the month that is best for the library to migrate to a new system and work back from that date. It is not advisable to convert to a new software platform during the library's busiest times of the year. If you are a public library, for example, migrating to a new system during the summer months would be the least advisable time period, but if you are a school media center or an academic library, the summer months would be the ideal time to migrate to a new platform. If you will be implementing an acquisition system, you may want to also consider timing that installation around the change of fiscal years.
There are always "bugs" to correct when converting from one type of integrated library system to another. Automation companies have proprietary software that can sometimes cause difficulties in the conversion process until everything is fine-tuned. In addition, the conversion process can be more pleasant and less stressful for staff if they do not have to deal with large numbers of patrons while at the same time learning new ways of doing their jobs. Ask yourself if the chief executive officer of a large department store would migrate to a new software platform during the holiday shopping season.

7.5 System specifications

- **General description of desired system**
State your overall expectations for an integrated library system. If you are only going to consider Web-based modules in circulation, cataloging, and so forth, then this is the time to make

that information known. If you are migrating from one system to another, you want to select vendors who have the experience in migrating from the system you currently own.

Other statements may include that you want the ILS to be compatible with your existing hardware, unless your workstations, server, and so forth, are three-plus years old and you know that they need to be upgraded or replaced. Any hardware and software must be installed by experienced staff. Vendors who have experience working with and have software development priorities for your type of library (public library, school media center, or academic) will be given preference.

All equipment and materials must be new, free of defects, and of the most current design and manufacture. Vendors must also discuss how software upgrades will be handled and any costs involved.

- **Vendor implementation plan**

Request that the vendor supply detailed information about the project timeline and how components of the process will be handled.

- What type of staffing will the system require? Does the ILS require an MIS administrator to manage the system, or can the company's technical support personnel remotely log into the library's servers and workstations to help troubleshoot problems? n How will the library's policies regarding circulation, patron types, and remote patron authentication (or remote database access) configure with the proposed ILS? For example, if you allow materials to circulate for two weeks with a maximum of two renewals, and only if no other patron is waiting to borrow an item, will that policy transfer to the new system without any type of staff intervention? In addition, if the library later changes its policy to allow only one renewal, will library staff be able to easily to modify the policy within the software?
- Does the vendor assign a single staff member to work with the library during the retrospective conversion process? What are the qualifications of this person? Is he or she well versed in cataloging standards and MARC records?
- What are the requirements for the library in preparing the site for the hardware, network, wiring, electricity, equipment closet, cooling capabilities in the equipment closet, and so forth? Will the vendor inspect the site in preparation for the installation of equipment?
- What type of training will the vendor provide for the library staff? Will the training take place on-site or will it be Internet-based? Will training DVDs or other learning tools be provided? If additional training is needed later, how will that be accomplished and at what costs? How many of the staff will be trained by the company? Will the trainers work with all staff or will they train a few library staff members and then expect the others to train the rest of the staff?

- **Vendor responses to specific questions about the ILS**

Some libraries want vendors to give specific answers as to whether or not the integrated library system can perform particular functions at the time of purchase. Again, the RFP is the basis for the contract. If a vendor states that a feature is functioning within the system, then he or she will be held contractually to that response.

7.6 Basic System Requirements

It is important that you communicate the basic requirements that vendors must meet. You will want to document that the vendor must quote prices for all the equipment, functions, and services that are required to install and operate the integrated library system. Assurances need to be given that the system being proposed by vendors is fully operational and is not in the experimental or testing stage of development. If a vendor wants to use your library as a test case, you should expect compensation or deep discounts.

You do not want any surprises after a vendor is awarded the bid. In the RFP, ask vendors to respond to the question that no additional purchases will be required to make the system operational. What the vendors quote in the RFP as to equipment, soft-ware, and so forth, is what is needed to run the ILS at your library.

The library needs to retain ownership of its own data and to be able to easily export bibliographic and customer records with no additional charges. If, after several years, library staffers decide to migrate to another system, you do not want to pay the vendor.

Objectives

After reading this unit you would be able to explain:

- Comparing RFPs from other libraries and vendors
- Writing the RFP
- System specifications
- Determining basic system requirements
- Developing modules
- Project management and organization
- Formulating project deliverables and requirements
- Designing instructions to vendors
- Configuring evaluation process

Self-Assessment Questions

1. Why it is important to review other RFPs to gain an understanding of what can be included and the best for writing an RFP of your library's ILS project?
2. What are the basic criteria to determine system capacity requirements of your library? Based on these requirements evaluate the current ILS of your library? How they will help you to set targets for designing the ILS project?
3. Why it is vital that the ILS should allow remote log-in using a variety of browsers?
4. What are the various security options at the ILS network level, database level, and application level?
5. What are possible ways to address vendors' questions that arise during the reading of the RFP?

Activities

1. Prepare Vendor Implementation Plan for your ILS project. The plan should cover staffing requirement (position, quantity, and qualification), compliant with your library policies, and also cover the library system requirement.
2. Prepare a comprehensive plan for power failures or other unforeseen events that can cause library data servers to fail.

3. Prepare a comprehensive plan for system security to restrict hackers
4. Formulate a complete training program for the newly hired staff to administrate the integrated library system.
5. Based on all plans that you developed in activities 1-4, prepare timeline for RFP and project that a vendor must meet for the successful implementation of ILS.
6. Based on all plans that you developed in activities 1-5, suggest some important suggestions for the successful implementation of ILS.

UNIT NO. 8

IMPLEMENTATION, INSTALLATION, AND TRAINING

8 Introduction: general considerations

The moment has finally arrived. The contract has been signed by both the library and the vendor, and the invoice has been submitted. Now begins the process of implementing the system.

Most of the larger ILS vendors will assign a project manager to work with you through the implementation phase. The software and maintenance fees are higher for these companies but customers receive guidance during the installation and migration process. For vendors who provide a project manager and guidance through the implementation phase, they invest a lot of upfront expenses in personnel to install the hard-ware and software. Vendors who sell less expensive integrated library system software may not provide all the services listed in this chapter. However, the software is much easier to install for libraries that want or need to do it themselves.

- Network installation and upgrades
- Electrical wiring and cable installation
- Peripherals
- Add-ons
- Retrospective conversion
- Managing existing bar codes in the collection
- Circulation rules
- Implementation meetings with staff
- Marketing a new integrated library system to patrons
- Plan to thank funders
- Planning the appearance of the library's web site
- Installation of hardware and ILS software
- Staff training sessions
- Migration of data
- Going live
- Final payment to the vendor
- A new level of service

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What has to be accomplished depends upon what type of system has been purchased. The following will cover a majority of the activities that take place when installing or migrating to a

new integrated library system. Not every library will utilize each step. If the library opts to purchase a hosted or SaaS system, for example, then steps regarding the installation of a server are eliminated from consideration.

8.1 Network installation and upgrades

The vendor will have questions regarding the configuration of the network, the IP address and port for communicating with the router. You will also be asked to check hardware and software specifications on the client workstations. The MIS administrator or contract network administrator can help you answer these questions. Begin now to schedule upgrades and/or the purchase of new workstations. If you are purchasing new servers, such as a data server and a Web server, then check preparations for equipment room.

Specifically, effective planning requires two things:

1. What are the dimensions for the servers? Is there a need to purchase mounting racks, sturdy desks, carts, or other furniture to keep servers off the floor and provide a location for monitors, keyboards, and mice?
2. For multiple servers it is recommended to purchase a KVM box. KVM stands for “key-board, video, and mouse.” Connect the servers to the KVM box and you have to use only one monitor, keyboard, and mouse. You are able to toggle from one server to another to access the log-in screen and desktop.
3. Check to see if the uninterruptible power supply (UPS) needs to be replaced. A larger, more powerful model may be needed.
4. Evaluate the bandwidth of your network. Are your Internet speeds fast enough to accommodate the additional workstations and servers you have planned? If you are planning a network of more than 25 computers, consider having at least an Ethernet connection (T-10 line).
5. What is the status of the hub(s), router, DMZ, and firewall? Make sure that your current firewall can handle the incoming and outgoing traffic to and from the servers, including any Web-based applications coming from the vendor’s servers.
6. Do you need to obtain a URL for the library’s Web site?
7. The vendor will need name and contact information for your Internet service provider.
8. If you are planning the equipment room from scratch, make sure that it has adequate ventilation. Servers generate a lot of heat, and a hot equipment closet can cause equipment not to function at its best and can shorten the lifespan of hardware.
9. The equipment room needs to be a locked, secure location. This area houses expensive equipment, not to mention the importance of the library’s data.
10. Check with the vendor to see what type of backup utility the company provides: backup tapes, Web-based utilities, RAID, external drives, flash drives, and so forth. If subscribing to a Web-based storage site, research the company’s own plan for backing up data. If using backup tapes, flash drives, or other physical storage devices, there should be a backup tape for each day of the week that the library is open plus one extra tape. The extra tape will be kept off-site in a fireproof safe and will be replaced on a weekly basis.
11. Take for example, a library that is open Monday through Saturday. In this case, one would buy seven backup tapes, flash drives, and so forth. Label each tape for the day of the week plus label two tapes for Saturday. On Monday, a staff person will insert the “Monday” backup tape in the data server and take the “Saturday” backup tape to an off-

site, fire-proof, and waterproof safe. The “Saturday” tape that is already in the safe will be removed and utilized that coming Saturday. The process repeats itself each week. If something happens to the data server, the library will have its patron and bibliographic records saved on its collection of backup tapes. If a disaster, such as a fire or flood, hits the library building, then the library has its data protected off-site on a backup tape. To ensure that the backup tapes are functioning properly, check the backup utility each day to make sure that data is being saved to the tapes. In addition, backup tapes should be replaced annually to ensure that they are in good working order. Use the cleaning cartridge every other week to keep the backup tape drive in serviceable condition.

12. The vendor will discuss when the servers will be delivered and when they will be installed. Prepare an area for the delivery of the servers. These will be large boxes. Coordinate with the MIS administrator or contract network administrator for installation date(s). Your network administrator will need to be on hand during the installation process to make sure that the server is connected properly to the network. Have the vendor give you an estimated time frame for when the contract network administrator needs to be on-site. Let the vendor know that this is a contract person and that time at your facility costs you more money. This should generate a more accurate time frame.

8.2 Electrical wiring and cable installation

Any improvements in electrical wiring and cabling should be planned from the beginning. If you are installing new workstations for staff or public access catalogs, you will need to schedule early with electricians and network cable installers. Make sure you have sufficient electricity in the places you have planned for workstations and servers. It is safe to plan on one 20-amp circuit for every four computers. Printers, especially large printers for public use, require more electricity than computers. Plan to install one large printer and two workstations per 20-amp circuit.

All workstations (public, staff, and online catalogs), printers, and peripherals need to plug into surge-protective power strips and not directly into electrical sockets. This will protect the hardware and equipment from power spikes and lightning storms. It is also wise to invest in uninterruptible power supplies (UPSs). These battery backup units supply electricity to keep your computers operational through a power spike and sustain equipment long enough after a power outage for you to gently shut down everything. It is especially important for servers to have this power protection. If a server crashes due to a power outage, serious problems may result from the potential corruption of your data.

If you are installing a network for the first time, there must be a RJ45 jack for each piece of equipment that will connect to the network. This means that there will be a RJ45 jack for each staff workstation, each public workstation, each online catalog, plus each printer on the network. Receipt printers, bar code scanners, and RFID readers will connect to the CPU for each individual staff workstation, so, at this writing, RJ45 jacks are not needed for these peripherals. However, peripherals will connect to the CPU through USB ports. Make sure your CPU has plenty of USB ports. Plan to install more network nodes than initially required so that you allow room for growth.

A contract network administrator will need to be hired to install the network. What platform will you use—Windows-based, Linux, or Unix? (This will have been decided earlier upon the selection of the integrated library system software.) Cabling should be fiber optic using Category

5, 5e, 6, or 7. (How do you select which kind? Rachel Singer Gordon states that “Pricing, ease of installation, and institutional needs will affect the choice.”) Discuss with the Internet service provider regarding which router to purchase so that it communicates with their system. If you are planning to offer wireless Internet service in the future, you will need to purchase a partitioned router to protect the library’s network from unauthorized access by laptop users. If you plan to purchase a Web server for the library’s Web site and online catalog, you will need to purchase a DMZ and firewall to protect the server from unauthorized access. The network administrator will guide you in what equipment is needed. If you are planning to expand the number of staff and public workstations in the near future, purchase a switch with additional ports that are open for additional connections to the network.

Install enough electrical outlets in the equipment closet to allow for future growth. All of the equipment and servers needs to plug into an uninterrupted power supply, so you may need more than one UPS to handle all the pieces of equipment. If you install only one outlet, for example, and have two UPSs, you have no outlets for future growth. You can piggyback UPSs, connecting one UPS to another, but this is not an ideal situation to protect your expensive investment in hardware.

If you are using desks or counters that were not manufactured for network cables, you may want to consider having holes drilled in the furniture. This will accommodate the cables and power cords that run from the monitors, receipt printers, scanners, keyboards, and mice to the CPU workstations.

8.3 Peripherals

Order any scanners, RFID readers, and receipt printers that are needed for the project. Take into account all workstations that will need these pieces of equipment. Secure a location for the delivery of peripherals. These items will arrive before the installation, so you need to find an area in which to store the boxes.

8.4 Add-ons

Some add-ons will take planning in the purchase and installation of hardware, cabling, electrical outlet, telephone lines, and coordination with other companies. Obtain detailed instructions from the vendor of what infrastructure is needed to install and operate the add-on equipment.

If one is purchasing a telephone notification system, for example, one will need to have (1) a computer workstation; (2) a UPS for the telephone notification equipment and computer workstation; (3) a desk for the monitor, keyboard, and mouse; (4) an electrical outlet; (5) CAT-5 cabling and an RJ45 jack to connect the computer workstation to the network; and (6) a telephone line or lines. In addition, if the library is using a phone system, the phone system company will need to be notified that a telephone notification system is being installed. The phone system company may need to be on-site during the installation of the telephone notification system to ensure that it is communicating properly.

8.5 Retrospective conversion

Retrospective conversion means to change the bibliographic records from one data format to the format of the new integrated library system you have just purchased. Software developers create integrated library systems that are proprietary, and each ILS has a different method for reading the MARC record fields and local holdings information. The more robust the software is, the

more fields within each bibliographic record are used for searching. A simple system might index only the author and title fields, but a more sophisticated system will allow searching by format, publication date, call number, series, keyword, subject heading, and more.

It is helpful if the vendor assigns one staff person from their company to work with your library through the retrospective conversion process. This will help as each party has questions through the retrospective conversion process and then with the final migration to the new system.

As an initial step in the retrospective conversion process, library staff may be asked to submit paperwork that lists all the collection areas of the library (including branches), the call number for each collection area, and the circulation time period for each type of material. Staff who catalog and process materials will be the most familiar with all the different collections. It can be staggering how many collection areas a library can possess. A public library might have areas such as fiction, young adult fiction, juvenile fiction, Spanish fiction, Spanish young adult fiction, Spanish juvenile fiction, nonfiction, Spanish nonfiction, audio books, young adult audio books, juvenile audio books, Spanish audio books, downloadable audio books, e-books, music CDs, juvenile music CDs—and this is just the tip of the iceberg. Academic libraries can have special collections, government documents, sheet music, artifacts, and other unique items. It is recommended that once a staff member has made a list of all the collection areas, this list should be double checked by two additional staff members. Collection areas can be added and deleted in the future, but the best plan is to do it right the first time. This is also a great opportunity to consider consolidating collections to simplify access for patrons.

The vendor will also request information about patron types, such as faculty, students, and staff. You will also need to send circulation rules governing patron types. The latter is only necessary if there are different checkout periods for patron types. For example, a faculty member may be able to check out material for an entire semester, while a student or staff member is given two weeks.

8.6 Managing existing bar codes in the collection

Library staff will be asked to submit examples of all the bar codes in use. It is vitally important to submit samples of all the bar codes in your collection. There may be a variety of bar codes in the collection if you: (1) order materials from publishers or distributors that arrive processed; (2) order bar codes from library supply companies or the ILS vendor; or (3) print bar codes in-house using your ILS software. Some libraries have used a combination of all three processes over the years and have bar codes from multiple sources.

If staff do not submit samples of all the bar code types in the collection, then the missed bar codes will not be readable after the migration to the new ILS. Missed bar codes can be fixed, but it is better to provide the ILS vendor with as much information in the beginning as possible. That way, the vendor will strive to make the existing bar codes readable by the ILS software and there is less work later on for the library staff to repair unreadable bar codes.

Ask the vendor what should be done if the software does not read bar codes that were missed in the initial migration. It may just be a matter of opening the bibliographic record in the circulation or cataloging modules and scanning the bar code to make it readable by the new software. (The ILS software converts the bar code symbology to a readable format). Or staff may have to replace an item's existing bar code with a new bar code label that is readable by the system.

When the library is near to migrating from the old integrated library system to the new ILS, there will be a cataloging cut-off date. The library will provide the new ILS vendor with a full MARC

file extraction from the old system. The vendor will mostly notify the library not to edit its MARC records after this cut-off date as any new changes to existing bibliographic records will not appear in the new bibliographic database being created by the ILS vendor. This means that employees cannot edit the MARC record and cannot change call numbers, add or delete item-level holdings, or change bar code numbers. It is very important that all employees who have access to the circulation module (circulation desk, technical services department, reference desk, children's services) understand these instructions as well. Changes to the bibliographic record, especially at the item level, can often be made utilizing the circulation module. So, even if a limited number of employees have access to the cataloging module, be aware that modifications to bibliographic records can occur through the circulation module.

If the library is able to export MARC records by date range, then you should be able to catalog new titles. Check with the vendor on what they recommend. If the vendor accepts new MARC records after the cut-off date, then materials catalogued during this "gap" period will be added to the bibliographic database. The gap is the time period from the "cut-off" date to the "cease all cataloging" date. That is why it is so important that no editing be made to existing bibliographic records once the MARC file is sent to the vendor. There is no overlay of records later in the system migration. The vendor will only add the gap file to the database.

Machine-readable patron and checkout files will also be sent to the new ILS vendor for migration to the new system. Sometimes it is not possible to migrate all of the transaction data to the new ILS. This information can be obtained during the RFP process, but if not, the vendor should let you know what patron or transaction information will not transfer over to the new ILS. This will give staff ample time to run reports on holds, lost-book charges, fines, and so forth. Once the migration is complete, check a few patron records (such as staff members' records) for accuracy. Check that the address, telephone number, and other contact information is correct, along with the number and/or titles checked out to each individual.

8.7 Circulation rules

The vendor should ask library staff about the circulation rules so they can configure and/or train the library staff on how to configure the software to match how the library does business. The ability to configure the software will depend upon the complexity of the software. With most automation systems, the status in the public-access catalog changes from "checked out" to "available" once materials are returned to the library. However, some ILS software is so sophisticated that it has the ability to create a lag time before the items displays as "available" in the PAC. This lag time gives library staff a day or two to reshelv the item before it displays in the PAC.

Following is an example of information vendors may request regarding circulation rules:

1. Patron types (faculty, student, adult, child, or interlibrary loan).
2. Checkout time frame by collection and/or patron type. For example, nonfiction books circulate for 14 days but DVDs circulate for seven days. Interlibrary loans have a 30-day checkout.
3. Fine amount imposed, if any, by collection and/or patron type. For example, students pay overdue fines but faculty do not.
4. Grace periods, if any, before fines are imposed.
5. Charges for replacement library cards.

6. Card expiration time frame. For academic libraries, cards may expire at the end of every semester, while public libraries may expire every year or two.
7. Expiration time period for holds/reserves.
8. The number of overdue and bill notices issued.
9. The interval between overdue notices and bill notices.

Again, the types of information you provide to the vendor depend on the ability of the software to be configured. Library staff may find themselves having to review and modify their circulation policies due to the restrictions imposed by the ILS software.

No ILS software is perfect in that it meets the all demands and requirements libraries would like. Whatever ILS software a library can afford to implement; it certainly beats the old-fashioned card system in every aspect.

8.8 Implementation meetings with staff

Another initial step in the installation process is preparing staff and patrons for change. The latter is true if library users will see a new public access catalog, a new Web site, and enjoy new services.

It is important to be cognizant of the fact that not everyone likes change. Even if the changes will benefit library borrowers and staff, change still engenders stress. It is important to recognize this reaction and work with staff, patrons, and others to over-come concerns and prepare for the future.

When discussing dates for the project, be sure to state that it is an approximate time frame. It is a good idea to allow for more time than you think is needed. It is better for staff morale to under promise and over deliver. Unforeseen issues may occur, but staff should know that the library and the vendor have an agreed-upon schedule that will be adhered to as much as possible. Assure staff that you will keep them current with monthly staff meetings. Even if you have department heads, it is important to build a team approach to the implementation process so that everyone knows they are a vital part of the library and not just part of an individual department, such as circulation or reference.

Communication is one of the best tools in dealing with change and stress. This is important with both staff and patrons, but the first step is working with the library staff. Hold an initial staff meeting and inform all the staff about generalities concerning the overall project, including:

The approximate time frame

1. What hardware and software will be installed at their workstations?
2. What new and improved features will benefit staff
3. What new and improved features will benefit customers
4. Acknowledge any outside funders for the project, such as grants or gifts
5. What major changes the staff might experience
6. Proposed training schedule
7. Proposed date for going live

The more complex the project, the more information should be imparted to employees. For example, a library converting RFID technology and self-check stations will be involved with tagging the collection, installation of new equipment, and the reassignment of duties for some individuals. Staff is always concerned that their jobs will be lost. They need to know that positions will change but that they will still have a job. Circulation staff, for example, may

move from checking out materials to becoming more involved with customer-service duties or working in collection management.

Employees are interested in what hardware and software will be installed at their work-stations. Let people know if computer technicians will be at the library to install new software or new equipment such as bar code readers and receipt printers. Give employees an idea of when this will take place and how they will be assigned to other duties/work areas during the installation. If the library is purchasing new hardware for its public areas, inform staff about where, when, and why this will occur. Your frontline public-service staff will interact with the public and pass along information about when and why changes will transpire. It is very important for staff to project a positive attitude toward the changes.

People want to know that changes are being made for a reason. Review the incentives as to why the library is purchasing a new integrated library system. Highlight new features or modifications that will benefit library staff. These could be improvements such as the ILS printing hold slips instead of staff handwriting customer names and contact information, or that staff will be able to easily copy contact information from one borrower account to another when making library cards for family members.

Discuss new and improved features that will benefit customers. Library patrons will want to know why the library is installing a new system (and spending institution or tax dollars.) A patron-oriented staff will be excited and proud that their library is offering new and improved functions and features for their customers. Such features could be the opportunity to use online resources from home because the new ILS has patron-authentication software. Customers will enter their library bar code numbers to access the online data-bases. A new function could be the ability to check out their own materials using self-check machines. To assist staff in answering questions from patrons, create tabletop signage or a flyer listing the benefits of the new integrated library system. Acknowledge funders for the project. If the city funded through a capital project, thank the city. If the ILS was funded by grants, gifts, the parent-teacher organization, or the friends of the library, acknowledge and thank the funders on the same signage used to advertise the benefits of the new system.

Cover major changes the staff will experience with the new integrated library system. These changes could encompass the appearance of the modules, moving from one screen to another, entering information, using the Z39.50 communication protocol to download MARC records from another server, the cataloging template, or patrons being able to manage their accounts from the library's Web site. Reassure employees that they will receive training in each of the modules they will use in their job responsibilities. Acknowledge that change can be stressful, but that information about the product, communication about the implementation process, and training on the modules will help to ease concerns.

Give the proposed date for going live with the new integrated library system. This will establish the goal and prepare employees for the upcoming changes. If the library is an academic or public facility, switching to a new system by Wednesday or Thursday will give employees a couple of days with full staffing before the weekend arrives with abbreviated staffing. The library director or project director should assure staff that he or she will be there over the weekend to assist with any problems, provide additional training, or answer questions. Just the presence of the project director or library director will be reassuring and give employees confidence in dealing with the new ILS.

At a regularly scheduled staff meeting, the library director can give updates on the implementation process and field any questions staff may have as time progresses. For example, before transmitting patron records to the ILS vendor, it may be decided that the patron database will be updated and that inactive or expired borrower records will be deleted. Staff will need to know about this decision in order to field questions from borrowers who suddenly appear with library cards in hand after a long absence. There will also be a time when staff can no longer add new bibliographic records to the catalog. All of this type of information is important to relay to employees to keep them informed and in the loop.

8.9 Marketing a new integrated library system to patrons

Just as library employees may have a stressful reaction to a new integrated library system, so may library patrons. The reaction will not be as heartfelt as what employees will experience, but you may see reactions to stress such as seemingly unjustified anger. Patrons may become irritated after the initial installation for different reasons if, for example, they cannot locate the new Web site or the Web site is different and they do not know how to navigate it, or they were not notified of a hold, or they were called too many times by the automated phone system, and so forth.

Marketing the new integrated library system prior to installation can alleviate some of the stress. Library patrons will have an opportunity to casually discuss the forthcoming new system with staff as they check out materials at the circulation desk or ask for assistance at the reference desk. It is important that these frontline employees be knowledgeable about changes and improvements so they can educate borrowers about what to expect.

Press releases to media outlets, the campus newspaper, the parent-teacher association newsletter, local cable outlets, Web-based outlets such as social-networking sites, flyers, and signage are just some of the methods that can be utilized to advertise the forthcoming integrated library system. Use whatever creative methods are appropriate for your facility.

Signage and flyers need a professional appearance. The information should highlight the benefits of the ILS for the borrower.

Flyers with the same information can be available at the desk for the staff to show customers while discussing the upcoming migration to the new system. It is helpful for employees to remember the benefits and have a visual for library patrons to review.

If the library plans to close for a day or two for employee training, begin advertising those dates four weeks in advance. That will give library patrons ample opportunity to be informed about dates the library will not be available. Use this opportunity to once again broadcast the benefits of the new integrated library system for users.

8.10 Plan to thank funder

It is never too early to plan how to thank funders after the integrated library system has been installed and is operating. Even if the source of funding is internal, such as a capital project funded by the administration, it is important to acknowledge appreciation for improvements made to the library. Not all methods of recognizing funders will work for every type of library. What is appropriate for an academic library may not be applicable for a media center.

1. Announcements on the library's Web site banner, social-networking site for the library, and the local cable outlet for the school district, college campus, or city. "Thank you Anywhere School District for new circulation/catalog system."

2. Press releases with accompanying photographs sent to media outlets announcing the new integrated library system and its funders. “Library Director John Smith announces the installation of new software at the campus library made possible through the generosity of alumnus Peggy Lee.”
3. Unique and ongoing methods of thanking funders may include pencils, pens, or candies imprinted with a thank-you message.
4. Installing an attractive plaque on the wall.
5. Poster at the entrance to the library.
6. Specially designed screen backgrounds or screen savers on the public computers.

Brainstorm with staff on methods to acknowledge funders. You may receive a unique idea that is sure to capture attention. Planning with staff also helps to spread the word in thanking donors, as employees will pass this information along to library patrons, friends, family members, and other outlets. One of the benefits of early planning for recognition and thanking donors is that it gives ample time to think of a variety of avenues, plan a budget, and not be caught scrambling at the end of the project to develop something. People who show appreciation are in turn appreciated for the time and planning they took to thank funders.

8.11 Planning the appearance of the library’s web site

Many ILS vendors provide a Web site as part of the integrated library system pack-age. This is a wonderful benefit, especially for libraries that do not have a staff member to create a Web site. The Web site is the “face” of the library and it is important that the Web site be attractive and easy to navigate. The Web site is also a vehicle for displaying the library’s logo, mission statement, or slogan.

Review the templates available from the ILS vendor or the Web sites that the vendor has created for other libraries. Note the features that you find useful and attractive, such as:

- An easy-to-locate search box for searching the online catalog. Library information, calendar of events, and message from the director
- Online resources
- Best-seller lists, reviews, and featured titles
- Ready-reference Web sites
- Children and teen information
- Staff contact information
- Community information

Work with the vendor on the Web 2.0 technologies that you want to implement for library patrons. These Web tools include blogs, social-networking sites, e-mail or chat reference services, online card registration, and so forth. The Web 2.0 technologies should be part of the library’s strategic plan and technology plan in how best to serve its customer base while taking into account staffing levels and the staff’s knowledge and abilities.

You will need to submit any photographs of the library that you want to use. If you are featuring people in the photographs, you will need to secure signed permissions— even if using staff members. Photographs with children will need signed permissions from parents or guardians.

In regard to staff contact information, you will need to decide what e-mail address to use for customers submitting general questions via the Web site. You can have the Internet service provider or system administrator create a special e-mail address for this purpose but make sure

someone is assigned to check that e-mail address on a regular basis throughout the day and respond to inquiries in a timely fashion.

It is not necessary to post contact information, such as e-mail and phone numbers, for every staff member. This is an internal decision that needs to be made. Staff contact information will be submitted to the ILS vendor for posting on the Web site.

If staff resources are at a minimum, you will not have a lot of time to update information. Work with the vendor to create a Web site that is usable for your situation. Assign a staff member to update the calendar of events and programming information on a monthly basis. If you post policies, such as a circulation policy, you will need to upload revised editions as they occur. Learning how to update the Web site needs to be part of the training provided by the vendor.

8.12 Installation of hardware and ILS software

Installers will contact you regarding the installation date for the server(s), ILS software, and client software. The client software is installed on the staff workstations and public-access catalog workstations. The library's network administrator will need to be on-site for the installation of the servers and the client software to ensure that the hardware is communicating on the library's local area network and also with the vendor's servers via the Internet. The installers will load the library's bibliographic and patron records onto the data server and begin testing the software.

8.13 Staff training sessions

The type of training, along with the length of training, will have been decided in the invoice or contract. If the library opts to provide staff training while keeping the library open, the vendor may provide a training server, either on-site or remotely. A training server contains the ILS software along with the library's data. It allows staff to manipulate patron records and bibliographic records without affecting the actual data. In addition, the library is able to remain open and operating using its existing automation system while the training takes place in the background. Staff will train on the new integrated library system in shifts while keeping the public-service desks operating.

If the library opts to close, then the library director or MIS administrator needs to plan for the following:

- Planning equipment and room for training.
 1. Training needs to be held in a room with access to the network or wireless Internet access. The type of access you need depends upon the type of integrated library system you have purchased. If some of the modules, such as the circulation module, are on the library's on-site server, then you will need access to the network. If some of the modules, such as the online public access catalog, are Web based, then you will need access to the Internet, either through the network or via a wireless Internet connection.
 2. If you need to access the network, then you will need a hub to connect the "training" laptops or workstations to the network. The hub needs to have enough ports to handle all of the training workstations, along with a port to connect the hub to the network jack. The laptops or workstations will need to have the ILS client software installed on them, so arrange this detail with the trainer. The installer or trainer can load the client software on the training laptops with the understanding that the software will be uninstalled after the training. (The number of client licenses is established in the invoice and contract.)

3. Locate enough patch cables to connect laptops/workstations to the hub. s Locate a patch cable to connect the hub to the network jack.
 4. Connect bar code scanners/RFID readers and receipt printers to training laptops/workstations.
 5. Obtain an LCD projector and screen (or white wall).
 6. Check with trainer to see if he is bringing a laptop or if he will use your equipment. His laptop will need to connect to the network unless the modules are all Web based and there is wireless Internet access.
- Stagger due dates so that customers are not returning materials on the first day that the library opens after being closed for a day or two. Give patrons additional days when circulating materials so that everyone does not feel compelled to visit the library the day you open your doors and “go live” with a new integrated library system.
 - Manage the book return(s). If you close the library for training sessions, you will need to plan how to handle items returned to the library via the book return(s). Even though your doors may be closed, patrons will still need to be able to return materials. Shelves or pages, who handle the checking in and shelving of materials, will not be able to check in items until the migration process is complete. Therefore, materials may need to be stored on shelves or carts until they can be checked in and shelved. If the migration process occurs during the first day of training, shelvers can be assigned to scan bar codes (or RFID chips) as soon as workstations and bar code scanners are available. So if training occurs from 8:00 A.M. to 5:00 P.M. and the migration process is successfully completed by noon, staff can start scanning bar codes at 5:00 P.M. and continue shelving through the evening hours.
 - Communicate with the vendor when the final migration of data will occur. If the migration process will happen at the end of the circulation training, you will want to plan the circulation training early so that materials can be checked in and shelved.
 - Coordinate with trainer regarding the schedule for learning each module. Put the schedule in writing so that the trainer knows when to arrive, how long each session will last, and the number of employees who will attend each session.
 - Order delivery of lunch for the staff and trainer. Purchase snacks and drink refreshments for training sessions and breaks.

8.14 Migration of data

Someone has to work with the vendor during the migration process. The migration loads the final version of the library’s data (bibliographic records, borrower records, and transaction records) onto the server. This may occur at the same time that the training is proceeding. If you are a small library with limited staff, take into account that the person involved with the migration may miss training sessions.

The staff member responsible for the migration process will work with the vendor to test the scanning of bar codes or RFID chips to ensure that the bar codes are being read by the software. To ensure a successful retrospective conversion and migration, staff members should test several bar codes and check the accuracy of several bibliographic and customer records. Also, check to see if “gap” catalog records migrated correctly. If there are any problems, the vendor will work with the software to resolve the issues. After the productive testing of several bar codes, bibliographic, borrower, and gap records, the vendor may ask the library director to sign a document stating that the migration has been completed to his or her satisfaction.

8.15 Going Live

“Going live” is the terminology used for first day the library uses its new integrated library system. Whether or not the trainer is on-site when the library goes live with the new integrated library system depends on arrangements made with the vendor. What-ever the contractual agreement, there are considerations to plan for that will help to make “opening day” a success.

- Schedule additional staff and/or volunteer coverage. If the library has been closed for a day or two, an onslaught of patrons may enter the library on opening day. Additional staff and volunteers can help with managing the larger-than-usual influx of customers. Trained volunteers can help customers navigate the new public access catalog. Additional staff at the circulation desk can help with checking materials in and out, making library cards, placing holds, and answering questions. Extra shelvees can quickly move returned materials to the shelves.
- Selecting the right time of year to “go live” will help to minimize the impact of patron foot traffic on staffing capabilities. A major department store would not schedule a change in its software platform during the busy holiday shopping season. A library should avoid scheduling a migration to a new ILS during its busiest time of the year

8.16 Final payment to the vendor

Invoices for software, hardware, training, and services should be paid once you, the customer, are satisfied. It is much easier to obtain satisfaction to a complaint when payment is withheld. Take, for example, a library that has purchased ILS software, a telephone notification system add-on, four bar code scanners, federated searching, and three days of training. Everything is operating to the staff’s satisfaction except the federated searching software. It is not functioning as described in the RFP or as demonstrated by the sales consultant. The library would pay the invoice with the exception of the charge for the federated searching software. The staff negotiates with the ILS vendor until a resolution is reached.

8.17 A New level of service

It has been a lengthy, engaging, and strenuous road in implementing the new integrated library system. Now the library is on a new playing field in the level of service it can provide—and that is stimulating.

Be sure to take the time to thank staff for their assistance and patience. Keep the avenues of communication open so that issues, concerns, and technical problems can be resolved. Anytime new software is installed, there are always questions or minor nuances that must be fine-tuned. Migrating or installing a new integrated library system is stressful. This is especially true if the library has moved from a simple automation system that just checks materials in and out to a sophisticated ILS that offers many facets of public services, such as a Web site where customers can manage their accounts, automatic e-mail notification, telephone notification, and on and on. One feels as though they have moved to an ILS that is so robust and powerful that it could land a shuttle on the moon—and the learning curve is steep.

Time and experience will resolve these concerns. As the staff uses the new system over the next few weeks and months, they will adjust to the new software, and soon daily operations will become “business as usual.” The library director, as the organization’s lead person, needs to be encouraging, calming, and diligent in providing staff the information and support they need.

Staffers who are savvy with computers will catch on quickly. Ask for their assistance in supporting others who may be struggling.

Again, remind everyone that this is new software, and with time and usage, they will become comfortable and confident. Stress the beneficial aspects of the system, such as, “Remember all the phone calls you had to make to notify patrons that their holds had arrived? Now customers are contacted automatically by e-mail or telephone.” Sometimes people have to hear a concept several times before it is ingested and comprehended. Do not be concerned with repeating yourself.

As patrons realize the new benefits of the system, the positive comments and compliments will also encourage any staffers who are struggling. Everyone likes to take pride in their organization, especially when it receives recognition for a job well done.

Take pride yourself for having pursued a project that is a major undertaking. You chose this path for the betterment of the library and those you serve. Only people who have had the responsibility of planning, selecting, and implementing an integrated library system will fully understand all the diligent work you have performed, so, from the authors of this book to you, the reader, congratulations. You are responsible for keeping the library current with technology that provides improved customer service. You are to be commended for your progressive thinking and attitude of service.

Objectives

After reading this unit you would be able to explain:

- Manage Network Installation and Upgrades
- Know Electrical Wiring and Cable Installation
- Familiar about various system peripherals and add-ons
- Requirements for retrospective conversions
- Manage existing Bar Codes in the collection
- Design circulation rules
- Planning meetings with staff
- Marketing a new Integrated Library System to patrons
- Planning the appearance of the library’s Web Site
- Installation of hardware and ILS software
- Planning staff training sessions
- Manage migration of library data
- Scheduling final payments to the vendor

Self-Assessment Questions

1. What are important hardware and software of a library that need to be discussed with vender?
2. What are installation options for client-server and Software-as-a-Service (SaaS) settings of different library software?
3. Why is it important to find various add-ons requirements? Why is important to know about ‘Peripherals’ and ‘add-on’ while preparing hardware requirements?
4. What are different methods for marketing the new integrated library system to the library users?

5. What are the key responsibilities of the staff member who will work with the vendor to migrate the existing library data to new ILS system?
6. How the collection areas may differ for public and academic libraries?

Activities

1. As an ILS manager, prepare a complete list of hardware and software that would be required to install or upgrade during the implementation of the new ILS system.
2. As an ILS manager, you want to convert bibliographic records from one data format to the format of the new integrated library system. To do so, prepare a list of various collection areas of the library (including branches), patron types, and bar codes that may be included in your conversion plan.
3. Enlist all important points to prepare staff and patrons for changes that would occur when the new ILS system becomes operational.
4. As an ILS manager, you decided to develop a website for your new ILS system. Identify audience, and web pages and their content. Identify important Web 2.0 technologies that may help you promoting the new ILS system.
5. As the library's network administrator, enlist and schedule all important activities that you will perform during the implementation of new ILS system.

UNIT NO. 9

SKILLS KOHA ILS SUITE: COMPREHENSIVE BASIC TRAINING

9 Introduction

Rapid advances in library technology, providing accurate and immediate information about library resources and services to users, have contributed to the number of integrated library system (ILS) conversions and migration projects in academic libraries in the United States. As a result, new and improved functions are introduced to academic users of these automated library systems. Denda and Smulewitz state that major shifts in technology such as those evident in the development of the Internet and newer ILS developments have changed “the routine workflow in libraries from technical services to public services” over the past two decades.³ Koha is the first free software library automation package. In use worldwide, its development is steered by a growing community of users collaborating to achieve their technology goals. Koha’s feature set continues to evolve and expand to meet the needs of its user base.

Academic libraries and ILS vendors are going through rough times as library administrators and systems personnel witness the volatile ups and downs of these companies, with some of which they have had long term relationships. Fierce competition among ILS vendors trying to attract new customers has combined with demand among academic librarians and users of ever-increasing sophistication for improved and more user-centered systems.

A systematic study of integrated online library system migration projects could serve to illuminate this unsettled environment. Many library directors and information technology (IT) professionals have been in a position to evaluate integrated library systems in an effort to choose the best, if not the “perfect,” system. Faced with decisions that involve millions of dollars, in-depth studies and analyses, various vendor demos, numerous focus group discussions, and countless hours of deliberation, choosing a vendor is only the first step. Solid system design, careful implementation, smooth production and thorough training are the keys to a successful conversion project.

9.1 Full-featured ILS

In use worldwide in libraries of all sizes, Koha is a true enterprise-class ILS with comprehensive functionality including basic and advanced options. Koha includes modules for acquisitions, circulation, cataloging, serials management, authorities, flexible reporting, label printing, multi-format notices, offline circulation for when Internet access is not available, and much more. Koha will work for consortia of all sizes, multi-branch, and single-branch libraries.

- Multilingual and translatable: Koha has a large number of available languages, with more languages every year.
- Full text searching Powerful searching, and an enhanced catalogue display that can use content from Amazon, Google, Library Thing, Open Library, and Syndetic, among others.
- Library Standards Compliant. Koha is built using library standards and protocols such as MARC 21, UNIMARC, z39.50, SRU/SW, SIP2, SIP/NCIP, ensuring interoperability between Koha and other systems and technologies, while supporting existing workflows and tools.
- Web-based Interfaces. Koha’s OPAC, circulation management and self-checkout interfaces are all based on standards-compliant World Wide Web technologies—XHTML, CSS and Javascript—making Koha a truly platform-independent solution.

- Free Software / Open Source. Koha is distributed under the Free Software General Public License (GPL) version 3 or later.
- No Vendor Lock-in. It is an important part of the free software promise that there is no vendor lock-in: libraries are free to install and use Koha themselves if they have the in-house expertise or to purchase support or development services from the best available sources. Libraries should be free to change support company and export their data at any time, make sure your support company allows this, it's also important to make sure it uses a good data management system.

The new features of KOHA version 3.0, which was released recently, include the following:

- Simple, clear interface for Librarians and Members (Patrons)
- Customizable Search
- Circulation and Borrower Management
- Cataloging Module with integrated Z39.50 client
- Full Acquisitions System including Budgets and Pricing information
- Simple Acquisitions System for the smaller libraries
- Ability to cope up with any number of Branches, Patrons, Patron Categories, Item Categories, Currencies and other data
- Serials System for magazines or newspapers
- Reading Lists for Members.

9.2 An orientation to Koha's installation

- What components we will need to install
- What installation tools to use and when
- The implications of choosing one Linux distribution over another
- Where to get help when you run into installation problem

❖ Koha's architecture

First, let us take a quick look at Koha's architecture. Koha runs on the Linux, Apache2, MySQL, Perl (LAMP) platform:

Linux: The operating system

- Apache2: The web server
- MySQL: The database server
- Perl: Koha is written in the Perl programming language

❖ What do we need to install?

We will install various packages related to:

The Koha architecture above—Linux, Apache, MySQL, and Perl

- The Koha application itself
- Build and compiler programs that help with the installation
- Various Perl and non-Perl packages that Koha uses, along with their own prerequisites

❖ Installation tools

Let us take a look at the various tools we will use to install Koha's software stack. These tools are:

- Package manager: To install Linux packages
- Make utility: To install Perl modules

- CPAN shell: To install Perl modules that are not available as Linux packages
- Git: To download the Koha application

9.3 Analysis of Koha ILS

The Koha system engineers the fast-growing ideas in developing libraries in our communities for user interaction or educational collaboration. Koha is a web-based system of ILS uses a Structural Query Language backend. This means it is an SQL application where the technical aspect cannot be read/write by a user, but the software aspect can be used for data an information manipulation and storage. The user's the edge/interface can be configured and deployed to be interpreted in several computer languages. The Koha system consists of excellent characteristics that are found in regular Integrated Library Services. These characteristics include Web2.0 such as tags, comments, shearing, timeline-feed, search tool, etc. The characteristics of the proposed Koha system is designed and implemented as follows:

- Accessible catalog for the public library: this offers web-based online access, which does not necessarily require software application to be installed in a user's computer device.
- Circulation edge: this is a web-based interface that maintains resource shearing and content reappearance. This does not require a global internet connection or software package to be installed on the management's personal computer but connects to a local switch or hub as an intranet communication.
- Management of consumers records: this permits information manipulation of each library consumer with a
- valid membership. User's accessibility for resource reservation: the library user can remotely reserve a target resource online and can be able to renew his collection when his reservation window is expired. This ability will highly minimize the traffic found in the library management desk, thereby reducing staff workload.
- Custom search: this permits the web-based application to select any field to search from the website.
- Library to library MoU: this can be ensured when two or more public or private librarians sign a memorandum of understanding. Library users can virtually visit and use each other's resources and enjoy some benefits such as scholarships, internships, etc.

9.4 Koha ILS support

The library automation using Koha Integrated Library System offers minimal cost of deployment and a user-friendly system. It has gained popularity around the globe, especially in Arab countries, African countries and even in the United States. This is because of its reliable services, enhanced performance, ease of collaboration and resource sharing. The application gives user autonomy when searching for vital resources in the library in books, journals, eBooks, research dissertations, and white papers. Autonomy enables library users to manipulate data and information during research analysis

- **Koha reliability:** the application software does not present any challenge when in use but always user-friendly. Data and information are always reliable without loss or failure. No form of bugs and when encountered, can have prompt fixes at the backend. Discuss the value of the skill with examples of library situations in which it could be used, define the skill, and explain how it functions.

- **Koha consistency and stability:** Software merchants from branded companies always ensure they promote their software application using upgrades with less effort. Sometimes, merchants offer their customers backend access to upgrade their Koha application when required. Based on reports, customers show a lot of appreciation for that open access.
- **Koha Assessment:** relative to Koha consistency, evaluating Koha using backend accessibility gives users liberty to observe the basic standard of Koha, including security and availability.
- **Koha Cost:** deploying the proposed application software to computers in the library is free. This adopts the standards of developing open software by computer experts and scientists. This is unlike branded software who attach a cost to their products.

A trainer may consider the following three key suggestions: Firstly, experts like Allen E. Ivey recommends video, audio, or live demonstrations of the skill.

9.5 Koha ILS pros and cons

Pros	Cons
It gives an advantage to library users as well as staff members as they are able to easily locate, retrieve and use the library materials."	It quires IT staff in the library to do updates and troubleshooting or you may need to consult outside if library has no IT staff, meaning extra costs.
Organizing and circulation of library materials using Koha. This gives the advantage of saving time for the reader and making sure that every material in the library is used."	"The fact that the software is an open source is the biggest disadvantage, the organization risks losing all of the data to hackers."
The main advantages of Koha ILS are :Koha facilitates several functional necessities of a library management system."	Another disadvantage is that there is no offline access thus there is need for internet to access it.
Koha is an excellent software and I would recommend it to any library that is serious about helping its students."	Its slow in open and saving files. It has an option to forgive fines that I feel is a weakness of a software."

9.6 Koha comprehensive basic training

When choosing an ILS for your library, it is important to consider many factors including size, funding, and compatibility with other consortia. In order to get an overall feel for a system, one must test that system and do extensive research before choosing the best ILS for a particular library. It is for this reason; many libraries should look into using a relatively new ILS called Koha. Koha “is the first free software library automation package” and is growing tremendously in a worldwide market as a reliable ILS (Koha 2010). The researchers behind the program began in 1999 before the 2K switch and ever since then have been growing and pushing for a new kind of ILS that would be universal to all library systems, including home-use. First released as a beta program in 2008, the system is now live worldwide in three languages.

A main proponent in making this worldwide ILS is Koha’s policy on a no-vendor lock-in (Koha 2010). Meaning the program will stay a free open-source software that enables libraries to download and install Koha themselves and have the “in-house expertise to purchase support or development services from the best available sources” (Koha 2010). This provides libraries the

option to be free to change their support company and export their data system at any time, as long as the support company that library chooses allows it.

Since this particular ILS is open-source software, it enables libraries worldwide of all sizes such as public, academic, special, and home libraries to benefit. Not only does it provide basic options in functionality, it also offers comprehensive and advanced options including “modules for circulation, cataloging, acquisitions, serials, reserves, patron management, branch relationships,” to name a few (Koha 2010). It utilizes an RDBMS searching function working together with an external search engine to provide users the most powerful searching possible. The different modules Koha offers is completely comprehensive in that in the cataloging function, it is operable with MARC records which aids in acquisitions. Because of the added advanced searching capability, acquisitions workflow is tremendously improved and serials information can be easily imported supported by other systems and technologies already operating in many libraries. Thus creating a smooth transition into the free system.

Koha also allows libraries to smoothly transition because it is truly a platform-independent solution that can be integrated immediately. The OPAC, circulation, management, and self-checkout interfaces are all based on standards such as XHTML, CSS, and JavaScript (Koha 2010). Meaning, any existing software can easily be transferred into Koha’s system because it is compatible with any World Wide Web technology. This is especially important with electronic resources, as their document management allows for documents to be displayed in a myriad of different formats to be accessible by patrons with Internet access. Recently, Koha 3.2 was released that corrected several bugs and added new abilities and differences including: the ability to batch modify items, batch delete items, a complete rewrite of the label maker, patron card creator, how budgets are handled, added more patron permissions, check out messages, fast add cataloging, custom RSS feeds, SOPAC integration, enhancements to acquisitions including those that allow for ordering over Z39.50 and from a staged MARC (and MARCXML) file, and the ability to merge bib records, and there are also talks of adding another metadata format storage system to be even more easily integrated into a home library (Engard, 2010).

Of course, with the new added features, Koha provides a plethora of tutorial and training material to aid librarians in smoothly integrating this new system into their existing ILS. The students at Wayne State University created the Koha English training manual in English, however, there are several versions in many different languages including Spanish, French, German, Greek, Arabic, and Portuguese (Koha 2010). The website also offers a Wiki page for their developers to discuss nuances in Web 2.0 librarianship and offer coding guidelines and API documentation to continuously improve the system. Pakistan Scientific and Technological Information Centre (PASTIC), Pakistan library association (PLA) and different organizations are offering Koha training for Pakistani library professionals. The main objectives of these all organizations are:

1. To uplift the standards of library services and sources at Pakistan
2. To enhance IT Skills of working librarians for creating culture of library automation and digitization in Pakistan.
3. To strengthen Koha knowledge and expertise in the academic and research libraries as well as various information and Resources centers.
4. To exchange information, knowledge and experiences in use Koha for library managements.
5. To support implementation of integrated library managements systems in the libraries and information centers.

6. To provide the trainees with hands on experience on using and in the administration of Koha.
7. To create awareness of the benefits of Koha and open sources solutions.
8. To test and certify their readiness to use Koha.

9.6.1 Training Objectives

Basic training program that will be kept up-to-date. There are three types of training resources: videos, documentation, and an editable procedure for each lesson. The documentation headings are based on real life situations and they are followed by step-by-step procedures on how to deal with these situations. First of all, familiarize yourself with Koha Integrated Library System (ILS) and discover its numerous features.

Furthermore, you will learn how to do the tasks you will need in order to manage your organization and your users.

Finally, you will deepen you understanding of the system by reading detailed documentation.

9.7 Circulation

In the circulation module, you will learn how to do the basic circulation tasks: loans, returns, renewals, holds. You will also learn how to set your circulation rules which let you control your circulation policies. You will then learn how to manage your users' fines and how to generate reports to help you manage transactions.

1. Defining circulation rules
2. Loaning out documents
3. Returning documents
4. Renewing documents
5. Putting documents on hold
6. Transferring documents from one library to another
7. Managing fines
8. Generating circulation reports
9. Managing offline circulation

9.8 Cataloguing

In the cataloguing module, you will learn different methods to create and modify bibliographic records as well as adding and managing items. You will also learn how to create barcode and call number labels. Finally, you will learn how to merge records to clean up the duplicate records from your catalog.

1. Creating a bibliographic record
 1. Creating a bibliographic record with the Z39.50 tool
 2. Creating a bibliographic record by importing a file
2. Creating an item
3. Creating an analytic entry
4. Editing a record or an item
5. Creating labels
6. Merging identical records
7. Using authority records

9.9 Patrons

In the Patrons module, you will learn how to create user categories and add patrons to those categories. The categories are used to create particular circulation policies for specific classes of patrons. You will also learn how to search for patrons and define permissions for staff users.

1. Creating a new user category
2. Creating a new patron
3. Searching for patrons
4. Defining staff permissions

9.10 Authorities

In the authorities' module, you will learn how to create authority types and different methods of creating authority records. You will also learn how to search for and edit authority records. Later on, you will be able to link these authority records to bibliographic records.

1. Adding an authority type
2. Creating an authority record
3. Adding an authority record with the Z39.50 tool
4. Searching for and editing an authority record

9.11 Staff interface, advanced search, cart and lists

In the staff interface and the advanced search modules, you will learn how to build precise queries using keywords, document types and other filters such as acquisition date. You will also learn how to search for specific items. Furthermore, you will learn how each search filter works and how they influence the results list. We will also show you the results lists, detailed records, the use of the cart and the lists.

1. The different parts of the staff interface
2. Searching
3. Item search
4. Using the cart and the lists

9.12 User interface (OPAC)

In the User interface (OPAC) module, you will learn how to build precise queries using keywords, document types and other filters such as acquisition date. You will also learn how each search filter works and how they influence the results list. We will also show you the results lists, detailed records, the use of the cart and the lists. Finally, we will go over the user's account and the different services available online as well as the password recovery method.

1. The different parts of the user interface
2. Searching
3. Using the cart and the lists
4. The user account and its services
5. Password recovery

9.13 Acquisitions

In the Acquisitions module, you will learn how to create and manage your vendors, orders and budgets. This module allows you to manage your acquisitions from the order to the reception and monitor your spending throughout your fiscal period.

1. Adding a vendor
2. Creating a budget
3. Creating a basket and a purchase order
4. Searching within orders
5. Managing purchase suggestions
6. Receiving orders and managing invoices
7. Managing late orders
8. Budget planning and monitoring
9. Managing EDI vendors

9.14 Serials

In the Serials module, you will learn to create and manage your serials subscriptions, receive issues and claim late issues. You will also learn how to manage frequencies and numbering patterns.

1. Adding a subscription
2. Managing prediction patterns
3. The inner counter
4. Receiving new issues and managing serial collections
5. Claiming late issues
6. Subscription monitoring
7. Adding a new frequency
8. Adding a new numbering pattern

9.15 Tools

In the Tools module, you will learn how to use all the different tools offered in Koha. For example, you will learn how to create patron lists, membership cards, setting up your organization's calendar, browsing through system logs or how to create news for the OPAC, among many others. You will also learn how to import and export data to and from Koha, batch edit items and manage letters sent to patrons.

1. Creating a patron list
2. Moderating patron comments
3. Importing patron data
4. Defining notices and slips sent to patrons
5. Setting overdue notice triggers
6. Creating patron membership cards
7. Batch deleting patrons and anonymizing patron loan histories
8. Batch editing patrons
9. Moderate patron tags
10. Uploading patron images
11. Batch editing or deleting items or records
12. Defining rules to modify items by age
13. Exporting data
14. Performing inventory
15. Creating labels and barcodes
16. Quick label creator

17. Managing rotating collections
18. Managing templates for modifying MARC records during import
19. Staging and importing MARC records into the catalog
20. Uploading cover images
21. Setting up the calendar
22. Managing CSV export profiles
23. Viewing system logs
24. Writing news elements
25. Scheduling tasks
26. Editing quotes for the Quote of the day feature
27. Using tool plugins
28. Uploading and managing files

Objectives

After reading this unit you would be able to explain:

- The importance of training.
- Why basic Koha training is necessary?
- Planning a training program.
- Discover the different Koha modules
- Learn how to do basic tasks in each of Koha's modules
- Learn how to use Koha's tools and settings
- Learn how to use Koha's searching features
- Deepen your knowledge of Koha

Self-Assessment Questions

1. What do you understand the term training and why is it important especially for Koha ILS?
2. Do you think a basic training program for successful implementation of Koha at library is important?
3. Do you think Koha ILS basic training programs are essential for learning and practice for library professionals?
4. How library director/ information technology (IT) professional can be evaluated of integrated library systems?
5. What are the basic requirements to sign a memorandum of understanding (MoU) between public or academic libraries by using Koha software?
6. What problems do you think you might have in adapting ILS Koha for your library?
7. What you think that hands on training would be beneficial to learn about the installation and implementation of Koha?
8. Compared to yourself before and after training sessions of Koha ILS. Consider yourself from beginner to expert.
9. What are basic modules being necessary for effective and early stage training of Koha?

Activities

1. Provide a road map to conduct a Koha basic training/workshop which are consisted on objective of training, audience, resource person, engagement of administration and distribution of shield or certificate among participants.
2. As a learner of Koha, find/call for free Koha ILS training online/face to face mode, join it and explain your experience about learning outcomes from it.
3. As an ILS manager, you want to convert bibliographic records from one data format to the format of the new integrated library system. To do so, prepare a list of various collection areas of the library (including branches), patron types, and bar codes that may be included in your conversion plan.
4. Enlist all important points which are necessarily required to design basic training of Koha software for library professionals.
5. As an ILS manager, how you decide to take an initiative about basic Koha ILS training and how you identify contents, audience, and time? Furthermore, how social media tactics can be used that may help you promoting the training and its registration.
6. As the library's network administrator, enlist and schedule all important activities that you will perform during the implementation of new ILS system.