Technology and the Remaking of Higher Education: A Longer View

The theme of the EDUCAUSE Top 10 IT Issues in 2018 is *The Remaking of Higher Education*. What will that remaking look like in the years to come? Where are we heading, and where is the most exciting place to be? We spoke with five leaders in our field about how higher education is changing and the contribution that technology is making:

- Bryan Alexander, futurist and author
- Tracy Futhey, VP and CIO, Duke University
- Tracy Schroeder, VP, Information Services and Technology, Boston University
- Vernon Smith, Provost, American Public University System
- Louis Soares, VP, Policy Research and Strategy, ACE

Their thoughts turned to higher education access and affordability, openness, artificial intelligence (AI), the learning experience, changes in the business model, and more. Although realistic about the challenges ahead, all five were optimistic and enthusiastic about the future of higher education and the role that technology can play.

**Breaking the Iron Triangle**

Anticipating technology’s contributions to higher education within the next decade or so, Vernon Smith said: “Technology is starting to break the iron triangle of the cost, quality, and accessibility to our students.” Until now, it has been possible to improve any two of the three sides of that triangle— but only two. However, digital infrastructure scales in ways that physical infrastructure does not. Smith believes advances in technology are beginning to make it possible to improve quality and accessibility while lowering costs—all at the same time. Tracy Schroeder also feels that access and affordability will improve, and Bryan Alexander foresees “massively increased access to higher education through the web, mobile devices, and open and other technologies.” Louis Soares and Tracy Futhey talked about how they believe technology will transform the learning experience. Futhey envisions a revamping of the undergraduate learning experience in a way that would bring it closer to the more individualized postgraduate learning experience in two ways: “[1] the use of technology to help ensure the student’s course of study is more tailored and even curated to their interests, experiences and skills, and [2] our ability to determine mastery or accomplishment of the educational goals based on factors other than GPA, contact hours and such aggregated measures.” Soares described learning within a social context; he believes technology will “help colleges create extended knowledge communities that include both high-tech and high-touch components.” He mentioned Northeastern University’s work on its alumni networks and said, “People need to be embedded in multiple communities that do occupation and career mapping and learning mapping.”

Quality, accessibility, cost. To get to a future that advances all three, higher education will need to overcome both barriers and risks and avoid some wrong turns.

**Silver Bullet or Tool?**

Breaking the iron triangle is harder than it may seem, especially to institutional leaders whose expectations of technology are influenced by their uses of Amazon, Facebook, Apple, and Google. Futhey and Schroeder, both CIOs, see a tendency for non-IT leaders to view technology as plug-and-play simple (and, with wireless, even the plug goes away). Yet technology-enabled solutions don’t happen without people, process, data, culture, and integrations. Futhey warned: “We need not to make the additional complexity the campus’s problem but we need the campus to recognize that all these components are needed and will limit how quickly technology-enabled solutions will happen.”

Smith and Soares warned against misconstruing technology as a panacea and against, as Soares put it, thinking that “IT is going to unilaterally solve a whole bunch of problems, from learning outcomes to college affordability. Digital textbooks are a good example, using OER.” As in Soares’s example, the reality is more complicated and plays out institution by institution and course by course. Yet technology-enabled solutions will happen. Alexander considered the other end of the value spectrum and worries that to some leaders, information technology remains a utility that “misses the huge range of possibilities, human creativity, the multiple ways we learn, the real challenges and dangers we face. It’s like thinking about a car as only about turning the engine on and off again. The tech takes you places, and that’s what we really have to show people.” Smith warned that a technology-as-tool perspective can cause leaders to overlook the ongoing costs needed to maintain and upgrade technology: “There’s such a movement of things that you can’t expect it to be a solid-state environment. Technology is more like a river, in that you can’t step in that same river twice. Things change.”

Higher education leaders’ interest in technology is growing. IT leaders need to help them learn how to dream big and plan realistically.

**Sobering Scenarios**

Greater access and affordability and more meaningful learning are exciting potential outcomes. Yet as technology plays a more
Higher education information technology is filled with rich and interesting jobs. Our interviewees’ thoughts about the most exciting jobs in the higher education IT field include something for everyone:

- CIOs
- Analytics professionals, who provide the bridge between the data dashboard and the leaders using the data
- Enterprise architects
- Instructional designers and other professionals in centers for teaching and learning
- Security professionals

Substantive role in higher education, it also risks changing our sector’s impact and very nature.

Colleges and universities have traditionally encouraged open dialogue and discovery within a large and diverse community of students, scholars, and community members. As technology enables students to channel their interests more specifically, one risk is that, as Futhey cautioned, “we become more insular rather than more open. If we focus inward, we could further marginalize ourselves to those who aren’t part of these communities.” She added that information security concerns present another challenge to the willingness and ability of higher education to value openness.

AI may help students learn more quickly and completely. It may also shape exactly what and how we learn. Just as textbooks can be written from a point of view that elevates some perspectives and facts and ignores others, so too, Schroeder warned, can AI algorithms, “if not developed by an appropriately diverse workforce in that coding community, because algorithms learn from those who teach them.”

Soares sees disruptors to the higher education business model. He observed: “The tech players are trying to create an integrated solution that is recognized by the market at a lower cost. The architectures outside can’t deliver an unbundled solution that is as efficient as the internal bundled one. Those outsiders are still figuring out how to create an integrated delivery of credentials.” Should they resolve that challenge, colleges and universities may face major, disruptive competition.

Achieving Brighter Futures

Higher education leaders’ mindset and choices are shaping the future of their institutions—and thus of our entire industry. Alexander reminds us that the U.S. higher education system was largely built in the mid-20th century. Yet we are facing forward and moving ahead, and we must remember that. Smith warned: “We are overly nostalgic in higher education. Nostalgia is a prohibiting force for doing things.” Technology is changing roles within our institutions, with initial changes to advising and teaching already visible. Smith envisions a potential unbundling of the professorial role, with more specialization and differentiation and an increasingly team-based approach to teaching, not unlike what has happened with healthcare.

Leaders of institutions with campus-based reputational roots may worry that an online strategy will change the very nature and quality of their brand. Yet Futhey sees an online strategy as a potential expansion, not dilution, of the brand: “If we aggregate the entire residential U.S. campus population and compare it with the online population, it’s tiny. It’s not at all realistic to pretend that we in higher education have some kind of monopoly on the smartest 18-to-22-year-old minds, let alone other age groups. If we can figure out how to bring that entire population into our community, it would strengthen higher education and reinforce the fundamental role of universities as the epicenter of learning, whether through geographic borders or the electronic community.” Soares anticipates “an era of a lot of interesting creativity around the academic enterprise.” In his mind, technology can best contribute by grounding investments in facilitating learning and focusing on “enabling learning-centered, knowledge-centered, and community-centered environments.”

These environments are generating vast amounts of data, which needs to be harnessed to help students pursue their learning journeys and to help thoughtfully measure the impact of higher education. Schroeder advocates for a rethinking of the metrics being used to assess quality: “I think the increasing view of education as a transactional good has eroded some institutional leaders’ freedom to pursue the kind of transformation that they would like to. If we want to see higher education transform into something that is oriented toward educating people at scale at a high level of quality, our current principle metrics of quality don’t support that. They disincentivize institutions from going in that direction.”

Metrics are important because they expose the implicit value that society assigns to higher education. Smith commented: “The biggest thing that I think will come into play again is this questioning of the public value of higher education. Is it a public good, or is it a private good? Who benefits from that? That goes to how it should be funded.”

So much of getting the future “right” may boil down to timing. Futhey warns: “If we get too far out ahead of our vision of what our constituencies are ready to accept, then we’re out too early.” Yet if we wait too long, higher education may be defending itself against a crumbling public commitment and new alternative credential-delivery solutions. What can IT leaders do? They can stay aware of technology’s potential and pathways, understand the business model and missions of higher education and how to apply technology to both, and learn how best to tell that story.

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