Optimizing an Octopus: A Look at the Current State of Electronic Resources Management and New Developments in the CORAL ERM System

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No one mentions in job descriptions that being an electronic resources librarian means drawing a lot of octopuses. In addition to dabbling in supply chain management, scholarly communication, and acquisitions, e-resources professionals are often asked to explain why those areas are related to the work of managing electronic access. The result is often a series of sprawling, tangled diagrams with arms reaching everywhere, all in an attempt to represent the “electronic resources management workflow.” The unfamiliar viewer may be shocked by the complexity of processes; knowledgeable viewers are often only marginally less overwhelmed. The reality is that electronic resources management (ERM) is dynamic, unstable, and unpredictable, and that’s if the librarian is lucky enough to work in a library that promotes innovative approaches to those processes.

Librarians and library software companies have dedicated considerable resources to developing systems that support and simplify the library’s ERM workflows, especially as the systems have multiplied beyond the central ILS. In addition to holdings and licensing information, many libraries have added the link resolver, the proxy server, web scale discovery systems, helpdesk ticketing systems, and other tools to their suite of services, all of which have a role in the e-resources life cycle. However, most attempts to simplify and centralize these individual services have been unable to

encompass emerging tools and ultimately generate the need for more extended workflows, more octopus diagrams, more spreadsheets in a shared drive.¹

It's been nearly a year since Emily Singley and Jane Natches, two researchers from Boston College, published about the pervasiveness of those external ERM processes at institutions with Library Service Platforms (LSP) in place, research which illuminated some of the central challenges in developing ERM systems.² LSPs, also commonly called "Next-Gen ILSes," have emerged as one approach to managing both electronic resources and library systems, an approach which hopes to reduce the number of processes by centralizing them in one larger, often shared system. Libraries have seen "a growing trend toward a consolidation of services for electronic resources management, A–Z journal listings, full text link resolving, and discovery services under a single service provider," and these centralized platforms are a natural evolution of that trend.³ Using the TERMS framework (<https://library.hud.ac.uk/blogs/terms/>) as a guide for some of the more universal functions of ERM, Singley and Natches conducted a survey of nearly 300 library professionals to uncover how ERM was being handled in three major LSPs: Alma, Sierra, and OCLC Worldshare. The survey respondents expressed that the systems have simplified many workflows, especially with regard to journal activation within the central systems. Nevertheless, all of the surveyed library staff expressed the need for performing many ERM tasks outside of the systems, particularly in managing renewals and performing ongoing assessment of the subscriptions. Across all three systems, more than half of staff users were assessing their renewals outside of the LSP in spreadsheets, shared drives, and other external

options.⁴ Usage modules and cost-per-use calculations continue to be a struggle to manage within central systems, and even many tools designed specifically for this purpose are not able to provide the full range of COUNTER data and calculations. For example, EBSCO's Usage Consolidation tools provide excellent ways to centralize JR1, BR1, BR2, DB1 and DB2 reports;⁵ however, many libraries are finding value primarily in the JR5 and JR1 GOA reports.^{6 7} This is not to single out that particular tool; finding systems to handle the calculations cited above is challenging, and demand for these reports and calculations is only just emerging. While improving these tools is a constant process, meeting these increasingly more specific needs at the current pace of collection management is a challenge for a centralized system, where other workflows will inevitably be affected.

The related challenge of feasible data migration in a major system change continues to be a discussion point in the centralization of these processes. Although librarians may appreciate the minimized processes that come with one-stop ERM in an LSP, that value is often contingent on how carefully the e-resources and metadata functions are being handled. Singley and Natches note that the "complexity and ever-changing nature of ERM has made it necessary for libraries to invest in multiple software systems as well as use manual workarounds to support ERM workflows."⁸ Many of the systems were not originally designed for interoperability, particularly in the parsing of metadata between them. This lack of connection between systems has often resulted in siloed workflows that are difficult to centralize without extensive project management and staff time. Libraries in this and similar situations have begun to

explore a different solution than system centralization: perhaps what is actually needed are configurable systems and integrations that allow ERM to be implemented more gradually, developed along the library's own timeline. This solution looks instead at creating connections between existing systems through APIs and integration tools, which will allow a library to make system changes only when necessary (and reasonable to do so).

The details of the open source FOLIO LSP had not yet been announced when Singley and Natches performed their survey in early 2016, but presentations of FOLIO at the recent 2017 EBSCO User Group reflected library demand for stronger integration of pre-existing platforms and clearer data migration plans.⁹ In fact, the agendas from the user groups of other major LSP providers, including Ex Libris and OCLC, included sessions about API development and fluid integration with outside systems.^{10 11} It's clear that many librarians and library providers are coming to the conclusion, as Singley and Natches did, "that ERM remains a complex process that is, as yet, too daunting to encompass within any one software system."¹² Beyond the functional concerns about centralized systems, many libraries continue to find value in maintaining a suite of separate tools. Librarians providing case studies of system interoperability at three Canadian university libraries noted that by maintaining unique but connected tools, they were able to to implement "flexible and diverse systems" while promoting "healthy competition within the marketplace."¹³ In coming to the decision to maintain or migrate systems over time, librarians are aware that the original interoperability issues are still present among their systems; in these situations, technical services librarians and

developers team up to enhance metadata parsing solutions and API technology. While it's understood that many parameters prevent this option from being available to many libraries, for others, this approach is more feasible than a large system migration or dependency on a single software provider.

In both emerging approaches, it must be noted that huge amounts of the work fall on the technical services librarians, whose many diagrams must be consolidated and scrutinized as the workflows and metadata are incorporated. When preparing to integrate services, information about the library's holdings from various incongruous systems is often seen in its rawest form: proxy configuration files expose periods of non-maintenance, and wrongfully activated links are held up to the light. Following this period of scrutiny, technical services librarians are then often asked to construct a central dataset for either one major system or several interoperable templates, a task which seems fairly straightforward, yet is somehow anything but. ERM is tough for all involved during many migrations, but it can also be a very rewarding process that often makes these library staff into more appreciated assets at their institutions. For those entrusted to construct and optimize a central dataset from disparate file structures, an open source ERM system such as CORAL (<http://coral-erm.org/>) can be very helpful. Open source ERM systems often provide librarians with the flexibility to implement as much of the system as needed according to technical limitations of their libraries. In the case of CORAL, the ERM is supported by an active developer group, an accessible user community, a history of vendor and library support, and a governance structure. While many libraries with CORAL implementations have developers who contribute to

the project, CORAL is also often implemented by librarians with the help of the developer and user community. The system is modular, and while some libraries stay up-to-date with the latest release (which occurs approximately every six months), some libraries have been known to bring just one function of one CORAL module into their other systems. Recently, the governance committees have been actively recruiting new members and expanding opportunities for leadership. The CORAL Steering Committee has become more focused on user engagement as the team looks toward refreshing the project road map. Following a recent survey among the user community, the Steering Committee will develop user-driven goals in this road map. In the coming months, the recently formed Web Committee will be transitioning the website and its data to an updated site, as well as diving into the project documentation.

Beyond governance, the developers on the project, with in-depth input from subject matter experts in ERM, have improved functionality of the system in ways that coincide with the emerging demands from librarians, and the work is impressive. (Figure 1 shows where some of this new functionality can be found in the system.) Earlier in 2017, developers enhanced the import configurability of CORAL to allow for custom field import at numerous levels in its Resource module, the primary means for documenting titles and packages in the CORAL system. These improvements allow librarians to lay out and import their holdings in bulk without forcing the data into a new structure. Even if the import doesn't satisfy the most detail-oriented of e-resources librarians, having the initial dataset imported for editing reduces the workload considerably.

Also in 2017, developers turned their focus on integrations. First, Matthias Meusburger and Paul Poulain from the open source software group BibLibre started to develop an integration between CORAL and the open source ILS Koha, an enhancement that allows vendor, budget, and acquisition information to be synchronized between CORAL and the ILS and provides real time acquisitions (RTA) options for users of those systems. The integration has since been developed to be more universally configurable and work with any API-enhanced ILS. SirsiDynix, which offers hosting and support services for CORAL, facilitated development of an integration between CORAL and EBSCO's central Holdings Management knowledge base using EBSCO's Resource Management API (RM-API.) To that end, Product Manager Carla Clark coordinated with contractor Luke Aeschleman to broadly define the integration. Luke then designed and coded the feature, which allows CORAL users to import resource information in bulk from EBSCO's central knowledgebase, including title information, resource URLs, subject designations, and coverage dates. For campuses with these systems, these integrations streamlined and automated many ERM processes while allowing libraries to keep some systems in place inconspicuously. Looking forward, developers are exploring integrations with projects such as the open discovery tool, Vufind, and the open knowledgebase, GOKb. While ERM tools on the market demonstrate a commitment to meeting the integration needs of libraries through API and RTA integrations, they are often confined to rigid release cycles that are opaque before launch. CORAL's open development community, institutional product

support, and modular implementation approach allow for leaner release cycles that are more transparent and can meet an increasingly diverse array of ERM needs.

Of course, there are far more ways to look at easing ERM than this dichotomy of centralization or integration. In any event, immediate need will likely dictate a hybrid approach to ERM, and any consideration given to long-term strategy is a luxury for many libraries. But regardless of the level and direction of ERM implementation in a library, professionals and providers alike seem to have a growing awareness that their system decisions should be flexible in order to address quickly emerging ERM tools and ideas. For example, literature in the field shows that more and more libraries are getting out of major e-resource packages, or “Big Deals.”¹⁴ However, little has been written about how to manage the residual access. Electronic resources librarians are finding variations in how post-cancellation access is being provided, and budget managers are finding themselves in a new role, tracking license and payment information in new ways. The emerging need to track perpetual access terms more closely generates a need for a new workflow, a new octopus diagram. Maintenance in any system becomes a little more cumbersome for the involved electronic resources librarian if the systems in place can’t be configured to meet this new data need. That specific yet increasingly recurring situation is only one example of many emerging collection management approaches, and library directors are looking to replace, not complicate, old processes. Even as we see impressive developments among all systems handling ERM, those working on the CORAL project have recently seen that librarians and developers working on the ground have a considerable advantage in anticipating these developments. The CORAL

community is made up of libraries that demand the most from their collections and services, and their support has made the open source project competitive with proprietary solutions. While it is possible to eliminate and integrate processes at the system level, these projects benefit when informed by those who don't see octopuses in these processes, but a series of constantly evolving workflows that are at the heart of the institution.

ILLUSTRATIONS

Figure 1, screenshot taken from a CORAL developer installation maintained at Caltech, which shows the File Import and EBSCO Knowledge Base integration that have been in recent development.

NOTES

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12. Jantzi, Richard, and Wong, 196.

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14. Singley and Natches, 81.