The 2015 Enterprise Application Market in Higher Education

Student Information Systems
Contents

What You Need to Know 3
Market Share 5
Market Shift 2011–15 6
Management Strategy 7
Deployment Strategy 8
Case Study: Due Diligence Mitigates SIS Replacement Risk 9
Conclusion 11
Acknowledgments 11

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What You Need to Know

A student information system (SIS) manages all information about students. It touches most student-related activities such as admissions, registration, and grades, and it integrates with many different systems, processes, and tools throughout the institution. Not only is the SIS technically complex, this highly integrated system also requires collaboration between multiple stakeholders from a variety of departments across the institution. All of this makes SIS replacement an especially complicated proposition, something institutions tend not to tackle lightly. Reflective of this, student information systems are among the oldest and least frequently replaced or implemented systems. As a result, student information systems rank near the bottom in terms of system area rate of change (figure 1).

*Rate of change is an indicator of how rapidly a system area is changing. It is a composite score based on year of current implementation and on plans to implement new systems or replace existing ones. Systems with the highest rate of change typically have been implemented recently or are expected to be implemented or replaced soon.

Figure 1. Characteristics of core information systems
Average age of implementation, combined with plans to replace systems, determines the rate of change for a system area. Most institutions (79%) have no plans to replace their student information system within the next three years, and nearly all of those institutions (96%) have not implemented a solution within the past three years (figure 2).

Figure 2. System provision and plans for change for student information systems
Market Share

With nine-tenths of the market (88%) using a solution from one of the top 3 vendors—Ellucian, 58%; Oracle PeopleSoft, 25%; and Jenzabar, 5%—the student information system market is highly homogeneous (figure 3).

Figure 3. 2015 student information system market
Market Shift 2011–15

Further indicating the low rate of change for student information systems, from 2011 to 2015 the SIS market was relatively stable (figure 4).

Figure 4. 2011–15 student information system market (top 3 solutions)
Management Strategy

Possibly related to system age, most institutions (86%) maintain an in-house implementation of their SIS and have not adopted any of the newer management strategies, such as SaaS. Among institutions without an in-house SIS, most use a system hosted or managed by another institution (figure 5).

![Diagram showing management strategies in use for top 3 student information solutions](image)

**Figure 5.** Management strategies in use for top 3 student information solutions
Deployment Strategy

Most institutions interact with their student information system through either a basic desktop application (28%) or a web-based application (52%). Among all institutions using any of the top 3 solutions, the institutions using Oracle PeopleSoft Campus Solutions are most likely to use a web-based application. Among colleges and universities using these three solutions, institutions using Ellucian Colleague Student have the highest rate of basic desktop application deployments (figure 6). Mobile-friendly student information systems are also evident in the market. About one-fifth of institutions use either responsive web design or a mobile app.

Figure 6. Deployment strategies in use for top 3 student information solutions
Case Study: Due Diligence Mitigates SIS Replacement Risk

Due to project complexity, decisions to replace student information systems are carefully considered and typically made only when a clear need is identified. In 2012, Boston College (BC) found itself in a replacement situation. Its homegrown, mainframe-based core SIS was about 30 years old. BC found the system increasingly hard to adapt to new business or government requirements, and it anticipated an increasing challenge to find skilled staff to maintain it. The university recognized the need to replace its SIS portfolio to mitigate developing risks.

Given the complexities, BC mindfully considered the risks associated with the replacement of a system so integral to institutional operations. Functionality, affordability, and vendor and technology viability factored into planning and risk assessment. A review of SIS solutions made it apparent to BC leaders that a commercial ERP did not fit the institution’s risk profile. BC officials believed that many commercial SIS solutions would be an expensive investment, were based on relatively older technology, and would require a costly major upgrade or replacement sooner rather than later. But change management was perhaps the greatest concern. “Implementing an ERP is very difficult in higher education,” said Michael Bourque, vice president, information technology. “It’s a rolling project over the course of a year or so, and you have to line up all the dominos exactly. If you miss one deadline, the problems cascade.”

Eventually officials at BC determined that a gradual, modular replacement strategy was the best path forward to manage risk and provide improved functionality. In other words, BC would replace one SIS component at a time over the course of several years, minimizing the risk of a cascade of missed deadlines and cost overruns. In addition, BC’s service-oriented architecture supported a modular approach. BC leaders outlined other benefits:

- **Control and flexibility:** With a modular approach, BC wouldn’t be locked into one solution. The institution would have greater control of the SIS replacement process, selecting the SIS components that worked most effectively for the university—e.g., best-of-breed, open source, commercial solutions, on premise, off premise—and determining the best time and sequence to implement each component.

- **Costs:** BC would avoid a large upfront financial investment for a total SIS replacement. Instead, the college will spend money over a longer period to replace each SIS component and perhaps less money in the aggregate.
- **Risk:** The college would take on and mitigate risks gradually. The entire SIS portfolio and all its associated functional areas would never be totally at risk; rather, risk is confined mostly to the specific module being replaced and its functional area.

In this way, BC started down its modular SIS replacement path. To support this strategy, BC joined the Kuali Foundation’s Kuali Student Project to help develop the Kuali Student SIS. The Kuali Foundation’s module development strategy, as well as the architectural approaches of Kuali Student, aligned with BC’s modular replacement approach. Its community-source strategy appealed to BC’s system development roots. And its cost-effectiveness appealed to BC’s bottom line.

Over time, BC participated in Kuali Student module development and replaced other BC SIS components with third-party solutions as required. For example, BC designated its financial aid system as a high-priority replacement system due to significant risk and implemented a third-party solution to promptly mitigate this risk and advance capabilities.

When the Kuali Foundation changed development and licensing strategies in summer 2014, however, the Kuali Student Project was impacted. As a result, BC needed to reassess its options. It concluded that the same risks still existed with commercial ERP solutions. Moreover, adopting a commercial ERP solution at that point would have changed the fundamental strategy of incremental adoption. BC deemed the modular path to still be the safest route. It will continue to implement third-party solutions whenever appropriate.

Additionally, BC has decided to leverage its Kuali Foundation experience in a new way. With help from third-party partners, BC is building some SIS pieces itself—such as the student account module—from code originating in the Kuali Student Project. These Kuali components are institutionally agnostic by design, with no built-in BC lock-ins and with an eye toward possible open-source release to help other institutions adopt a similar modular SIS replacement strategy. BC is working to develop a system that is functionally rich and well architected (service contracts, DevOps, etc.). BC plans to complete the SIS replacement in mid-2018.
Conclusion

A student information system is intricately woven into an institution's operations, and its replacement requires intensive forethought and planning to minimize institutional risk. With a stable market and infrequent replacements, institutions replacing these systems may have difficulty identifying peer institutions and best practices for replacement. The main takeaway from BC’s experience is the importance of continued due diligence and risk assessment in an SIS replacement. BC’s thoughtful planning enabled it to design a replacement SIS strategy and to modify it as necessary, all to best advantage.

Acknowledgments

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Note

1. See the Kuali website for more information on company history and licensing.

About the Enterprise Application Market Series

The Enterprise Application Market report series from the EDUCAUSE Center for Analysis and Research focuses on data from the EDUCAUSE Core Data Service (CDS) to better understand how higher education institutions approach various information systems. Market share and system rate of change are among the metrics highlighted in this series. Information provided for this series was derived from the Information Systems and Applications module of CDS. For reports in the 2015 series, responses from 510 institutions were analyzed. Only U.S. institutions are represented in this series.