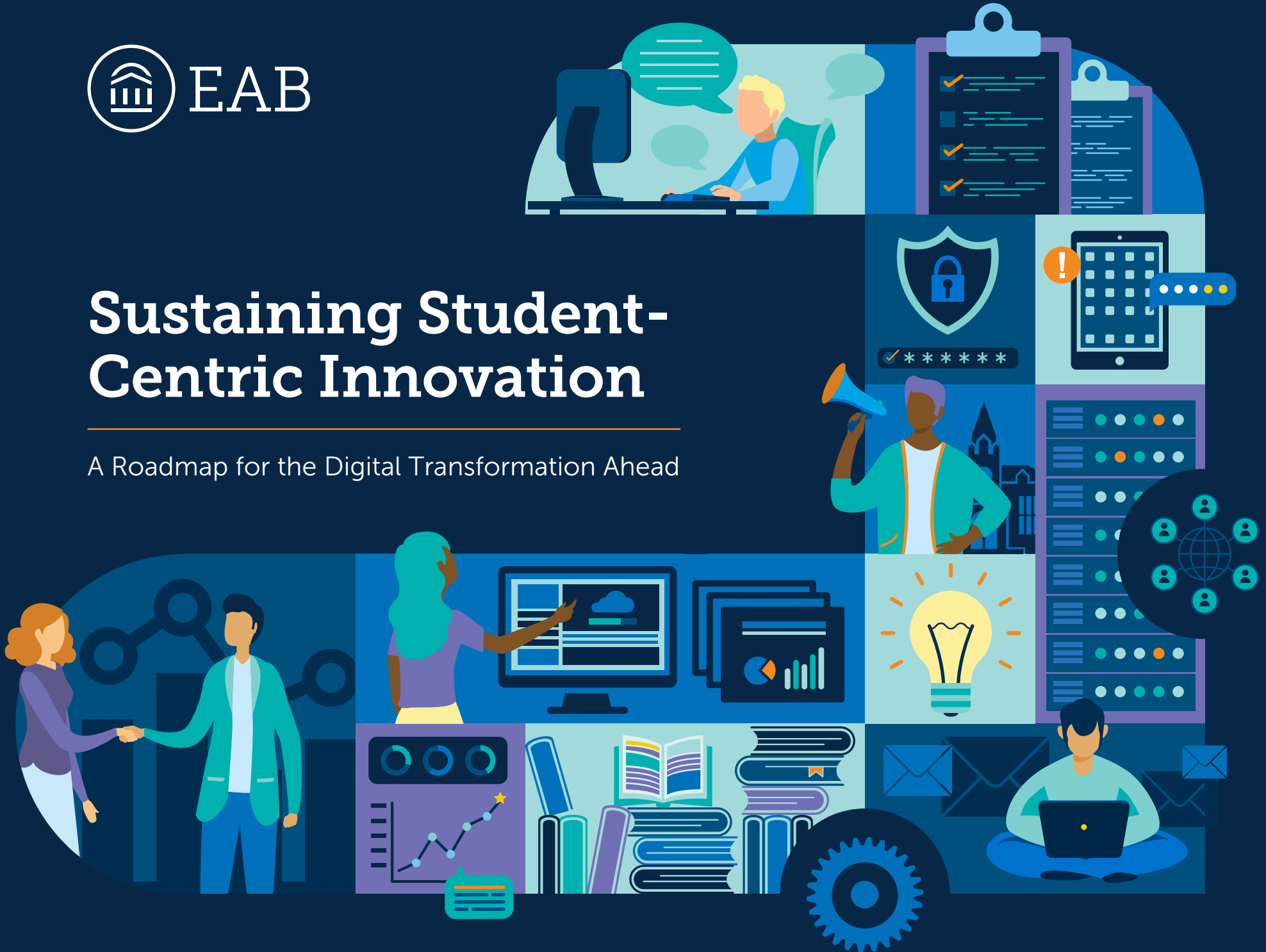




# Sustaining Student-Centric Innovation

A Roadmap for the Digital Transformation Ahead



# Executive Summary

## Sustaining Student-Centric Innovation: A Roadmap for the Digital Transformation Ahead

Living in the shadow of today's consumer economy, higher education is on the hook for delivering seamless, personalized experiences while staying true to its educational mission. As institutions grapple with this new reality, uncertainties are quick to confront them: Who will our students be in the coming decade? How do we optimize support across an extended student lifecycle? How can we overcome pervasive integration and data-quality issues to create an agile technology ecosystem that adapts as student needs change?

Across three sections, this white paper explores the mandate for student-centric innovation and offers a roadmap for higher education leaders to develop a sustainable digital strategy for the years ahead.

### SECTION 1

#### Confront the Mandate for Change

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Colleges and universities are battling on three fronts: the looming demographic cliff, budget constraints made tighter by the pandemic, and waning public perceptions of the value of a degree. Institutions of all shapes and sizes are being forced to reckon with their strategic priorities and their readiness for the decade ahead.

Amid these concerns, business model innovation is inevitable. In response, leaders across higher education are calling for fast-paced innovation cycles, with a focus on adaptation to support emerging issues and responsibilities.

#### TOOL: INFOGRAPHIC

Understand how the student journey is getting longer and more complex

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### SECTION 2

#### Where Is Technology Stifling Innovation?

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As leadership teams focus more on the total student experience, innovations can only ever be as accurate as the data underpinning them. On most campuses, cobbled-together and unevenly adopted processes have wreaked havoc on the quality of data collected, while technologies acquired over decades sit side by side in an incoherent portfolio that requires an outsize proportion of staff time and dollars to maintain.

#### TOOL: INFOGRAPHIC

Understand four risks of legacy tech lock-in

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### SECTION 3

#### Build Agility and Stamina for Continuous Innovation

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Forward-thinking campuses must frame digital strategy as two interconnected functions: optimizing the current technology portfolio to deliver student-centric innovation and simultaneously investing in infrastructure to support integration and future adaptation. Today, every leader is a digital leader and must take an active role in ushering in new investment priorities and governance processes fit for the digital age.

#### TOOL: INSIGHT

Learn three principles of student-centric digital change

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Weigh key considerations in vendor evaluation

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#### TOOL: DECISION FRAMEWORK

Compare technology investment strategies

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# Confront the Mandate for Change

# Fast-Paced, Student-Centric Innovation in the Spotlight

In the ongoing turmoil of a global pandemic, the higher education community has surprised itself with nimble adaptation. Faculty shifted classes online almost overnight, virtual advising and committees played a crucial role in supporting students and keeping campuses connected during the lockdown, and administrators and staff moved mountains to create hybrid experiences that balanced student needs with increasingly grave financial realities.

As a new normal continues to emerge, the growing consensus is that we can't go back—institutions of all shapes and sizes are being forced to reckon with their strategic priorities and their readiness for the decade ahead. Keeping one eye on the looming demographic cliff and the other on budget constraints made ever tighter by the pandemic, institutions are battling on a third front with waning public perceptions of the value of a degree.

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## No Returning to “the Old Normal”

Amid these concerns, institutional leaders have long understood that business model innovation is inevitable. Even before a pandemic swept the globe, the president at one large, regional public told EAB that “incremental change won't be enough for my institution to thrive into the future. We have to start shifting our future model, and it needs to happen on our current leadership team's watch.”<sup>4</sup> With higher education's operational model teetering on a knife edge into 2021, the mandate for immediate, concerted change could not be clearer. In response, leaders across higher education are calling for fast-paced innovation cycles, with a focus on adaptation to support emerging issues and responsibilities.

**16.1%** Decline in freshman enrollment from Fall '19 to Fall '20<sup>1</sup>

**\$120B** Estimated cost of COVID-19 to higher ed institutions<sup>2</sup>

**61%** of Americans believe that higher education is “headed in the wrong direction”<sup>3</sup>

“ **There will be no return to the old normal** but rather an advance towards new structures and solutions built with new tools.

[...] institutions must fashion creative and rapid-response innovations. There will be no more fixed five-year budgets or plans. Instead, **we must move to continuous planning and change our structures to address student and societal needs more immediately.**”

Gregory Crawford | *President, Miami University*

President Crawford’s focus on community needs—and especially student needs—is one shared by his peers across the industry. In EAB’s December 2020 polling, **83% of presidents and 80% of chiefs of staff** indicated the “total student experience” as their number one priority for 2021—resoundingly beating out other pandemic-induced hot topics such as remote work, campus space redesign, and mental health.

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### Meeting the Expectations of Digital Natives

This drive, of course, is accelerated not only by the cracks in higher education but also by the shifting trends in consumer expectations. Data and information technologies have empowered a customer-centric revolution in the consumer world, where data informs everything from product development to process redesign to hyper-personalized experiences. New business models such as Uber and Netflix focus on lowering the bar to entry with dynamic, mobile-first, and streaming-focused services; chatbots are picking up the slack of repetitive engagements; and personalized ads remind buyers of their abandoned interests at every turn. And a better customized experience pays: customer-centric organizations are 60% more profitable and generate 5.7x more revenue, in addition to building superior loyalty and retention.<sup>5</sup>

Within higher education, incoming students are already embedded in a world of information overload—the average teen spends more than seven hours each day on screens (not including school and homework).<sup>6</sup> For these digital natives, experiences of higher education present a widening gulf in meeting service expectations. The experiences they seek are digitally enabled. From forms to facilities, administrators know that students’ expectations aren’t being met. As one facilities leader at a large public research institution shared: “You need to look at private industry because that’s what students are comparing us to. If you have a problem with your room, Marriott doesn’t make you go to five different places. But we do.”<sup>7</sup>

Living in the shadow of this developing consumer economy, higher education is on the hook for delivering seamless, personalized, and integrated experiences for its own communities while staying true to its educational missions. However, as institutions grapple with the need to differentiate within this framework, the idiosyncrasies and uncertainties of higher education are quick to confront them: Who will our students be in the decade ahead, and how do we optimize our support across an extended student lifecycle?

# Evolving to Support a Lifelong Student Journey

Though disruptive innovators such as Uber, Netflix, and Amazon are repeatedly held up as inspiration for campus innovation, supporting student learning and academic discovery is an enterprise that spans decades of engagement with a single individual. The work of education is not a car ride to be completed, a movie to be watched, or a consumable to be purchased. But this reality begs the question: What is the desired outcome of an educational experience? Even among “traditional” students, there is little consensus. According to recent surveys of student sentiment, just over one-third see the completion of a degree as the primary measure of success. Employment prospects, academic attainment, and personal growth together account for 62% of students’ main objectives in attending college.

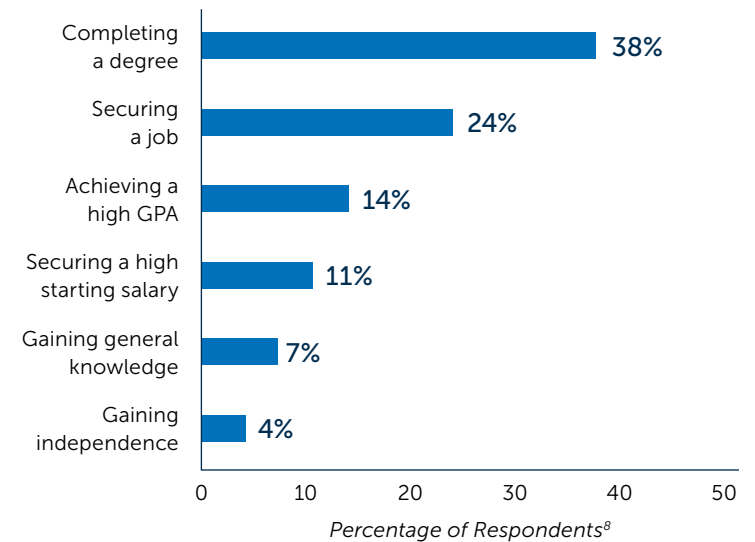
Amid the disparate goals that students have for their educational experience, they are confronted by various shared way stations along their journey, from awareness and application through to graduation and giving. In conversation with EDUCAUSE, Penny Howard, EVP for Administration and Finance at SUNY Erie Community College, highlighted the importance of lifecycle thinking in approaching the student experience—the linchpin of student and institutional success.

“The student’s start-to-finish experience is the bread-and-butter of the financial stability of this institution. **We are trying to create a new structure and new business processes** that address the experience that our students have from **the minute they begin to explore the college all the way through graduation and their transition to alumni status.**”

Penny Howard | Executive Vice President for Administration and Finance,  
SUNY Erie Community College

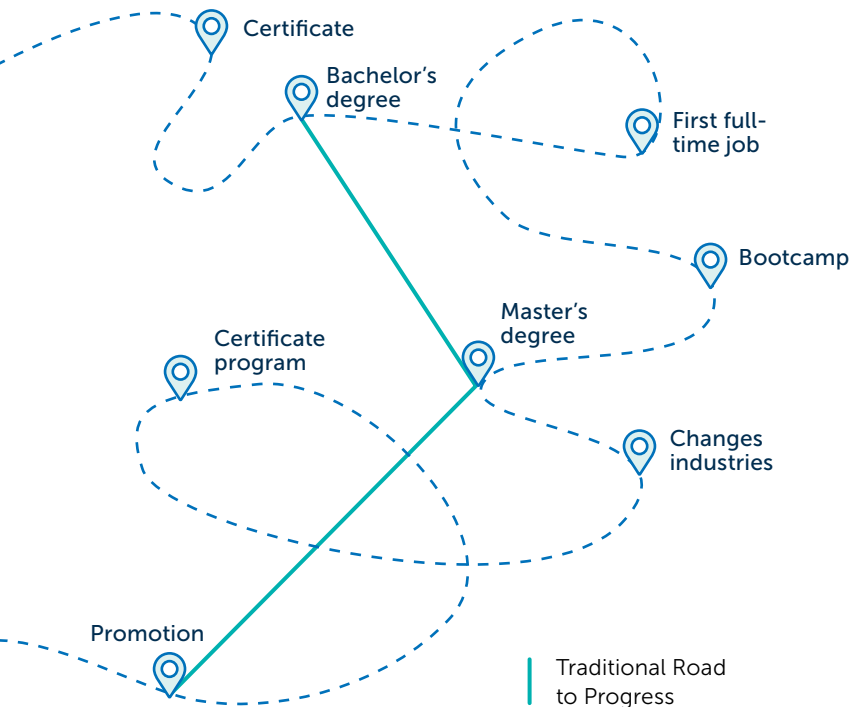
## Success Is Relative

Students’ Primary Measure of Success,  
EDUCAUSE 2020 Report



## The Extended Student Journey

Post-Bachelor's Engagement Becoming More Complex



### More Opportunities for Repeat Enrollments, But..



**Hard to Propose Right Step at Right Time**  
Schools lack data, and student career paths lack predictability



**Challenge to Stay "Top of Mind" for Occasional Buyer**  
Loyalty easiest when a recurring part of daily life; switching costs are high



**Need to Develop the Right Mix of Offerings**  
Sustained market viability of emerging credentials still unclear

The reality for many institutions is that the timelines that matter for improving this student experience are diverse and at the same time both divergent and overlapping.

In one direction, the student experience is receding into the earlier years of an individual's educational trajectory. Though "prospecting and retention" is an annual process for the enrollment office, it relies on the accumulation of activities across prior years—both within and beyond the institution—and may be a decade in the making for the students themselves. Traditional student success efforts then focus on a four-year time horizon of institutional engagement and academic activity, while a more inclusive approach to student success can stretch the timeline up to eight years and beyond for part-time and stop-out students. For all institutions, preenrollment indicators paint a complex picture of who our students are and how our organizations can best serve them—and help them fulfill their aspirations.

In the other direction, conceptions of the student experience continue to extend across decades into an individual's career. Beyond learning and credentialing, successful transition of students into the workforce plays a growing role in every institution's finances and operations—whether in service to outcomes-based recruitment, state-based funding applications, or alumni prospects. Increasingly, graduates represent an ongoing prospecting community for both the development and enrollment offices, with graduate work and lifelong learning accelerating adult learner recruitment strategies in every segment.

As with high school engagement, the drive to engage adult learners is well supported by shifting economic and labor demand contexts. With accelerating technology disruption consistently shortening the shelf life of skills and the tenure of jobs, and the pandemic precipitating a historic and ongoing shedding of jobs in the US workforce, the necessity of formalized, lifelong learning is gaining traction among employers and academics alike.

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## Investing in Lifelong Learning

Even as digital giants such as Amazon and Google are investing millions in certificate programs to generate workforce pipelines, institutions are upping their own investments in lifetime learning opportunities. Prior to the pandemic, leaders in continuing education—including deans and researchers from Harvard, UC Irvine, and the University of Washington—have been urging a “60-year curriculum” focused on more flexible, just-in-time education options and up-skilling for a fast-paced and evolving digital economy.<sup>12</sup>

Whether the two-year and four-year degree architecture remains or the 60-year curriculum prevails—or we see divergence among institutions to deliver everything in between—the innovator’s dilemma is clear: as the tendrils of the academic and learning enterprises continue to extend within and beyond an institution’s four walls, as well as beyond the “traditional” model of postsecondary learning, the challenge of focused innovation on a singular idea of “the student experience” grows ever more complex.

5yrs

Current half-life of professional job skills, especially in STEM<sup>9</sup>

25.7M

American workers hit by the COVID-19 economic downturn<sup>10</sup>

16M

People will need to switch careers by 2030 to stay employed<sup>11</sup>



# New Structures and Solutions Will Be Unique to Higher Ed

Despite widespread innovation on the outskirts of the higher education community, digital interlopers are yet to see the scale of disruption that digital transformation evangelists identify in consumer industries. While digital upstarts such as Netflix, Uber, and airbnb, Inc. are widely hailed for transforming their respective industries in rapid fashion, those industries are nothing like the broad landscape of higher education. Netflix, Uber, and airbnb are all, fundamentally, digitally enabled businesses. Technology and innovation go hand in hand. For emergent and disruptive digital businesses, leveraging cloud technologies allows them to quickly build bespoke tools and workflows that are ruthlessly aligned to customer needs, all with an eye on a single metric: profit. When things don't pan out, they quickly fall apart; when they do, the model scales.

The same alignment in higher education has so far been difficult to attain. In addition to the complexity and longevity of our customers' goals, expectations, and experiences, the complexity and longevity of our organizations themselves create a barrier to following the consumer industry's innovation playbook. For higher education, in the words of one CIO, the effort to align technology with purpose is about as easy as solving a Rubik's Cube.

“ **Higher education is essentially three businesses in one:** quasi-governmental administration, teaching and learning, and research.

From a technology perspective, **it's like a Rubik's Cube;** you can easily align for one of those priorities, but **it's difficult to get all three sides the same color.**”

*CIO, Canadian Research University*

“ We need to build with Lego blocks, not pour concrete on situations. For all strategic decisions—especially during COVID—you need to **figure out how to easily take it apart if it doesn't work now or you don't need it for the future.**

In higher ed, we're really good at pouring concrete, when **we should be building with Lego blocks.**”

*VP for Strategic Initiatives and Chief of Staff,  
Small Private University*

Over years, the various processes and touchpoints between an institution and its students have spanned a vast technology ecosystem that shifts and changes with the technological whims of the day. When it comes to innovation, we're looking at a complex landscape of opportunity built atop different layers of technology, processes, and yesterday's innovations. Our playbook will be different, and it's up to today's leaders to write it.

To accelerate the evolutions required to align with the decades-long, multidimensional relationships emerging among institutions and their students, campus leadership must build a pathway to sustainable innovation. In the absence of an absolute, irrefutable future to build toward, trial and error will be the name of the game, and the institution's strategic and technology plans must align to create the flexibility to make it happen. Or, in the words of one chief of staff, it's time to start building with Lego blocks.



# Where Is Technology Stifling Innovation?

# Legacy Tech Hampers Campus Agility

For institutions looking to build adaptive and engaging student experiences, every idea and every investment counts. On most campuses, technologies acquired over decades of innovation and campus operation—often by leadership that has long since moved on from the institution—sit side by side in an incoherent portfolio. Often there are overlapping functionalities across different platforms, and the sediment of solutions past creates a headache for management and drastically reduces efficiency. As one IT leader expressed, a CIO's job is often like running a technology museum.

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As with any museum, different collections require different maintenance—and for campus technology, the most laborious maintenance is often the most integral to the day-to-day operations of the institution. Oftentimes, at the very bottom of the tech pile there are aging enterprise systems adopted to support the digitization of core campus processes. Student Information Systems (SIS) and Enterprise Resource Planning (ERP) systems ushered in a new era of digital record management at the tail end of the twentieth century. In Canada, the average age of a homegrown information system sits at 21 years.<sup>13</sup> In the United States, at least two large research institutions are running critical campus applications on mainframe technologies that are more than four decades old. At one institution, replacement parts can be found only on eBay.<sup>12</sup> Though cutting-edge at the time of adoption, these systems have stagnated, even as they served as the backbone for sprawling digital operations. Through that process, they've calcified at the center of a labyrinth of technical interdependencies—and with the pace of change accelerating, they present serious challenges for innovation and campus agility.

“We're running a **technology museum**. We have one of everything that's been released since 1980. Actually, no. We have more. I wish we had just one of everything...”

*VP for IT, Large Public Research  
University in the South*

## Four Risks of Legacy Tech Lock-In



### Poor Data Accessibility

When peripheral systems that use newer technologies are introduced, developers must invest time and dollars to facilitate data integration. As the age gap between the myriad campus systems continues to grow, so too do the cost and complexity of integration and data access across the portfolio.

**76%**

of large organizations have data trapped in legacy systems<sup>15</sup>



Cross-campus view of the total student experience impossible to integrate



### Escalating Cost of Ownership

As systems age, the skills to maintain them grow harder to access as technology professionals retire and the demand for new skills grows. At the same time, long-standing contracts have a growing price tag that seems increasingly disproportionate to the price of newer, more interoperable systems.

**5%**

of higher ed IT budget available for "transformation"<sup>16</sup>



IT staff have few resources to dedicate to new campus projects



### Flatlining Product Innovation

Even as contract terms increase, vendors with a broad user base and high levels of lock-in devote fewer and fewer resources to product development and innovation. As vendors reallocate their investments into newer offerings (and acquisitions), users of older products miss out on the latest updates and features.

**#1**

Strategic driver of M&A is acquiring new tech functionality (ahead of expanding product offerings)<sup>17</sup>



Loss of competitive advantage and low user satisfaction



### Prohibitive Cost of Migration

The longer technologies remain in use, the more deeply embedded and broadly customized they become. When migration of these systems is ultimately forced, process-mapping and technology change management costs can be vast—in campus time and in dollars.

**30 mos.**

Typical length of SIS migration<sup>18</sup>



Costs of migration are impossible to justify amid budget uncertainties

By absorbing disproportionate amounts of staff time and institutional dollars—especially relative to student-facing value—legacy operational technologies play a huge role in limiting campus agility in delivering on the total student experience.

Yet, while student information systems and resource planning tools are the easiest targets, the reality that many campuses are confronting is the ever-shortening half-life of technology investments. As the revolving door of new technologies continues to spin faster and faster, the speed with which rationally acquired, thoroughly evaluated purchases are obsolescing is also accelerating. As of 2020, the Eduventures higher education technology landscape includes over 300 vendors across 40 separate market segments working with university and colleges to address existing and emerging challenges—with new products and iterations constantly introducing capabilities to the market. And beyond the 600+ individual products already built for higher education, broader technology innovations in fields such as artificial intelligence, automation, and robotics continue apace, each with an opportunity to inform new processes and student experiences optimized for the digital age.

For leadership teams with a relentless focus on adapting and improving the student experience, having an outsize proportion of staff and dollars tied up in behind-the-scenes operational technologies is an impediment to this future-focused investment—and in the world of continuous innovation, that's a heavy and growing burden to bear.

**300+** Tech vendors across 40 market segments in higher education<sup>19</sup>

**\$2.2B** Raised by US edtech firms in 2020 across 130 deals<sup>20</sup>

**30%** Increase in edtech venture capital investments 2019–2020<sup>21</sup>

“ **We have 400 servers on campus, and Banner takes up 100 of them.** I could defend that number, maybe, if we were using Banner for everything—but **we're also using Workday for HR and Finance, Blackbaud for Financial Aid, and other systems for other pieces.** So, we're only using Banner for student data—and even then it's only certain aspects of students, because we've done all this customization over the years. **Given our institution's mission, that ratio is indefensible.**”

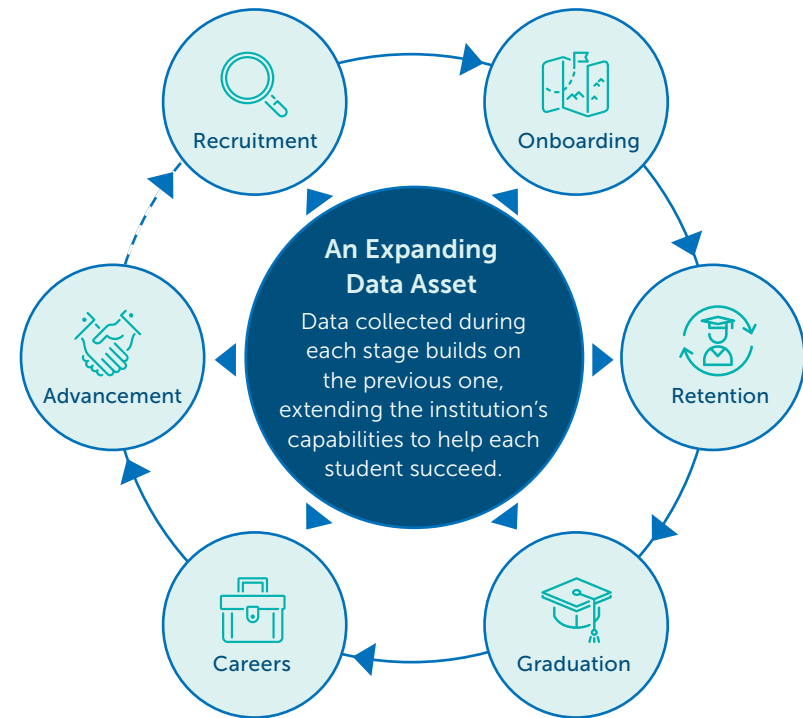
*VP of IT and CIO, Small Liberal Arts College*

# Digital Sprawl Undermines Innovation

Although many of higher education's core transactional systems have aged in place, new technologies have been put in place around them. Efforts to improve specific functions and institutional processes have resulted in the adoption of tailored solutions in almost every corner of campus, with most institutions amassing hundreds of applications over three decades of digital growth. In the classroom, learning management systems and engagement technologies support digital pedagogy; in enrollment and advancement, customer relationship management (CRM) tools optimize the processes of prospecting and outreach; and in the world of student success, advising and case management tools promote retention efforts. There are mobile apps for campus engagement and exploration, digital signage and smart technologies to enhance the campus experience, dashboards and analytics suites to promote operational efficiencies, and digital document management software to smooth out wonky, paper-based processes. The list is long—and it's growing.

For each individual application in isolation, the value is obvious. Usually, applications are selected, vetted, and implemented by campus groups working toward their own mandates: recruiting more students, improving retention, delivering engaging courses, or even growing the institutional endowment. But faced with the grand challenges of improving access, outcomes, and sustainability, institutions are turning to the connected campus. By managing a student's intersections with the institution across the full (and shifting) learner lifecycle, colleges and universities can bring to light any hidden undercurrents that are holding their students back and reduce friction in their processes to empower learners on their individual paths to success.

## Value in Synergy Across the Student Lifecycle



As campuses turn their attention to cultivating the total student experience, the fragmented ecosystem continues to undermine efforts to coordinate—and students have noticed.

As one student shared in our research<sup>22</sup>: “The ‘shuffle’ is a known thing around campus. Whether it’s financial aid, paying bills, pretty much anything, we get bounced from office to office just to get one question answered.” Although different groups are committed to make improvements across the student lifecycle, technical and cultural barriers continue to frustrate efforts under way in various areas of opportunity on campus.



OPPORTUNITY AREA: **Enrollment**

### An Arms Race in Enrollment Experience

With an already competitive enrollment environment and the upcoming 2024 demographic cliff, institutions must increasingly compete on all aspects of the student experience—from application to graduation and beyond. Customizing the enrollment process for an individual student has moved beyond simply placing a prospective student’s name in admissions materials. Students expect personalization from application to deposit, such as an invitation to apply that details relevant affinity programs or scholarships or outreach to admits by a current student sharing their extracurricular interests or major/minor combination. Institutions already possess the necessary ingredients to provide this next-level experience yet often fail to operationalize their efforts.



**TECHNOLOGY BARRIER:** Prospect data such as website clicks and survey responses often provides additional color on a prospective student yet goes unused due to the time and effort required to connect that data with an enrollment CRM.



**CULTURAL BARRIER:** Accustomed to full control of their own domains, data stewards are often wary of sharing data across departments, fearing misuse or misinterpretation. Unfounded or not, these concerns often stagnate efforts to create a coordinated data ecosystem for use across campus.



OPPORTUNITY AREA: **Student Success**

### Student-Centric Retention Demands Customized Support

Once enrolled, digital-native students expect support that also feels seamless, including a safety net to catch them if they fall off track during their academic journey. The ongoing diversification of student types, including adult and online students, demands even greater customization of support and an abandonment of cookie-cutter, one-size-fits-all approaches. By tracking and measuring student engagement, (e.g., behavioral markers such as submitting assignments, registering for courses, or attending tutoring), institutions can begin to provide holistic support earlier. However, operationalizing that data and using it to drive proactive interventions require a coordinated approach to centralizing and unifying data.



**TECHNOLOGY BARRIER:** The definition of “student data” has expanded to include data on attendance, assignment submissions, extracurriculars, satisfaction surveys, and more—most of which lives in siloed secondary systems.



**CULTURAL BARRIER:** Gathering data on students requires clear processes and compliance across all student-facing staff, including faculty, academic advisors, and tutors. Without proper compliance with data requests—as well as proper training on how to access the data when working with students—institutions cannot effectively manage and use that data.





## Personalization Frontiers in Digital Fundraising

In response to the growing percentage of Millennial and Gen Z alumni, advancement offices must adjust their processes to cater to a more digital and personalized world. These types of donors expect a much more personalized experience—and are less likely to donate in response to standard outreach, as evidenced by historic declines in alumni participation rates and difficulty engaging recent graduates in traditional alumni activities. Data on those students—and their experiences at your university—is paramount to successfully personalize alumni outreach. Yet despite this need, advancement CRMs typically operate in isolation.



**TECHNOLOGY BARRIER:** Major gift officers are expected to manage large portfolios of donors with fewer resources, with average portfolios spanning 150+ potential donors. MGOs often manage their portfolio via the CRM alone, with limited ability to connect with or leverage data from the donor's time on campus (e.g., advisor/advisee relationships, their residence hall, extracurriculars) to scale more personalized outreach.



**CULTURAL BARRIER:** Advancement offices and fundraising processes “are often run the same ways today that they were in 1995”, according to one Director of Advancement, even despite an increased desire for customized digital touchpoints in addition to traditional in-person relationship building among MGOs and more recent graduates. Power politics and data hoarding continue to slow progress and derail advancement's best efforts to build an end-to-end digital donor experience.

While every function has seen accelerated digital maturity through new capabilities and workflow optimization in the tools built specifically to enable their strategies, focusing on the individual way stations in the student experience has come at the expense of the holistic view. Though technology is powering pockets of innovation in services, these fragmented technologies have calcified a data disconnect, leaving campuses unable to look across and respond effectively to long-term, multidimensional student needs. Each system has its own data structures and versions of truth, leading to friction and mistrust in cabinet-level conversations and collaborations. In the age of experience, information is the common currency—but most campuses are mired in a web of cross-talk and misunderstanding brought about by the digital ecosystem. When it comes to the total student experience, optimizing for links has weakened the chain.

# Bad Data Leads to Bad Experiences

While looking across and understanding the various touchpoints between the institution and its communities is made hard enough by the complex web of systems that support it, cobbled-together and unevenly adopted processes have wreaked havoc on the quality of data collected. As the total student experience and more personalized lifecycle engagement come into focus, the insights that will drive our innovations—and automations—can only ever be as accurate as the data that supports them.

While some data-quality issues are the result of low levels of data literacy and limited appreciation for the afterlives of locally collected data among frontline staff, our technologies themselves are also key culprits in the deterioration of data integrity. Where software is not well suited to its task and the processes it enables, frustrated staff will often build workarounds or customize applications in ways that drive up costs and grow IT's maintenance burden. In the process, the data ends up being untrustworthy and fragmented even further.

Whether used by back-office staff or directly by the student community, the plethora of systems on campus may generate and capture data (such as student preferences, applications, or website activity) or simply function as an engine to put data into action by automating processes (for example, by delivering text messages or opening up registration options by releasing student holds). Oftentimes, they do both. In either case, if the quality of the data concerned is not well maintained, the value of the tool is diminished—or even undermined entirely. Using poor-quality or unreliable data, institutions risk learning the wrong lessons, automating the wrong things, and ultimately doing a disservice to our students and broader communities.

“ We’ve been **surrounded by different systems** doing their unique things for quite a long time. We’re finding out that **we don’t have one truth**—and that realization up to the highest levels. **When my Provost can’t trust the data she’s looking at**, the technology we have isn’t working well for us.”

*Financial Aid Analyst, Regional Public University*

**47%** of newly created data records have at least one critical error<sup>24</sup>

**53%** of higher education data governance policies openly address data quality<sup>25</sup>

**72%** of CBOs see poor data quality as a barrier to analytics capacity<sup>26</sup>

Specifically, poor data collection and its proliferation slow institutions down when it comes time to leverage their data assets—which people do every single day. Frontline staff, managers, leaders, analysts, and student support services are constantly turning to their technologies and data to enable processes and interactions. Where there's incomplete or faulty data, poor decision-making and mistakes will follow. In turn, mistakes force staff and faculty to spend time focusing on interrogating or correcting them—or even, in the case of one campus, issuing apologies.

### Case in Point

Where the collection and transmission of quality data is central to the delivery of service, experiences suffer. As campuses scrambled through 2020 to deliver new services in the wake of disruptions, many were forced to apologize publicly to their students for errors along the way, including one institution whose quarantine meal delivery service fell below student expectations.

The responsiveness of the service's capacity and demand management, in addition to communications errors with the institution's third-party vendor, were blamed for the snafu.<sup>27</sup>

**2,600**

Students being quarantined at the university

**3**

Meals/day (often delivered all at once or skipped)

**20%**

of meals are specialty in some way<sup>28</sup>

**1.8M**

Views of a student's TikTok revealing their chicken Caesar salad meal contained neither chicken nor salad

# Risk Aversion Stifles Innovation

Not only do these missteps take already limited staffing resources away from higher-value, human- and learning-centric interactions—such as engaging directly with students or spending time on ideation, collaboration, and strategy implementation—but they foster deep mistrust in data-enabled and data-informed processes. Where institutional leaders have made difficult decisions or taken unwelcome actions, campus community backlash has often focused on the unreliability of the data underpinning their efforts. As a result, risk aversion and unwillingness to fail continue to morph into an unwieldy cultural obstacle in innovation efforts.

With more data and more automation on the horizon, campuses must turn the corner on data quality to reduce the risks associated with any bold and digital innovations. Emerging technologies such as Internet of Things and processes driven by artificial intelligence have the power to transform the student experience, from guiding students to quiet study zones and empty parking spots with smart campus sensors to providing personalized digital concierges on students' smartphones. For institutions looking to leverage these technologies, the need to improve the quality and integrity of data across different systems and sources takes on greater, more urgent importance.

“**You can't try new things where there isn't an appetite for change and trust in the tools you have. When you have a culture which, for years and years, has **made mistakes with bad data**, and penalized failure—it's difficult to then tell those people we've got a good foundation for innovation.**”

*Chief Innovation Officer, R1 University*

“The **quality demands of machine learning are steep**, and bad data can rear its ugly head twice—**first in the historical data used to train the predictive model** and **second in the new data used by that model to make future decisions.**”

Thomas C. Redman | *Harvard Business Review*<sup>29</sup>

The opportunities for digital innovation are out there for the campuses able to grasp them. Predictive models managing chatbots, streamlined and automated digital processes, and smart campus operations all have the capacity to allow campuses to deliver seamless, integrated, and omnichannel experiences to their students—all while shifting the attention of their faculty, students, and staff to improvements in the core missions of the institution: teaching, learning, and holistic student development. Until campuses resolve their internal data quality-issues—and with them, the organizational anxiety around data-informed and automated actions—they will struggle to fully activate the power of the technologies they adopt.

Wherever poor data quality amplifies the perception and the reality of risk, innovation will continue to be stifled.



# Build Agility and Stamina for Continuous Innovation



# Every Leader Is a Digital Leader—with a Mandate for Continuous Innovation

Student-centric service innovation means pulling in the right technology at the right time to deliver the most impactful experiences, touchpoints, and supports to guide our students on their journeys—no matter the students, and no matter their individual goals. For campus leadership, that means putting in place a comprehensive technology strategy that aligns with the need to support agile decision-making and service pivots. Once technology is out of the box, underpinning every corner of campus, digital strategy must in turn move from being backstage to being in the spotlight, and leaders across campus must pick up this collective mandate. Today, every leader is a digital leader.

In a digital ecosystem within a changing world, coordination and collaboration are key to success. Though CIOs and other IT executives tasked with building cohesion among the institution's technology investments can take the lead in organizing strategy, it is no longer acceptable for their peers in the cabinet to claim ignorance of digital imperatives—or take no responsibility for the opportunities and consequences of doing digital business.

“ In higher education, we have a **long history of leadership taking pride in their ignorance of technology**—as if it's a distraction, with very little bearing on strategy.

Looking forward, it's not okay for leadership not to understand our digital strategy: **it's a liability.**”

*VP for IT, Large Research University*

“**Software is ephemeral**, and the business model might last for 15 years—but **data is yours forever.**”

*CIO, Regional Master's University*

Presidents, provosts and their cabinets must take an active role in ushering in new investment priorities and governance processes fit for the digital age. For many campus leaders, the learning curve will be steep. But without appropriate strategies and processes to support their institutions in modernizing infrastructure while managing the constant change of an evolving technology landscape, change fatigue will quickly set in.

In a tight budget environment with competing priorities, prudent leaders are moved to scrutinize every purchase and adopt rational and methodical investment processes that weigh the pros and cons of every option on the table. Often, technology evaluations bring together expansive cross sections of the campus community to support needs assessment and product scalability conversations, and hundreds of person-hours are poured into comparing features and fit across multiple potential vendors.

Once a campus partner has been selected, then comes the process of implementation which, depending on the product, could require a matter of weeks, months, or even years. In this context, it's hard to say goodbye and turn over a new leaf when a technology no longer meets institutional needs, but faster-paced technology turnover is exactly what campuses should be preparing for. In spite of careful deliberations and thoughtful implementations, the shelf life of technologies is waning. A new enterprise system is no longer a 25-year investment. In a world where cloud-based technologies enable constant development and innovation, newer tools and applications will continue to be optimized to support emerging best practices in student success, financial operations, and other institutional priorities (or even crises).

Given such high levels of digital innovation and technology flux, even the most rational and exhaustively considered investment decisions made today will seem redundant or irrational as the world changes around us. Today's best-in-class application will always fall behind the innovators leading change tomorrow—and higher education's slow pace of change has left many institutions dealing with the ongoing pains of technology stagnation. Unless a broader strategy for integration and coordination is put in place and upheld by campus executives moving forward, the outcomes of fast-paced innovation and technology adoption will only exacerbate current growing pains while escalating campus costs.



As all leaders become digital leaders, balancing rational investment with the institution’s innovation strategy requires campus leadership to recognize **three principles of student-centric digital change**.

Principle	Think This...	Not That...
<p><b>1 Student Service Must Drive Technology Investments</b></p> <p>The adoption of technology should always be driven by strategic direction and the acute or emergent needs of higher education’s missions: teaching and learning, research, and community service. As our notions of “student” continue to be transformed by the economy and the industry shifts to deliver differentiated, student-centric experiences, the service models of higher education will shift in accordance. With changing needs come new priorities, and in turn, different strategies—all with different technology requirements.</p>	<p>We need to be able to reach part-time learners more effectively.</p> <p><b>What’s the best way to do that?</b></p>	<p>We have online learning management software. Can we use it build online programs?</p>
<p><b>2 Software Is Not Strategic</b></p> <p>While cloud availability means that software innovation will continue apace in response to emergent needs in every industry, software solutions are not, in themselves, strategic. Software may automate processes, help formalize and embed better practices, or even provide mission-critical functionality to the campus community, but while software will enable various campus strategies, it should not (and will not) guide them.</p>	<p>I need a tool for managing the donor lifecycle.</p> <p><b>What’s the best one on the market?</b></p>	<p>I hope my ERP vendor releases a tool for managing advancement.</p>
<p><b>3 Data Is the Institution’s Most Valuable Tech Asset</b></p> <p>If software is utilitarian, data is characterized by its transferability. For the institution, its value remains, even as the software in use changes around it. Whether a campus business office uses PeopleSoft, Ellucian, Workday, or any other vendor solution to support campus financial processes (or a patchwork of different vendors across decades of operations and disparate schools or divisions), it is the maintenance of accurate, accessible financial data that will support the campus strategy today, as well as decisions that emerge at crossroads in the future. The same is true across any number of technologies in use today.</p>	<p>We need to <b>make sure we’re tracking the right financial information</b> in the right way to model our program costs.</p>	<p>We’ll run the operational reporting that’s supported in our ERP, and that will have to do.</p>

With software demoted, data integration elevated, and strategy at the helm, institutional leaders have a new framework to deliver on the mandate of student-centric innovation: individual purchases must together build a flexible technology ecosystem that empowers leaders to deliver on bold new strategies while retaining the coherence of coordinated services and student experiences.

“Technology should not lead you to transformation. Transformation should lead you to the technology.”<sup>30</sup>

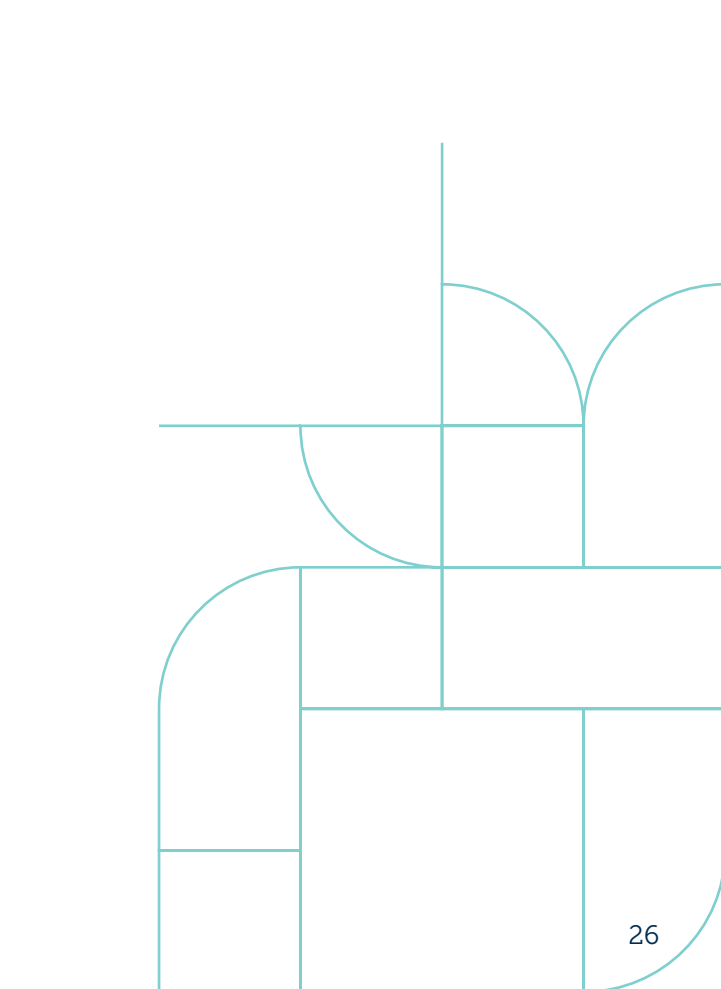
Higher Ed Futurist Matt Alex

# Acknowledge Data and Innovation Trade-Offs in Vendor Considerations

As leaders step up to the challenge of supporting technology strategy, their commitment to collaboration and sustainability must translate into the process of selecting and investing in technology systems. While institutions may plan to develop integrated, high-quality data to provide right-size building blocks for experience-oriented innovation, the current vendor landscape makes it difficult for campuses to deliver on both simultaneously. Instead, campuses are forced to make trade-offs between integrated campus-wide solutions and best-in-class process alignment for individual service-oriented functions—and whether a system offers benefits in either direction, a campus investment will have significant impacts on the institution’s technology and data strategy.

In one camp, established vendors and new entrants tout integrated platforms and technology suites to drive campus unity through an ecosystem approach. Far-reaching tools provide aggregated data and seamless process integration in service to the broad spectrum of institutional priorities. Whether with suites of back-end tools (student information and enterprise resource planning systems) or enterprise-wide constituent relationship management (CRM) platforms, the promise of platform solutions is in their ability to unify campus data and promote a full, service-oriented lifecycle approach within a single tool or suite.

Taking a different approach to partnership, bespoke solutions are continually emerging to address the challenges and needs of specific higher education business functions and those of members of the campus community. From prospecting and admissions CRMs and financial aid administration, through advising and degree auditing, and on to fundraising, the vendor landscape is strewn with hundreds of tools to accelerate campus innovation and deliver on the promises of institutional strategies.



## Buyer Beware: A Framework for Today's Tech Strategy Considerations

### Monolithic Platforms

Vendors supply enterprise tools to support multiple processes, either through extensible solutions or integrated technology suites.

### Best-of-Breed Applications

Vendors supply targeted software applications that deliver differentiated functionality to support specific campus services or functions.

<p><b>One Tool to Rule Them All</b></p> <p>Shared platforms and suites require units and campus service providers to agree on a vendor or platform; where workflows are ill-suited, customizations, workarounds, and bolt-on technologies emerge over time.</p>	<p>Service Scope</p>	<p><b>Bespoke Workflow Optimization</b></p> <p>Specific units and campus service providers select the best-in-class tool for their specific function; workflows are representative of established best practice in the specific processes addressed by the technology at hand.</p>
<p><b>High Disruption, Deeply Political</b></p> <p>Widely adopted platforms require broad campus buy-in to back an investment or a decision to migrate, leaving campuses with low agility due to concerns regarding process alignment, upheaval, and organizational change management.</p>	<p>Migration Agility</p>	<p><b>High Flexibility, Limited Disruption</b></p> <p>Solutions rolled out in service to the needs of smaller constituent groups require more limited political investment to change direction, due to fewer dependencies and disruptions in other areas of campus.</p>
<p><b>Development and Consulting</b></p> <p>Vendor-specific skills are often required to develop and customize applications to meet diverse stakeholder needs, requiring campus to either optimize for the ecosystem or hire external consultants to manage operations.</p>	<p>Ecosystem Maintenance</p>	<p><b>A Spiderweb of Good Intentions</b></p> <p>Brittle, one-off interconnections that are built to transfer data between disparate systems create large maintenance burdens for institutional IT; disparate tools may require disparate skill maintenance in the IT organization.</p>
<p><b>Aggregated Data Stores</b></p> <p>Data is stored and accessed centrally, typically in a shared structure or model, and within a single database.</p>	<p>Data Integration</p>	<p><b>Siloed Data Islands</b></p> <p>Data is duplicated and siloed in separate applications—often with different proprietary storage structures.</p>
<p><b>User Management Required</b></p> <p>If solutions are not well suited to all work conducted, flexibilities within the tools may motivate users to create process workarounds, leading to poor data entry practices and having significant downstream effects on data quality.</p>	<p>Data Quality</p>	<p><b>Lost in Translation</b></p> <p>Good-fit systems and processes encourage better data input/capture, but data is often out of sync, meaning integration for cross-campus analytics and process-mapping becomes complex and costly.</p>

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<p><b>Go-It-Alone Encouraged</b></p> <p>Large, broadly adopted platforms serve many masters with different business operations and workflows, meaning innovation is focused on technology capabilities rather than its application; with the right IT skills in place, institutions may innovate and develop quickly, but vendors' input will be limited.</p>	<p><b>Vendor-Led Innovation</b></p>	<p><b>Activated Best Practices</b></p> <p>Limited scope of service tied to specific units' processes and outputs means faster pace of change and innovation; typically attuned to delivering on current industry-leading or market-leading practices in a given domain to enhance product competitiveness.</p>
<p><b>Misleading Discounts</b></p> <p>Better discounting for larger, wide-ranging contracts—but potentially a false economy with more specific applications being purchased anyway.</p>	<p><b>Contracting Levers</b></p>	<p><b>A Thousand Cuts</b></p> <p>A patchwork of disparate software solutions means negotiating individually with each vendor—limiting discounting and creating larger management overhead.</p>

Though it may seem like an either/or decision with every purchase, the reality that today's leaders face is that choices in either direction present significant hurdles to overcome in the pursuit of student-centric innovation. A platform technology or ecosystem vendor may account for 70–80% of campus needs within a given domain but cause barriers to integration with mission-critical tools that lie outside the provider's purview. Similarly, a patchwork of innovative, targeted solutions very quickly becomes unsustainable for maintenance and data integration without an effective strategy for managing scale, leaving students and staff to do the tedious and time-consuming work of manual integration across their own experiences and workflows. In each case, a technology purchase must be evaluated for its broader contributions to the campus portfolio—with a particular focus on whether a given investment is rate-limiting the total technology ROI.

Despite wide-ranging vendor promises, the reality of effective digital strategy in higher education today is that the dichotomy of "integrated platform" or "best-of-breed patchwork" is false: leaders must pursue strategies to deliver on integration and innovation within the technology portfolio, because neither 360-degree integration nor process innovation can be sacrificed in a market sensitive to the delivery of personalized and adaptive student experiences. Institutions must instead find a pathway to deliver on both simultaneously: a third way that enables fast-pace innovation and process transformation while providing a holistic view of students and campus communities across the learner lifecycle.

“ When we think of vendor management, we forget to look at the big picture. Every contract negotiation is important, but **what we ultimately care about is the ROI of our entire vendor portfolio.** A good deal means nothing if the product doesn't add value, or no one uses it.”

*CIO, Public Research University*

# Future-Proof Investments with Integrated Innovation

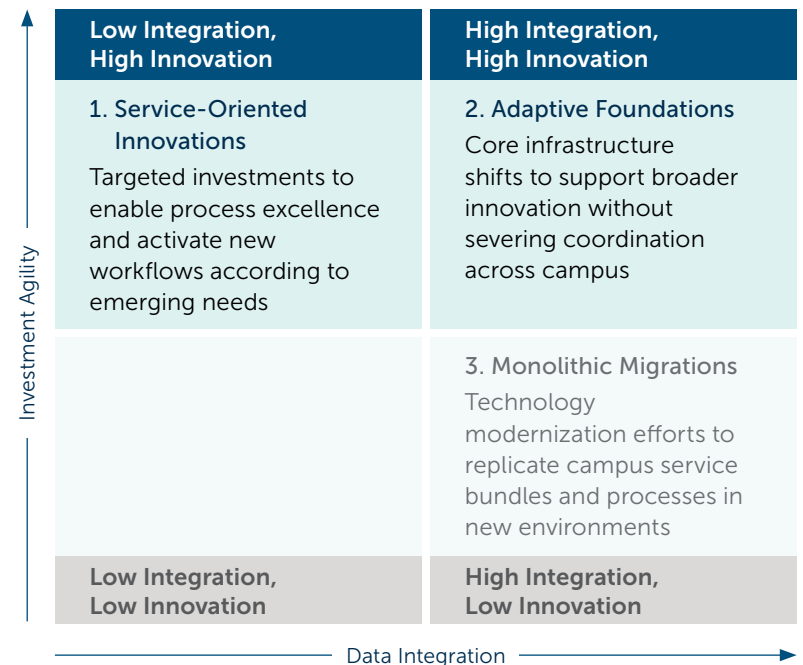
For leaders looking to take a portfolio approach to the technology ecosystem, uncertainty in the coming decade creates two imperatives: empowering innovation to meet the needs of students today while building long-term agility to meet the needs of students in years to come. With innovation and integration often at odds, accounting for both relies on **two separate technology investment strategies** simultaneously.

## Strategy 1: Optimize for Today with Service-Oriented Innovation

Though the disruptions of the COVID-19 pandemic have left higher education reeling, institutions' herculean technology implementation efforts were an inspiring lesson in student-centric investment. The billions of dollars in federal funding that were allocated to the higher education sector by Congress limited any technology spending to hardware and services to support students through a period of remote learning, with a particular emphasis on investments with "clear nexus to significant changes to the delivery of instruction."<sup>31</sup> In turn, institutions invested in scaling access to educational content via the learning management system, in extending access to Wi-Fi on campus and beyond, and in student success technologies to help students stay on track to graduation despite significant disruptions in their academic and personal lives. In each case, the question campuses asked—and answered—was both acute and student-centric: What do our students need now to provide the best experience possible as they progress through the current reality of their learning journey?

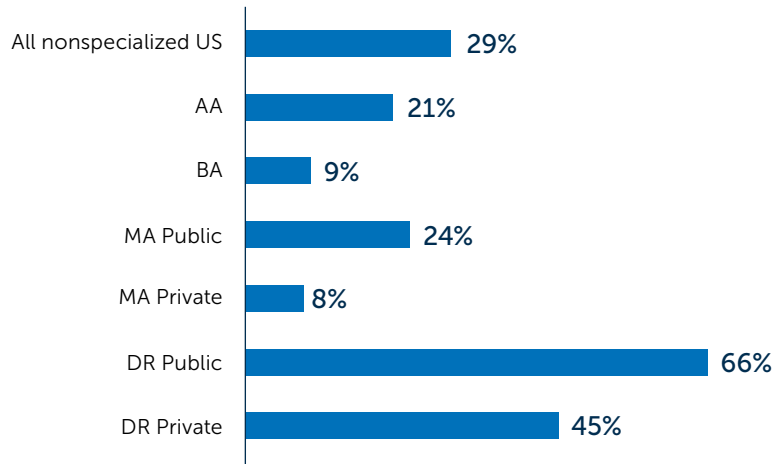
## Technology Investment Strategies for Digital Agility

Ongoing Investments Fall Into Three Main Categories



- 1 **Targeted innovation:** Best-of-breed tools enable mission critical campus services
  - 2 **Building agility:** Data management investments build vendor-agnostic integration capabilities
  - 3 **All-in gamble:** High-stakes system modernization efforts are expensive and labor intensive
- ⓘ At this inflection point, and with limited budget, innovation and agility must take priority.

## Percentage of Institutions with Distributed IT Spending and Staffing<sup>32</sup>



“ Different functions have their own funding. They all need the best tech solution for their constituents, and we want them to have it.

What we need to do at the institutional level is **figure out how to make all that fit together** in our long-term technology strategy.”

*Director of Technology Innovation and Consultative Services, Liberal Arts College*

As the pandemic subsides, the same focus and energy should be brought to technology investments, with a focus on the areas with greatest impact in the day-to-day of students' experiences across the learner lifecycle. Targeted products and development should concentrate on enabling the missions of the institution, focusing on providing a seamless experience and limiting friction.

### Three questions data leaders should ask themselves:

- How do we simplify the process of application and generate feelings of belonging among our prospective students?
- How do we ease navigation of disparate campus services to minimize the administrative burden on students pursuing an education?
- How do we support today's students beyond graduation and into the workforce, to ensure that alumni are engaged in the institution's ongoing success?

For most institutions, opening the doors for campus leaders to select the optimal tools for the strategies they pursue in response to these questions is not difficult: campus budget allocations and technology purchasing practices already account for these types of investment. In fact, according to EDUCAUSE data, a large proportion of US institutions already see greater than 25% of IT spend happen outside of central IT.

The difficulty comes with finding appropriate bandwidth to invest in the infrastructure that holds these tools together. Rarely do new campus investments come with the appropriate funding to craft a coherent architecture behind the scenes, tying together disparate processes and data into a seamless, coherent, and coordinated view of campus operations.

In turn, the holistic student experience remains underserved and under-resourced. Where campuses can turn the tide is to recognize that investing in the integration of these patchwork systems is in fact an investment in the holistic student experience across campus functions, in addition to providing a shared foundation to support new strategies and innovation in years to come.

## Strategy 2: Build Agility for Tomorrow with Adaptive Data Foundations

Creating a shared data fabric that stretches across the organization to knit together the various student touchpoints for holistic understanding and inflection is no mean feat—and finding the resources to connect the dots is a challenge for most institutions. Skilled IT staff are expensive and hard to hire, and disentangling the web of technologies already in place is a gargantuan and unenviable task. At one large research institution, efforts to map its current technology landscape comprehensively took six consultants and two years to uncover more than 400 applications leveraging and augmenting data from the student information system.

This point of visibility was only the beginning. What followed was a years-long journey to rationalize the ecosystem and create a more coherent pattern of information exchange across it. That new pattern relied on an adaptive, shared data foundation to limit direct system connections and enhance shared understanding of processes and outcomes across the full spectrum of services and institutional touchpoints.

Within the foundation, aggregated data assets are agnostically modeled and collaboratively governed to create a holistic view of campus. This digital blueprint aggregates data from specific systems of record and systems of engagement to empower a 360 view of operations and individual experiences, regardless of the unique and disparate systems leveraged to do the work. A student can apply via a process governed in the enrollment CRM, be admitted through processes in the student information system, be taught via two learning management systems, be contacted through the campus mobile app, and be audited for graduation in third-party software accessed via the web. And still, for campus administrators and the architects of new student experiences, the full lifecycle is available in one shared, reliable repository.

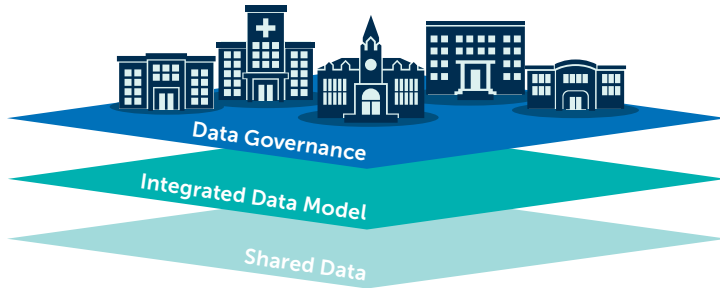
### Efforts to map the current technology landscape at one large research institution:

6 Consultants

2 Years

400 applications leveraging and augmenting data from the SIS

## Adaptive Data Foundations



Investing in data synthesis across applications not only creates the opportunity to connect the dots today; it also provides an agnostic data view to support migration of applications in the future. When data-sharing across campus is governed directly and separately—rather than as a function of individual systems—removing individual applications presents simpler work. Rather than disentangling and recreating hundreds of connections to systems across campus, leaders can focus on selecting the solution that best fits their needs and the needs of their students. With its agnostic view of campus information, the data foundation will adapt to incorporate the new tool into the technology ecosystem, and the evolving portfolio of digital applications will continue to provide best-in-class support for student processes and interactions.

By considering ways to optimize the current technology portfolio to deliver student-centric innovation, while simultaneously investing in building the infrastructure to support integration and future adaptation, campuses are able to reframe digital strategy as two distinct yet interconnected functions: continuous innovation and sustainable integration. Leveraging these two buckets as strategic priorities, institutional leaders should revisit project prioritization processes to ensure that both imperatives—whether tackled in unison or via separate paths—receive the mindshare and resourcing required for institutional success.



# How EAB Helps Institutions Meet the Digital Transformation Imperative

## Optimizing for Today with Service-Oriented Applications

EAB's technology is rooted in best practice research and guided by a philosophy of creating best-in-breed applications to solve higher education's most mission-critical challenges.



### Enrollment Success

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about the technology and analytics that power EAB partners' enrollment strategies



### Student Success

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about Navigate, EAB's Student Success Management System



### Institutional Sustainability

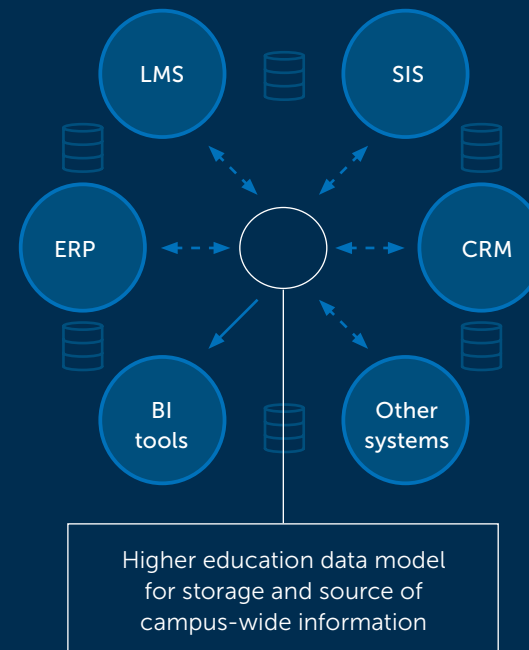
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## Building Agility for Tomorrow with Adaptive Data Foundations

### Education Data Hub

The First Data Management Platform for Higher Education



### Open-Purpose

Democratizes data for both analytics and integration needs in a secure environment



### Vendor-Agnostic

Open architecture demanded by modern cloud applications



### Future-Proof

Allows for and facilitates technology change as organizational needs evolve

## Speak to an Expert

Danielle Yardy, PhD | *Director, EAB*

EAB's team of experts is available to discuss this white paper with you and your campus leaders. If you would like a virtual presentation or meeting to discuss how your campus can prepare for digital transformation, please email [DanielleYardy@eab.com](mailto:DanielleYardy@eab.com).

600+

**Integrations completed** across a variety of vendors and enterprise systems

450+

Unique institutions' **data flows and native structures** informing the data model

10+

Years of **best-practice research and insight** informing the technology development

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