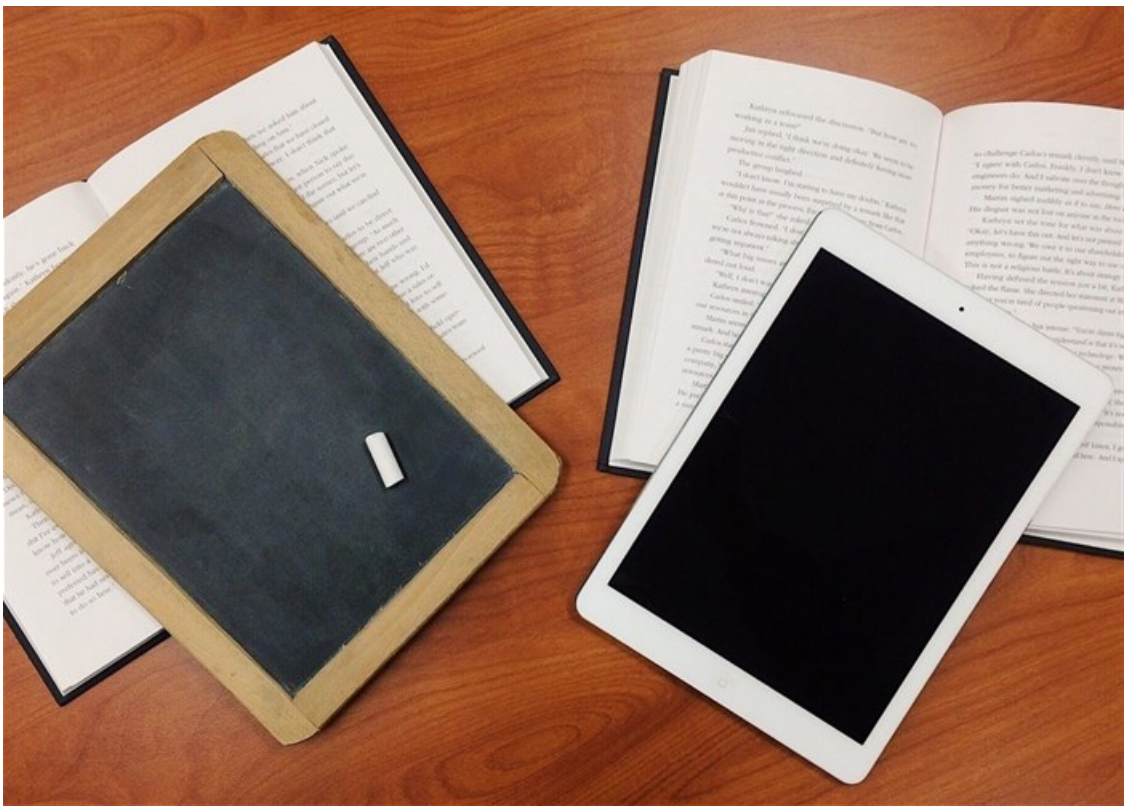
10 strategic technologies impacting higher education in 2019

Gartner has identified the top 10 strategic technologies impacting higher education that CIOs should have on their radar this year, especially as they look to enhance their competitive advantage and support emerging business models.



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Institutions looking to thrive in the expanding education ecosystem must leverage technology early on that enables them to become more innovative, said Glenda Morgan, senior research director at Gartner.

The top 10 strategic technologies impacting higher education in 2019 are:

Next-generation security and risk management

There are a variety of factors — global regulatory compliance, growing Internet of Things (IoT) landscape, expanding software as a service (SaaS) portfolio — that are starting to force higher education institutions to address security and risk matters with a multidimensional strategy.

Next-generation security must offer new approaches that support digital business and the institutions' academic, research and business objectives," said Ms. Morgan. "The average modern-day student expects seamless personalised experiences, so the typical security objectives of confidentiality, integrity and availability must expand to include privacy, safety and reliability as institutions become more digital."

Artificial Intelligence (AI) conversational interface

AI conversational interfaces are a subset of conversational user interfaces (CUIs), in which user and machine interactions occur in the user's spoken or written natural language. CUIs place responsibility on the machine interface to learn what the user wants, rather than the user having to learn the software, saving user time, increasing student satisfaction, and being

available to use 24/7.

"CUIs have seen an explosive growth in higher education," said Morgan. According to the 2019 CIO Agenda Survey, the percentage of higher education institutions that have deployed or have plans to deploy the use of CUIs jumped from 18-38% in just one year.

Smart campus

A smart campus is a physical or digital environment in which humans and technology-enabled systems interact to create more immersive and automated experiences for university stakeholders. Smart campus initiatives are still in the early stages, but there has been a rising interest across higher education institutions.

"The smart campus will drive growth in markets like robotic process automation (RPA) solutions and augmented and virtual reality (AR/VR) in the higher education space. Campus efficiency will be enhanced and student learning will be enriched with the new capabilities they bring. It's a win all-around, except for the data security implications that come with most technology initiatives today," said Morgan.

Predictive analytics

Predictive analytics use historical data to recognise patterns and assess likely outcomes using statistical or machine learning techniques. They can assist in everything from calculating student demand for a certain course or identifying students at risk of failing, dropping out or transferring.

Predictive analytics can be a particularly powerful tool for CIOs in higher education," said Morgan. "Skeptics might claim the outcomes of predictive analytics — such as identifying a potential student drop out — could have been otherwise determined, but their real power comes from the way these analytics systems socialise the prediction at hand among a range of stakeholders to remedy the issue at hand."

Nudge tech

Nudge tech is a collection of technologies — cloud, mobile, social and data — that work together to achieve timely personalised interaction with students, staff and faculty, such as a just-in-time text (SMS) reminder for class.

The idea behind 'nudging' is for institutions to use data to impact behaviour, like establishing good studying habits or making time for fitness in between classes," said Ms. Morgan. "Above all, nudge tech is a concrete example of how to achieve personalisation at scale, which is becoming a key competitive advantage in an increasingly global and digital education ecosystem."

Digital credentialing technologies

Digital credentials are a natural evolution from traditional credentials in eliminating fraud. The maturity of technologies like blockchain and data encryption, coupled with the evolution of professional networking sites, are driving a change in the delivery of higher education credentials. Students, faculty and the higher education institutions they are a part of are starting to expect the ability to quickly and freely exchange credentials to enhance the verification and recruitment process.

In many ways, credentials issued by an education institution are the only tangible evidence of higher education. They should be considered the currency of the education ecosystem," said Morgan. "These technologies really enable universities to leverage technology to improve the student experience by giving them more control over their information. The only hurdle is a general lack of understanding of digital credentialing technologies and risk-averseness in the high-stakes nature of the higher education market."

Hybrid integration platforms

Educational institutions are increasingly adopting cloud-based business applications, resulting in a hybrid portfolio of cloud and on-premises systems. Adding to the complexity of the multiple integration capabilities that the hybrid approach requires is the presence of the educational institution's customer relationship manager (CRM) and learning management system (LMS) tools. A hybrid integration platform (HIP) leverages the best in-the-cloud and on-premises integration approaches, and is rapidly becoming the reference framework for next-generation integration infrastructure.

Career software

The importance of career software has peaked globally as educational institutions become increasingly accountable for their students' outcomes after graduation. "Historically, career software was found in the career offices in professional schools, such as business or engineering, but we are seeing institutions explore the option of deploying a single enterprise level career-focused tool," said Morgan. "The market for career software is large and diversified, so universities must take the time to invest in the tools that fit its needs and specific ecosystem."

Student cross-life cycle CRM

Student cross-life cycle CRMs create a campus-wide, 360-degree view of a student across his or her major educational phases, beginning with precollege and moving through prospect, applicant, enrolled, graduated and alumni statuses. Historically, most higher education CRM deployments have been driven from the functional needs of individual departments without enabling a single view of the student.

Wireless presentation technologies

Wireless presentation technologies allow users to project material from a computer or mobile device onto a screen using a wireless network, rather than hard-wired connections like a projector. Wireless presentation technologies are likely to become more important, as higher education institutions move to bring your own device (BYOD) and as the use of mobile technologies, such as tablets, increases.