

New Realities for Higher Education

Technology and
the campus transformed

Oracle Cloud Infrastructure for higher education

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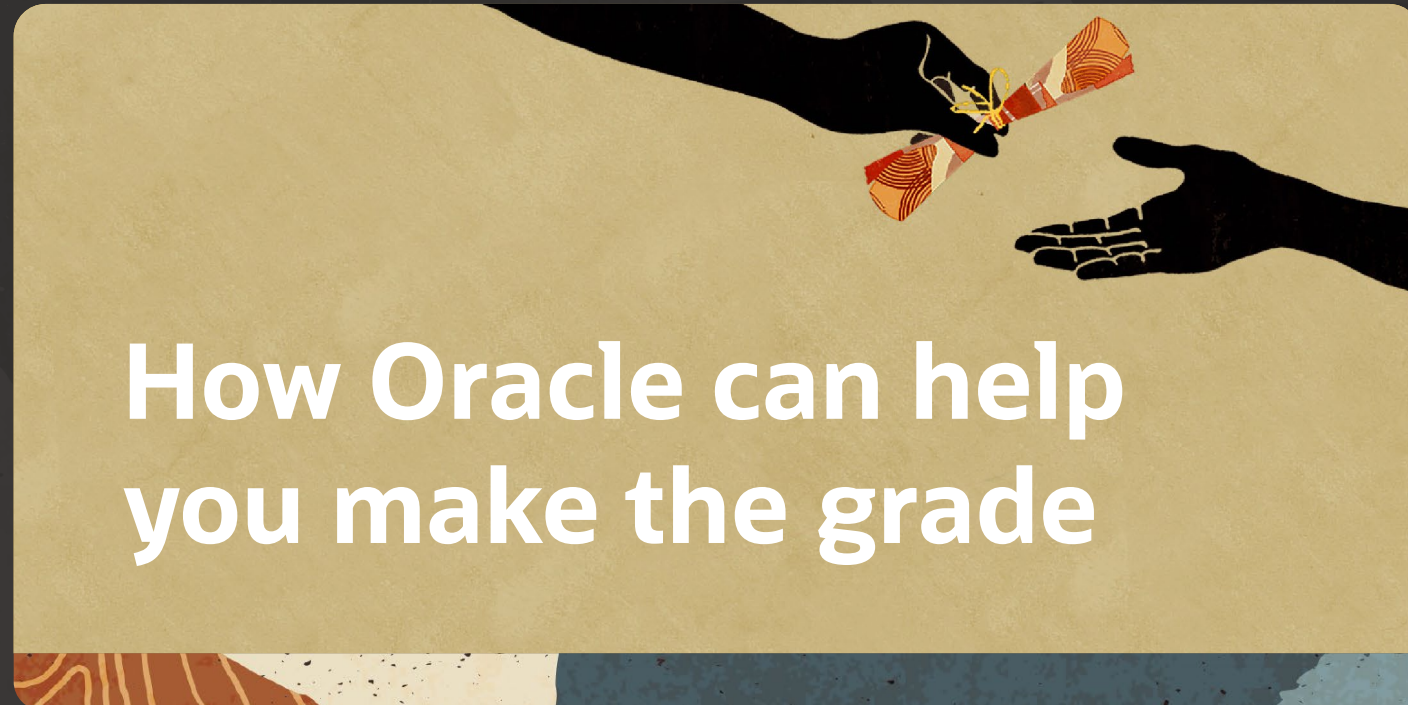
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A new breed of campus experience



In the spring of 2020, the COVID-19 pandemic disrupted life across the globe, from business to education to our everyday existence. The higher education market was hit particularly hard, as many signature college experiences were abruptly shuttered and replaced by online learning.

University leaders were able to keep students on course during this unprecedented health crisis, in large part due to the round-the-clock efforts of IT staff. Now, universities and colleges must prepare for a new era of online education, where a digital campus, rather than a physical one, may be the norm. What was once inconceivable—virtual orientation, registration, testing, and even graduation—is now a reality because of secure, enterprise-grade cloud systems.

For most universities, the COVID-19 crisis simply accelerated the shift to digital education. Learners today act differently from the traditional students of just a few years ago. They want an array of online classes, just-in-time communications, and intuitive experiences that go beyond the textbook.

This new breed of student—juggling jobs, children, and aging parents—also looks to the flexibility and cost savings of community college to attain an associate’s degree, often the first step on the

road to the American dream. Many are first-generation college students; others are retooling a lifetime of experience into a new career path. And they expect their institution to provide the latest mobile tools to help them schedule classes, monitor progress, and get academic assistance, all without ever setting foot on campus.

Colleges, both private and public, are meeting the demand with mobile and convenience-first tools and reinvented learning experiences—essential if they are to remain attractive and profitable.

Collaborative learning platforms and personalized dashboards that display real-time data like grade point averages, graduation timelines, course completion calendars, and detailed account information help students stay motivated as they move from education to occupation.

Artificial intelligence (AI)-powered chatbots play a big role in this new world as well. Unlike web and mobile apps, these conversational interfaces are designed to help guide people with instant and personalized assistance 24 hours a day. Virtual assistants act as on-screen advisors that proactively and reactively hand-deliver advice to prospects, students, professors, and administrators—and provide a demonstrable return on investment. Next-generation experiences

like these improve stakeholder experiences and, in turn, elevate the academic reputation of the institution delivering them.

To prototype, pilot, and launch new tools and systems in lockstep with the pace of technology, universities and colleges, public and private, large and small, may want to consider moving to the cloud.

The cloud can revolutionize the campus experience by:

- Delivering cost savings, flexibility, and a framework to bring innovation on campus
- Securely warehousing student population data
- Offering greater interoperability and access
- Enabling expedited app development and deployment
- Automating the use of chatbots for instant engagement through mobile cloud services



The collegiate squeeze



It's safe to say institutions of higher learning are under pressure to deliver results. Colleges and universities face the challenges of diminished funding and establishing fresh relevance in an environment of escalating tuition prices and degree programs that, on the surface, may not correlate with traditional career paths.

The acceleration and consumerization of technology is reshaping expectations by college administrators, faculty, students, and prospects alike. Instant, uninterrupted, secure, and mobile access to a school's system is simply expected. Yet each audience brings with it numerous

devices that tax campus networks already choked by simultaneous demands for speed, storage, and hefty downloads.

To meet these challenges head on, colleges and universities are embarking on a journey of technological transformation.

Championed by a variety of stakeholder groups ranging from leadership and faculty to IT and administration, the modernization and migration of institutional legacy systems to the cloud is gaining campus-wide support—and for a variety of reasons.

Migrating on-premises technology assets to the cloud can provide remarkable benefits, including:

- Shaping next-generation campus experiences that support retention
- Streamlining institutional operations
- Accelerating leading-edge research



Empowered research



Research is the lifeblood of large institutions. It drives breakthroughs on global issues, garners acclaim, attracts funding, and launches careers.

However, today's research initiatives are becoming more complex, and costly—and are being examined through the lens of faculty performance and student achievement, increasing the need for more accountability.

To satisfy the public's scrutiny of escalating tuition costs, institutions must now quickly deliver real-world, evidence-based outcomes of research with more transparency. To do this, researchers will need more advanced remote tools to simulate research and share data sets collaboratively.

But the disruption doesn't end there. With beacons, wearables and other Internet of Things (IoT) devices able to capture information previously inaccessible, the sheer scale of research projects and the exhaustive amount of data they generate has exploded.

To store an unparalleled avalanche of structured and unstructured data, today's information repositories must be highly secure, scalable, and cost-effective. A university's technology stack design has important consequences on how research analysis and collaboration are performed as well, making cloud-based technology for data storage and retrieval an attractive option.

The cloud can empower research at your university by:

- Storing vast quantities of data from sensors, metering devices, and other sources
- Scaling up and down as projects generate fluctuating amounts of data
- Enabling faster decisions that lead to medical and scientific breakthroughs
- Defending against breaches in security and system outages
- Generating a collaborative structure to enable research and discovery around the globe



Keeping up with technology



Because technology moves at breakneck speed, it's easy to see how challenging it is for administrators and internal higher education systems to keep up.

Many institutions own disparate collections of outdated and inflexible systems. In some cases, these systems have been around for years—even decades—meaning poor user experiences and higher maintenance costs. In 2020 alone, the estimated IT spend for higher education, as projected by the Center for Digital Education, was a hefty \$14 billion.

To support agile online learning, and deliver differentiated value, traditional processes should be consolidated and digitized. With lower costs of ownership and up-to-the-minute financial and human resources analytics, faculty and staff are empowered to make the macro and micro decisions that shape student success, financial sustainability, and institutional excellence. For new levels of insight and efficiency, institutions should begin to migrate their legacy applications to the cloud.

The cloud can help you leverage technology and ensure business continuity by:

- Providing unified management and more visibility
- Reducing operating costs while enabling the launch of future-forward applications and services
- Using the power of big data to deliver insights and predict future needs
- Protecting proprietary information through enhanced cybersecurity features
- Delivering superior disaster recovery capabilities
- Bridging on-premises applications such as Peoplesoft, Ellucian Banner, and Blackboard to work in synchronization with Oracle Cloud applications
- Generating a collaborative structure to enable research and discovery around the globe



How Oracle can help you make the grade



Cloud computing offers boundless opportunities for higher education, but with so many factors to consider, where's the best place to start? After you've developed a plan and collected requirements, it's time to choose a partner that can meet your current needs and future vision.

Oracle offers a simple path to the cloud with integrated capabilities across SaaS, PaaS, and IaaS—making it the industry's most complete offering.

Oracle's Generation 2 Cloud Infrastructure represents a fundamental re-architecture of the conventional public cloud. Security is baked in from core to edge in Oracle Cloud Infrastructure's layered, Machine-Learning (ML)-based security design, helping universities minimize risk by predicting, detecting, and responding to sophisticated threats.

Oracle Cloud Infrastructure is also the only cloud built to run Oracle's Autonomous Warehouse. With its self-driving, self-securing, and self-repairing nature, Oracle Autonomous Database minimizes downtime, reduces manual operational efforts, and gives IT staff and managers more time to focus on innovation.

With nearly three decades of experience in academia and over 13,000 higher education customers in 128 countries, Oracle has a history of helping institutions around the world.

Beyond security, Oracle can help you improve productivity and advance your reputation with:

- Apps with built-in Artificial Intelligence (AI) to help select and recruit the right students, academic, and professional staff
- Chatbots that deliver a better student experience 24/7
- AI and IoT-based analytics for discovering hidden patterns and guiding student success
- Blockchain technology that helps secure student credentials and transactions
- ML tools for creating analytics and visualizations that lead to better decisions
- An open standards-based dev platform for building, deploying, connecting, and enriching apps
- Natural language processing that helps meet the needs of international students and affiliates faster



Oracle customer stories



Oracle Cloud helps CERN explore our universe

At the European Laboratory for Particle Physics, CERN, a highly complex mix of accelerators, detectors, and information-management technologies helps explore our universe. CERN has proven that Oracle Cloud can integrate within the large worldwide Large Hadron Collider computing grid with up to 10,000 cores on Oracle Cloud Infrastructure. CERN is also working with Oracle Autonomous Data Warehouse to improve the operational efficiency of the control IoT—all with the goal of accelerating scientific discovery.

Gonzaga's New Vision

To support their students now and into the future, Gonzaga University IT leaders needed to significantly upgrade their on-premise IT infrastructure supporting Ellucian applications. After an extensive RFP process, they selected Oracle Cloud. In just seven months, the university improved security, reduced costs, and were able to provision new servers in minutes instead of hours.





The COVID-19 pandemic will have a lasting effect on how colleges and universities operate. As university IT leaders and staff continue to re-examine higher education in this new world, they must now consider how their technology can support:

Virtualized experiences:

New concepts like virtual reality, chatbots, and gamification must be operationalized to ensure class content and proctored exams can be accessed digitally.

Project and collaborative learning:

Teachers and students will need a comprehensive range of data catalogs and application tools available with security protocols that help them to share data safely.

Verification of learning:

Digital student profiles may soon require encrypted digital ID cards that accurately verify online attendance and can measure the effectiveness of what is being taught.

Analytics:

Already a vital measurement in higher education, analytics will require more speed and throughput to further support student and faculty success in online learning environments.

Security:

Secure cloud environments and identity management that ensures student, faculty, and researcher privacy, will grow in importance—especially as benchmark exams are administered digitally.

Scale and elasticity:

As various administrative, research, and student activities will co-exist in a growing digital ecosystem, IT support will need to constantly assess and tune performance of cloud environments.

Learn more about Oracle Cloud Infrastructure for higher education today.

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