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New Library Collections, New Technologies: New Workflows

I EXPECT THE NEW GENERATION OF AUTOMATION SUPPORT TOOLS TO OFFER THE FLEXIBILITY THAT ALLOWS THE LIBRARY TO DESIGN THE WORKFLOWS MOST SUITABLE FOR ITS NEEDS.

In the past year or so, I've been doing a lot of speaking and writing about the new wave of library automation applications. It's a topic that seems to have great interest in the library arena in many parts of the world, as I have observed during my recent travels. I have seen many libraries at the juncture where they need to develop plans relative to these new products. Do they see themselves staying with their current systems for a few more years, or will they be considering a change? In every change cycle, there are some libraries eager to be early adopters, and many more that prefer to wait a bit for the products to mature and to prove themselves. I would also suggest that libraries might look beyond the automation systems they use and the consideration of whether it's time to replace them. Perhaps it's also time to reevaluate the patterns of work that surround their automation systems and to evaluate if those systems still make sense.

We can expect an intense marketing campaign from the creators of the new products as development nears completion and a phase of early adoption begins. Whether or not libraries have planning processes in place, they need to be prepared to be flooded by information promoting these new products and their conceptual underpinnings. Libraries will need to consider a range of factors as they contemplate all the possible options. They will naturally want to identify the products most aligned with their broad strategic vision, to assess the features and functionality relative to their anticipated requirements, and to gauge at what point they will be mature and established enough relative to the organization's tolerance for risk. Today's menu of library automation options offers a wider selection than in previous times. Offerings include traditional integrated library systems, including proprietary and open source options, as well as a group of new-generation library services platforms.

Ever-Turning Cycles of Technology

I often describe library automation as moving forward through an ongoing series of cycles, consistent with the epochs defined by the broader realm of information technology. The initial cycle of library automation systems based on mainframe computing wound down when the client/server architecture became the preferred approach for business computing. We're now in a time when web-based applications deployed through software as a service have become well-established as the dominant computing paradigm. Technology products have to reinvent themselves at least every decade or so.

As libraries moved into the era of client/server automation systems from text-based mainframe or minicomputer applications, the underlying models of automation survived

intact. The essential organization of the integrated library system seen in the early mainframe systems, consisting of modules for cataloging, acquisitions, serials management, circulation, and public access catalogs, didn't change substantially as the products were redeployed through graphical interfaces tied to lower-cost servers. That transition was essential given the demise of mainframes in most organizations, deemed too expensive to maintain given the ample computing power available on the desktop computers that had been widely deployed. The client/server systems offered major advantages over the text-based predecessors in usability, replacing cryptic command sequences with more intuitive graphic interfaces.

THE CURRENT CYCLE OF CHANGE WILL BRING INTO PLAY A NEW CATEGORY OF PRODUCTS I TERM 'LIBRARY SERVICES PLATFORMS.'

In that previous change cycle, existing models of automation were essentially poured into new vessels of technology. When mainframe-based automation gave way to client/server systems in the mid-1990s, libraries had not yet encountered some of the transformations that have brought sweeping changes to libraries today. While some electronic content products were beginning to gain traction, largely delivered on CD-ROM applications, the emphasis on library collections remained primarily focused on print materials. The general tasks of library automation remained basically consistent, carried forward on top of new technology underpinnings. Therefore, the basic modules of integrated library systems, underlying metadata models, organization of data stores, and business process models remained mostly unchanged within the integrated library systems as they were redeveloped under the client/server architecture.

Today, the client/server systems phased in during the last major automation era face the same inevitable demise as the mainframe-based systems of the earlier generation. But this new phase not only brings a new technology foundation, but it also comes at a time when the conceptual and functional foundation for automating libraries needs to be fundamentally revamped. The increasing dominance of electronic content as a proportion of library collections, changing modes of acquiring materials through patron-driven acquisitions for physical and licensed content, new expectations for service delivery, and demand for high-quality assessment tools are but some of the obvious changes that demand a fresh look at what automation systems do rather than just transferring the functionality of a previous generation into new technology platforms.

Realignment of Automation With Library Realities

This new phase of automation, it seems to me, differs substantially from earlier transitions. The conceptual model of the integrated library system that persisted through both the mainframe and client/server eras does not fully address the challenges libraries face today. Business systems that aim to efficiently and effectively support modern libraries will need to break away from the entrenched organization of modules and workflows that have been deeply ingrained into the traditional ILS. While what libraries have been doing has been gradually changing over the past decade, until recently, automation systems have not necessarily undergone a fundamental redesign. We've added pieces and parts to fill the gaps, but the core design of the ILS has remained in place. In addition to the ILS, many academic libraries, for example, operate a cluster of additional automation products including OpenURL link resolvers, electronic resource management systems, institutional repository platforms, digital asset management systems, and discovery interfaces.

The current cycle of change will bring into play a new category of products I term "library services platforms," offering functionality more in line with current library realities as well as modernizing the technology infrastructure. This new model takes to heart the reality in which libraries operate today with complex collections composed of print, electronic, and digital components, with the role of print diminishing. Based on these new assumptions, the new generation of library services platforms should offer a fresh approach to providing automation support for acquiring and managing collections, providing access to content of interest to their patrons, in delivering programs and services, and other aspects of library operations.

Some of the specific products included in this new category of library services platforms include Intota from Serials Solutions, Alma from Ex Libris Ltd., OCLC's WorldShare Management Services, the Kuali OLE open source project, and Sierra from Innovative Interfaces, Inc. I anticipate that other products might also emerge to expand this group.

What About the ILS?

I don't expect the traditional integrated library systems to fade away in the short term. Especially for public libraries that continue to see most of their activity concentrated on print materials, the ILS may continue to offer the best model of automation for quite some time. To the extent that the these products can evolve to accommodate the

growing involvement of public libraries with ebooks and other new media and can make continued advancements on their public-facing interfaces, I don't yet see a movement toward radical change. For the time being, it seems like public libraries will continue mostly along the ILS track, often supplemented by new discovery services, while academic and research libraries will begin a transition to library services platforms. I do expect significant evolution of the current slate of integrated library systems to take on some of the functional characteristics and to increasingly be deployed through cloud-based technologies.

Rethinking How Libraries Organize Their Work

As libraries consider moving to one of these new library services platforms, they have an opportunity to also reconsider how they might reorganize at least some aspects of their work in managing collections once free from workflows imposed by the traditional ILS. Might there be more efficient ways to manage collections once we have automation infrastructure that does not force us to segregate tasks according to formats? I expect the new generation of automation support tools to offer the flexibility that allows the library to design the workflows most suitable for its needs. I believe that libraries might choose to organize their work at least somewhat differently once unbound from the patterns imposed by traditional automation systems.

As an example, I observe that many libraries currently have separate teams focused on print materials and electronic resources. Acquisitions of print materials may be performed mostly through personnel that work with the integrated library system while acquisitions of ejournals and aggregated content resources are managed through an electronic resource management product. This separation of acquisitions into two streams based on format may be efficient for some libraries, but it may introduce duplicative efforts or data management for others. The same workflow options may apply to cataloging or other bibliographic processes. Having separate automation platforms for different materials usually imposes a need to have separate processes; a more comprehensive platform gives the library options to organize its work either way. For both general organizational divisions as well as the detailed steps involved in individual tasks, libraries can analyze and assess the efficiency of current arrangements and develop new workflows as needed. Such an exercise might be especially useful as a preliminary phase of assessing a new automation system.

While the new slate of library services platforms provide the opportunity for libraries to redesign how they carry out parts of their operations, they don't impose requirements to do so. If a library is well-satisfied with its current work patterns, then the new platforms should be expected to accommodate those as well. In general, I hope that automation systems support the work of libraries in the way that they choose to organize them and not impose their own rigid workflows.

In these times when most libraries face slimmed-down budgets and fewer personnel, it's essential for them to find the most efficient ways to do their work and to make strategic decisions on where to concentrate their efforts. As a technologist I appreciate the benefits gained through the transition to more current computing models seen in this new wave of library services platforms. But it's the new approach to the functionality addressed that seems of even higher strategic importance. ■

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