

RESEARCH  
BRIEF

# Digital Transformation on Campus:

Assessing College Leaders'  
Attitudes on Strategic  
Technology Changes



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SUPPORT  
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## Enrich the student experience

Amazon Web Services (AWS) envisions a world where education is always available, personal, and lifelong for everyone. To realize this vision, we work hand in hand with higher education leaders who are seeking new and innovative ways to improve the experience of their students.

When I talk with institutions across the US, I often hear about the importance of creating equitable and engaging experiences for students on and off campus. Now, more than ever, colleges and universities want to make it easy for students to get information and communicate with staff while also increasing access to learning tools and resources that help train and prepare them for the workforce.

We are working with universities like UT-Austin who migrated to a digital one stop in just one weekend and decreased average wait times for students to talk to staff from 15 mins to less than 30 seconds. We are supporting institutions' missions by delivering solutions like virtual labs that can be deployed on any device, increasing equity and access to digital resources for every learner. To prepare students with skills for the global marketplace, we are working with the California State University system and Highline College, the most diverse community college in Washington State, where students are engaged in simulated cybersecurity, artificial intelligence (AI), and machine learning (ML) competitions to enhance their learning with emergent technology.

We know the last two years have been challenging for higher education leaders and institutions, with workforce complexities and rapidly changing teaching and learning environments. We are here to partner with leaders who look to the future with hope and excitement about designing and delivering meaningful, technology-enhanced learning experiences that modernize and enrich the student experience for every learner.

My team is here to support your innovation and whatever transformation means to you.

Sincerely,

*Mike*



*"We're committed to collaborating with you to drive innovation at your institution."*

*– Mike Hofherr, AWS*

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Contact [CI@chronicle.com](mailto:CI@chronicle.com) with questions or comments.

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## EXECUTIVE SUMMARY



**D**igital transformation is vital to the future of the nation's colleges and universities. Yet most institutions have never attempted such a tech makeover, while a considerable number lack the right strategic plans to make a campuswide digital revolution successful.

Those are the key takeaways from a survey conducted in the winter by *The Chronicle of Higher Education* with support from Amazon Web Services (AWS). It was designed to learn more about college leaders' views on how well their institutions are using technology to improve how they educate and operate.

The survey explored attitudes on the value of new tech tools on campus, whether institutions have created viable strategic plans to spur a transformation, and where colleges see opportunities to use digital systems to improve operations.

The vast majority (90 percent) said that making digital progress is key to their institution's future, while a similar share (88 percent) said Covid-19 has sped up digital-transformation efforts. At institutions where large-scale tech innovations have taken place, a significant portion of college leaders said those efforts have been successful.

Digital tools were seen as having the potential to make a positive impact on a multitude of areas, including admissions and recruitment, finance and business, student retention, academic advising, and student affairs.

Nearly all respondents said digital progress is important for increasing campus operational efficiency, improving student services, enhancing the online educational experience and the in-person classroom experience, and lifting enrollment.

College leaders reported that a digital metamorphosis entails more than just buying and using new technology. Among respondents from institutions that have pursued a digital transformation, the majority said student equity is a major consideration during strategic planning.

For all the perceived benefits of creating

digital change, 73 percent of leaders said higher education trails the corporate world. Only 3 percent said that colleges are ahead of businesses and corporations when it comes to tech.

Cost remains a key obstacle to digital transformation. When asked to name the largest roadblock, more than one-third of respondents cite budget constraints — three times the second-most-cited option, campus culture.

But the issue goes beyond the price institutions must pay for meaningful digital progress.

While an overwhelming majority of college leaders (90 percent) said that digital transformation is essential to their institution's future, 57 percent said that their institution has the right strategic plan for one. And 57 percent also said that their board and leadership team work well together to establish goals regarding technology, while 51 percent said their college does a good job evaluating how well a new technology or system benefits its mission.

Those insights came from answers to a survey emailed to administrators at two-year and four-year institutions in early February. A total of 519 responded. Directors made up the largest group (31 percent), followed by deans (20 percent), chief information officers and other tech officials (15 percent), provosts (9 percent), and presidents or chancellors (6 percent).

# INTRODUCTION

**T**wo years into a pandemic emergency, colleges find themselves relying more on technology and being more agile than they could have imagined beforehand. Covid-19 forced institutions to innovate on the fly. With the help of [\\$40 billion in federal funding](#), many institutions retooled themselves with digital systems that allowed them to continue operating remotely. Others have concentrated on melding classroom and online classes into hybrid-education models.

Some colleges have also spent considerable time and money upgrading how they run their business and enrollment offices or sought digital means for staffers to remotely complete their work. The result has been not only an acceleration in the pace of digital adoption, but an acceptance of the need for it across campus — something the pandemic drove home.

“Some people have told me that they have made more operational changes in the past year than they had in the past 10,” says Michael Zastrocky, executive director of the Leadership Board of Chief Information Officers in Higher Education, an association of college tech officials.

All signs are that colleges are following up on their considerable investments in Covid-era digital teaching and learning technologies with systems designed to help in other areas, including student advising, data analytics, fund raising, and course registration.

This year, 64 percent more institutions made decisions to invest significantly in human-resources management platforms than did so last year. What’s more, 60 percent more said they opted to invest in tech systems to help them run their finances, according to an [annual report](#), released this spring, by the Tambellini Group, a college advisory and analysis company. The report uses information from 4,300 higher-ed institutions in the United States. Over all, colleges have more than doubled the dollar amount of their investments in those areas during the past year.

The firm also found that more than 90 percent of the institutions that invested in those two areas also moved them into the cloud — “a high-impact and expensive investment that signals a long-term commitment to fundamentally changing and improving their internal operations,” the report notes.

Yet, there have been hiccups, even major headaches, as technology is becoming the new lingua franca on campuses. For

companies, only about 30 percent of attempts at digital transformation met or exceeded their objectives, according to [a study](#) by the Boston Consulting Group.

Beyond understanding how technology works, college leaders need to see a digital transformation as more of a leadership challenge than a technical one, experts say.

“Many institutions have struggled in their attempts to digitally transform and, as a result, have invested considerable time and money without achieving the desired outcomes,” [notes a report](#) by Educause, an organization that encourages institutions to improve their operations via the use of IT.

At Ohio State University, a move to add a comprehensive, cloud-based student-information system was called off in December after the university experienced implementation problems, costing it tens of millions of dollars. Finding workable tech solutions to monitor students’ academic and financial records remains a problem for colleges, experts say. Some worry that the complexity of the task, as well as the expense that cash-strapped institutions would have to bear upon purchasing a student-information platform, may discourage tech companies from developing more of them.

Colleges, mindful of meeting student needs and expectations, are nonetheless

finding ways to upgrade their technologies. While most colleges continue to rely on legacy tech systems that may be outdated, many are now shifting to more tailored solutions to streamline how they operate, the Tambellini Group report says.

**“Many institutions have struggled in their attempts to digitally transform and, as a result, have invested considerable time and money without achieving the desired outcomes.”**

Colleges are searching for affordable systems that allow them to stay in the black well into the future. In an era that calls for increased digital investment, institutions are hoping that new tools will, in the long run, save them money by helping them do business more effectively and efficiently.



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# The Imperative of Digital Retooling



**R**esults of the *Chronicle* survey confirm two views about digital progress. Nine in 10 respondents said that digital transformation is vital to their institution's future, while nearly as many said that Covid-19 has hastened the pace at which tech has moved forward on campus.

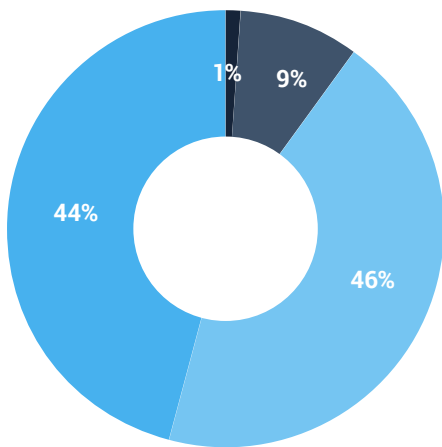
In the Covid era, digital systems are now an accepted and, increasingly, better-understood facet of the campus landscape. "The pandemic has accelerated the rate of implementation of tech tools,

but it has also increased user familiarity with them," says Vince Kellen, chief information officer at the University of California at San Diego. "They don't scare people as much."

Digital transformations have become important enough to regularly engage the attention of top college officials. Survey takers said that presidents, at 78 percent, were most often the ones present as decisions on campus tech investments are made, followed by chief information officers or chief technology officers (74 percent), chief financial officers (70 percent), and provosts (69 percent).

### Digital transformation is key to my institution's future

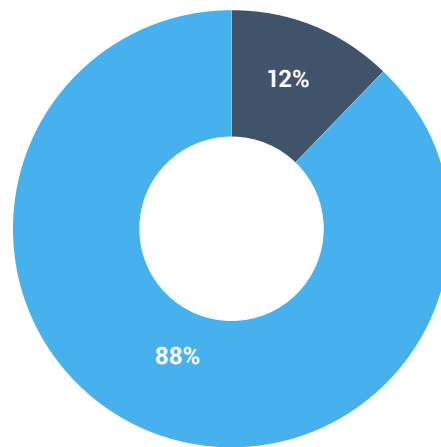
■ Strongly agree    ■ Disagree  
■ Agree            ■ Strongly Disagree



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

### Has Covid-19 sped up digital-transformation efforts on your campus?

■ Agree            ■ Disagree



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

And many college officials see digital progress as one way to increase equity and inclusion on campus. More than four of five said that equity issues are discussed in tandem with digital-transformation plans.

Faculty, long seen as an obstacle to campus innovation, have also bought in on digital change, survey results indicate. When asked what constitutes the biggest obstacle to digital progress, only 5 percent of respondents cited faculty reluctance.

“The faculty are ready to move forward,” says Jonathan Dryden, provost at Lorain County Community College, in Ohio, which has made flexibility in learning a priority in recent years. “They’re experimenting with new teaching models and classroom technologies. Some were resistant before Covid, but now that they’ve taught in different ways, they really like it.”

“There’s a gap between digitally native students and colleges that have yet to develop strong digital programs.”

At the same time, there has been a recognition that a sizable number of students — often viewed by colleges as preferring in-person learning — are comfortable with learning online. At the Community College of Vermont, state higher-ed officials have observed “an enormous shift in desire from in-person

courses to remote courses,” says John Mills, interim president at Northern Vermont University. “There’s a gap between digitally native students and colleges that have yet to develop strong digital programs.” (Not surprisingly, a “student reluctance” response option in the survey received no support.)

The positive view that some students, mostly those who are older than the traditional age, have taken to digital learning and the convenience technology offers in other ways — making appointments for advising, accessing transcripts instantly, and registering online, to name a few — creates even more incentive for administrators to seek out digital solutions.

“Now, colleges are under pressure to create a digital-learning realm as well as an in-person one,” Kellen adds. “Our challenge is how to transcribe campus culture digitally.”

Starting last fall, many colleges began reopening their physical campuses. Because of a renewed emphasis on getting students back in the classroom, some experts worry that institutions may fail to follow through on integrating tech systems that make their campuses more accessible, economical, and efficient.

As much as college leaders talk about technology, many still lack a comprehensive view. “Everyone in higher ed seems to equate digital transformation with large systems, like ERPs,” or enterprise resource planning systems, says Paige Francis, formerly the chief information officer at the University of Tulsa. “They’re not grasping the full power and range of technology. They’re backsliding to business as usual.”

When compared with corporations, colleges are regarded as followers when it comes to digital transformation, the survey found. While half of surveyed officials said their institution is in about the same place as peer colleges when it comes to digital progress, only 3 percent said the higher-education sector is ahead of the corporate world, with 73 percent saying institutions trail companies.

Colleges by nature are slower to make changes, says Phil Hill, a higher-ed market analyst and publisher of the blog [PhilOnEdTech](#). “And we shouldn’t be trying to duplicate what corporations are doing. There’s value in putting on the brakes and taking a long-term view.”

Colleges are concerned with mission, and not profits, which means they are motivated to view digital change differently than companies do, Kellen adds. And college leaders may be overestimating the rate of digital progress among corporations, says Francis, who has worked as a corporate technology executive and has seen some companies stumble during tech integrations.

Regardless, college officials should resist comparing their situations with those in other sectors. “Tech is not a core product of what we do — it supports what we do,” says Carol Smith, chief information officer at DePauw University. “That has an effect on how quickly we can transform.”

## When it comes to the process of digital transformation, where does higher education stand compared to the corporate world?

Behind it



About the same



Ahead of it



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

## How would you rate where your college or university stands on digital transformation?

Behind our peer institutions



About the same as our peer institutions



Ahead of our peer institutions



“Note: Percentages add up to more than 100 percent due to rounding.”

Source: *Chronicle of Higher Education* survey of 519 senior college administrators.



# Where Colleges Stand on Strategy

**W**hile a vast majority of surveyed officials cite digital transformation as integral to their institution's future, 56 percent said their college has a strategic plan geared toward

large-scale digital progress. For those with a plan, 57 percent said their institution has the right strategy to achieve digital transformation. The same percentage said their college's board and leadership team collaborate effectively to establish broad strategic technology goals.

Though majorities held a positive view on those questions, some experts see a gap between college officials' technology ideals and their ability to make campuswide digital progress a reality.

"There is always broad-based and long-term support for digital transformation. But that's completely different from strategic planning," says Hill. When asked to list obstacles to digital progress at their institution, many respondents cited a lack of strategy.

**"There is always broad-based and long-term support for digital transformation. But that's completely different from strategic planning."**

“Colleges devise the wrong mechanisms for strategy,” Hill adds. “What you usually see is a massive design committee instead of a process that includes input from various groups across campus.”

Others caution institutions not to rely on overarching strategies that prove to be inflexible and exclusionary. “I’m not a fan of digital-strategy plans in general. Often they put the cart before the horse,” says Kellen, of UC-San Diego. “What we typically see is classic 1990s’ framing of the issue — the idea that you start from the top down.”

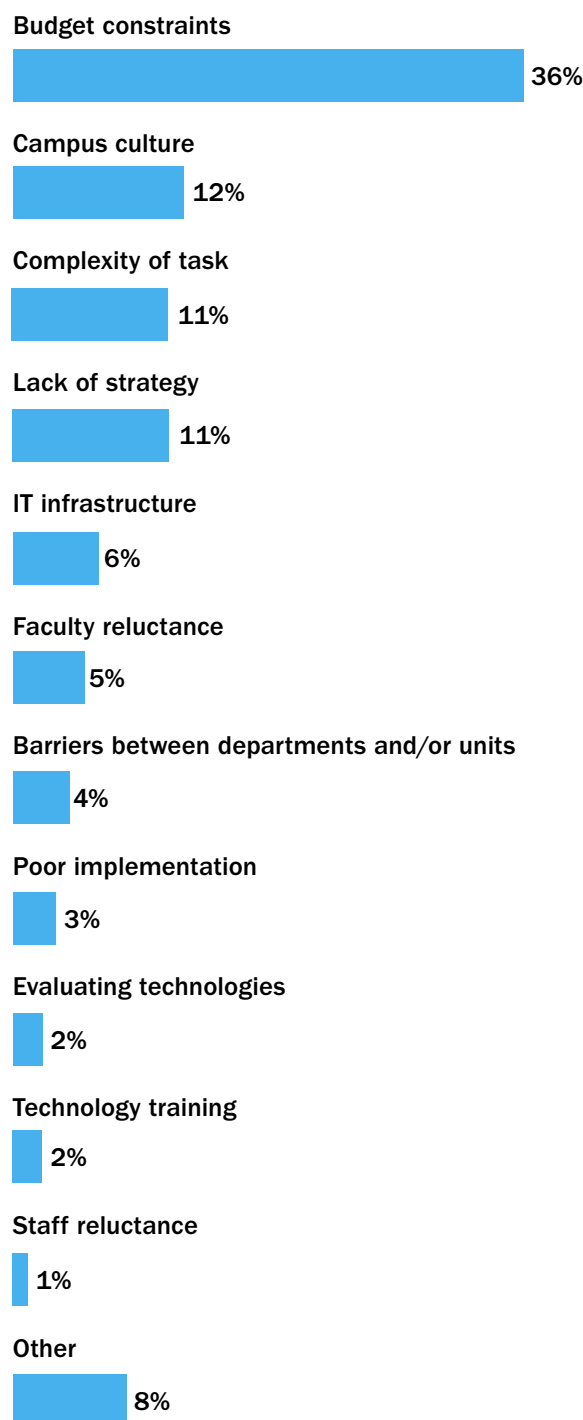
For digital transformation to take hold, colleges should look to get all stakeholders working toward it, and then keep up the momentum, he adds: “I see tech and human beings as fibers that need to be intertwined. You need to match the top-down with the bottom-up.”

Those who manage college budgets see another issue: money. For them, the majority in the survey claiming to have strategies that work toward digital transformation seems off. “The number doesn’t match the reality,” says Mills, of Northern Vermont. “Do we have a plan that we can complete with the resources we have? No, we don’t.”

Budget constraints were named as the biggest obstacle to tech transformation by 36 percent of respondents — three times as many as those who faulted campus culture, which ranked second.

The cost of technology may be keeping many institutions from embarking on a large-scale digital upgrade, with 43 percent saying their institution has engaged in a tech overhaul. Of those, 87 percent deemed the attempt successful.

## What is the biggest obstacle to digital transformation on your campus?



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

The survey also shows that chief information officers or chief technology officers are the prime drivers in exactly half of all digital-transformation strategies, ranking much higher than an institution's president, provost, and chief financial officer. At 9 percent of campuses, no one is leading transformation efforts, respondents said.

"It's encouraging because [research at Educause](#) shows that the role the CIO plays can determine whether a college is really thinking strategically about transformation," says D. Christopher Brooks, a senior analyst at the Tambellini

**"Without CIO leadership, it would be more difficult to make strong strategic decisions."**

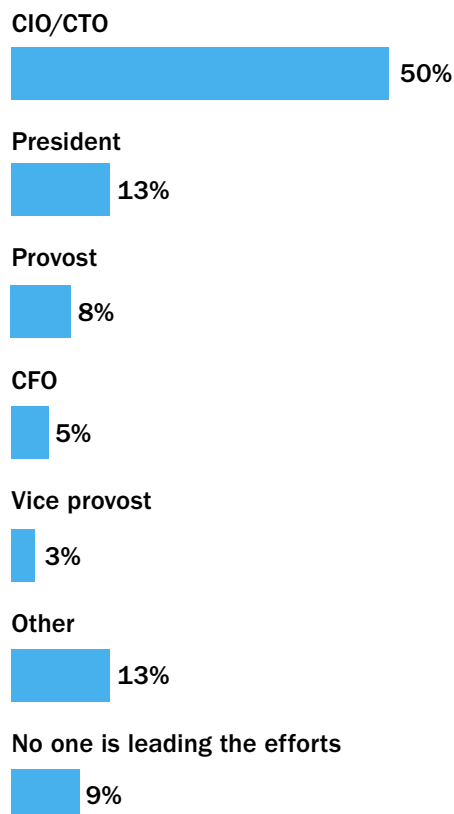
Group and a former director of research at Educause. "Without CIO leadership, it would be more difficult to make strong strategic decisions."

Though CIOs and other chief technology officials have often been seen more as problem-solvers than long-term strategists, several experts say — and some written survey responses indicate — that their role is changing. Many more are now part of college presidents' leadership teams.

Opinion is almost evenly split between respondents who say their institutions do a good job evaluating how well a new technology or system benefits their mission (51 percent) and those who don't (49 percent).

For both strategy and implementation,

## Who is leading the digital-transformation strategy on your campus?



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

colleges shouldn't be shy about asking for outside help, says Paige Francis, now the chief information officer at Art and Wellness Enterprises, an organization that provides support services to the billionaire Alice Walton's philanthropy.

"Having a multifaceted strategy kind of flies in the face of what higher ed usually does," Francis says. "If they don't know where to start, they need to find a partner."

# Infusing Tech Throughout Campus

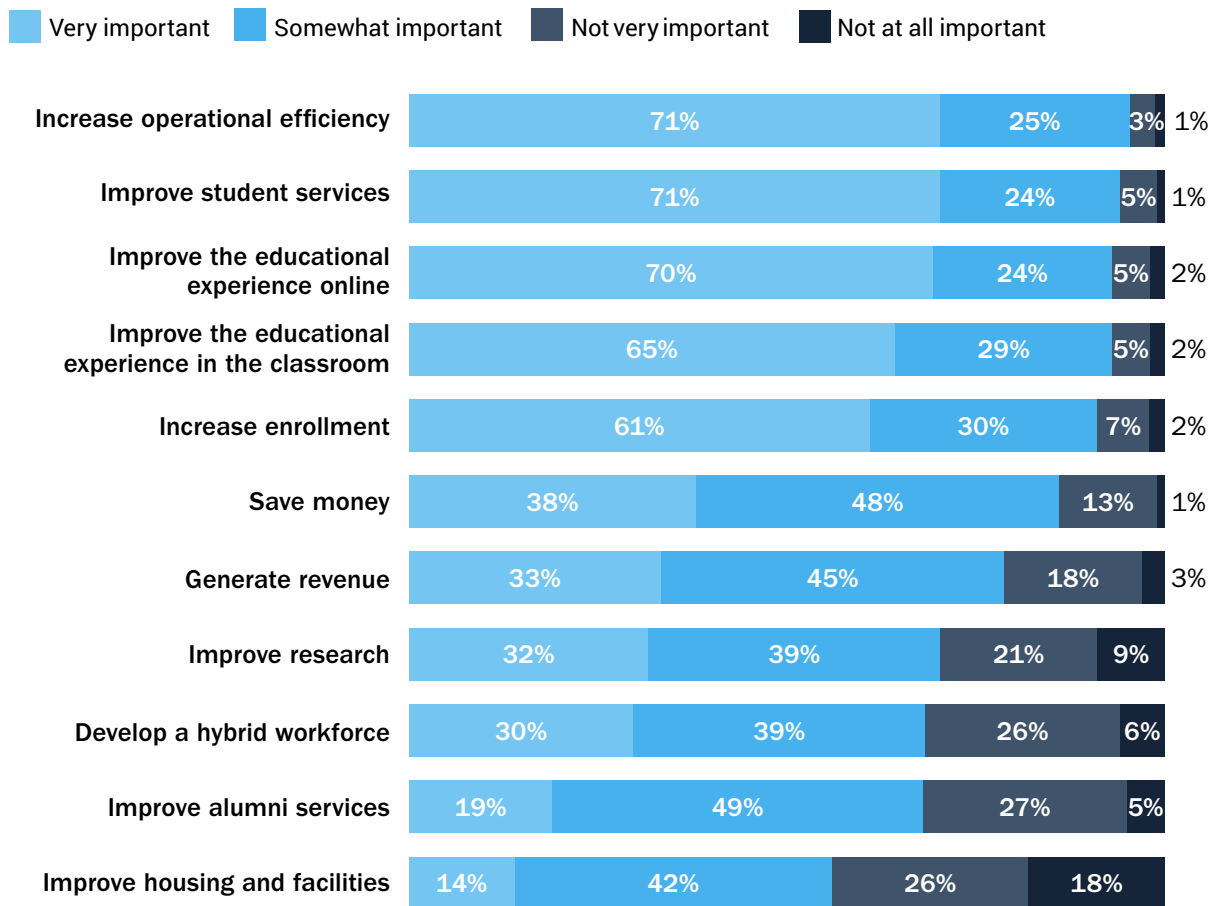




**C**ovid-19 kicked the adoption and integration of remote teaching and learning platforms into high gear. With an eye on the longer term, colleges during the pandemic era now also have a stronger appetite for technologies that can be used in a variety of ways across campus.

Chief among them are digital tools that can help institutions streamline how they work and reduce costs. Virtually every survey respondent said that digital transformation is important for increasing operational efficiency. That category was cited more often than 10 others. The other highly ranked areas were improving student services and the educational experience, both online and in the classroom

## Rate the importance of digital transformation at your institution on the following topics



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

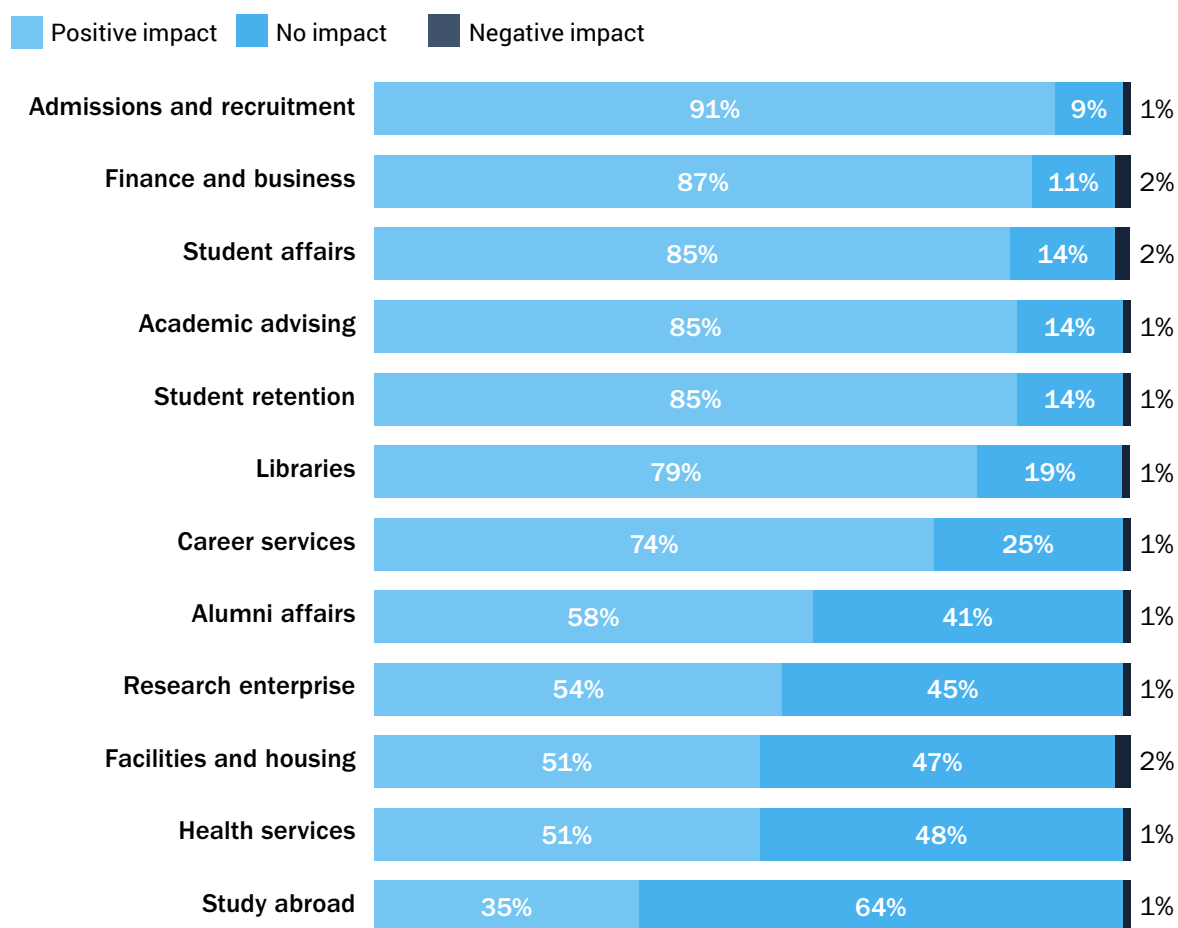
Respondents also ranked where at their institution digital upgrades can have the biggest impact. Admissions and enrollment rate the highest, with finance and business also garnering a high level of support. Survey respondents ranked both categories above academic advising, student affairs, and student retention.

“We’ve seen many more opportunities to take a second look beyond learning technologies and more toward best business practices,” says Carol Smith, of DePauw. “Digital transformation can help as we try to find ways to manage the costs of higher education.”

Cutting costs doesn’t necessarily mean eliminating staff, Smith says. Workers can be repurposed while digital platforms do the work of handling finances, registering students for classes, or setting up a variety of appointments.

But many colleges, already faced with the need to merge, downsize, or cut budgets to survive, may jettison human workers — with the help of digital technology. At Northern Vermont, the result of a recent merger of four public institutions, “Cost is our prime worry, every day,” says Mills, the university’s interim president. “I have to be honest. Part of digital transformation is

## At your college or university, rate how digital transformation will impact the following areas



Source: *Chronicle of Higher Education* survey of 519 senior college administrators.

mechanizing work so we can reduce staff.”

One goal of the merger was to “eliminate redundancies and rely more on a shared-services model” so the campus can modernize, Mills adds. “Seventy percent of our classrooms aren’t digitally capable of being hybrid-ready. How do we get there? We can’t improve student services or boost our retention measures until we can redirect funds that we get from becoming more efficient.”

The paradox: To reduce costs and get closer to the cutting edge, colleges must spend money. Purchasing and putting to use cloud-based human-resources or finance systems can cost anywhere from \$5 million to \$100 million, according to the Tambellini Group’s report.

Many colleges are now seeking ways to make digital systems less expensive. A few dozen members of the Higher Education Systems and Services Consortium, made up of about 300 colleges, banded together to purchase a shared, cloud-based student-information system last year. The shared cost makes the system more affordable, Smith says, adding that other consortium members are monitoring how well the arrangement works.

But sometimes the sheer amount of technology it takes to improve several types of campus systems can make it all seem unreachable, both in terms of cost and time. What’s more, finding tech vendors who can fill the wide range of needs of institutions, as well as customize digital tools to fit each individual college, can prove difficult.

“It’s hard for companies to make money in the ed-tech world,” says Phil Hill. “So, they tend to concentrate on other markets.”

As the Ohio State case shows, buying a large system and expecting it to work, glitch-free, soon after switching it on doesn’t guarantee that it will. Installing student

information platforms can be particularly difficult, notes the Tambellini Group report.

When Lorain County Community College rolled out a digital strategic plan last year, campus leaders hoped it could help transform their tech foundation and integrate far-flung tech systems. But they were presented with so many challenges, they now take a longer view.

“All of these changes take a lot of bandwidth, both in terms of staff and money,” says Jonathan Dryden, the college’s provost. “Suddenly, we have more projects than we can pay for.” A goal of combining a student-information service with human-resources and finance platforms has proved to be unwieldy — at least for now.

“Thinking about digital strategies has forced us to modernize business practices here that might not have been best practices.”

“But we’re confident efficiencies will come via digital transformation in time,” Dryden adds. “In the meantime, thinking about digital strategies has forced us to modernize business practices here that might not have been best practices,” such as how it manages staff workflows.

Now that many institutions have survived the early Covid years, experts say they would do well to lengthen their perspective on digital transformation.

“The question for college leaders now is, How do I make digital changes in a way that guarantees our institution will still be innovating in three years?” Hill says.

## CONCLUSION

Often seen as fusty and unyielding institutions steeped in solid-but-dated principles, colleges and universities pivoted instantly toward the future two years ago. Faced with the challenge of closing campuses but still educating students, institutions answered Covid-19 by offering flexible learning options that kept colleges “open” and vital.

The term “digital transformation,” though overused, aptly describes how institutions responded to the threat of the pandemic. But the term also encompasses tech tools outside the realm of teaching and learning. Colleges, faced with the prospect of declining enrollment and the added cost of delivering education in ways other than via the traditional classroom, are now looking toward automated systems that can help them run their operations more effectively and less expensively.

Though they may remain behind profit-driven companies in terms of tech savviness, they are no longer laggards when it comes to embracing digital change.

Institutions now look to digitally transform their campuses to deal with a variety of challenges — including finding ways to serve students better, improving how they reach a new generation of prospective students, and running back offices more efficiently.

But as is the case with all meaningful change, there are bumps in the road. Though many institutions have successfully undergone large-scale digital makeovers, the majority haven't. The numbers of leaders who see campuswide tech transformations as essential to their institution's future don't jibe with the much-lower numbers of colleges that have created digital strategic plans.

The cost of technology remains by far the biggest obstacle to putting it in place. College leaders recognize that a digital transformation, while costly to execute, will likely cut their operational costs in the long term. And with the threat of Covid-19 apparently diminishing, many are now taking the longer view about embracing technology and how it can keep their institutions forward-looking and vital.

## METHODOLOGY

“Digital Transformation on Campus: Assessing College Leaders’ Attitudes on Strategic Technology Changes” is based on a nationwide survey of 519 administrators at colleges and universities, conducted by *The Chronicle of Higher Education* and underwritten by AWS. The data collection took place in February 2022.

## FURTHER READING

[“Changing Views of the Faculty in the Digital Age,”](#) by Michael Anft, *The Chronicle of Higher Education*, March 2021.

[“Digital Transformation Is the Future of Higher Education,”](#) Educause, 2020.

[“Higher Ed Must Go All In on Digital,”](#) by J. Puckett, Ernesto Pagano, Pranay Ahlawat, Nick Zwemer, Pashmeena Hilal, Arianna Trainito, and Abigail Frost, Boston Consulting Group, June 28, 2021.

[“The Unequal Costs of the Digital Divide,”](#) by Audrey Williams June, *The Chronicle of Higher Education*, October 5, 2020.

[“Why the Science of Teaching Is Often Ignored,”](#) by Beth McMurtrie, *The Chronicle of Higher Education*, January 3, 2022.

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