Chapter 2
Beyond the ILS:
A New Generation of Library Services Platforms

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ABSTRACT
This chapter focuses on the changes in integrated library systems (ILS) over the past thirty years as the focus shifts from collecting physical items to electronic and digital materials. The relationship between the ILS and new specialized applications, including link resolvers, knowledge bases of e-content, electronic resource management systems, digital asset management systems, discovery services, and institutional repository platforms is discussed and placed in context. In addition to looking at workflows with these new systems, a general discussion of how academic libraries are likely to engage with these new systems, the time frames in which we can expect availability and widespread adoption, and any cautions or concerns to have in mind when selecting or implementing these systems.

INTRODUCTION
For the last thirty years or more, academic libraries have relied on integrated library systems to help them manage and provide access to their collections and services. The ILS was designed at a time when academic library collections consisted primarily of physical items and they provided automated support for a very broad range of the tasks related to the management and access of these materials. The transition to ever increasing proportions of electronic and digital materials pressed the ILS beyond the limits of what it was designed to manage.

In order to deal with these new formats, the current phase of library automation leaves the ILS in place, but surrounded by other specialized applications, including link resolvers, knowledge bases of e-content, electronic resource management systems, digital asset management systems, discovery services, and institutional repository platforms. This approach, while filling in needed functionality, results in duplication of effort and
inefficiencies for library personnel in the way that they work and makes use of library resources difficult for patrons as they attempt to navigate through a complex matrix of interfaces and services.

This chapter will address the technologies emerging now that address the current and future needs of academic libraries. The chapter will describe and give perspective on some of the projects and products emerging in this context. An early section will describe some of the general concepts embraced by each, including unified workflows across all collection formats, highly shared data models, open API’s and engagement with community developers, as well as general technology trends such as multi-tenant software-as-a-service. Sections will be devoted to some of the major products: Ex Libris Alma, OCLC WorldShare Platform, Serials Solutions Web-scale Management Solution, Innovative interfaces’ Sierra, and Kuali OLE.

The chapter will conclude with some analysis, perspective, and projections on how academic libraries are likely to engage with these new systems, the time frames in which we can expect availability and widespread adoption, and any cautions or concerns to have in mind when selecting or implementing these systems.

**The State of the Integrated Library System**

The model of the integrated library system has been the bedrock of library automation for around more than thirty years. The first automation systems introduced in the early to mid-1970s embraced a model of organization that grouped functional tasks into stand-alone systems specializing in a specific area of library operations, such as circulation, cataloging, acquisitions or serials management. Over time, these standalone modules consolidated into more comprehensive systems and have steadily gained more nuanced functionality, but many of the foundational principles of the early automation efforts designed for a print world persist through the integrated library systems in use today.

The earliest days of library automation systems were created to address specific processes. Some offered cataloging and circulation capabilities, such as Libs 100 system introduced by CLSI in 1971 or the Gaylord Circulation 100 system in 1975. Others specialized in acquisitions, including Innovative’s INNOVAQ. In these early days managing even a more narrow scope of functionality was a giant leap beyond the manual procedures previously in place. The ambition, from the beginning, was more comprehensive automation, and many of these early systems evolved accordingly, bringing together bundles of functionality.

The mold of the fully integrated library system germinated out of the previous generation of special-purpose applications, taking root by the 1980 when products began to be marketed that combined multiple modules that shared common databases and interfaces. The libraries of this era saw all their energies concentrated on managing collections of physical materials—books, serials, microforms, and manuscripts. Monographs existed only in printed form, and were purchased through approval plans, firm orders from publishers or book jobbers. Journals were published in print, and the functionality to perform check-ins to record issues received, make claims for missing issues, and to facilitate the binding into volumes was an enormous help over the manual procedures previously followed for tracking a library’s holdings of newspapers, periodicals, and scholarly journals. This was also the time when researchers would find articles related to their areas of interest using printed indexes, such as the *Readers Guide to Periodical Literature* or one of the more specialized indexes.

It was in this print dominated time that the integrated library system entered the scene, with modules designed to work together to provide a comprehensive array of functionality. These