THE BUSINESS OF HIGHER EDUCATION

Why colleges and universities must modernize their processes to remain competitive

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By transforming workforce management, colleges and universities can get back to their core mission – educating students.

There is an unprecedented lack of funding for U.S. colleges and universities. According to the Center on Budget and Policy Priorities, state funding for public colleges in the 2017 school year was nearly $9 billion below its 2008 level. At the same time, institutions are struggling to stay relevant for an increasingly diversified workforce that includes a mix of younger, veteran, remote, and full- and part-time employees.

Managing this workforce can drain already limited financial and personnel resources. Manually calculating time and attendance leaves institutions vulnerable to human error, overpayments, paycheck delays and possible compliance violations.

By adopting smarter workforce management processes, institutions can cut labor costs and reinvest that money back into what matters most: improving student outcomes. For instance, automated timekeeping solutions eliminate manual, paper-based processes and reduce errors. Institutions can also save money by more accurately paying employees for actual hours worked and by avoiding overpaying for miscalculated overtime or leave. And when labor data is collected and stored in a database, higher education leaders can apply analytics and spot trends to easily make cost-saving adjustments.

Some universities are already realizing these advantages:

- ★ When Shenandoah University in Virginia automated its previously paper-based timekeeping system, it drastically cut the time it took staff to complete payroll – from two days to just four hours.
- ★ Pace University in New York City made the same shift for its 3,200 employees, cutting payroll calculation time from two days to just one minute.

Colleges and universities face many challenges. Don't let workforce management be one of them. Let Kronos help you do this task more quickly and efficiently, so your staff can focus their talents where they belong — on the business of educating students.

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INTRODUCTION

The U.S. higher education enterprise is at an inflection point as institutions encounter uncertain public funding, shifting student demographics, political pressure to contain costs, and increased calls to improve student outcomes and overall completion rates, among other hurdles.

We use the term "enterprise" deliberately — even with their unique mission and governance, higher education institutions share common challenges with complex organizations in many economic sectors. To confront these challenges, colleges and universities require a change in business practices.

Borrowing from methodologies honed in other sectors, we use language in this handbook that is not always found in the academy, such as business units, clients, customers and life cycle management. Such business-centric terms reflect another reality: Since higher education faces the same financial pressures as other sectors, it must also adopt innovative methods to fulfill its mission of educating students. Technology can enable these changes, but only when it is considered through a broad lens.

Oftentimes, individual departments or faculty and staff members attempt to address these challenges, leading to siloed efforts that do not produce fast results. For example, a June 2017 survey of college and university deans conducted by the Academy of Innovative Higher Education Leadership found that many college leaders thought their institutions were headed in the right direction. But 37 percent noted the pace of change was too slow.

In this report, we explore why colleges and universities are addressing both traditional business processes, as well as those that impact all areas of the student experience. We also look at the business process improvement strategies that help ensure new tools meet the rapidly evolving needs of an increasingly challenging higher education environment.

Even with their unique mission and governance, higher education institutions share common challenges with complex organizations in many economic sectors.

THE IMPERATIVE

There's no doubt that colleges and universities face numerous challenges. Less clear are the ways these challenges have placed new stress on their business and technology practices. Among them:

Enrollment pressures. The well-publicized dip in the birth rate means there are fewer 18- to 24-year-olds attending colleges and universities. At the same time, middle-aged adults are also now less likely to return to college to further their education than in years past, largely due to a stronger economy and the emergence of online and proprietary providers targeting older learners. The result is a five-year decline in U.S. higher education enrollments, with a total of 2.4 million fewer students enrolling in post-secondary institutions than in 2011, according to the National Student Clearinghouse.

The scramble for students means admissions departments must employ more sophisticated practices — both on the front end where online systems can simplify the application process for students, and on the back end where analytics can provide insights into the students most likely to apply, enroll and graduate. Admissions departments also need better connections to financial aid and other services that can help ensure students remain in school.

Increased reporting responsibilities. Acronyms such as FERPA (the Family Educational Rights and Privacy Act) and HIPAA (the Health Insurance Portability and Accountability Act) have become a lingua franca in college business offices as they and other regulatory and reporting requirements have increased dramatically through subsequent reauthorizations of the Higher Education Act. To ensure they comply with these regulations, higher education institutions and their employees must collaborate to better manage data.

"Most colleges and universities are very differentiated with a lot of demands on different business units," says Barron Koralesky, chief information officer (CIO) at Williams College in Massachusetts. "In the past, they were loosely coordinated, and things worked well. Once you ratcheted these requirements on top of them, everything had to be more aligned."

Tech-enabled teaching and learning. Relatively new tech-driven approaches like blended and online learning will proliferate. Ninety-one percent of deans polled by the Academy for Innovative Higher Education Leadership predict

they will offer more online programs in 10 years, which places greater demands on learning management systems (LMSs) and in-class uses of technology.

Efficiency vs. effectiveness. Colleges and universities have long focused on containing back-end costs to ensure limited resources go toward teaching and learning. In many cases, technology implementation has been justified by its cost-saving benefits — going paperless, eliminating redundant data entry and so forth. While efficiency remains a goal in redesigning business practices, it's increasingly becoming the means, not the end, to an institution's objectives.

Consider efforts to streamline financial aid as part of institution-wide changes at the University of Wisconsin-La Crosse (see sidebar on page 12). UW-La Crosse awards financial aid packages to around 6,000 students each year, a process that used to take a month or longer.

"Now it takes four hours," says Mohamed Elhindi, assistant vice chancellor and CIO.

While the changes have saved time and money, they also have made the admissions process more effective by giving UW-La Crosse a leg up with prospective students.

"Students may be looking at five institutions before they decide where they will attend," Elhindi says. "The first one that comes up with a package will move to the top of their list."

COMING FULL CIRCLE

As institutions invest in technology to meet these challenges, one irony is that their IT strategy is coming full circle — with some important twists.

Earlier campus technology efforts focused largely on one-off systems found in — and at times, developed by — specific departments. In recent years, these have been overshadowed by all-encompassing systems that feature many modules or applications serving the different departments of an institution — most commonly, financial and student information systems (SISs), but often a more comprehensive range of modules ranging from admissions management to facilities and curriculum management.

Within IT circles, this was the era when the enterprise resource planning (ERP) methodology entered the lexicon, and the comprehensive systems that came out of this process represented an initial attempt to break down technology silos among departments. The process of implementing these enterprise-wide

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— Barron Koralesky, CIO, Williams College

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systems using the ERP methodology also was characterized by highly focused requirement gathering that prompted institutions to build their own customized systems or encourage vendors to do so.

Even so-called standardized ERP systems often wound up adding large chunks of customized code and idiosyncratic processes to accommodate individual campus needs. But as the demands on institutions have increased, the limitations of these all-encompassing systems became evident.

"When you've got a Swiss army knife that does a little bit of everything, it might not have the exact tool you want," says Williams College's Koralesky. "Just when we thought we were pulling into centralized systems, business units started requiring highly specialized systems to compete."

In short, as new capabilities and business needs evolved, these multipurpose systems often couldn't keep pace, in part because the varying degrees of customization and their expanding scope made them difficult to upgrade.

"I could click through more than 30 different functions where we needed some kind of tool or system to become more efficient, and the system couldn't do it," says J. David Armstrong Jr., president of Broward College in Florida.

In a 2014 report, Gartner predicted these all-in-one enterprise systems would soon gain the "legacy" moniker formerly associated with the mainframe systems of previous decades. However, more specialized tools don't necessarily translate into a return to the Balkanized systems of yore. Given today's business demands, they simply can't.

"We're moving beyond the singular, giant ERP system to a situation with many interrelated subsystems that serve the business units well," Koralesky says. "But the data is not necessarily in a central place. IT must do a lot of work to integrate all of these satellite systems."

For many institutions, the cloud is becoming that central place. It can serve as both a single data repository — which many of the new, more specialized subsystems draw from — and as a platform for software-as-a-service (SaaS) applications. And when institutions continue to use existing systems, IT departments can integrate them with data in the cloud. Gartner famously called these systems "postmodern ERPs," and most colleges and universities are determining how to move in this direction.

"Knowing there's not a single system to do everything, the challenge is how to open the infrastructure," says Elhindi of UW-La Crosse, where nearly 60 applications spread across different departments now provide and extract information from a single database.

FOCUSING ON PROCESS

Given the complexity of what Gartner calls "postmodern" systems, a greater challenge is ensuring that new systems adequately reflect the changing higher education environment and an institution's different business functions — including admissions, finance, teaching and learning, facilities management and so on. Hence the interest in business process reengineering and similar practices that dive deeply into how institutions do their jobs to reduce complexity and ensure technology initiatives save time and money.

"Having a business case that outlines what an institution is trying to accomplish is essential to success," says Peter Eschenbach, managing director at Huron. "An institution might say it's using a mainframe system, so the idea of replacing it is obvious. Even in those cases, taking time to think through how you're going to execute and deliver on your goals is critical." ●

“To get a student admitted, upwards of 20 or more departments get involved. Each of these groups is juggling different challenges, which makes it difficult to develop holistic process design.”

— Joseph Drasin, Director of University Process Innovation, University of Maryland

REDESIGNING THE PROCESS

Whether it's called business process reengineering, process design or some other buzzword, colleges and universities are increasingly using sophisticated new methodologies to take a wide-ranging look at their business practices.

To get a sense of the work it takes to scope the business needs of just one unit of a higher education institution, consider the facilities department at Williams College. Tasked with maintaining hundreds of campus buildings, the department's old IT system made it difficult for technicians to keep track of work orders and building plans, and it did not support their mobile devices.

For the past year, the facilities staff has worked with the college's IT department and an outside consultant to determine their needs. Department employees have walked through each step of their jobs so department leaders can develop a business case for upgrading the system and identify the total cost of ownership. A team of IT and facilities employees are also conducting interviews with software vendors.

Managing change can be challenging even for a single department. Most of the business functions in colleges and universities, however, involve multiple departments, processes and systems. At best, the same information may be collected or acted on multiple times. At worst, different departments work at cross purposes, slowing down vital processes like awarding scholarships or scheduling students.

"To get a student admitted, upwards of 20 or more departments get involved," says Joseph Drasin, director of university process innovation at the University of Maryland (UMD). "Each of these groups is juggling different challenges, which makes it difficult to develop holistic process design."

COMPONENTS OF CHANGE

While process design borrows heavily from methodologies honed in other sectors, colleges and universities also must consider the unique nature of higher education and the inherent resistance to change within institutions. The steps of the process vary based on methodologies, but they tend to include the following components:

Undergoing readiness assessments. Institutions often bring in consultants before undertaking process design to get an unbiased sense of their readiness for change. As part of its institutional readiness assessment, for example, Huron looks at 20 different attributes ranging from governance to commitment to change to availability of resources to the readiness of

The term "customer" may be unfamiliar in higher education, but growing financial pressures require colleges and universities to look at prospective students as consumers weighing options in a competitive marketplace.

stakeholders — a critical component given the difficulty of rethinking long-engrained business practices.

"The ability to identify areas where you aren't ready and take steps to mitigate them can help set up the successful execution of a project plan," says Eschenbach.

Emphasizing the customer. The term "customer" may be unfamiliar in higher education, but growing financial pressures require colleges and universities to look at prospective students as consumers weighing options in a competitive marketplace of institutions. Colleges and universities also must think of existing students as customers which the entire enterprise must support.

"The word customer is not always well liked, but higher education nationwide is being challenged to reform the way we do business," Elhindi says.

As is true in other customer-focused sectors, there's a life cycle to serving students, starting with the admissions process and progressing through financial aid; billing; housing; course selection; major declaration; and health, advising and other supports — all culminating in graduation and then alumni fundraising and relationship management.

While staff resistance may arise, this overarching approach is vital to help disparate business units appreciate the benefits of looking at how their functions fit into the overall workings of the institution, says Elhindi: "Then they understand this isn't about reducing staff or budget, but developing an integrated experience for our customers."

AT UW-LA CROSSE, MOVING FROM A TO G

In 2011, the University of Wisconsin-La Crosse implemented a next-generation student information system (SIS). But before it began looking at technical specifications, leaders opted to map out the entire student journey — if not from A to Z, at least from A to G, or admission through graduation.

"We started looking at how we were going to make this a seamless process," says Mohamed Elhindi, assistant vice chancellor and CIO. By focusing on "student life cycle management" — tracking the full range of experiences students have throughout their time at the institution — Elhindi prompted different departments to think more broadly about how their functions impacted students.

"From there, it [student-focused language] started infusing our vocabulary and created a shared vision, and that helped us move forward," Elhindi says.

Moving forward involved ensuring all 60 of the university's systems pulled from a single repository of data, the SIS. The guiding rule that drove data management soon became "one instance of an application and one instance of data, driven from a quality data source, with checks and balances at the beginning, middle and end," Elhindi says.

The university has realized some cost savings, through actions like consolidating two scheduling systems within the facilities department. But more importantly, Elhindi says, identifying common needs has allowed departments to share information more effectively. For example, counseling and student health centers now share an application that securely houses pertinent student information, including mental health issues and learning disabilities.

This allows the departments to more effectively collaborate, says Elhindi, and provide students with the support they need. It also helps ensure their personal information is only seen by authorized staff.

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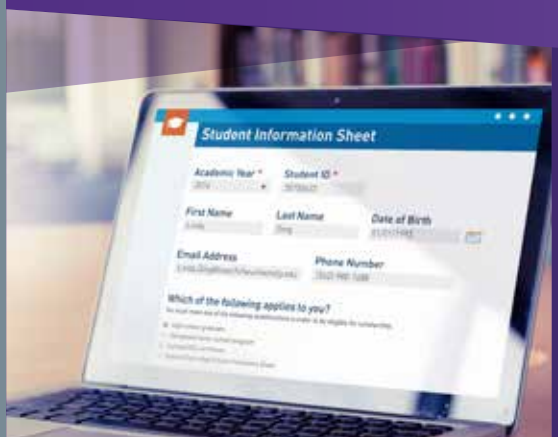

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Mapping out processes. Staff members can usually point to the problems they encounter as they work to complete specific tasks. The challenge is those local problems aren't always the root cause of the larger issue, says Drasin. "When a client says 'our problem is x or y,' it is usually a symptom of the problem."

Through facilitated conversations and the use of modeling tools, employees can work backwards through the steps of a process to articulate the challenges.

Doing so often begins by documenting the current process — identifying each step to get a high-level understanding of how things work. At UW-La Crosse, the product of this activity is called "the binder," and Elhindi argues it has value even if nothing changes.

"When people leave or retire, the institution runs a risk of not being able to function if the processes aren't documented," he says.

Bringing people together. While it's important to understand each step of discrete business processes, it's just as critical to understand how they connect with each other.

At UMD, for example, the bursar's office wanted to increase the speed at which it processed scholarship money. Drasin and his team brought together representatives from various departments, including accounting, finance, financial aid and scholarship providers, and had each list the data they needed to get their individual jobs done on flip charts. The goal was to get to what Drasin calls the "minimum viable data set" that includes all the information needed by each department.

The process identified steps the university could eliminate, but only after talking with staffers in the cashier's office. It turned out that information about students and scholarships that staff members entered into the system at the end of the process was already available, eliminating the need for time-consuming data entry. Drasin projects that administrative costs will decrease by at least two-thirds once a revised process is in place.

Thinking of technology in context. Understanding and refining business processes is a vital first step in identifying technology needs; the technology decisions most often come last. That's because when systems are designed to automate existing practices, they invariably generate the results for which they are designed.

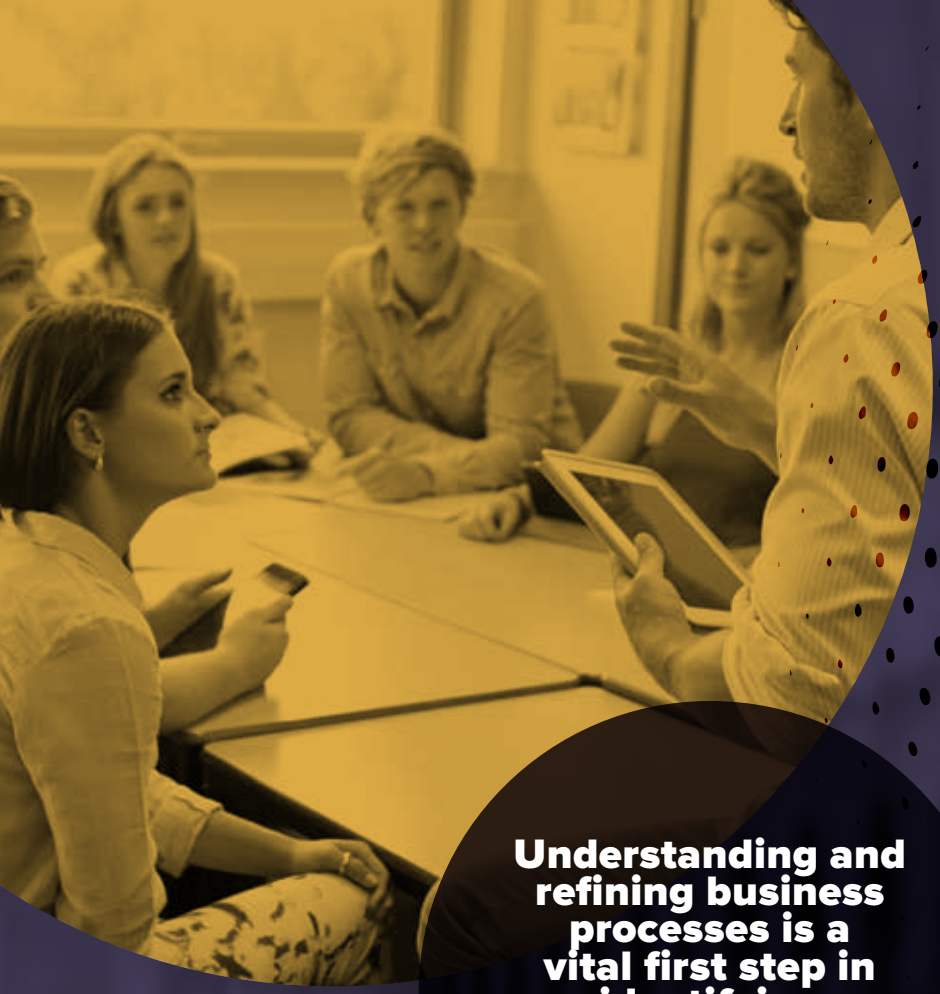
Through facilitated conversations and the use of modeling tools, employees can work backwards through the steps of a process to better articulate the challenges.

"A really good technology can amplify bad processes at an equal rate as it can help improve your efficiency," Broward's Armstrong says. "It's very important to improve those business processes upfront before you design the system."

THE ROLE OF IT

The IT department plays a key role in business process design.

"We're often brought in because every process relies on some form of technology," Koralesky says. "But we must speak to more than just technology. We need to speak the language of business units — what finance is doing, what admissions is doing, what the registrar is doing."



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— Mohamed Elhindi, Assistant Vice Chancellor and CIO, UW-La Crosse

Because of this, IT departments are taking on new roles. In places like the University of Maryland, the department houses a standalone process improvement group which oversees change management activities and trains others within departments to do the same (see "At UMD, A New Role for System Change," below). In others, new titles like "business process analyst" are emerging as IT employees must attain knowledge of business units and help them identify their needs.

At Williams, for example, Koralesky pairs IT staffers who have this kind of functional knowledge with a tech-savvy employee in each unit. Over time, "they gently grow into each other's areas and start to work openly and honestly together," Koralesky says. At UW-La Crosse, the IT department embeds business analysts into each department and involves them in all process discussions.

Beyond these specialized roles, all IT staffers should develop a sense for improving processes, Koralesky says. "Everyone needs to build out business process consulting skills — from the help desk folks helping individuals to the IT and department leaders who have a larger college-wide scope," he says.

However, it's important to maintain boundaries. "Never say 'here's a list of 10 things you need to do,'" Drasin says. "They're the subject matter experts and we will never be."

By serving in these roles, IT departments can become embedded consultancies within institutions. "Most places think of their IT department as the 'House of No,'" Koralesky says. "You want them to put you on their speed dial so people call anytime a problem arises."

AT UMD, A NEW ROLE FOR SYSTEM CHANGE

Joseph Drasin has a title unusual in higher education: director of university process innovation. A member of UMD's IT division, he and his team's staff aren't technology experts. They come from a broad set of educational backgrounds — including business, economics, psychology, engineering and design — who follow procedures more commonly associated with the business consultancies that guide Fortune 500 companies.

"The crucial issues that are causing challenges for most of our clients have little to do with technology," Drasin says. "Technology is where it manifests itself."

Along with consulting on specific IT projects, the team focuses on training others within the university to apply the same lens to their processes and technology needs. Drasin, who also teaches consulting practices to graduate and undergraduate students, is developing a training and certification curriculum for others in the university.

"We've purposefully not grown particularly large," he says. "We could never scale big enough to handle all of the issues at the university."

Nor does Drasin see the goal of his group solely as facilitating IT implementation. "It's a way for people to have healthier and more effective conversations about the university's functions," he says.

Smart Campus Networks – Making Transformation Possible

Utilization requirements are consistently increasing for higher education. Students expect access on campus everywhere and at any time. Mobile devices are used for more than just texting. And streaming media isn't just social, but now informational. All of this strains bandwidth, causing slow connections and challenges in providing a flexible, strong and secure service. At the same time, rising costs and shrinking budgets are making it difficult for institutions to make needed network upgrades. A transformation is needed.

What's the solution? How can you get a smarter, faster, more efficient and a robust network that meets these demands? The answer is not to add more hardware and layers of complication at vastly more expense. Instead, you can improve bandwidth capacity, connectivity, security and flexibility at less cost by using solutions from Ronco Communications.

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THE OPPORTUNITIES

While technology should not drive the business improvement process, it still often provides the strongest opportunities to improve functional areas. Among the greatest areas of opportunity:

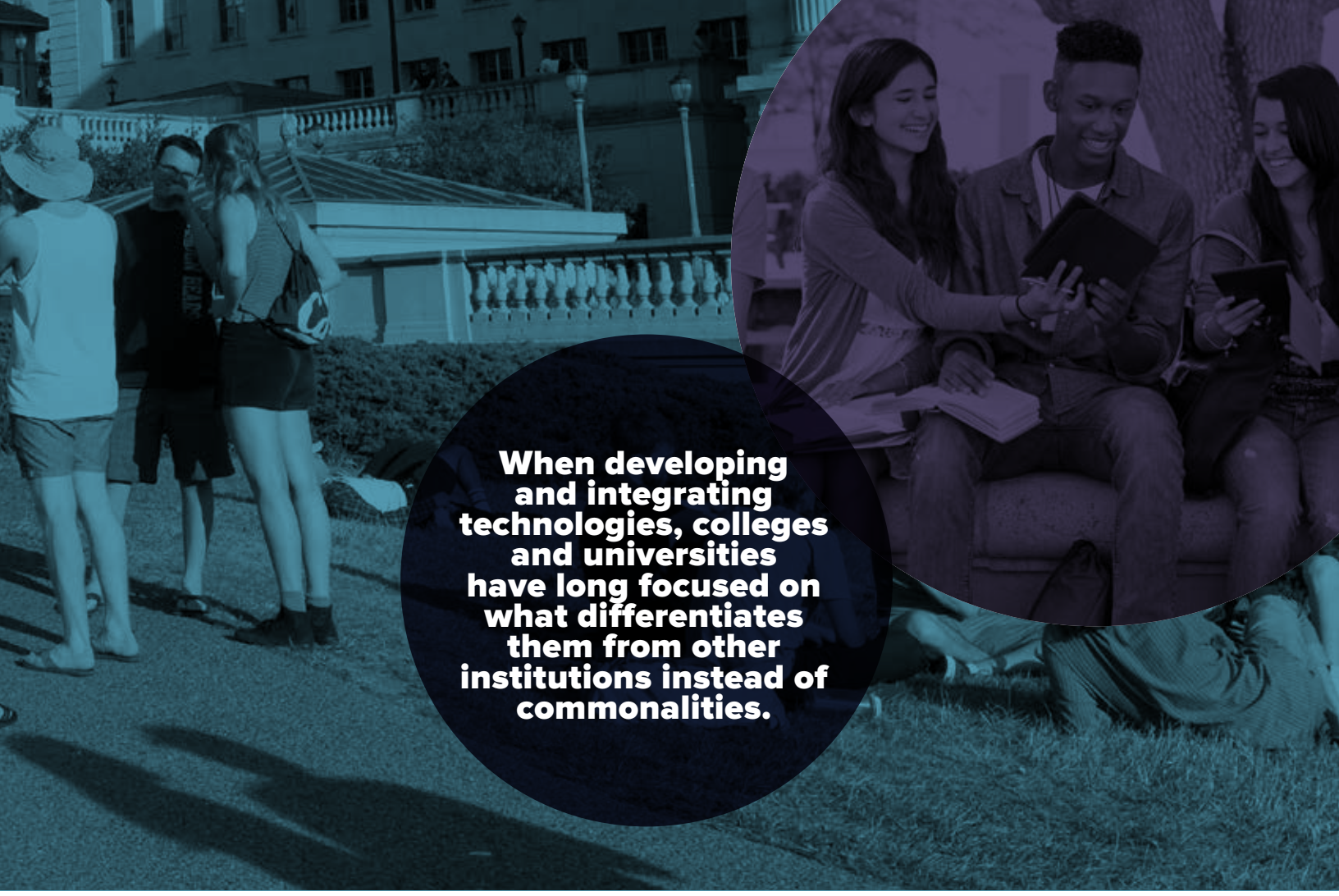
Institutional effectiveness. More coordinated use of data — one instance of an application, one instance of data, and checks and balances to ensure data integrity, as Elhindi says — provides a range of opportunities for institutions. For example, admissions departments often were the first departments to break away from all-encompassing systems in favor of highly specialized tools. These new admissions-specific systems, often run as SaaS, in turn provide data and analytics that enrollment and grant management systems can use.

New SISs can become the heart of central data repositories that also serve other departments, including finance and housing. LMSs can be leveraged to provide richer classroom experiences, as well as support growing numbers of online courses. And the use of data and analytics from SISs and LMSs to inform advising or automated early-warning systems provides institutions with opportunities to better support students and improve retention.

Cost savings. The ongoing shift to SaaS technology, for example, means institutions can eliminate capital expenditures for hardware and instead incur ongoing maintenance expenses through a subscription or contract model. At the same time, upgraded systems will increase functionality, while the SaaS model ensures regular updates and improvements.

Other practices, such as consolidating procurement or other systems across departments — or even across institutions in state or multi-campus systems — require weighing the perceived value of autonomy against potential cost savings.

A better digital experience. The systems that students interact with — mobile services, student portals and the like — are often thought to increase engagement, but experts temper these promises with the reality of student behavior. For instance, students don't particularly like or respond to email. A 2016 study by Bowling Green State University found that more than half of students (54 percent) don't always read emails from their university or academic departments and one-third (39 percent) don't always read emails from advisors. These statistics suggest that improved business communications practices may play as important a role as technology in engaging students.



When developing and integrating technologies, colleges and universities have long focused on what differentiates them from other institutions instead of commonalities.

In similar fashion, self-service portals that let students handle different business processes face an equally steep hurdle: The standard of comparison is highly honed online retailers like Amazon. Nonetheless, these tools, along with LMSs and in-class technology that facilitate more active learning environments, all can play essential roles in student retention.

Improved human capital management. New systems not only can streamline recruiting and resume processing, but also manage ongoing activities such as performance reviews. Along with making these processes paperless, these systems also can introduce best practices from other industries, including standardized interview questions and analytics.

"We had triplicates and papers of all colors — all that stuff is gone," says Broward's Armstrong. "Now we can do very robust goal setting and regular performance interviews, and even 360-degree reviews where I can easily pull in peers to give feedback."

MOVING TO THE CLOUD

As Gartner notes, postmodern enterprise systems are rapidly moving to the cloud. By next year, nearly one in three service-oriented organizations will have moved large parts of their ERP systems to the cloud, the technology research firm says. Within a decade, the majority will have done so.

These hybrid systems have great potential. By offering a common data store integrated with existing systems that still meet business needs, they provide institutions with highly specialized tools for specific business functions, including powerful analytic and data mining capabilities. However, as new tools emerge, colleges and universities will have to confront an issue that goes back to how they fundamentally view themselves.

When developing and integrating technologies, colleges and universities have long focused on what differentiates them from other institutions instead of commonalities. That resulted in highly customized systems and applications that have proven a challenge to maintain and update.

"Many colleges amassed a huge amount of technical debt," Koralesky says. "That debt is coming due."

That's because vendors are less likely to build cloud-based applications from the ground up for individual institutions. One of the benefits of SaaS products is that vendors can constantly upgrade them from a central platform, but the

drawback to this approach is that they cannot be readily customized for different customers. Instead, they are typically configurable — a key distinction, Koralesky stresses.

"It forces the individual functional unit to think more about adopting the methods of the tool than customizing it," he says.

On the plus side, more uniform systems may help institutions adopt the best thinking about common business functions. On the more challenging side, this relies on vendors working closely with institutions to understand and refine these processes. And systems still should be configured to meet local needs.

"In project management, there has been a long-held school of thought that says you should always customize the business process to match the technology," Eschenbach says. "Today, that is no longer the case because technology is now flexible enough that the business process can be standardized and used across multiple technologies."

This provides another new opportunity for colleges that have invested time in reengineering their business processes — the opportunity to help other institutions. Cloud-based developers already work closely with institutions to refine their products (see "At Broward College, Leading the Charge to the Cloud," below), which could yield systems that better mirror best practices than the customized tools of the past.

"My dream is that companies that work with us will bake business best practices into the toolset so we're adopting business processes instead of inventing them on our own," Koralesky says. ●

Implementing more uniform systems may help institutions adopt the best thinking about common business functions.

AT BROWARD COLLEGE, LEADING THE CHARGE TO THE CLOUD

Two decades ago, Florida's community colleges were part of a consortium that helped develop its own ERP system. But when J. David Armstrong Jr. became president of Broward College in 2007, the need for change was evident.

Technology had evolved beyond the "green screens" used to operate the system, but the higher education landscape continued to change even more dramatically. So as Armstrong began assessing the need for a new system, his questions had little to do with technology.

"How can we adequately address the needs for students to succeed and serve them from a customer point of view — recruitment, enrollment management and customer relationship management — on the front end? And then how do we mine the enormous amounts of data all of us collect about our students and utilize this to make informed, evidence-based decisions about what's best for our students, and how do we empower our students to make decisions themselves?" Armstrong asks. "This is a story that could be told at most higher education institutions."

Today, Broward College is leading the transition to next-generation cloud-based systems. Working with consultants, Armstrong reached out to a leading cloud provider whose financial and human capital management systems had made significant inroads into the IT and retail sectors and was beginning to explore entering the higher education market with a solution focused only on financial issues.

"I requested a meeting with their CEO for the sole purpose of asking him and his team if they would consider looking at a new, designed-from-scratch SIS," Armstrong says.

Today, Broward is one of about a dozen colleges and universities working with the provider to develop a range of higher education-focused modules. First up is student recruitment, which Broward uses to manage information about 30,000 potential Broward College students in the county's K-12 system. That will be followed by a new curriculum management tool and financial aid module.

A team of student and academic service staffers have been assigned to the project for up to two years as they move "from a blank whiteboard to design a system that meets their needs," Armstrong says.

"To serve our students — our clients — better, we need better tools like this," Armstrong says. "In this way, it ends up being the frontline power users who know what needs to be done that shape the system."

THE FUTURE

Changing business practices is ultimately about more than streamlining functions across the enterprise. At its core, it's about changing the culture of an institution.

"It's hard work to change one of these systems," Broward's Armstrong says. "As a result, a lot of people will kick the can down the road and wait."

Among the strategies essential in cultural change:

Leadership involvement. Administrators, presidents and chancellors must be invested — and often, directly involved — in the more expansive work of process design.

"For people to move forward, they need to see someone at a higher level behind them — and ahead of them," Elhindi says.

Senior leaders also need to understand frontline issues. Broward's Armstrong calls this "management by walking around," and it was discussions with counselors that led him to understand concerns about the efficiency of existing systems. "My role was to listen and not accept as a given that this was going to be status quo," he says.

A focus on serving clients. If institutions see students as customers, leaders focused on business process change must see their departments as clients — and treat them accordingly.

"I see a great need for IT departments to reach out more and earn a seat in that discussion, rather than imposing it," Koralesky says.

Dedicated staff beyond the IT department. In IT departments, which have added business analysts or process managers, it's a given they'll focus on these issues. But for change across the enterprise, it's important to involve leaders throughout the institution — and invest in their time.

At Broward, for example, staff members were pulled out of their jobs for six months to a year to work with implementation partners and then the software developer as part of redesigning business practices and policies.

"Our core team is frontline users, including deans and associate deans," Armstrong says. "We had to commit to pulling those people out and backfilling them."

Armstrong argues the investment in staff time reaped significant benefits. "They became the change managers within their departments," he says. "They had ownership of it, they were proud of it and they got to be on the frontlines of their decisions."

Investment in training. Institutions often upgrade legacy systems because once-ubiquitous hardware is no longer familiar to today's touchscreen generation of employees, which requires extensive training. At the same time, employees must be trained and supported as new systems come online,

Armstrong cautions: "If you don't prepare your employees to use what are in many cases very well-built tools, you may have wasted a lot of money and have a negative influence on performance."

An understanding of the big picture. As institutions take a holistic view of their processes, they must keep in mind the reason for doing so, Eschenbach says. "It's an opportunity to truly make an organization run better — it's really as simple as that. The technology has never been better, and it allows institutions to change the ways they're doing things, give employees more control and have a better business outcome."

"If you don't prepare your employees to use what are in many cases very well-built tools, you may have wasted a lot of money and have a negative influence on performance."

— J. David Armstrong Jr., President, Broward College

GLOSSARY OF TERMS

BPR (business process reengineering) — Analysis and redesign of workflows within enterprises with an emphasis on automation and streamlining end-to-end processes across departments.

ERP (enterprise resource planning) systems — Software built on business process management principles that integrates multiple applications and processes into a common system.

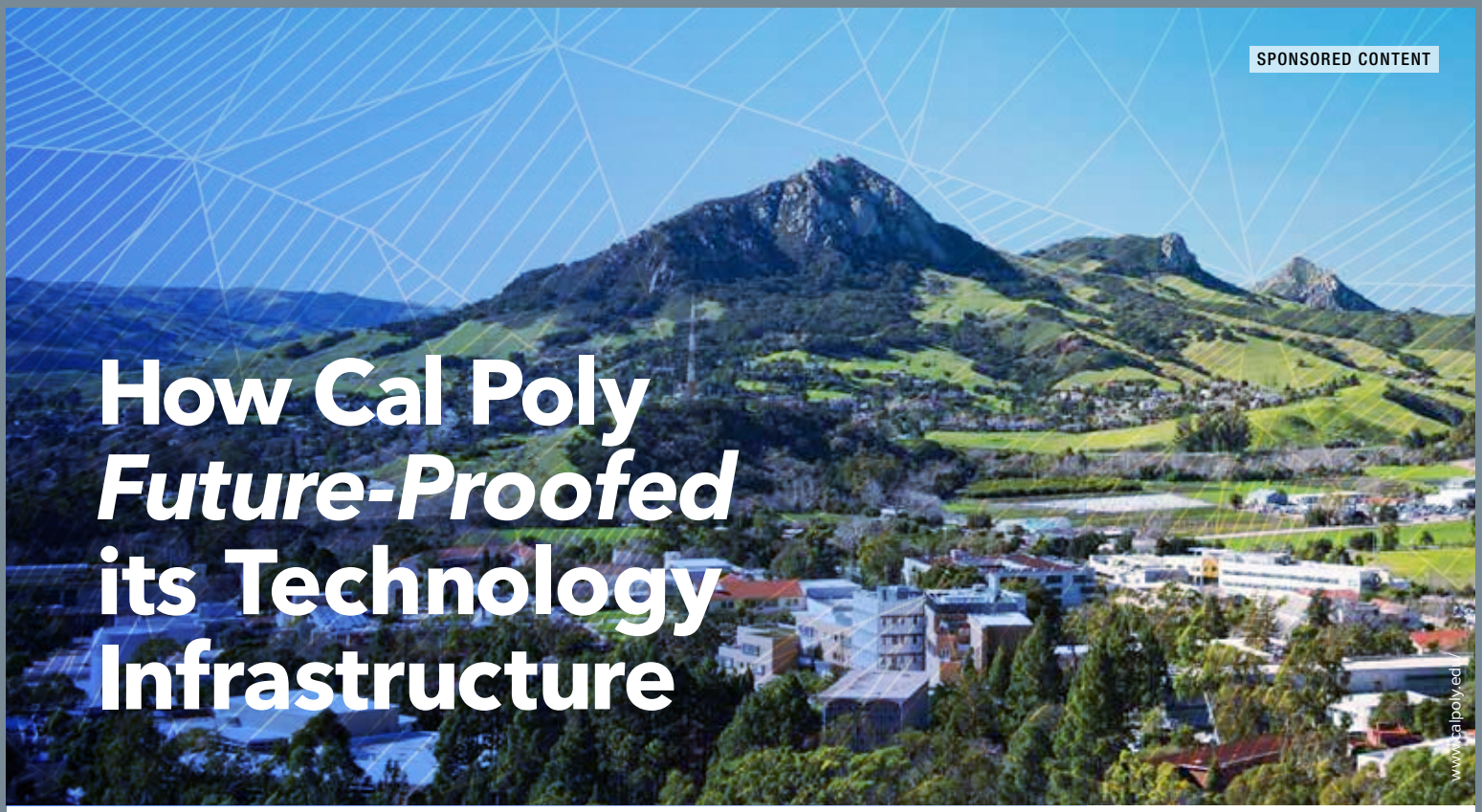
SIS (student information system) — An information system that integrates multiple elements of student data for different functions (student financials, academic, etc.).

LMS (learning management system) — Software that serves as a platform for instructors and students in traditional and online courses.

HCM (human capital management) — Processes and systems focused on recruiting, managing and providing feedback to employees.

SaaS (software-as-a-service) — Often offered through the cloud, these applications are administered remotely by developers and paid for using an ongoing licensing model.

TCO (total cost of ownership) — For technology decisions, it includes system costs, staff, IT support and other resources.



How Cal Poly *Future-Proofed* its Technology Infrastructure

California Polytechnic State University (Cal Poly) is one of the top engineering schools in the nation, but the university was struggling with legacy technology that put data at risk.

"Our data center was built in 1963, and everything we were doing was a burden on it," said Bill Britton, CIO, Cal Poly. "We were performing Band-Aid refreshes of whatever had broken. We were replacing pieces and parts, but not improving the overall environment."

University leaders estimated a new data center would cost about $20 million. But that only addressed current needs, without offering Cal Poly the opportunity to future-proof the organization.

Faced with the need to expand its IT infrastructure, Cal Poly IT leaders needed to re-assess the organization's technology goals. Britton and Paul Jurasin, director of new programs for Information Technology Services, searched for alternatives.

"We talked to all the cloud storage leaders, but none of them seemed interested in working in an educational environment," said Britton.

That is when Cal Poly connected with Amazon Web Services (AWS), and an immediate collaboration began.

"They took the time to listen and they took our suggestions to heart," said Britton.

After further exploration, Jurasin and Britton pitched Cal Poly's leadership team on the idea of migrating to the cloud.

Today, Cal Poly is migrating its entire infrastructure to AWS, including its learning management systems, payroll, database services, mobile applications, data warehouse, content management services, security applications, and student scheduling and advising services. The move will allow Cal Poly to avoid the cost of a new data center, and it will save the university an estimated $3.5 million on its current infrastructure costs over the next three years.

> "We are moving from an infrastructure we could never support or sustain at the right level to a future-proofed, risk-reduced cloud with AWS."
>
> – **Bill Britton**, CIO, Cal Poly

Most importantly, the move will provide Cal Poly's 21,000 students with access to modern technology tools that will enable them to compete in a tech-based workforce.

"It was difficult for us to keep up with new technologies before," said Jurasin. "By using cloud, we can implement the latest technologies almost as soon as they come out. That provides a big advantage to our faculty, staff and students."

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