

Just as our society and our social institutions are being reshaped by the rapid advances in information technology, the contemporary university also faces many challenges and opportunities presented by the digital age. For most of the history of higher education in America, we have expected students to travel to a physical place, a campus, to participate in a pedagogical process involving tightly integrated studies based mostly on lectures and seminars by recognized experts. As digital technology relaxes the constraints of time and space—and perhaps even reality itself—some even question whether the campus-based university will continue to survive.

For the near term, at least, it seems likely that the university as a physical place of learning, a community of scholars, and a center of culture, will remain. Information technology will be used to augment and enrich the traditional activities of the university, in much their traditional forms. To be sure, the current arrangements of higher education may shift. For example, students may choose to distribute their college education among residential campuses, commuter colleges, and online or virtual universities. They may also assume more responsibility for and control over their education. In this sense, the most immediate challenge of information technology to the university will be the way it unleashes market forces, as suggested by the bewildering array of newly emerging competitors, ranging from for-profit colleges to virtual universities to a growing array of Internet “dot-com” providing educational services.

However, over the longer term, however, all bets are off. After all, for almost half a century we have seen the power of information technology increase by roughly 100-fold every decade. If it continues at this rate, the \$1,000 computer in the year 2020 will have a computing speed of 1 million gigahertz, a memory of thousands of terabits, and linkages to global networks at data transmission rates of gigabits per second. Put another way, it will have a data processing and memory capacity roughly comparable to the human brain. Except it will be so tiny as to be almost invisible, and it will be coupled through a global communications grid to billions of similarly powerful computers that handle the routine tasks of our society, from driving our cars to watering our lawns. When the possibilities of future technological advances such as quantum computing, self-replicating nanotechnology, and neural implants are included (the ultimate

silicon-carbon interface), the very nature of human communities and learning processes is likely to be challenged.

No one knows what this profound alteration in the fabric of our world will mean, both for academic work and for our entire society. As William Mitchell stressed in his provocative book, *City of Bits*, “the information ecosystem is a ferociously Darwinian place that produces endless mutations and quickly weeds out those no longer able to adapt and compete. The real challenge is not the technology, but rather imagining and creating digitally mediated environments for the kinds of lives that we will want to lead and the sorts of communities that we will want to have.”ⁱ

It is our collective challenge as scholars, educators, and academic leaders to develop a strategic framework capable of understanding and shaping the impact that this extraordinary technology will have on our institutions. We are on the threshold of a revolution that is making the world's accumulated information and knowledge accessible to individuals everywhere, a technology that will link us together into new learning communities never before possible or even imaginable. This has breathtaking implications for education, research, learning, and, of course, for the university in the digital age.

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ⁱ William J. Mitchell, *City of Bits: Space, Place, and the Infobahn* (Cambridge: MIT Press, 1995), <http://www-mitpress.mit.edu/City_of_Bits>.