The 2015 Enterprise Application Market in Higher Education
Facilities Management Systems
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What You Need to Know</td>
<td>3</td>
</tr>
<tr>
<td>Market Share</td>
<td>6</td>
</tr>
<tr>
<td>Market Shift 2011–15</td>
<td>7</td>
</tr>
<tr>
<td>Management Strategy</td>
<td>8</td>
</tr>
<tr>
<td>Deployment Strategy</td>
<td>9</td>
</tr>
<tr>
<td>Case Study: Facilities Management Systems Enhance Asset Management at the University of Nebraska–Lincoln</td>
<td>10</td>
</tr>
<tr>
<td>Conclusion</td>
<td>12</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>13</td>
</tr>
</tbody>
</table>

## Authors

- **Leah Lang**, EDUCAUSE
- **Judith A. Pirani**, Sheep Pond Associates
- **Catherine Watt**, EDUCAUSE

## Citation for This Work


©2016 EDUCAUSE. Creative Commons BY-NC-ND 4.0.
What You Need to Know

The management of college and university physical space can seem like the final frontier of enterprise applications. Of all the enterprise systems deployed and managed, those that track the use of and return on investment for academic space are often overlooked. However, the importance of deferred campus building maintenance cannot be overstated, given that annual budget restrictions often push leaders to delay regular updates. With construction costs surpassing $600 per square foot and state appropriations to public institutions remaining stable at best, facilities management data are becoming increasingly important. Facilities management systems typically track drawings, rooms, square footage, maintenance requests, and repairs. Replacing these systems, or installing them for the first time, has become more important to many organizations. Facilities management systems rank toward the top in rate of change but very low in the proportion of systems outsourced (figure 1), suggesting that most institutions still prefer to manage their facilities processes internally.
Figure 1. Characteristics of core information systems

*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.
These nearly ubiquitous systems (used by 92% of institutions) are unique among the core information systems in that they are typically provided by a unit outside central IT (figure 2).

Figure 2. System provision and plans for change for facilities management systems
Market Share

With just over half of institutions (52%) using a solution from one of the top four vendors—TMA Systems, 19%; Dude Solutions, 13%; Accruent, 10%; and AssetWorks, 10%—the facilities management system market is fairly heterogeneous (figure 3). This is likely a product of varying needs across institutions and levels of investment.

Figure 3. 2015 facilities management system market
Market Shift 2011–15

From 2011 to 2015, TMA Systems achieved major gains in market share (7% in 2011 versus 19% in 2015; see figure 4). Market share for other top solutions either remained stable or saw moderate increases. During this same period, construction at institutions increased, especially for nonacademic space. As of 2015, half of new space is academic and the rest includes new residence halls, student centers, and athletic/recreational facilities. More-complex space requires more-complex management systems.

Figure 4. 2011–15 facilities management system market (top 4 solutions)
Management Strategy

Although most institutions (72%) still opt for an in-house implementation, one-fifth (20%) have a SaaS implementation, which may provide benefits such as scalability. Of the top 4 solutions (listed in order of market share in figure 5), Dude Solutions (SchoolDude) MaintenanceEssentials Pro is most likely to have a SaaS implementation (63%).

Figure 5. Management strategies in use for top 4 facilities management solutions
Deployment Strategy

The most common method of deployment for facilities management systems is web-based application (in use by 43% of institutions), followed by basic desktop application (35%). All institutions using one of the top 4 solutions (listed in order of market share in figure 6), are more likely to use these deployment strategies over mobile deployment or application virtualization.

Figure 6. Deployment strategies in use for top 4 facilities management solutions
Case Study: Facilities Management Systems Enhance Asset Management at the University of Nebraska–Lincoln

Effective facilities management is an uncelebrated but critical institutional success factor. Education and research may drive an institution, but sound facilities management creates a safe and reliable environment for these to occur. Technology plays a growing role in facilities management, especially as more physical assets incorporate IP-addressable network devices and Internet-connected sensors and electronics. A facilities management system uses these data to monitor and manage physical assets—for example, identifying trouble spots or tracking preventive maintenance, inventory, and work orders; communicating work-order status and progress to staff and customers; and providing information for operational, financial, and strategic decision making.

The Facilities Maintenance and Operations (FMO) area at the University of Nebraska–Lincoln (UNL) manages the university’s facilities management system, which central IT hosts physically in its central data center. FMO used a homegrown facilities management system initially installed in 2003, but in 2012, the department began to contemplate other options to handle expanding reporting requirements, key performance indicator (KPI) tracking needs, and system scaling across the university. Commercial solutions were by then an attractive option, offering many capabilities on FMO’s checklist right out of the box. After an RFP process and a series of site-visit evaluations of different products, FMO replaced its homegrown system with a solution from TMA Systems. FMO chose on-premises hosting to facilitate custom reporting requirements.

Implementation resembled that of most enterprise systems, involving issues of integration and workflow. “Think of a facilities management as a star topology system,” explained Lalit Agarwal, director of facilities systems. “There are multiple integration points with other systems because the facilities management system affects many day-to-day business activities—billing, accounting, payroll—and we had to ensure integration with our SAP ERP system and other shadow systems.” Integration with the campus-wide systems required collaboration with various groups; FMO provided each group with the required specification for their application’s hosting environment. Agarwal noted the process went smoothly.

In addition, the new system provided an opportunity for FMO to optimize workflows, which were more loosely defined in the homegrown system, making programmed exceptions quite common. So FMO started from scratch with the new system, documenting the workflows and making required process changes to support the new system’s parameters and required data flows.

FMO believed that facilities management’s distributed nature made system pilots and area rollouts problematic. As a result, the team took a horizontal approach to implementation, activating the new system’s base module campus-wide in 2013.
Over time, FMO added more features and capabilities as time permitted and priorities allowed, initially focusing on financial matters—such as chargeback and payroll functions—and then operational enhancement features including monitoring, inspection, and custodial management.

One important benefit is FMO’s ability to diagnose and respond to problems faster. “The homegrown system referenced buildings only, making it difficult to pinpoint problems,” Agarwal stated. “Now we can drill down to specific rooms and can even determine if the problem’s root cause originates in a mechanical room located elsewhere.” In addition, FMO staff can document the incident more thoroughly, recording and coding staff and other system information as it becomes available. This, in turn, enhances post-incident analysis and better prepares staff response to similar situations. In fact, Agarwal reported faster response times since the TMA System implementation. FMO is considering other potential system enhancements that center on communication and information gathering, a customer communications module, mobile solutions, and geographic information system (GIS) integration, all of which can help refine the response cycle even more.

Agarwal shared these lessons learned from his experiences:

- **Learn from your peers:** Agarwal emphasized the benefits of reaching out to other institutions. The site visits not only served as a “vendor reality check” (to see if a solution would be a good fit for UNL) but also provided Agarwal and his team with new ideas on system use and workflows. “It is interesting how you go into these meetings with a certain list of questions, but what you really pick up are all those subtle tips, pointers, and ideas,” stated Agarwal. He recommended doing a little matchmaking beforehand to take full advantage of the experience, connecting with peers who have several years of system experience and who operate in similar technology environments—e.g., TMA System interoperation with an SAP ERP—to fully leverage their knowledge.

- **Don’t underestimate integration:** Like any enterprise system, a facilities management system has many touchpoints with other enterprise systems, such as the financial management ERP, and those connections potentially add complexity to the implementation. Agarwal cited the importance of 1) focusing adequate time and resources on integration during implementation to avoid problems later, and 2) collaborating closely with central IT on system integrations.

- **Don’t discount the end user:** FMO worked with impacted staff members on redesigning workflows. The upside was enhanced staff knowledge of the entire work-order life cycle. But change can be hard, and some staff members did not easily adapt their work patterns when the new facilities management system went live. FMO worked with staff members as necessary.
Conclusion

Sound facilities management promotes operational efficiencies and better asset management, and UNL discovered that a capable facilities management system boosts these benefits even further. Many institutions face a situation similar to that of UNL. Nationally, more than 50% of currently active space was built before 1960. The need to track space usage, evaluate its return on the initial investment, and maintain its currency will continue to become more important because of budget constraints and external accountability demands. Leaders face a strong need to better manage their facilities information because of limited deferred maintenance dollars, but they can be unprepared for the integration challenges when adopting new systems. There are myriad levels of data specificity available within and across systems, meaning that each institution must determine what information management system will work best. The heterogeneous marketplace will allow decision makers to tailor an implementation suited to their needs. Academic space management is about more than square footage. Proper space management provides leaders with an additional dimension to guide both planning and assessment for long-term growth.
Acknowledgments

ECAR wishes to thank for Lalit Agarwal, Director, Facilities Systems; Mark Askren, Vice Chancellor for Information Technology and Chief Information Officer; and Kathy Notter, Director, Shared Computing Services, all from the University of Nebraska–Lincoln, for their help with this case study.

Notes

2. Ibid.
3. Ibid.

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.