



DELL EMC



## DELL EMC SOLUTIONS FOR HIGHER EDUCATION:

Driving Innovation and Student Success  
through Digital Transformation



# The Need to Innovate

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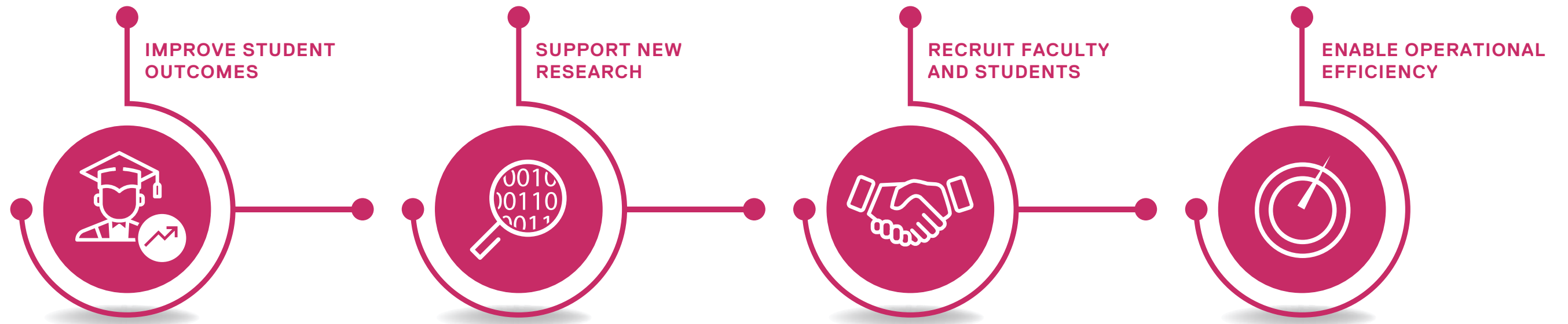
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Today, higher education institutions are at a pivotal moment. They are in the middle of a significant shift in educational models, delivering both unique learning models and student campus experiences through digital transformation. Students are increasingly taking advantage of technology on demand to meet their own learning needs and chart their own path to workforce readiness. This change around why, how and when students are learning is the driving force behind the growing need for technological advancement on campuses.

As a result, IT infrastructure has changed drastically. Application modernization and enhanced proactive security frameworks are paramount to the digital transition process. It's no longer just about managing hardware or software — IT systems must deliver the technology and services that enable agility, efficiency and learning innovation to support student outcomes, improve decision making across the organization and transform IT to provide more

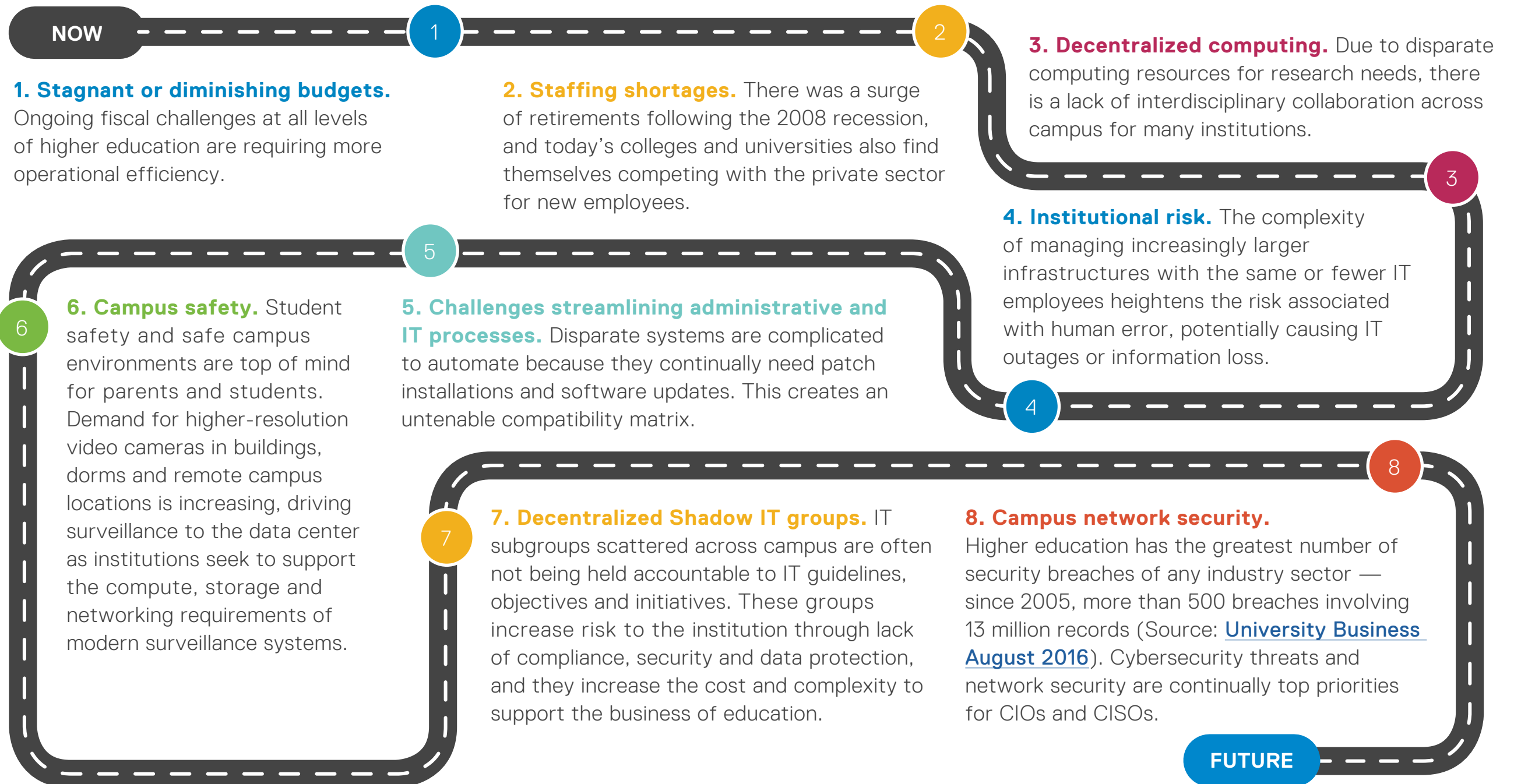
efficient services. Institutional leadership is therefore looking for opportunities where technology can support students as they prepare for their careers, using data and predictive analytics to improve success and completion, and engaging faculty through IT services to support their research initiatives.

To foster student success, institutions are also seeking fresh learning approaches that reinvigorate classrooms through innovative and immersive teaching methodologies that increase collaboration and student engagement. Students are picking tech-savvy colleges and workplaces that can advance their learning while offering them a compelling degree track.

Colleges and universities also want to enable operational efficiency at the academic, administrative and resource levels to maximize available dollars for teaching and learning — and to offset the ever-rising costs of education.

## ROADBLOCKS TO DIGITAL TRANSFORMATION

Achieving effective digital transformation is difficult for many higher education institutions because they face an ever-increasing list of barriers. These include:





# Transforming the business of education

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Real innovation on campus happens through digital transformation — when higher education institutions reinvent themselves and realize their digital future by deploying modern technologies across their entire organization. For colleges and universities, the results of this transformation are workforce-ready students and alumni, transformative and engaging faculty, and innovative research capacity.

Digital transformation takes place through the implementation of a modern IT infrastructure that drives new research and classroom collaboration and engagement, and automates previously complex tasks that required hands-on, manual processes.

Higher education institutions today need to upgrade their IT environments as part of an overall MAT (modernize, automate and transform) methodology — an approach designed to create improvements by better utilizing IT personnel so they can be freed to focus on both supporting and driving innovation across campus. By transforming the IT infrastructure, campus IT leaders can provide the tools that students will use in the workplace and offer modern technology platforms that attract the best faculty and researchers.



# The path forward

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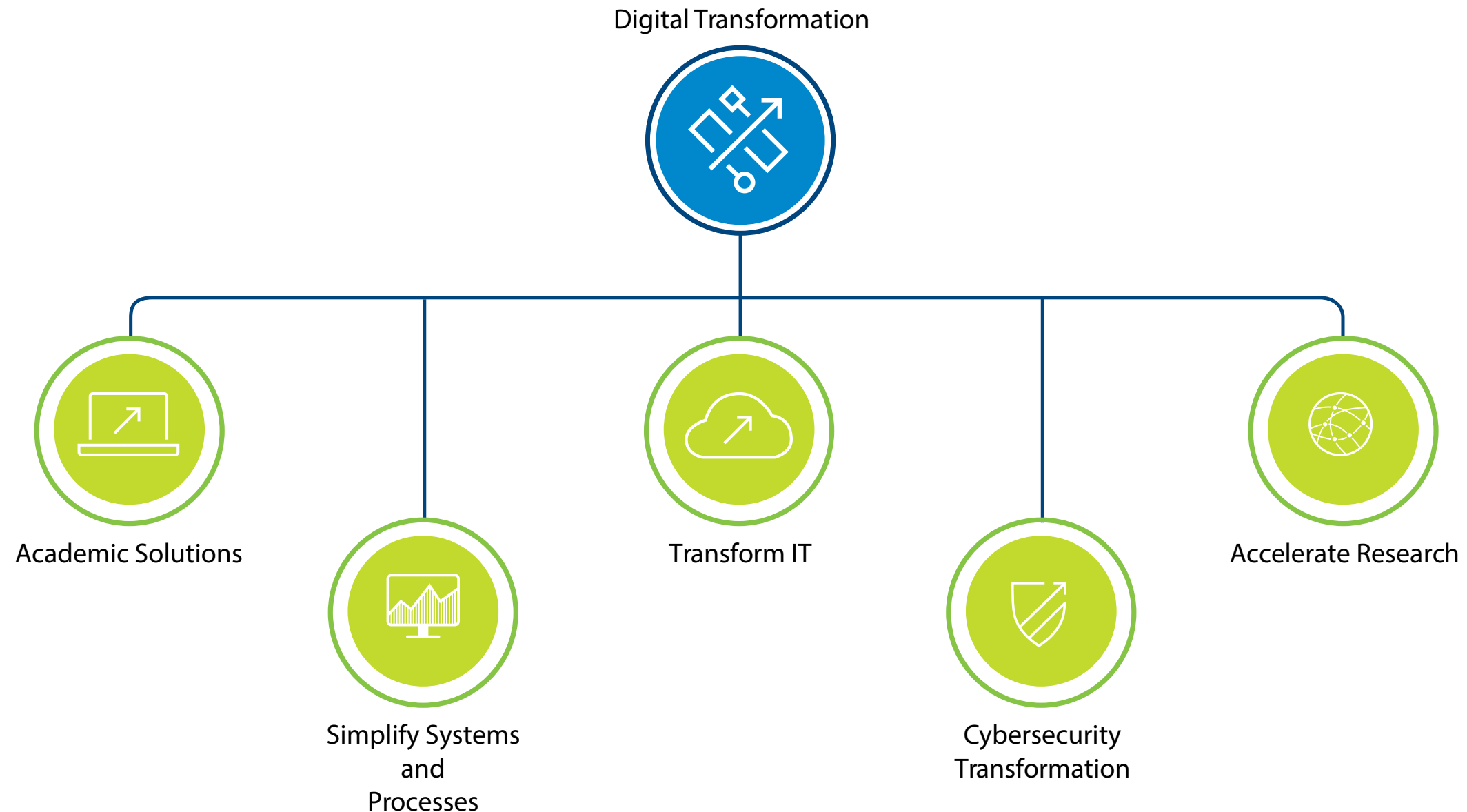
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Higher education IT leaders today want to improve student and institutional success through IT initiatives that include bringing digital transformation to their campus experience. How can they get there?

Dell EMC is positioned to help. Building on its extensive relationships with colleges and universities throughout the

world, Dell EMC offers much more than technology. It provides a partnership in digital transformation.

Dell EMC provides comprehensive, holistic solutions that are rooted in a thorough understanding of the missions, visions and strategies of higher education institutions.



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## ACADEMIC SOLUTIONS FOR STUDENT SUCCESS AND WORKFORCE READINESS

Institutions using Dell Technologies can drive innovation at every level, from administration to research to the classroom.

### Solutions:

**Active campus.** Through devices such as Dell Latitude PCs, Dell Precision workstations and Dell Canvas, Dell EMC supports mobility, access and innovative learning. Virtual desktop infrastructure (VDI) solutions and video conferencing enable access to IT resources and distance learning by helping geographically remote students to connect to the classroom no matter what device they're using.

**Learning spaces.** To better engage students in the classroom, Dell EMC provides interactive, collaborative, connected technologies that coupled with innovative teaching practices can transform learning environments. These products include large-format displays, projectors, interactive displays, monitors, storage and wireless collaboration solutions – technologies that support collaboration between students and faculty and develop critical thinking and workforce readiness skills.

Partnerships and alliances. Through the Academic Alliances Program, Dell EMC actively engages with academic thought leaders and business partners to foster research partnerships and unique programs including foundational IT courses. These courses cover information storage and management, cloud infrastructure and services, data science and big data analytics, and data protection and management. The program also provides free technology e-learning courses to institutions.



We knew we were hitting the mark when we received a note that said , 'My grades are up and I spend more time with my family. Thank you.'

— Steve Athanas, Director of Platforms & Systems Engineering, University of Massachusetts Lowell

**Education data management.** Dell EMC offers powerful student and learning analytics solutions specifically designed for education. Education data management (EDM) enables better-performing education strategies, including recruitment and retention, fiscal management, compliance and reporting, PK-20 data monitoring, and workforce readiness measurements. As a result, institutions can have a dashboard of accurate, actionable data that will ensure students are on track to graduate.



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## SIMPLIFY SYSTEMS AND PROCESSES

Administrators can overcome the limitations of staff shortages and budgetary constraints by utilizing centralized solutions that break down silos and streamline operations.

### Solutions:

**Campus safety.** Dell EMC offers end-to-end video surveillance solutions featuring 4K-resolution cameras, and a proven and validated architecture, as well as compute, storage, virtualization and cloud services. Dell EMC also has one of the largest video surveillance software labs in the industry, which helps to ensure simplified system deployment based on rigorous testing. Dell EMC cloud technologies can also augment the solution to support longer retention periods.

**Smart campus (IoT).** Taking advantage of the Internet of Things, Dell EMC has an IoT technical working group that has collaborated with universities such as MIT to develop water quality management solutions. Additionally, Dell EMC offers storage repositories for gathered IoT data and use in data lakes. Together, Dell, VMware and Pivotal work to provide a standardized IoT implementation through plug-and-play components and virtualized infrastructure.

**Virtualized application services.** Institutions can run critical applications on VMware environments in the data center, on an appliance or a client device. Dell EMC also provides virtualization and virtual labs, designed to help students conduct research.



The analysis of data in real time or near-real time is important. And the infrastructure that does this, the analysis, the storage, the presentation and discovery tools — Pivotal offers all of this in its suite.”

—Gerry McCartney, CIO and Associate Professor of Information Technology, Purdue University



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## TRANSFORM IT

Through powerful Dell EMC data center and cloud technologies, institutional IT leaders can transform their IT environments and applications.

### Solutions:

**Data management, storage and protection.** Integrated compute clusters and network fabrics can empower researchers to kick off projects and initiatives that could lead to new scientific breakthroughs. Dell EMC technologies can streamline data management through data protection, risk and compliance management, and customized enterprise content and records management. Dell EMC's ability to provide digital storage environments that range from the smallest to the largest capacity is designed around workload and institutional needs for efficiency, performance and "scale as you grow" simplicity.

**Cloud technologies.** Dell EMC provides a variety of cloud services so institutions can move workloads and data to, from and across clouds to gain agility, economy, performance and security. Cloud solutions include private-cloud infrastructures; public cloud-enabled services to providers including AWS, Microsoft Azure and Google Cloud; and Dell Technologies' own enterprise-class cloud provider, Virtustream. Dell EMC can also provide a hybrid-cloud infrastructure, combining a private cloud and brokered public-cloud services through a service portal.

**Modern data center.** To reap the next-generation transformation benefits of the MAT model, Dell EMC offers automated hyper-converged platforms that support colleges and



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If you look at the entire picture, there are hundreds of servers and other IT resources that won't have to be maintained because they are consolidated onto the new infrastructure.

—Patrick Williams, Information Architect, North Carolina State University. The school deployed a Dell EMC private-cloud system with virtualized applications

universities in their role as education service providers, with IT promoting an IT-as-a-service model. Using this model, institutions can provide all their primary functions via a self-service catalog. Institutions can build a hybrid cloud, through which they can capitalize on their on-campus resources and also integrate public-cloud and managed services under the same self-service catalog — exposing, measuring and brokering all the different services the university wants to offer to its users, partners and the community. This enables agility, efficiency, security, and the measurement and management of all digital resources to be provided in the most effective way, thereby supporting the institution's mission and the entire community associated with it.





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## CYBERSECURITY TRANSFORMATION

Cybersecurity has emerged as a top challenge for institutions in recent years. According to the annual Educause CIO IT Issues, cyber/institutional security is now the number one priority of IT leadership in higher education.

Dell Technologies addresses this challenge through campus security solutions that cover all digital and physical security to protect the people, information and physical components that institutions need to manage in today's open digital and physical environments. Dell EMC provides a wide range of security solutions including:

**Threat and intrusion protection.** Dell Technologies offers solutions including managed services from SecureWorks and

RSA as well as industry-leading governance, risk and compliance tools from Archer.

**Endpoint security.** Strengthen client security through VMware NSX virtual networking and client management via the VMware Horizon and AirWatch tools.

**Threat intelligence and analytics.** SecureWorks offers intelligence-driven security solutions that can detect, prevent and predict cyber attacks.

By combining these solutions with the security hardening of Dell and Dell EMC hardware, secure enterprise cloud technologies from Virtustream, and physical security capabilities of the Dell Technologies video surveillance team and partners, Dell EMC provides a holistic group of security solutions to address the needs of any institution.



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## ACCELERATE RESEARCH

With the combination of Dell and Dell EMC hardware and software solutions, Dell Technologies has become one of the leading providers of research infrastructure and can now affect all parts of creating such an infrastructure. Dell EMC can scale from small institutions to some of the largest in the world, using its expertise and partnerships to help create the modern, future-ready research environments that higher education institutions need to stay ahead of the research curve.

Through its solutions and initiatives, Dell EMC is moving research toward an as-a-service model similar to what is seen in a traditional core data center. By taking advantage of this on-demand model, institutions can conduct more and better research, which helps attract top researchers and the grants that fuel research and innovation.

### Solutions:

**High-performance computing (HPC) systems.** Integrated compute clusters and network fabrics can empower researchers to kick off projects and initiatives that could lead to new scientific breakthroughs.

**Research storage.** Researchers are taking advantage of Dell EMC storage technologies such as Isilon for big data storage. Other technologies include tools that support the Integrated Rule-Oriented Data System (IRODS), which enables flexible data movement between storage systems and metadata management systems.

**Research analytics.** Using its native Hadoop unstructured analytics platform, Dell EMC can integrate HPC and research storage systems with big data. Another research analytics option is the open-source versions of the Pivotal Big Data Suite.





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## DIGITAL TRANSFORMATION OUTCOMES

Dell EMC higher education solutions deliver benefits that drive impact throughout the institution, from IT leaders to campus administrators, students and faculty.



**IT leadership.** Using Dell EMC data center and virtualized technologies, IT leaders can transform their environments and applications to overcome the challenges of diminished budgets and staffing shortages. By simplifying their platforms, IT leaders can do more with less by deploying large-infrastructure solutions that do not require massive investments.



**Campus leadership.** By deploying modern Dell EMC data center technologies, institutional leaders can improve performance and scalability for their applications, and they can use data analytics to do everything from keeping students on the right academic trajectory to optimizing schedules and predicting labor needs. In addition, leaders can make their campuses safer by implementing robust video surveillance systems, and they can use digital transformation to drive the kind of innovation that attracts faculty and students to their schools.



**Researchers.** Using HPC and end-to-end research analytics and storage solutions, colleges and universities can provide the tools and infrastructure to power high-end research and give faculty a better ability to use computational power and data to support research. As a result, institutions can attract and retain more students and researchers and can drive more revenue.



**Students.** Through active learning solutions and collaborative spaces, schools are transforming classrooms and optimizing the learning experience. For example, Dell EMC solutions can engage remote students and bring them into the classroom through technology that enables virtual content sharing across multiple devices, video conferencing and other methods.



**Smart campuses and communities.** Joint efforts between cities and universities in or close to cities leading to the development of a Smart Digital Community will impact not only higher education, but also the government and K–12 districts and citizens, visitors and the businesses of the community. This is truly one of the biggest developments to arise from digital transformation outcomes.



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Higher education institutions know that they must find new ways to drive innovation if they want to succeed. The institution that we think of as a university is rapidly becoming a hub for transformation at a local, national and global level. Having that reach (and that responsibility) requires that IT infrastructures

at higher education campuses be developed to be as future-proofed as possible to support student success, smart campus environments and breakthrough research. Dell EMC looks forward to helping your institution in that journey to the future, with all the benefits it can bring.