INTRODUCTION: CONTEXT AND BACKGROUND

The term “online courseware”—used throughout this book to refer to initiatives in which traditional degree-granting institutions convert course materials, originally designed for their own undergraduates, into non-credit-bearing online versions for the general public—is perhaps best defined in relation to better-established forms of university teaching: traditional undergraduate education and credit-bearing distance education.

The traditional undergraduate experience, at the core of modern higher education, can be divided into pedagogical and residential components. The basic unit of the pedagogical component is the course, which is taught in person to enrolled students in lecture or seminar format and is supplemented by features like peer interaction, discussion sessions with teaching assistants, hands-on labs, and independent work. Students may ask questions of their professors during class or office hours, receive feedback on their performance, and earn credits; if they complete all required coursework satisfactorily, the university eventually grants them degrees. The residential component of the traditional undergraduate experience includes a leafy campus, dormitory living, a host of extracurricular activities, participation in collegiate traditions, amenities like increasingly lavish student centers and gymnasiums, and constant opportunities for peer interaction in a diverse environment.¹ Of course, beyond those activities that directly contribute to the undergraduate experience, universities

¹Although they may lack dormitories, commuter institutions retain other aspects of this experience through the on-campus interactions afforded their students.
also do much more. In The Idea of the University: A Reexamination, Jaroslav Pelikan notes that the university is defined not only by the “extension of knowledge through undergraduate and graduate teaching,” but also by its “advancement of knowledge through research . . . training that involves both knowledge and professional skill in the professional programs or schools of the university; preservation of knowledge in libraries, galleries, and museums; and diffusion of knowledge through scholarly publications. A university may do many other things, and all of them do.” These additional elements of the university enterprise are beyond the scope of this book, but they are vital aspects of higher education’s overall contribution to society.

The online environment has provided a means for universities to expand their teaching activities beyond the walls of the classroom, allowing course content and pedagogical practices developed on campus to serve a broader group of students than the physical campus can support. Such external course dissemination efforts have most commonly taken the form of online degree programs, a type of distance education in which the university provides educational materials, along with some level of instruction and credentialing, in exchange for student tuition or fees. In other words, the pedagogical component of the traditional university experience is unbundled from the residential component, and the medium in which courses are delivered changes. This distance education model has been embraced by for-profit institutions, such as the University of Phoenix, as well as by traditional university systems, as in the University of Maryland’s University College and Penn State’s Global Campus, which offer online degree programs in addition to on-campus instruction.3 In their capacity to serve a larger and

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2Pelikan, Jaroslav, The Idea of the University: A Reexamination, New Haven: Yale University Press, 1992, 76. Emphasizing the importance of the research function performed by the United States’ premier universities, Jonathan Cole writes that “although the transmission of knowledge is a core mission of our universities, it is not what makes them the best institutions of higher learning in the world. We are the greatest because our finest universities are able to produce . . . the most important fundamental knowledge and practical research discoveries” (Cole, Jonathan R., The Great American University: Its Rise to Preeminence, Its Indispensable National Role, Why It Must Be Protected, New York: PublicAffairs, 2009, 5).

3Some of the most selective institutions also offer online courses for credit. In that sector, though, such distance education programs have largely been confined to professional masters
geographically disparate student body, these credit-bearing online degree programs function much like correspondence courses did historically, albeit with significant technological upgrades.⁴

But in recent years, an additional set of initiatives have emerged that, despite sharing some features with distance education efforts, do not securely belong in this existing category. Online courseware further unbundles the pedagogical components of the university. Not only is the professor-created content offered without credit attached to it, but online courseware providers also typically strip away many of the interactions characteristic of traditional teaching—interactions which distance credit-bearing education efforts try to retain in some form.⁵ MIT’s OpenCourseWare (OCW) is explicit about this distinction, describing its courseware initiative as providing course materials, rather than complete online courses. The audience for these materials is also radically different—no longer restricted to a finite and well-understood enrolled student population, online courseware is offered to the general public.⁶

⁴Outside the United States, such activities have been going on for decades in the form of open universities, distance education–based institutions with few or no entry requirements that are designed to provide broad access to education. The first of such institutions, the United Kingdom’s Open University, was founded in the 1960s, and similar institutions have since been created all over the world.

⁵The concept of such unbundling assisted by information technology extends beyond the specific instance of online courseware: as the higher education researchers William Massy and Robert Zemsky have written, “traditionally, higher education institutions have combined several functions in their faculty. Faculty are architects as they design learning programs; navigators as they help advise students in their course of study; instructors when they lecture; mentors when they help students form a sense of connectedness to the world; and evaluators and certifiers as they decide to grant students grades or degrees. IT will allow educational providers to separate some key functions traditionally bundled together” (Massy, William F., and Robert Zemsky, “Using Information Technology to Enhance Academic Productivity,” white paper prepared by Educom’s National Learning Infrastructure Initiative [NLII], http://net.educause.edu/ir/library/html/nli0004.html, 4). One program that does attempt to replicate instruction at a distance, the Open Learning Initiative, is the subject of this book’s fourth chapter.
Each of these offerings—traditional classroom teaching, distance education over the internet, and online courseware—has a corresponding value proposition. The traditional undergraduate experience allows students to learn, network with faculty and peers, experience personal growth, and, perhaps most importantly, receive credentials certifying their achievements. In “Universities in the Digital Age,” John Seely Brown and Paul Duguid ask what “are higher education’s ‘core competencies’? What do its accredited institutions do that other institutions don’t? Why are individuals, families, states, and government agencies willing to invest so much in it? What is it they want—and the system offers—that’s so valuable? The easiest answer . . . is that it offers degrees.” Distance education offers a slightly different, yet no less clear, value proposition: much of the networking and the residential experience may be absent, but online degree programs still allow students to learn and earn credits. What the student gives the university (tuition dollars) and what the university provides to the student in exchange (instruction, credentialing) is well understood.

But in the shift to online courseware, in which course materials are offered for enrichment only, the nature of the exchange becomes far more subtle—and complex. Many of these initiatives do not generate revenue for the universities, and none offers credit to the users. Online courseware requires no formal transaction, no rela-

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6Not only can a strong peer group facilitate students’ social development and lifelong network of contacts, it can even push individuals to perform better academically. Based on their empirical research, Gordon C. Winston and David J. Zimmerman found that “peer effects exist—students’ characteristics and behavior do, indeed, influence other students’ behavior. . . . strong students tend to increase peers’ academic performance, and weak students tend to reduce it” (Winston, Gordon C., and David J. Zimmerman, “Peer Effects in Higher Education,” in College Choices: The Economics of Where to Go, When to Go, and How to Pay for It, ed. Caroline M. Hoxby, Chicago: University of Chicago Press, 2004, 418).

7As Stanford University President Gerhard Casper has noted, “universities, especially the American college, also perform the function of furthering the process of coming of age, of growing up. . . . The rite of passage is one reason, anthropologically speaking, Americans go to college” (Casper, Gerhard, “Come the Millennium, Where the University?” address to the annual meeting of the American Educational Research Association, San Francisco, April 18, 1995, http://www.stanford.edu/dept/press-provost/president/speeches/950418millennium.html, 6).

tionship between the institution and its students. Neither group owes anything to the other: students (users) are under no obligation to give online courseware their full attention or to demonstrate any mastery over the material, and the professors and institutions that create the materials do not have to provide their audience with support in using them.

As Table 1.1 illustrates, online courseware projects therefore mark a significant shift in most components of a university course. The offerings, the audience, and the value proposition inherent in online courseware can differ dramatically from their counterparts in traditional or distance education, raising the question of why some selective institutions are pursuing initiatives in this terrain. As this book shows, the internet has provided institutions of higher education with an extraordinary opportunity to share a key asset—their courses—with the public, a service which by all accounts has been an end unto itself. But online courseware has also enabled universities to use courses to accomplish other things—strategic objectives that may have little to do with teaching and learning.

Of course, universities have always been interested in activities like outreach, marketing, attracting attention from outside academia, distinguishing themselves from competitors, alumni relations, and appealing to government and other funders. These institutions have historically engaged the public in a variety of ways—on-campus events, summer programs for high school students, faculty-led educational trips for alumni, continuing education courses for local adults—all of which in some way expose external constituencies to the life of the university. In addition, students in far-flung locales have long benefited from the intellectual output of faculty at the country’s most elite institutions through the textbooks those faculty have authored, which have enormous reach beyond the gates of a professor’s home institution.⁹ The internet has affected and will continue to affect each of these activities, allowing uni-

⁹Former MIT President Charles Vest shared an anecdote about studying from an MIT professor’s textbook as a student in West Virginia (interview with Charles Vest, 9/30/08). That experience would later contribute to Vest’s enthusiasm for the OpenCourseWare concept.
versities to potentially reach wider audiences by migrating them to digital formats.

But the internet, perhaps for the first time, has allowed universities to use courses as a means of furthering these other aims—all of which are far afield from the original goals and value propositions of the traditional university course. Unlike other opportunities for community engagement, online courseware allows those outside the gates to see the day-to-day actual classroom teaching that goes on at top institutions.10

The Context in Which Online Courseware Originated

As the following chapters make clear, universities that take on online courseware projects do so for their own reasons, often with

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10As the following chapters show, those teaching activities are conveyed through online courseware with varying degrees of precision, depending on the approach taken. Many MIT OCW courses contain each semester’s syllabi, homework assignments, and lecture notes, but often in a text-based format that is not so different from a textbook. In contrast, programs like Open Yale Courses provide full audio and video records of lectures as they were delivered to actual Yale students, with the goal of making the home user feel as if he or she were present in that classroom. The Open Learning Initiative (OLI) utilizes the content developed in Carnegie Mellon courses but asks that faculty re-imagine their teaching approaches to optimize the online versions for remote delivery, in an attempt to ensure that, through an interactive online learning environment, students using the OLI course can really learn to the extent that their enrolled counterparts have. In this sense, the OLI is less about replicating the day-to-
institution-specific goals in mind or particular desired impacts. But a set of external forces has helped to shape opportunities available to universities in this space, and other key developments in both higher education and the online environment provide crucial context for understanding institutional decision making in the case studies that follow. Online courseware projects represent a response by elite institutions to profound changes afoot within and outside the academy, and they must be considered within the context of broader issues like access to higher education, the changing nature of the commercial internet, the commercialization and globalization of the selective university, and the wider range of experiments in teaching with technology and developing digital content referred to as Open Educational Resources.

Divergent Trends in Access to Higher Education

The online courseware concept emerged in the mid- to late 1990s and gained momentum following MIT’s historic announcement in 2001 of its plan to make versions of all of its courses available online for free. This period has been marked by several divergent trends in terms of selectivity in higher education. There is great demand for higher education in the United States, the bulk of which is met by less-selective institutions like community colleges, non-flagship state institutions, and burgeoning for-profit colleges. At the same time, the elite tier of institutions accepts an ever-shrinking percentage of those who want to attend, with 90 percent of Ivy League applicants rejected in 2007. As economist Caroline Hox-
by’s recent research shows, the top 10 percent of American colleges have become dramatically more selective, and “by 2007, the most selective colleges were up against the ceiling of selectivity,” drawing their average students from the 98th percentile nationally.\(^{13}\)

A parallel trend is the rising cost of higher education, particularly at top-tier colleges and universities: tuition at these selective institutions has increased much faster than the rate of inflation, consuming ever-higher percentages of family income (although record numbers of students are receiving financial aid to defray or even cover the costs of their education).\(^{14}\) Increased prices charged to students and families are directly related to escalating costs within the university, which, as a labor-intensive public service, is subject to the “cost disease.”\(^{15}\) Endowments can be a means of compensating for rising costs, but endowment windfalls are often reinvested in new initiatives rather than in holding the list price of tuition steady. And prior to the global financial crisis of mid-2008—in which university endowments, like nearly all investments, decreased considerably—this increase in the costs of elite university education came at the same time that these institutions became considerably wealthier.\(^{16}\) The combination of heftier edu-

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\(^{10}\) On climbing costs, see Ehrenberg, Ronald G., *Tuition Rising: Why College Costs So Much*, Cambridge, Mass.: Harvard University Press, 2000, 8. But Hoxby notes that “even though tuition has been rising rapidly at the most selective schools, the deal students get there has arguably improved greatly”: the top tier of colleges are the most costly, but they also have significantly higher subsidies per student (Hoxby, “Changing Selectivity,” 2).


\(^{12}\) Regarding the decrease in the value of endowments, see Zezima, Katie, “Data Show College Endowments Loss Is Worst Drop since ’70s,” *New York Times*, online edition, January 26, 2009. Ehrenberg says of the most selective institutions that “as their endowment levels have increased, so too have the levels of tuition that they charge undergraduate students,” and that many American families “are angry that the institutions have the audacity to increase their tuition at all, given that the institutions are becoming increasingly wealthy” (Ehrenberg, *Tuition Rising*, 4).
cation price tags coupled with rising endowments at elite private institutions has been the subject of considerable scrutiny in Washington. In recent years, Congress has held hearings on the finances of universities in light of their tax-exempt status. In short, over the past several decades, the most elite sector of higher education has become more selective—and expensive—than ever. But this tendency of the wealthiest institutions to become more rarefied is not the story for most of higher education, as the vast majority of students attend less-selective institutions that, as Hoxby demonstrates, operate differently. In *Shakespeare, Einstein, and the Bottom Line*, David L. Kirp writes that “even as higher education has become more stratified at the top, it has also become more widely available. . . . on the lower rungs of the academic ladder, where what matters are money and enrollment figures, not prestige. Less selective and non-selective schools—four out of five American college students attend such institutions—vie to fill classroom seats,” with for-profit, nonselective public, and community colleges trying innovative methods, either to further their missions or to increase their market share. Online education has been an increasingly common strategy to make education more accessible to a growing and ever more diverse range of students in the less-selective tier. This shift has been felt across higher education; a 2008 Sloan Consortium report on online education

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**17** Senator Charles Grassley, the ranking Republican on the Senate Finance Committee, who has had a sustained commitment to the issue of college endowment spending, told the *New York Times* in 2008 that “Tuition has gone up, college presidents’ salaries have gone up, and endowments continue to go up and up. . . . We need to start seeing tuition relief for families go up just as fast” (quoted in Arenson, Karen W., “Senate Looking at Endowments as Tuition Rises,” *New York Times*, online edition, January 25, 2008). Issues of college costs and rising tuition (among others) were also taken up by former Secretary of Education Margaret Spellings’ Commission on the Future of Higher Education, beginning in 2005.

**18** Hoxby’s major finding was that despite the outsized attention paid to the mounting selectivity of the nation’s most prestigious institutions, “Rising selectivity is by no means a pervasive phenomenon. Only the top ten percent of colleges are substantially more selective now than they were in 1962. Moreover, at least 50 percent of colleges are substantially less selective now than they were in 1962” (Hoxby, “Changing Selectivity,” 1).

found that online enrollments have grown much faster than overall higher-education enrollments in the United States.20

The commercial institutions have perhaps entered this space most eagerly. Entirely online branches of for-profit institutions have sprung up, with great commercial success: while the most prestigious universities have shied away from pursuing distance degree programs for their core undergraduate curricula, the University of Phoenix has seen its enrollments rise from 100,000 in 2000 to over 450,000 in 2010.21 Some large public institutions like the University of Massachusetts have completely reinvented their educational and business models by developing online-only or hybrid degree programs for undergraduates.22 Competition from for-profits offering online courses has recently driven smaller community colleges and regional public universities to create similar options to better serve local students.23 The 2008 Sloan report states that “Both public universities and two-year colleges did agree that online courses were ‘critical’ to their long-term strategies, while [private] baccalaureate institutions generally refrained from ascribing them such dramatic importance.”24

But the most elite universities—including the parent institutions of the initiatives profiled here—have not felt this same pressure to use the internet to expand enrollments in their core undergradu-

22UMassOnline offers 22 different online bachelors degree options, and no distinction is made in transcripts or degrees between online and campus-based credits earned (“About UMassOnline,” http://www.umassonline.net/AboutUs.html).
ate degree programs. As a result of disproportionate growth on the part of less-selective institutions over the past several decades, elite universities have seen their “market share” drop considerably. In other industries, this would be highly problematic, and businesses would attempt to grow their product lines to keep pace with demand. But the selective tier of higher education is atypical, in that serving lower proportions of interested students only makes these institutions more desirable. Against the backdrop of declining admissions rates and vast growth and innovation on the part of less-selective competitors, some elite universities have begun to explore online courseware initiatives, thus tentatively building a teaching presence on the web. These projects are highly visible means of making university materials available to a broader audience than would otherwise be possible—a benefit offered to society in an era in which wealthy parent universities that spend so much to educate so few have faced pushback from the public. As Dr. Ramamurti Shankar, a participating professor in Open Yale Courses, told the Philadelphia Inquirer, “we can’t admit everybody to Yale, but we can give this to everybody absolutely for free.” At the same time, by offering course content—but not the university credit that has typically accompanied it—to nonmatriculated students, these elite institutions maintain a key barrier to entry that keeps their exclusivity intact.

The Development of the Commercial Internet

As this book’s first chapters describe, changes in online courseware models are indicative of an overall shift on the part of numerous businesses from charging for online content to offering it for free. The dot-com boom that reached full strength around 1998

Kirp writes that “in the realm of commerce, when demand exceeds supply, firms are supposed to expand or else jack up their prices, a practice that encourages new entrants. But that isn’t how higher education operates. . . . The very idea of expansion is anathema to the elite. . . . Instead, these schools set ever-higher standards for admission. The most selective reject seven out of eight applicants, almost all of whom are qualified” (Kirp, Shakespeare, Einstein, and the Bottom Line, 2).

was marked by a fervent belief in the vast revenues available in online-enabled markets.\footnote{In \textit{dot.com: The Greatest Story Ever Sold}, John Cassidy offers a concise description of the first several decades of internet business models, describing how what began as a free resource was progressively commercialized, resulting in the dot-com bubble of the 1990s and then its inevitable decline. Of the early history of the internet, Cassidy writes that “Anyone who wanted access to the NSFNET, the Internet's backbone, had to abide by an ‘Acceptable Use Policy,’ which restricted it to ‘research and education.’ . . . by and large, the Internet remained commerce-free—often militantly so.” “Not until the early 1990s, when millions of people around the world were already using the network to communicate with each other, did the private sector show much of an interest. When Wall Street and corporate America did discover the Internet, they adopted it with the zeal of converts, and the bubble started to inflate. Once that happened, the process was self-reinforcing, with everyone involved trapped in the peculiar competitive logic of a speculative boom” (Cassidy, John, \textit{dot.com: The Greatest Story Ever Sold}, New York: HarperCollins, 2002, 22, 7).} The wild early success of some much-publicized internet start-ups, the availability of venture capital for nascent online endeavors, and the “brazen self-confidence of dot-com entrepreneurs” all helped to create a shared sense of the commercial potential that the internet held for virtually any business.\footnote{McCarthy, Ellen, “U-Md. Professor Archives History of Dot-Com Bombs,” \textit{Washington Post}, online edition, October 28, 2004.}

Selective institutions’ early forays into online courseware launched at the height of the dot-com boom (including, among numerous others, Fathom.com, profiled in Chapter 2) were very much influenced by this culture. Both Fathom and AllLearn (also profiled in Chapter 2) attempted to set up a form of e-commerce that would monetize courseware, but they found that charging fees for access to content failed to bring in sufficient revenue. Based in part on the well-publicized difficulties of Fathom, AllLearn, and their peers, online courseware projects conceived after the dot-com crash in 2000 and 2001 opted instead to make courseware available for free.\footnote{In \textit{Free: The Future of the Radical Price}, Chris Anderson writes that “A decade and a half into the great online experiment, free has become the default, and pay walls the route to obscurity” (Anderson, Chris, \textit{Free: The Future of a Radical Price}, New York: Hyperion, 2009, 12–13).} Initiatives like MIT OCW and subsequent efforts received generous startup funding from foundations, allowing them to create online content—and in doing so, to enhance the online presence of their parent universities—without requiring that the money follow. The past decade has seen tremendous experimentation with mechanisms for generating online revenue, including “freemium”
models or those based on advertising revenues.\textsuperscript{30} But the extant projects profiled here have relied on foundation, institutional, or government support for the majority of their funding.

The freely available “open” courseware projects that have come to dominate this field resonate conceptually with a broader movement that encourages the open sharing of information online and the removal of barriers to accessing that information. Rooted partly in and extending the thinking behind the free software movement, proponents generally protest against what they consider artificial limitations—legal or otherwise—on end users’ ability to share and modify content, suggesting that the internet enables creative and productive reuse by the average user (often described as “remix culture”).\textsuperscript{31} The free and open programs in the case studies that

\textsuperscript{30} The freemium approach was first defined as “Give your service away for free, possibly ad supported but maybe not, acquire a lot of customers very efficiently through word of mouth, referral networks, organic search marketing, etc., then offer premium priced value added services or an enhanced version of your service to your customer base” (Wilson, Fred, “My Favorite Business Model,” A VC, March 2006, http://www.avc.com/a_vc/2006/03/my_favorite_bus.html). Such changes have already had major impacts on the functioning of multiple industries, including newspapers and music. The newspaper industry has attempted both models for online content (ad-supported and keeping some content behind a pay wall) with very limited success thus far. (For a brief summary of the problems facing the newspaper industry in the online environment, see Shirky, Clay, “Newspapers and Thinking the Unthinkable,” blog post, March 13, 2009, http://www.shirky.com/weblog/2009/03/newspapers-and-thinking-the-unthinkable/.) In the music industry, technological change has disrupted long-standing business models, as music is increasingly disseminated through sources like iTunes that enable unbundling of content (selling individual songs rather than complete albums) and may in some cases disintermediate traditional gatekeepers like record labels.

\textsuperscript{31} The free software movement, which formalizes long-standing practices of sharing code freely between early software programmers, has grown out of the philosophies of Richard M. Stallman, as demonstrated in his work with the GNU Project and Free Software Foundation. Stallman casts the free sharing of software as a moral imperative, insisting that all users must share the “freedoms” to run, modify, and distribute software, in original or modified form (Stallman, Richard, “About the GNU Project,” http://www.gnu.org/gnu/thegnuproject.html). Perhaps the most visible manifestation of the movement’s objection to limits on the rights of end users is the Free Software Foundation’s “Defective by Design” effort, which protests the application of digital rights management—or, as they title it, “digital restrictions management”—claiming that it takes control away from the end user (Brown, Peter, “What Is DRM? Digital Restrictions Management,” http://www.defectivebydesign.org/what_is_drm). Regarding remix culture, see Remix: Making Art and Commerce Thrive in the Hybrid Economy, New York: Penguin Press, 2008, as well as other writings of Lawrence Lessig. In addition to Lessig, this cause has been championed by the group Students for Free Culture (http://freeculture .org/). The Creative Commons movement, which allows users to easily license materials for such reuse, also provides a backbone for this culture of sharing (http://creativecommons.org).
follow also mirror a long-standing practice of sharing information within academic communities, with scholars prioritizing impact on their fields over revenue from their intellectual products. In recent years, this value system has led many to advocate for open access to scholarly publications, a change aimed primarily at increasing the speed of publication and reducing the price of scholarly communications. Given the radical new ability to copy, modify, and distribute content far more simply and at lower cost in digital form, an ideology of free sharing and reuse of information online has been embraced by many—and is perhaps at work in the Hewlett Foundation–supported examples of “open” courseware projects in the case studies that follow.

Commercialization and Globalization of Higher Education

In addition to these sweeping trends, online courseware touches on a variety of perennial issues in higher education, one of which is the concern over mounting commercialization of the university. The digital age offers universities unparalleled opportunity to share their resources and knowledge outputs with the world. But, as William G. Bowen, then-president of the Andrew W. Mellon Foundation and president emeritus of Princeton University, stated in his 2000 Romanes lecture, these opportunities “have to be balanced against the associated temptations and risks, many of which

32This movement is predicated on the convergence of “an old tradition . . . the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge” and “a new technology . . . the internet” (Budapest Open Access Initiative, http://www.soros.org/openaccess/read.shtml). Peter Suber refers to the movement around open access as “the campaign for OA” and writes that, in the case of scholarly journal content, open access allows content creators to “take advantage of the internet as a powerful new technology for sharing knowledge instantly, with a worldwide audience, at zero marginal cost, in a digital form amenable to unlimited processing” (Suber, Peter, “Open Access Overview: Focusing on Open Access to Peer-Reviewed Research Articles and Their Pre-prints,” last revised June 19, 2007, http://www.earlham.edu/~peters/fos/overview.htm).

have a commercial dimension.”

One such risk was that market forces might encourage universities to focus on activities with the best chances of achieving financial success, perhaps diverting attention or resources from pursuits related to their core missions. These comments came at a moment when nearly every highly selective university felt that it had to stake out a position in the online space—to either become a leader on the internet or risk being left behind. Bowen’s warning implied that such digital endeavors might generate powerful conflicting interests that would upend the centuries-old values of the university itself. Early fee-based initiatives like Fathom, along with a slew of contemporaries, exemplify the university’s application of its courses toward commercial ends. MIT OCW (and implicitly all the subsequent open initiatives) was a direct reaction to that trend and has taken on a somewhat politicized anticommercial stance.

Over the past several decades, numerous commentators have remarked upon—indeed, expressed anxiety over—the intensifying commercial pressures on higher education and the degree to which universities have come to resemble businesses. The influence of commercialism on higher education is not new, but as Kirp writes, “what is new, and troubling, is the raw power that money directly exerts over so many aspects of higher education.” Universities’ desires to distinguish themselves in a competitive marketplace by luring the best faculty and students have led them to develop active marketing departments and increased the attention paid to issues of presentation. MIT OCW and others may have rejected

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34 Bowen, “At a Slight Angle to the Universe,” 11.
35 Bowen’s speech summarized the thoughts of many observers of higher education at the time. As Casper said, “in addition to the ‘information industry’ a ‘knowledge industry’ will develop—is indeed lurking around the corner. For better or for worse, knowledge will be commercialized at an ever increasing rate” (Casper, “Come the Millennium,” 3). And according to Martin Trow, “commercial markets have already moved into the university’s research laboratories . . . blurring the distinction between pure and applied research and between research and development. I believe we are seeing a similar movement of market forces into the instructional life of the university” (Trow, “Development of Information Technology,” 312).
37 Investment in marketing efforts and more generally in the presentation of the institu-
the commercialism typified by Fathom, but the extant online courseware projects still can serve a marketing function aimed at burnishing the university’s brand. As Kirp suggests, attention-grabbing acts of altruism like MIT OCW allow the institution to promote “its reputation by giving everything away” through the “symbolic capital” of such a gesture, and subsequent chapters show that MIT is not alone in deriving branding benefits from online courseware. Maintaining and bolstering their public reputations has always been a priority for universities, and recent trends toward placing greater importance on such activities are not inherently negative; however, there is some concern that an outsized focus on branding activities may distract from mission-related pursuits.

Online courseware initiatives also developed in parallel with universities’ aggressive efforts to extend their geographic reach. Echoing a sentiment expressed by so many others at the time, former University of California President Richard C. Atkinson said in 2001, “our rapidly expanding ability to share information and ideas is leading to what can be called the globalization of the university.” Whether through redoubled efforts to attract international students or through “a kind of educational gold rush” to establish branch campuses in far-flung and potentially lucrative global locales (including China, Singapore, and the wealthy Persian Gulf countries of Qatar and the United Arab Emirates), universities are attempting to expand their presence and raise their profiles overseas, increasing their exposure in other regions to tap new markets.

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39 “‘How “businesslike” should universities be?’ Underlying the concerns expressed by many (including the use of marketplace language such as ‘brands,’ which has worrying symbolic overtones for some faculty) is the fundamental risk of ‘mission drift’” (Bowen, “At a Slight Angle to the Universe,” 33).


41 Universities are becoming increasingly dependent on tuition from overseas. Inter-
the university’s core teaching activities in a readily accessible digital format, online courseware positions participating institutions to reach a world audience.

Past Experiments in Teaching with Technology

Experimenting with online courseware is one of many ways in which elite universities have incorporated technology into the patterns and structures of university life. Email has become the default medium for communications within the university, digital library systems have supplanted card catalogues, and technology has grown increasingly integrated into all aspects of the teaching process. Professors routinely use course management systems like Blackboard and Sakai to organize their instructional materials; students choose their classes via internet-based course enrollment programs; and instructors in all subjects incorporate PowerPoint into their lectures while students take notes on laptops.

In addition to these subtle integrations of technology into the structures of teaching, many universities have also been using technology to more fundamentally reshape the teaching process itself, seeking to improve learning outcomes or cut costs. Examples of coordinated efforts to redesign courses by incorporating technol-

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ogy are legion; for instance, in 1993 the Alfred P. Sloan Foundation began working to encourage the proliferation of quality online elements into the mainstream of higher education through its Asynchronous Learning Network (ALN).\textsuperscript{42} The Mellon Foundation’s Cost-Effective Uses of Technology in Teaching (CEUTT) program funded controlled experiments at 25 institutions between 1996 and 2001, aimed at collecting data on learning improvements and cost savings accrued through the incorporation of technology into undergraduate courses.\textsuperscript{43} In a similar vein, the Pew Charitable Trusts invested $8.8 million in its Program on Course Redesign (PCR), which from 1999 to 2002 funded 30 institutions’ experiments on the potential gains—both pedagogical and economic—that technology in teaching could bring to universities.\textsuperscript{44} Thus online courseware projects emerged in an environment of widespread experimentation with the use of networked technologies in the undergraduate classroom, often involving prestigious participants and high-profile funders.\textsuperscript{45}

These earlier experiments in the use of technology have certainly influenced how universities operate internally and educate their own students. But while the activities outlined here were aimed mostly inward, the series of open courseware projects described elsewhere in this book have sought not only to put undergraduate course content online, but to do so in a branded, public-facing way that extends beyond the gates of the university, sharing components of elite higher education with the world.


\textsuperscript{43}Fisher, Saul, “Teaching and Technology: Promising Directions for Research on Online Learning and Distance Education in the Selective Institutions,” Andrew W. Mellon Foundation, http://cshe.berkeley.edu/research/ebusiness/papers/teaching_and_technology.pdf.

\textsuperscript{44}Twigg, Carol A., “Improving Learning and Reducing Costs: New Models for Online Learning,” Educause Review 38, no. 5 (September–October 2003), 30. This program was enacted by the National Center for Academic Transformation, led by Carol Twigg.

\textsuperscript{45}As subsequent chapters describe in more detail, Berkeley participated in the CEUTT program, conducting a controlled experiment on one of its webcast courses, and Carnegie Mellon’s participation in the Pew PCR laid some of the technical foundation for what later became an Open Learning Initiative course.
The Open Educational Resources Movement

The set of projects profiled here can also be understood in the context of the broader Open Educational Resources (OER) movement. As previously described, this book’s primary intention is to analyze elite universities’ uses of the internet to publish core undergraduate course materials, in a variety of ways and for a variety of purposes. Initiatives like Fathom and AllLearn, the subjects of Chapter 2, charged fees to users for many of their materials, thus limiting access to paying customers. But the other courseware projects profiled here provide their content free of charge, often using licenses that allow end users to edit and reuse that content in diverse ways. These open courseware projects—the three initiatives funded by the Hewlett Foundation in addition to webcast.berkeley, a member of the OpenCourseWare Consortium (described in detail in Chapter 3)—also fall under the umbrella of the more expansive OER movement. These initiatives include “free tools and content” available on the web that “can include full courses, textbooks, streaming videos, exams, software, and any other materials or techniques supporting learning.”

Though conceptually related to the long-standing open-source software movement, the term “Open Educational Resources” was coined in 2002 at the United Nations Educational, Scientific and Cultural Organization (UNESCO) Forum on the Impact of Open Courseware for Higher Education in Developing Countries, which was “convened to consider the potential, for developing countries, of the Massachusetts Institute of Technology (MIT) initiative to put course materials online for open access.” Also in 2002, the Hewlett Foundation launched what would become known as the OER division of its education program, with the goal of using “information technology to help equalize the distribution of high-

46William and Flora Hewlett Foundation, “Education: Open Educational Resources,” http://www.hewlett.org/oer. NPTEL also offers online courseware free of charge, but its content does not currently carry an open license.

quality knowledge and educational opportunities for individuals, faculty, and institutions within the United States and throughout the world.\textsuperscript{48} Pioneered in many ways by the Hewlett Foundation’s early and ongoing efforts, this promising field has grown tremendously over the past decade, attracting the attention of additional foundations (among them the Carnegie Foundation for the Advancement of Teaching, the Bill and Melinda Gates Foundation, the Lumina Foundation, the Shuttleworth Foundation, and the Soros Foundation’s Open Society Institute) and governments around the world in support of creating and sharing high-quality educational materials.

OER includes diverse open materials created by a range of producers and intended for varying uses. Open digital textbooks (from producers like Flat World Knowledge and Rice University’s Connexions project, to name just two) aim to provide students with course texts that are not only free but also more interactive, granular, and customizable than traditional textbooks through the remix and reuse options afforded by their open licenses.\textsuperscript{49} (This sector of the OER community also seeks to solve a daunting problem facing education: the sharp increase in textbook costs, which have risen to the point where students are resorting to renting or pirating textbooks they cannot afford to buy.)\textsuperscript{50} In addition to the core content itself, the OER movement also encompasses resources to find OER (like OER Commons, OCW Finder, DiscoverEd, and


World Lecture Hall), portals to post updates and discuss them (such as OER Blogs), and the licensing infrastructure that makes all this sharing possible (Creative Commons).^{51}

Open courseware and open textbooks are being created all over the world by institutions in all sectors, including K-12 schools, universities like Michigan State, and community colleges like California’s Foothill De Anza.^{52} As evidenced by the membership in the OCW Consortium, much of the activity in this space is in the developing world, with numerous initiatives coming from Asia and South America.^{53}

While there are instances of overlap between the OER field and the cases examined here, this book does not attempt to cover the OER movement or to offer an assessment of its progress or potential. Rather, by zeroing in on a few exemplary courseware projects (most of which are also examples of OER—although others, like Fathom and AllLearn, are not), *Unlocking the Gates* aims to understand what sharing undergraduate curricular materials with the general public has meant for some of the elite institutions currently engaged in these projects.


\[\text{\texttt{\url{52Curriki, a website promoting the sharing and collaboration of free and open-source curricular materials for K-12 education, can be found on the web at http://www.curriki.org/xwiki/bin/view/Main/WebHome. Another source of mostly K-12 open course materials is the National Repository of Online Courses, http://www.montereyinstitute.org/nroc/. For Michigan State and Foothill De Anza, see, respectively, http://www.msuglobal.com/ocw and http://sofia.fhda.edu/gallery/}.}}\]

\[\text{\texttt{\url{53http://www.ocwconsortium.org/members/consortium-members.html. The NPTEL effort profiled in Chapter 7 is not a member of the OCW Consortium; its content is openly and freely available over the internet, but it does not carry an open license allowing for derivative versions, one of the criteria for membership in the Consortium. Yet it is exemplary of a strong localized open courseware presence throughout Asia, with similar efforts taking root in China, Japan, South Korea, and Vietnam. Widespread international support for free and open courseware content generated around the world is evident in UNESCO's support of OER (see the project on Open Educational Resources by UNESCO's International Institute for Educational Planning: http://www.unesco.org/iiep/virtualuniversity/forumshome.php?queryforums_id=3) and the Cape Town Open Education Declaration, a virtual document with over 2,000 signers that calls OER “a wise investment in teaching and learning for the 21st century” (“The Cape Town Open Education Declaration: Unlocking the Promise of Open Educational Resources,” http://www.capetowndeclaration.org/read-the-declaration).}}\]
Universities’ willingness to share their course content, traditionally reserved for only a limited number of students, represents a laudable contribution to society. Through online courseware projects, some of the most selective institutions have exposed their intellectual capital in an unprecedented way. But—often with good reason—they have done so while protecting the substantial part of their value proposition derived from their residential experience, interactions between students and faculty, and, of course, their prestigious degrees. In other words, these institutions have struck a careful balance between altruism and self-interest and have often, as we will see, garnered other ancillary benefits along the way. The online courseware projects at elite institutions reveal an industry in transition—selective universities making tentative adjustments in response to the networked environment, while fundamentally adhering to the model that has defined them for centuries. But these first steps by early adopters may lay important groundwork for a shift in the way that even the most elite institutions pursue their educational missions.