The narrowing field: The interrelationship of systems librarian training & ILS marketplace consolidation

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Abstract: The ongoing consolidation of the integrated library system vendor environment, coupled with the increased shift towards closed remotely hosted software options, has created a situation in which librarians can no longer evaluate the technology that serves as the primary infrastructure for library service. This shift, coupled with inadequate preparation for systems librarians through LIS graduate coursework, sets the stage for a future in which librarians' professional values of openness and equity will stand at odds with the necessary choices in library software providers. Advocacy and professional development through organizations dedicated to technology in libraries, and open source development, may help to prevent the total loss of institutional autonomy.

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The rising generation of librarians stands on the edge of a precipice, defined by both a field increasingly driven by the market trend of software-as-a-solution (SaaS) integrated library system (ILS) models and an education lacking in the necessary training in systems administration. As the platforms that are so vital to libraries and their constituencies move ever closer to a fully cloud-hosted, black box approach to software provision, it is incumbent upon librarians and library staff to be more vigilant in our assessment of the ways in which library systems align with our professional values. Yet, surveys of current trends in library and information science (LIS) pedagogy find that the core information technology skills supplied through LIS education are insufficient to adequately prepare the next generation of librarians to manage existing ILS platforms. In light of this assessment, what relationship might exist between the transition to hosted, SaaS ILS models, and the library science training of systems librarians?

A useful contextualization of this issue lies in the history of ILS vendor offerings through the past several decades, beginning with the initial release of library automation software in the 1970s and 80s, right up to our current age. Kinner & Rigda (2009) track the market history of vendor-sourced ILS, noting that despite the dynamic nature of the early library software environment — peaking in 1990s with over 40 unique vendors — market offerings began to dwindle through the early 2000s as large companies such as OCLC and Sirsi (now SirsiDynix) acquired smaller ILS vendors. As Marshall Breeding (2016) notes, the narrowing of the vendor field continues, exemplified by recent corporate acquisitions which "[concentrate] power among a smaller number of much larger companies." Primary among the goals of these new leviathan vendors is the pursuit of a total service software, an ILS that centralizes all library functions through a single service provider. Breeding (2017) refers to this as "vertical consolidation," one of the last growth areas for a market that has been reduced to only a small handful

of top tier competitors. Hand-in-hand with changes in software provision is a shift towards completely web-based SaaS solution, for example OCLC's *Worldshare Management Services* and Ex Libris's *Alma*.

While SaaS platform provision makes sense from a vendor perspective, the most alluring appeal for libraries is the potential cost savings in the form of decreased institutional investment of in-house resources such as systems infrastructure, administrator salaries, and professional development training. The state of LIS programs, and their failure to deliver adequately trained systems librarians, is a potentially under-acknowledged problem that may exacerbate the gap between SaaS system vendors and libraries. In a survey of ALA-accredited LIS programs, Scripps-Hokstra, Carrol, & Fotis (2014) found a lack of a unifying standard for technology competencies. Building upon their work, Tomer (2017) concludes that despite the acknowledged importance of information technologies to the LIS field, ill-defined standards and shallow expectations of "understanding" tech skills have led to an unsustainable position in which our field incorrectly believes that "[…] complex systems can be effectively managed by people who do not fully understand how they work" (16). Perhaps the resource that libraries lack in terms of deciding between traditional locally hosted ILS systems and SaaS solutions is not merely funding, but also adequately skilled systems librarians.

The problem is not one of resource allocation alone. Rather, this move towards remotely hosted SaaS platforms, and the (un)intentional role that our pedagogical practices play in this move, is intimately related to ethical concerns regarding the openness of library infrastructure and the biases that can exist unchecked within closed, proprietary systems. By now, Safiya Nobel's (2012) work on biased information retrieval in commercial search engines is a familiar caution of the structural inequalities that can be reinforced by proprietary systems while maintaining the guise of objectivity achieved through technological superiority. The systems that libraries acquire through vendors are no different: Matthew Reidsma (2016) points to several instances in which ProQuest Summon Discovery

Services' "Topic Explorer" feature produced biased results for searches related to gender, sexuality, religion, and race. These results are returned based on vendor-defined algorithms that are protected by trade secret law, rendering them immune to user-initiated audit save through after-the-fact results evaluation. This is a labor- and skills-intensive endeavor that may prove prohibitively burdensome. As we transition more library functions to opaque, SaaS tools as means of easing the pain of financial and skills-related scarcity, our field will be less capable of auditing the platforms we purchase, making it difficult to ensure that they align with institutional and professional expectations. We would therefore be reliant on vendors to promote our professional values of openness and equity through their services, despite the potential for their profit-driven motivations to stand at odds with our own.

The ongoing consolidation and vertical integration of the vendor market, coupled with the shift towards closed SaaS library systems, may lead to a future in which libraries can exert little influence over the technological infrastructure that make up core library services. While the examples of bias discussed above reside primarily in the realm of discovery, the consolidation of power over library systems within the hands of a small group of vendors will increase the likelihood that – over time – library systems may move out of alignment with our professional values, while providing fewer opportunities for audit and remediation. While economic forces may trend towards an increasingly closed model of platform provision, librarians and LIS students can take steps to promote skills and awareness of systems management. First, users can search the ALA-accredited programs directory (http://www.ala.org/educationcareers/accreditedprograms/directory/search) for programs that specialize in information systems design and analysis, programs that will likely provide a better conceptual foundation in systems librarianship than might otherwise be found in a generalist LIS program. Equally important is the support of openness through professional organizations and initiatives. Groups such as the Digital Library Federation (https://www.diglib.org/), the Library and

Information Technology Association (http://www.ala.org/lita/), and Code4Lib (https://code4lib.org/about) support committees, interest groups, and conference sessions focused on systems librarianship and the value of open source systems. Lastly, open source library system initiatives including FOLIO (https://www.folio.org/), Evergreen (http://evergreen-ils.org/), and Koha (http://www.koha.org/) provide interested users the opportunity to experiment with open systems for library environments and to provide public support for open alternatives to vendor models.

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