When IT No Longer Remains Anonymous—For All the Right Reasons

This is the last of the six columns on innovation I promised to write for the 2015 New Business Models department of *EDUCAUSE Review*. My other columns focused on topics such as innovation in a regulated industry, the primacy of human factors in education, and the changing higher education ecosystem. Because EDUCAUSE is the leading IT association in higher education, I will focus here—in my final column—on the technology itself and on the role of IT organizations in their institutions.

I think of technology as falling into three categories:

- Technology that allows us to do what we have been doing, but do it better
- Technology that allows us to do what we have been doing, but do it less expensively
- Technology that allows us to reinvent what we do

Like all taxonomies, this one has some overlap, and certainly other factors are at play, but I'm not sure we spend enough time thinking about these categories. That's because IT organization leaders spend most of their time on keeping the IT trains running. They have their hands full with the sheer and confounding challenge of making sure things don't break.

Since we are now in football season, let's call this the *Offensive Lineman Approach* to information technology. In football, offensive linemen usually hear their name announced only when they have messed up. They fail to block well on a run, resulting in a loss of yardage; or they are outmuscled by a defensive player, who goes on to sack the quarterback; or they move before the ball is snapped, and their team is penalized five yards. If you are an offensive lineman, you really don't want to hear your name over the PA system.

This approach applies to the campus IT organization as well. No one pays much notice unless the network goes down, or a system gets hacked, or help-desk requests are not immediately met, or a major system install is plagued with issues that interfere with people's work. Like a good offensive lineman, a smoothly running IT operation never hears its name called out. For doing that work well, IT organizations deserve respect. In the age of video downloads and music streaming, when users are likely to have three or four wireless devices, network demands are enormous. Hacking attempts are constant, with campus networks pinged thousands of times per day and with security practices by end users often lacking. In addition, most institutions (and often departments too) want their systems customized because we insist that *our* way of structuring curriculum, or terms, or student types can't be fully captured in the system's default design. We are all special and defy standardization—which means that any update to one system has a potential ripple effect throughout the IT infrastructure. In an age of instant customer-service gratification, we want our help-desk calls to be answered immediately and our problems fixed right away. Yes, keeping the IT trains running on time is a formidable task.

Yet the three other ways of thinking about technology—listed in the taxonomy above—can allow the campus IT organization to go from anonymous offensive lineman to star skill player whose name is called out to applause and cheering. It has perhaps been most successful at this role in relation to the first taxonomy category: *technology that allows us to do what we have been doing, but do it better.* Higher education has a long history of using technology to enhance teaching and learning, so that students in small, rural colleges have access to the same rich stores of information once associated only with R1 and elite colleges and universities. In a connected world, geography matters little; an explosion of rich content and access for almost anyone, anywhere means not only improved learning experiences but also improved access that is no longer limited by the local institution's program offerings. Online learning has become so good that we now ask how to make traditionally delivered courses as good as the best-designed online courses, which often include data analytics allowing much better insight into student performance.

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Technology has also allowed us to improve various administrative processes, so that students who once lined up for hours to register for a needed course now simply log in and do so online. While there, they can also monitor their progress to program completion, sign up for housing, and much more. At least in theory, all of that improved customer service can be accomplished with fewer staff, saving the institution money: *technology that allows us to do what we have been doing, but do it less expensively*. Anyone who has used an airport kiosk has experienced this use of technology. All the business activities remain the same—checking against a passenger manifest and a no-fly list, changing seats, upgrading, printing a boarding pass, generating a baggage tag—and none of this requires a human. Many industries have realized enormous

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productivity gains and lowered operating costs by using technology in this way. Indeed, we have seen a growing public conversation about a future in which human labor will be increasingly supplanted by technology and robotics. The profound social and geopolitical consequences of that scenario aside, this use of technology—mostly in the administrative side of the house—has been disappointing in higher education. In part, this may be because our administrative systems have been so poor and in part because nonprofits are more reluctant to displace people in favor of automation. Indeed, administrative staffing has *increased*, much to the chagrin of our academic colleagues, and since 1982 the costs to students have risen to twice those of health care. Think about that: higher education, as an industry, makes health care look good in terms of cost containment. So in this category, we fall short—perhaps because we are simply too nice (just don't tell that to policy makers who now have lowering cost and price as their top priority).

In my third category, *technology that allows us to reinvent what we do,* we are entering a period of exciting developments. Adaptive learning, MOOCs, game-based immersive learning environments, learning-relationship management platforms using data analytics, machine grading, and powerful advising customer-relationship management systems are allowing us to rethink how we deliver teaching and learning. These are still new and have not yet been widely influential, but they will improve in time and they are giving us tools to reimagine what we do. For example, the delivery models in the new generation of competency-based programs align new rules of operation (e.g., measuring learning instead of time) with new tools for implementing those ideas. As I've pointed out in an earlier column (July/August 2015), we work in a highly regulated industry, so these tools for reinvention won't lead to the "off the precipice" disruption we saw in music and journalism and retail, but they do point the way to the possibility of enormous change.

The campus IT organization of the future must keep the trains running on time, an admittedly fearsome task, but it must do more. For many IT organizations, change is bad (because it is potentially disruptive) and control is paramount (because the risks are high if someone messes with things). Yet in an industry that is changing so quickly, we need IT organizations not only to be supportive but also to be present at the design table, helping shape the innovation strategy for their institutions. One example of that role occurred at SNHU when our STEM design team wanted to deploy some heavy-duty (in terms of processing and system demands) applications for use in STEM courses. Rather than simply license what was required, our IT staff negotiated a first-of-its-kind partnership with VMware, and now every SNHU student will use VMware—on a preconfigured virtual desktop—to access every application we offer, allowing those students with older computers to save money on upgrades and removing enormous demands on our help desk. Everything is based in the cloud, providing scalable and secure infrastructure. This was a case of the IT organization taking the lead in innovation and moving from anonymous offensive lineman to star running back.

This more expansive and admittedly demanding role for information technology in the campus innovation agenda requires leaders to invite the IT organization into the work early and as full partners. It requires that IT leaders enter the discussion with (1) the skills and mindset required to contribute to the innovation agenda and (2) the ability to balance the absolute need for IT system stability with systems and approaches that allow for change and experimentation. Yes, this will involve some risk taking. But we cannot meet students' needs with the U.S. higher education system as presently configured. We need to keep what works, learn to be better at it, and also invent new pathways that offer the golden triad of improved quality, lower cost, and more educated Americans. Technology has played a key role in tackling analogous challenges in other industries; what we do in higher education, however, is arguably both more vital and more difficult. Educating is still art *and* science, creativity *and* sound practice. The IT organization must be good at the science and sound practice—its foundational work—but to successfully face the challenges ahead, the organization must also help *lead* the way with a creativity and inventiveness it has not always volunteered or been asked to provide. ■

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