



By DIANA G. OBLINGER

# Higher Education in the Connected Age

The change started with the network. Moving digital information instantly from one place to another has reshaped delivery systems, business models, and economics and has led to the globalization of almost every industry. However, this “network effect” is about more than the dissemination of information. It is about connections. We are no longer in the *information age*—we are in the *connected age*. Everyone and everything is interconnected. Anyone who can access the Web can participate. The connections magnify the reach and value of not just information but also our relationships, creating opportunities for learning, working, and collaborating on an unprecedented scale.

Higher education has always been about more than information, no matter how quickly that information can be disseminated or how much of that information can be stored. Our institutions have always been communities driven by connections—connections among faculty, students, research, education, disciplines, communities, and the institutions themselves. In the connected age, it doesn't matter where the information is, where the student is, or where the faculty member is. What matters is the value that comes from the connection.

*Learners are connected.* They connect with other students, faculty, advisors, and their families and friends through multiple systems and applications. Learners also need to connect formal and informal learning, education and exploration, the physical world and the virtual world. Information technology can enable those connections as well. The data that institutions collect can be used to provide feedback to students and to offer them the next opportunity. Analytics can be used to reveal pathways for students, whether those are personalized learning pathways, course-selection systems, or tools to ensure students stay on track to graduate. And for those learners whose academic careers encompass multiple institutions, information technology can make the process of connecting credits to credentials more seamless and productive.

*Faculty are connected.* They are connected to databases, archives, tools, and other scholarly resources. They are connected to students. They are connected to colleagues. They are connected within their discipline and to other disciplines. They are connected within higher education and to the world at large.

*Institutions are connected.* Colleges and universities have local, regional, and global alliances. They interchange students, faculty, and staff. They interact with entrepreneurs, established industries, and governments. Whether through public service, education, or scholarship, our institutions rely on technologies, applications, and systems to sus-

tain an expanding range of connections that are critical to higher education's mission.

For our learners and scholars, “connecting the dots” is critical. Scholars from multiple disciplines may need to collaborate to find answers to “grand challenge” questions such as those affecting the environment or health issues. In the connected age, data, collaboration tools, and communities can come together in ways never before possible. Students may need to connect the dots between different disciplines, such as science and literature. Information technology can help. Immersive learning experiences, augmented reality, simulations, and other tools enhance our ability to “teach information” to help students develop the valuable skill of transfer—of being able to take what they know and apply it to a new area. Transfer is a 21st-century skill that differentiates high-impact learning from information age approaches.

Technology makes the connected age possible. Cloud networking allows us to connect to data, applications, or services regardless of location. The implications of the cloud go well beyond where the bits are going (or coming from). Ownership of an asset becomes less important than access. Technology enables pervasive and continuous access, not only to information and ideas but also to resources, tools, people, and communities.

If everything is connected, we can connect, disconnect, and reconnect. BYOD is an example. Consumers are choosing to mix and match devices, applications, providers, and more. Megan Fitch, in “The Wild-Card

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Character of ‘Bring Your Own’: A Panel Discussion” in this issue of *EDUCAUSE Review*, observed: “We need to embrace BYOD not to save money but to be able to spend money instead on specific technical capabilities that our community members really need from us and that they find unquestionably valuable as they pursue their goals at our institutions.” Another panelist, Michael McPherson, commented: “This is a unique moment in technology, a fundamental shift in the expectations, needs, and technology self-determination of our users. . . . What is different this time is ubiquity—the fact we can assume that virtually all of the members of our communities have access to some sort of computing device.” BYOD can be extended to a much larger scale with “bring your own everything” (BYOE), even to the institutional level. Colleges and universities are contracting with third parties in order to add “private label” services. Many institutions are using the “put your logo here” approach for products that range from student support to website services to online degree programs.

If everything is connected, institutions can connect data and integrate advising systems to improve student success. In “Bigfoot, Goldilocks, and Moonshots,” Josh Jarrett describes systems that provide online advising and personalized student support for degree planning. Such systems might alert a student who just enrolled in a course: “You just moved yourself from the four-year plan to the five-year plan. Are you sure you want to do that?” These interconnected systems help the institution as well. Arizona State University’s eAdvisor system, for example, lets the institution know, three semesters out, “how many class sections it will need, which means the university can be much more efficient with classroom space and faculty time. In addition, once the university knows who is on which path, it can use predictive analytics to determine which students will need help staying on the path. As a result, ASU went from 22 percent of students ‘on track’ in their programs in 2007 to 91 percent on track in 2010.”

If everything is connected, questions may be raised about institutional affiliation and roles. Individual faculty members are offering their courses, independent of their institution, to MOOC providers. Some institutions are disaggregating faculty roles, separating course development from mentoring, tutoring, and evaluating. In “Thinking about Accreditation in a Rapidly Changing World,” Paul J. LeBlanc suggests this “may signal new possibilities for how faculty members are situated within the industry. For-profit StraighterLine (<http://www.straighterline.com/>) has announced a model for ‘self-employed’ faculty to teach courses: faculty set their own price models and share the tuition revenue. Similarly, Udemy (<http://www.udemy.com/>) offers 5,000 courses in which the professor sets the fee and shares 30 percent of the revenue with the company.” With MOOCs, the “course” is disconnected from institutional credentialing systems. As LeBlanc observes, these new models “reinforce the notion of learners ‘grazing’ or assembling their learning from multiple sources.” Although a MOOC can be independent of a particular institution, it can be reconnected in different ways through testing and competency measures. In a world where individuals and institutions are choosing to bring a bit of everything together into a degree, questions are being asked about whether accreditation should be at the institution level, the course level, or the provider level. LeBlanc notes: “Accreditation is now faced with assessing learning in an increasingly disaggregated world with organizations that are increasingly complex, or at least *differently* complex, and that include shifting roles, new stakeholders and participants, various contractual obligations and relationships, and new delivery models.”

Pragmatists may ask: why bother with a notion like the connected age? Because metaphors matter; they help us integrate what we are experiencing into a coherent picture of where we are and where we might go. Information technology is about more than information or the information age. Information technology can change learning experiences, catalyze new forms of scholarship, reveal pathways, and interconnect a world that is highly interdependent. Information technology can enable alternative business models that have disrupted many industries—and that may disrupt our own.

Information technology is about connections, which are fundamental to our institutions, our faculty, and our students. Information technology forms a vital neural network—it isn’t plumbing. If we can shift the metaphor we use for information technology—the way information technology is seen and understood—perhaps we can realize more of the potential that resides in the best uses of information technology. ■

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