

Given the recent spate of library system vendor acquisitions and consolidations, integrated library system (ILS) migrations have become a hot topic again. Although ILS migrations happen all the time, they tend to be cyclical in nature. For example, in the late 1980s, a large number of libraries migrated from homegrown systems to vendor-provided solutions. About 10 years later, in the latter part of the 1990s, a large number of migrations occurred again as the underlying technology moved from being mainframe-based to the distributed, Web-based systems we have today.

Although the individual circumstances that spur a migration vary from one library to another, a great degree of this renewed interest is being driven by discontent with current-generation systems and the vendor practices that have arisen in this era of vendor consolidation. Most of us can identify with the irritation a person might feel when a viable system is yanked from the market as the result of a merger between vendors. Perhaps even more frustrating is when the suggested replacement system is nothing more than old technology repackaged with minimal improvements that still doesn't adequately address the needs of your library anyway.

It's not surprising then that many of the customers who feel they have not been dealt with fairly are re-considering their options and checking out the whole field of replacement-system candidates. Today, people are thinking broadly about what options might be available to them. These include changing vendors, using systems not traditionally associated with a par-

ticular library segment, or joining an open source ILS community. In the current marketplace, nothing is beyond consideration.

These migrations, however, are distinguished from the efforts that many libraries are undertaking to implement new systems for gaining additional functionality, such as next-generation catalogs.¹ While these next-gen implementations are closely related to the underlying problems and general dissatisfaction with traditional systems, they are distinct from the current ILS migration trend. The primary reason for this is that next-gen system implementations do not, in most cases, replace the library management back-end system, but instead graft new front-end, patron-facing components to the in-place ILS.

Issues You Should Consider

Not surprisingly, this new round of system migrations raises a unique set of problems for libraries. For many of us, it's difficult to recall the issues related to migrating from one system to another because the process is but a distant memory, one we'd often like to forget. Our forgetfulness may be driven, to a great degree, by the fact that converting from one system to another is a time-consuming and generally thankless task. Further muddying the water is that in the current environment, most migrations will not really leave us in a much better place (from a functional perspective) than we are today. Primarily, this is because there's little true functional difference between ILSs,



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Some New



migration

in the 21st Century:

Things to Think About This Time Around

by Frank Perrone

except for differences in functionality within broad categories of system types (i.e., systems designed primarily for public libraries as opposed to academic libraries).

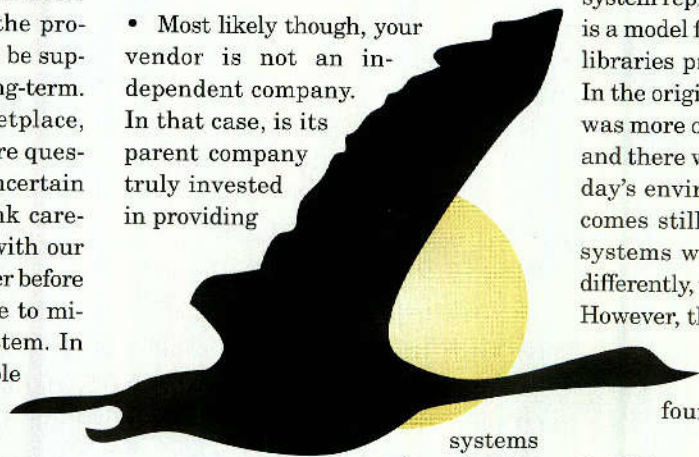
Migrating from a current-generation system may provide minor improvements, but it's not likely to significantly enhance the ability to better meet patron needs. Even with significant new functionality, a migration raises the real possibility of creating distress in the patron community² that may reflect poorly on the library.

The reality is that the major factor driving migrations today is the promise of a new system that will be supported by the vendor for the long-term. Given the state of the marketplace, most promises to this effect are questionable, at best. In such an uncertain environment, we need to think carefully about whether we stay with our current vendor or choose another before investing the time and trouble to migrate to a completely new system. In some cases, the most reasonable way to proceed may be to follow the migration path of our current vendor. The following are some factors to consider with the two options:

- Is your current vendor a viable commercial entity? If it doesn't have necessary financial backing and market share to continue to enhance its products, it's time to look for a new vendor. Investigate sources such as Marshall Breeding's annual "Automation Marketplace" report³ to gather information on the financial stability of your vendor.
- Is your current vendor investing in new technology? If it's cutting back on new system development and putting more effort into small incremental improvements in an existing system, this could be a danger sign. Most current-generation ILSs will need major functional overhauls to make them work effectively with emerging standards, such as FRBR,⁴ SRU,⁵ and MXG.⁶ Ad-

ditionally, they will need to have redesigned patron interfaces that will provide seamless integration with the larger world of information resources. If your vendor is not focusing on these issues, consider finding a new one.

- Is your vendor independently owned? While it's no guarantee of stability, financially steady, independently owned ILS vendors stand a better chance of not being buffeted by the changing whims of a corporate entity that's interested only in return on investment.
- Most likely though, your vendor is not an independent company. In that case, is its parent company truly invested in providing



systems and services for libraries and information agencies? Does the corporate integration strategy make sense? There's nothing inherently wrong with a vendor being part of a larger entity. However, those that are can be influenced by many factors outside of the library marketplace. One important factor in evaluating a vendor in this situation is how well the library services integrate with the overall strategy of the larger corporation. If there does not seem to be any logical connection, there probably is not. And the danger is that when profitability dips, the library unit will be a prime candidate for a sell-off.

Use a Fresh Perspective

If, after weighing the pros and cons, your library decides to move forward with a migration, it would be well worth

looking at the system requirements process with a different perspective.

In the past, library systems have been evaluated along very standardized lines, such as developing requirements for circulation, acquisitions, serials, and OPAC components. This approach, however, does not take into account either the continuously evolving way our libraries work or the rapidly increasing service expectations of our patrons.

In 2003, people at the National Library of Australia⁷ used a different approach when considering a large-scale system replacement project. Their work is a model for a new perspective on how libraries provide and deliver services. In the original requirements, the focus was more on outcomes than functions, and there were four subsystems. In today's environment, this focus on outcomes still stands, but the four subsystems would be described slightly differently, with expanded functionality. However, the core purposes remain essentially the same.

The following are the four updated descriptions:

1. Bibliographic subsystem—This provides many of the functions one would expect in a traditional cataloging module, with serials integrated into the workflow as simply another material type. The subsystem supports the intake, creation, and editing of bibliographic, authority, and holdings data. In this model, the focus is not on MARC format data, but on any type of descriptive metadata.
2. Search subsystem—This subsystem functions in many ways and provides similar services to the traditional OPAC. But in addition to discovering local material, it would also have functionality similar to federated searching in order to provide an integrated view of the resources that are available to the patron.
3. Customer management subsystem—This is similar in function to traditional

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administration and access-control systems. The difference is that rather than set up an individual silo of data, it's fully integrated with other institutional

systems. This allows library staff members to leverage knowledge they already have with similar tools (such as reporting) that are used across orga-

nizational systems (such as financial management systems, student information systems, etc.).

Typical Tasks in a System Migration Effort

SYSTEM SELECTION

Establish migration working groups

- Functions and features workgroup
- Testing workgroup
- Data conversion workgroup
- Documentation and training

Draft overarching goals for new system

Determine methodologies for gathering input

- Working groups analyze needs and desired functionality
- Analyze workflows for possible redesign

Draft overarching criteria for new system

Schedule vendor demos

- Schedule site visits
- Perform evaluation demos on vendor test systems

Contract Negotiation

IMPLEMENTATION

System configuration

Develop and implement data conversion specifications

- Develop data testing procedures

Order and install new hardware

Install test version of new system

Develop test scripts for critical functionality points

- Develop scripts for testing typical functional situations
- Develop scripts for testing abnormal functional situations
- Install test database
- Perform testing for typical and abnormal situations
- Perform system performance (stress) testing

Conduct training for production staff

- Vendor provides training for in-house training staff
- Train library staff

Create local documentation, if needed

SYSTEM CUTOVER

- Install production database
- Test system using normal and abnormal situation scripts
- Enable general staff and public access to system

STABILIZATION

4. Document delivery subsystem—At a very basic level, this subsystem provides a seamless interface for both staffers and patrons to request and use materials held at other libraries. In the academic environment, course reserve materials would be integrated into this unified electronic document delivery system.

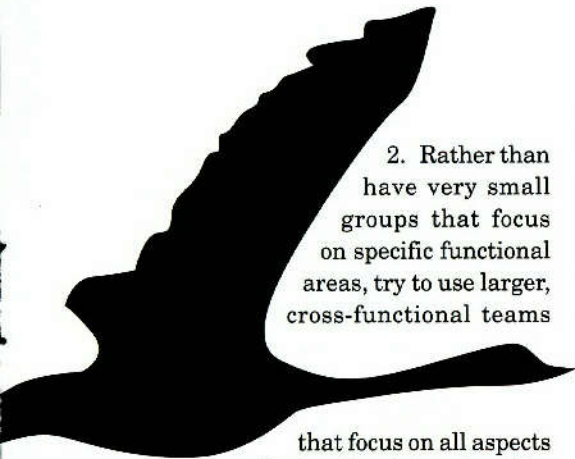
Steps Involved in Migration

With this general framework in mind, we can consider the steps involved in migrating to a new system. In general, there are three major phases:

1. System selections—In this phase, the library establishes the major working groups for the migration effort, determines the functional requirements, and evaluates the suitability of several systems (given the requirements).
2. Implementation—This is where the library performs the majority of the migration work. In this phase, staffers configure the system, convert data from the old system, test the new system, and receive training.
3. Production stabilization—This is perhaps the most often overlooked part of the migration. Staffers throughout the library work through the remaining issues of the migration effort.

The sidebar (left) outlines some of the major tasks that are typically performed in a migration. It's beyond the scope of this article to comment on each step in detail, but the following are some things to keep in mind as you plan your conversion:

1. Establishing functional working groups early on in the project is a critical factor in overall project success.



2. Rather than have very small groups that focus on specific functional areas, try to use larger, cross-functional teams

that focus on all aspects of higher-level functional issues. For instance, appoint a team to handle general data conversion instead of having one team specifically for the conversion of MARC data and another for circulation data. Furthermore, don't be afraid to invite some "nonexperts" to the team. They may just be the catalyst to get people thinking in new and different ways.

3. Optimize your use of Web conferencing technology for demos. It's often easier to schedule shorter demonstrations of specific functionalities at different times than to get everyone together on the same day for a massive demonstration of every single feature in the system. This also facilitates focusing on specific issues of importance rather than trying to address everything (and probably not well) all at once.

4. Make sure there's plenty of opportunity for staff and patron input. This includes providing multiple methods for gathering this feedback. Don't just rely on a questionnaire or survey. Hold a few focus groups or all-staff meetings to discuss issues.

5. Expect that the contract-negotiation process will take longer than you anticipate.

6. Develop testing scripts that include situations which are outside of normal workflow patterns. Testing the odd cases is typically more informative than testing the routine.

7. Stress-test the system *before* going into production. Consider using automated tools to simulate transactions. See below for a list of some of these tools.

8. Don't neglect training. For a good overview of the issues to think about in this area, I suggest consulting Ralston, Rioux, and Ellis' article "With Feet Planted Firmly in Mid-Air: Staff Training for Automation System Migration."⁸

9. Brace for a long day when the final production cutover occurs.

10. Warn staff that the weeks after the migration will be fraught with minor problems and inconveniences as the small details are worked out. Regardless of how well your migration goes, there are going to be issues afterward.

Timing Is Up in the Air

The astute reader will note that I have not provided any time estimates for the tasks in the sidebar. This is because devising a one-size-fits-all timeline is difficult. Without understanding the context of the implementation, it's impossible to give reasonable time estimates for planning purposes. In my experience, new system implementations at smaller libraries were often performed in as little as 7 months, but one implementation at a very large institution ran more than 2 years. Further complicating matters, as no two libraries are alike, each of these phases will take a different amount of time to complete depending on the individual institution.

However, based on an analysis of several installation plans, I calculate that a library can expect to spend approximately 32 percent of its project time in the selection phase, 48 percent in the implementation phase, and about 20 percent in the production stabilization phase. So at a medium-sized academic library, where the entire installation would take a year, the timeline would work out to almost 4 months for system selection, 6 months for implementation, and a little less than 2 months to stabilize the system once it's in production.

Given the cyclical nature of these types of conversions, it's not surprising that we're seeing a resurgence in system migrations. Significant changes in the library system vendor landscape are leading many institutions to reconsider what the future really holds for their ILS. But migrations like these are not to be entered into lightly. As I've explained, the process is complex, time-consuming, and expensive. One

Open Source Web Application Testing Tools

Apodora (www.apodora.org) is a GUI-based framework for developing automated testing scripts. It requires a Python run-time environment.

dogtail (<http://people.redhat.com/zcerza/dogtail>) is a test tool and automation framework that's based on the Python programming language.

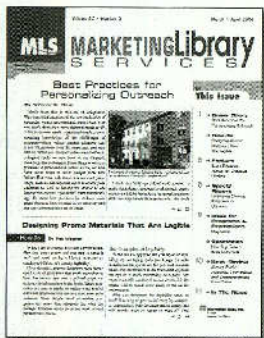
MaxQ (<http://maxq.tigris.org>) is a Python-based testing application that records interactions with a Web site, allowing them to be replayed at a later time.

Selenium (www.openqa.org/selenium) is a browser-based testing tool that uses JavaScript and IFrames to embed a test automation engine in your browser.

XMLTestSuite (<http://xmltestsuite.sourceforge.net>) is a testing tool that only requires the test creators' knowledge of HTML and XML. It needs a Java run-time environment for test execution.

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important consideration that should be factored into any decision is whether the new system will have substantially new functionality that will better serve patrons. If there's no benefit to be had in this area, then the wisest decision might be to wait awhile until a system comes along that will provide that new functionality.



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