

A black and white photograph of a man in a light-colored shirt sleeping at a desk. His head is resting on his arm, and his hand is on a laptop. A large thought bubble is positioned above his head, containing the text 'Dreaming of a Better ILS'. Three smaller circles lead from the bottom of the thought bubble down to the man's head. The background is a plain wall with a window on the left.

Dreaming of a Better **ILS**

by Ellen Bahr

HERE'S WHAT SOME WELL-KNOWN TECH LIBRARIANS WANT TO SEE IN THE NEXT GENERATION OF INTEGRATED LIBRARY SYSTEMS.

What features and functionality do you want to see built into integrated library systems in the near future? CIL invited me to pose this question to a number of library technology experts and to report back on my findings. Below are some of the answers that I received (edited for length and clarity).

Roy Tennant was the first to reply, and some of the other respondents echoed his ideas, so I'll begin with his response.

Roy Tennant (senior program manager, RLG Programs, OCLC Programs and Research): There is only one thing I want to see built into integrated library systems in the near future and that is an application program interface (API). I want a standard way to communicate with the ILS and to have a structured result returned. Such an API should be full-featured enough to provide access to nearly all of the operations of the ILS, from the book checkout process to circulation statistics and much more. As I have written before (see my latest column at <http://libraryjournal.com/article/CA6457238.html>), the integrated library system should continue to be focused on the business processes of a library (including keeping track of holdings) and no longer be used as a finding tool. But for any new finding tool to be effective it will need to communicate with the ILS, and therefore we need a mechanism by which to do that.

Kristin Antelman (associate director for the Digital Library, North Carolina State University Libraries): I agree with Roy's contribution. At NCSU, we have found that we are no longer looking for a couple of things that ILS vendors have historically focused on, namely built-in integration and user interfaces. We need to be able to get various components (from vendors, the open source community, or home-grown) to work well together. We want the same thing from our data providers, too, i.e., not fancy front ends for indexes and aggregators, but simple data feeds in standard formats

that we can then use in our own applications of choice. So, in a nutshell, what I would like to see from integrated library systems in the future is that they are no longer integrated.

Ross Singer (library applications developer, Georgia Tech): I would like to piggyback on Roy's comment a bit by saying the best feature that an ILS could have is the ability for my users to never have to directly interact with it and for libraries to be able to integrate the data in the ILS very easily into other interfaces. So, besides being able to include catalog results in any kind of site search and being able to interface with the user's account from a university portal or courseware or something, I'd like to see it be incredibly easy to create your ebook pages or database of databases from some sort of ILS API (so this data doesn't have to be duplicated in a million places). I think it should be simple for users to export their library account to, say, Google Calendar ("Your copy of *Brave New World* is due back today!"). I really don't want to have my users deal with the ILS.

Andrew Pace (head, Information Technology, North Carolina State University Libraries): I'm going to echo Roy's sentiments but from a slightly different angle. The ILS marketplace is in serious trouble and from two somewhat opposite directions. The first is the nearly 20 years that libraries and vendors pursued the best inventory system money could buy with little attention to really usable public interfaces (OPACs) and interoperability with other inventory and discovery tools and targets (A&I and FT databases, digital collections, etc.).

The second problem is that "library systems" are about as niche as one can get these days; ILS vendors recognized this more than 5 years ago by embracing link resolving, self-checkout, RFID, IRs, etc., while simultaneously abandoning the flagship products that created their market share. Nowhere is this more evident than in the newest OPAC race,

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a mantle being picked up by AquaBrowser, Endeca, and OCLC, three non-ILS vendors. Nontraditional vendors are carving a path now, and that will likely continue with dangerous consequences for libraries. That danger includes being forced to pick ILS products or support from the likes of Banner, PeopleSoft, or some other "search" company that happens to sit among a portfolio of some equity firm that just picked up a quaint little library software provider. (Wouldn't that be ironic? After all our complaints about search problems, we're forced to use software from a search company that knows nothing about inventory control?)

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—KRISTIN ANTELMAN

OK so I have dodged the question, but I think my answer is between the lines. We need what Roy said, but a little more than simply a published API. We need systems that are prepared for true interoperability (a word that I have called this decade's "greatest lie" in library automation). Our profession has been obsessed with building the perfect legacy system by combining parts of the fully functional ILSs. Instead, we should be worrying about interacting with larger enterprise systems like payment, HR, and financial systems; RFID and other self-service systems; ERM; digital asset management systems; full-text repositories, etc.

Some of the other survey respondents had different things in mind. John Blyberg replied with his library "bill-of-rights" for the ILS. Stephen Abram and Frank Cervone highlighted differences between the needs of libraries and library users, and how these differences should impact the design of the ILS.

 **John Blyberg** (head of technology and digital initiatives, Darien Public Library): I envision a library Bill-of-Rights with four simple but fundamental must-have's from your ILS.

1. Open, read-only, direct access to the database. When I say "open," I mean that we should be able to run any query at all against our own data, however absurd it may be. "Read-only" because I understand the need to protect data

integrity, but no harm can come from getting your own data out. Many vendors offer this already. Good for them. It should be standard. It should also not be prohibitively expensive. For most libraries, an open-source RDBMS [relational database management system] like MySQL or PostgreSQL per webopedia would not only suffice, but would be ideal.

2. A full-blown, W3C-standards-based API to all read-write functions. This is the big one, because all else stems from here. We ought to be able to access every level of functionality inside our automation system using an open standards API. Everything from modifying a patron's home address to cataloging new items should be included. I envision a vast set of functions that can be described via a standard WSDL [Web services description language] stream for interfacing via Web services. In addition, shared [database] libraries need to be made available along with proper documentation. Ideally, these would be the same libraries and APIs that vendors themselves use. It's clean, simple, and it makes so much sense. (It's also why I've said before that vendors need to rewrite their software from the ground up.) Given these tools, librarians would be empowered to roll out new services and features in their time frame, not that of the vendor. This, alone, is a major evolutionary necessity for the survival of the online library.

3. The option to run the ILS on hardware of our choosing, on servers that we administer. We should have access to the machines that run our ILS. This does two things. First, it ensures that we're not being taken advantage of. Second, it gives us the flexibility to run software locally doing tasks that we might not otherwise be able to do, such as cron jobs that parse logs, data files, etc. [Cron is a UNIX command that can be used to automate certain processes; a cron job is usually executed periodically, when certain conditions are met.] As it stands now, if I know security is a problem on the machines running our automation system, there is very little I can do about it.

I REALLY DON'T WANT TO

HAVE MY USERS DEAL WITH THE ILS.

—ROSS SINGER

4. High security standards. I think library infosec [information security] is unacceptable. Vendors need to step up now, review their best practices, and implement some very radical changes to the way they're handling everything from rollouts to patches to access protocols. We have the right to peace-of-mind (and so do our patrons, for that matter).

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Looking at this list of four fundamentals, I'm thinking, "this is as basic as it gets." This is not shoot-for-the-moon stuff. Yet, if conceded these features, we'd be given all the tools we need to permanently change the way we adapt to emerging trends.

Stephen Abram (vice president, innovation, Sirsi-Dynix): The ILS will continue to run the library. However, the OPAC will devolve into a broader user experience driven by technologies like portals, portlets [plugable user interface components that are managed and displayed in a Web portal], federated search, OpenURL, RSS, visual display, and 2.0 type read/write/experience applications, etc. Hopefully the debate about the future of the ILS will mature and the discussion about the future of ILSs will bifurcate. We need to get to the point where librarians can differentiate their organizational needs for systems to manage the library and content and the users' needs to have a community, information, research, and learning experiences. This has to happen faster since the discussion is quite muddled at the moment. So, to answer your question, ILSs will offer a wider range of metadata management tools, tagging, portalized content management, elearning hooks, and ways to integrate all forms of content. OPACs, on the other hand, will bury themselves in content and context-driven portals and portlets whereby the goals are driven by the end users' needs for a research and learning experience and not by the libraries' needs to tell the users things.

H. Frank Cervone (assistant university librarian for information technology, Northwestern University): What I'd like to see is for the catalog to go away. To a great degree, it is an anachronism. What we need from the ILS is a solid, business-process back end that would facilitate the functions of the library that are truly unique such as circulation, acquiring materials, and "cataloging" at the item level for what amounts to inventory-control purposes. Most of the other traditional ILS functions could be rolled into a centralized system, like OCLC, that would be cooperatively shared. The catalog itself should be treated as just another database in the world of resources we have access to. A single interface to those resources that would combine our local print holdings, electronic text (both journal and ebook), as well as multimedia material is what we should be demanding from our vendors.

So, for ILS vendors out there, what is the bottom line? Survey respondents expressed a clear desire for the following features and functionality in the future ILS:

- Direct, read-only access to data, preferably through an open source database management system like MySQL

- A standard way to communicate with the ILS, preferably through an application programming interface
- Standards-compliant systems including better security and more complete documentation
- The ability to run the ILS on hardware that the library selects and on servers that the library administers
- Greater interoperability of systems, pertaining to the systems within the library (including components from vendors, open source communities, and homegrown systems) and beyond (enterprise-level systems such as courseware and university portals, and shared library systems such as OCLC)
- Greater distinction between the ILS (which needs to efficiently manage a library's business processes) and the OPAC (which needs to be a sophisticated finding tool)
- Better user interfaces, making use of the most current technologies available and providing a single interface to all of the library's holdings, regardless of format

While many of the respondents had clear ideas about what they wanted, I could read some concerns between the lines. There was a call for more clarity in discussions about the future ILS, particularly in making a distinction between back-office systems and public interfaces. There are also tensions between the integration and disintegration of systems, with some survey respondents feeling that less integration will mean greater flexibility, and others concerned about the potential negative impact on the ILS industry as systems become more disintegrated.

One thing is clear: Librarians are no longer satisfied with the systems that vendors are providing, and they are looking for alternatives. Librarians know what they need and, in many cases, it's pretty straightforward. So who will build the system that we're dreaming of? Will it be a single system or will it be made up of many parts? What do you want to see in the future ILS? We invite you to stay tuned to CIL as it covers the changes that are sure to come.

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