College 2.0: Transforming Higher Education through Greater Innovation and Smarter Regulation
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Digital technology has not only changed many economic sectors, it has transformed them by lowering costs, increasing access, and delivering the personalized, customized, and interactive experiences that consumers have come to expect. Higher education, however, has yet to experience the kind of disruption and subsequent gains in productivity realized by other knowledge-based industries. While colleges and universities have used technology to streamline back office functions, improve research collaboration, and give teachers new tools to manage their classrooms, they have yet to tap the potential of digital technology and embrace private sector-led innovation to transform learning, dramatically lower costs, or improve overall institutional productivity.

Higher education has not changed its basic structure and delivery model because it hasn’t been forced to do so. Protected by government regulations and accrediting bodies, supported by taxpayer subsidies and guided by a collegial, risk averse culture of shared governance, higher education has avoided addressing “the fundamental issues of how academic programs and institutions must be transformed to serve the changing educational needs of a knowledge economy.”

However, an array of forces is now working to disrupt the traditional business model of higher education. Increasing international competition, a decline in government funding, changing demographics, an increasingly mobile population, new-tech savvy students that expect anytime, anywhere customized learning, and the emergence of new commercial providers are just some of the factors threatening the status quo.

While the demand for postsecondary education has never been higher, the cost of obtaining a college degree continues to rise at unsustainable levels with student loan debt at all-time highs. At the same time, the United States is losing ground internationally in educational attainment and employers are increasingly finding students ill-prepared for the demands of the workplace.

The failure to address these challenges has triggered a productivity crisis in higher education. Meeting these challenges will require rethinking established practices, finding new and flexible ways to serve underserved populations, and improving educational outcomes, even as most colleges face tight budgets and shrinking state support.

Many of the most promising initiatives with the potential to transform higher education are coming from outside the education establishment. Armed with new ideas and the power of Internet-based technologies, these “edupreneurs” are willing to challenge the status quo to prove that education can be affordable, reach more people, and enable students to learn faster and at higher levels.

The ultimate impact of these new technologies will depend on whether higher education leaders embrace and integrate them into new business models and whether policymakers create a climate that sustains rather than stifles new providers and products. Many of these emerging innovations challenge the basic cost structure, delivery system, and organization of traditional higher education, and in doing so, point the way to a new future for education leaders that want to transform their institutions to save them.

The ten “Spotlight Innovations” featured in this paper represent just some of the potentially game changing products, services, and new business models emerging from a host of start-up ventures launched in the last several years. Technology has moved beyond simply being able to deliver content online to creating entirely new, more interactive ways of learning and teaching. And the private
sector, with its ability to innovate, raise capital, and scale up new ventures quickly to meet consumer need, is rushing in to take advantage of these advances in technology. Non-profit organizations, unencumbered by the structure and risk-averse culture of traditional higher education, are also developing breakthrough innovations that use technology to democratize learning, redesign course delivery, and improve quality in the classroom.

Innovation can save higher education, but it has to be allowed to thrive. As discussed in the report, a number of barriers stand between what students need and what private entrepreneurs and visionary campus leaders can deliver. These barriers include:

• a state and federal financing system that funds enrollment instead of completion and fails to provide incentives for efficiency and quality student learning outcomes;
• an antiquated accreditation system that stymies new providers and is based largely around educational inputs instead of educational excellence;
• a complex 50-state regulatory structure that is poorly suited for the reality of online education; and
• federal regulations that discourage new entrants, prevent innovation, and drive up costs.

The challenges facing traditional higher education cannot be overcome without fundamental transformation brought about by strong institutional leadership coupled with policy reforms that promote innovation. The cost spiral will continue without innovations driven by e-learning and incentives built around increasing productivity. The vital goal of dramatically expanding access to higher learning for traditionally underserved populations can only be met by expanding capacity through online learning. Both traditional and for-profit schools will have to invest more heavily in academic quality and measures to ensure students have acquired the skills valued by employers. Regulations and incentives should be crafted to open the way for the most dynamic innovations, while rendering the true costs, risks, and potential benefits as transparent as possible for prospective students.

Creating a climate that fosters innovation in higher education will require policy reforms in a number of areas including:

• aligning higher education’s regulatory framework with the national priority of raising attainment levels and increasing access;
• rationalizing the federal and state rules governing interstate education—particularly distance learning—to accommodate the pervasive presence of internet-based e-learning;
• applying federal quality assurance regulations fairly to all sectors and focusing on providing the consumers of education with useful tools to compare institutional performance;

• overhauling accreditation to focus on educational outcomes and make it easier for new providers and new products to enter the postsecondary education market; and
• restructuring the financing of higher education to reward productivity and performance.

Advances in communications and information technology have begun disrupting the business models of traditional colleges and universities by creating a global market for knowledge delivered in new ways and in new formats. But these technologies can also save higher education by helping it become far more productive than it is today.

Many of the most promising new innovations are coming from private ventures and grass roots entrepreneurs who are rethinking established practices. Whether this new wave of innovation is allowed to flourish and help solve higher education’s productivity crisis is up to policymakers and higher education leaders. If innovation is stifled through restrictive regulations on e-learning, discouraged through funding that fails to reward quality and outcomes, or simply thwarted by complacency within traditional intuitions, then the U.S. is likely to lose its edge to faster moving international competitors.

The U.S. higher education system has long been one of the country’s crown jewels. With the right leadership and policy choices, it will remain so.ii
Where is the “Google” or “Apple” of Higher Education?

Digital technology has transformed many industries by lowering costs, increasing access, and delivering personalized, customized, and interactive experiences that consumers have come to expect. Media, music, travel, retail, advertising, and telecommunications have all adapted to meet this demand. Online retailers allow wired shoppers to compare prices, find the nearest store, determine availability of an item, and connect immediately with customer service. Skype, the broadband service that allows users to make free phone calls between Skype-equipped computers, has revolutionized communications and made international collaboration less expensive. Websites like Google and Yahoo! have become storehouses of vast quantities of data and are able to fine-tune information and offer applications to meet their users’ specific needs and interests. And Facebook—the ultimate personalized, customized, interactive media product—has more active users than the population of every country in the world except China and India.

Technology has turned consumers from passive recipients of knowledge and information into engaged participants, who shape, manipulate, and repackage it to serve their needs.

While higher education has brought digital technology to the classroom and the back office, it has not succeeded in using it to transform learning or lower costs. Universities have taken advantage of software-based solutions to streamline administrative functions such as admissions, student retention, and financial aid management. Information technology has enhanced research and the ability of scholars to collaborate. Access to content improved as classrooms were wired, laptops distributed, teachers trained, and curriculum digitized. But these actions fall far short of the transformative change experienced by other sectors. As Bill Gates put it, “so far technology has hardly changed education at all.”

Unlike other knowledge-based industries, the productivity of postsecondary institutions (or, for that matter, the entire K–16 system) has not improved during the Internet era and by some metrics has declined. Former University of North Carolina Chancellor Michael Hooker noted that the shift from energy to knowledge as the basis for our economy has enabled productivity gains in virtually every economic sector except higher education.

In fact, the most significant technology-related development in higher education in the past decade occurred outside of the traditional sector with the rise of for-profit universities. Entrepreneurs discovered that using technology to cut costs, deliver convenient online classes, and reach students seeking career-specific training could be a profitable enterprise. These universities originally targeted a small subset of career-minded students, but their numbers have grown quickly, accounting for almost 12% of all students enrolled in postsecondary education in 2010. The University of Phoenix is now the largest university in the United States, with an enrollment of more than 500,000.

So far, traditional higher education has not embraced the kind of disruptive and transformative change enabled by new technologies. A national commission studying the future of higher education noted that higher education as an enterprise “has yet to address the fundamental issues of how academic programs and institutions must be transformed to serve the changing educational needs of a knowledge economy. It has yet to successfully confront the impact of globalization, rapidly evolving technologies, an increasingly diverse and aging population, and an evolving marketplace characterized by new needs and new paradigms.”

Part I: The Transforming Potential of Private Sector Innovation
Higher Education’s Productivity Crisis

The failure to address these challenges has triggered a productivity crisis in higher education. Even one of the nation’s top higher education associations has acknowledged that improving productivity in higher education “is essential to strengthening the nation and positioning it to remain competitive in an increasingly global marketplace.” In large part, the nation’s colleges and universities have not used innovation to improve productivity because they have not had to. But a number of forces are exerting stress on the foundation of higher education and threatening the status quo. Enrollments are surging (a record 2.6 million freshmen enrolled in 2008—the highest increase since the Vietnam War), tuition costs are soaring (rising faster than median family income and inflation over the last decade) and yet the United States is losing ground, dropping to 12th in degree attainment among 25- to 34-year-olds in developed countries. At the same time, employers are increasingly finding graduates ill-prepared for the demands of the workplace.

Policymakers are concerned about these trends and the effect of declining college attainment levels on the country’s global competitiveness, particularly since the U.S. is one of only two nations in which the current generation has attained less education than their parents’ generation. To reverse this decline, the Obama administration, state governors, and leading education think tanks have embraced the goal of at least 60% of working-age Americans earning high-quality degrees or credentials in the next 10 to 15 years.

Creating the highly-skilled workforce the U.S. needs to drive a high-performing economy means educating and graduating greater numbers of students, including nontraditional and adult students. Two-thirds of all future jobs will require some postsecondary training, but today only roughly 39% of American adults hold a two- or four-year degree. Experts predict a shortage of more than 14 million college-educated workers by 2020 if current trends continue.

Meeting this demand requires rethinking established practices, finding new and flexible ways to serve underserved populations, and improving educational outcomes, even as most colleges face tight budgets and shrinking state support. This productivity challenge is unlikely to be solved by traditional higher education alone. Higher education has long been one of America’s greatest strengths, but the entire sector is now ripe for “disruptive innovation” due to the high demand for education coupled with a high-cost structure and antiquated delivery models. Peter McPherson, president of the Association of Public and Land-Grant Universities, captures the urgency for innovation: “Most of us feel that historical change is happening right now. Most believe our universities will look different, maybe very different, in 10 years. To most it is a question of whether we will work to shape that future or the future will shape us.”

SPOTLIGHT INNOVATIONS

Introducing...
Spotlight Innovations

Many of the most promising initiatives with the potential to transform higher education are coming from outside the education establishment. Armed with new ideas and the power of Internet-based technologies, these “edupreneurs” are willing to challenge the status quo to prove that education can be more affordable, reach more people, and students can learn faster and at higher levels.

The 10 “Spotlight Innovations” featured throughout this report are just a few of the potentially game-changing products, services, and new business models emerging from a host of startup ventures launched in the past several years. Technology has moved beyond simply being able to deliver content to creating entirely new, more interactive ways of learning and teaching. And the private sector, with its ability to innovate, raise capital, and scale up new ventures quickly to meet consumer need, is rushing to take advantage of these advances in technology. Nonprofit organizations, unencumbered by the structure and risk-averse culture of traditional higher education, are also developing breakthrough innovations that use technology to democratize learning, lower costs, and improve quality in the classroom.

As the pressure grows on higher education to become far more productive than it is today, it will need to embrace new ideas and innovations coming from the private sector. Encouragingly, some colleges and universities are already doing so. Reaching the Obama administration’s goal of raising the nation’s college graduation rate to 60% by 2020 will require a major transformation of every aspect of the current structure of higher education. The innovations featured here are helping usher in this transformation to a new technology-driven, student-centered model of higher education for the twenty-first century.
Khan Academy

Khan Academy became an Internet sensation when people started discovering YouTube math tutorials that founder Sami Khan had made for his relatives. Limited to 10 minutes in length by YouTube requirements at the time, the tutorials were modular and based on single topics arranged by subject matter. As Khan added to his library of tutorials, which eventually reached more than 2,000 videos, the project grew in popularity.

The real breakthrough, however, came when the Khan Academy developed an interactive interface for users to access the video tutorials. The interface linked the tutorials to exercises that are partly computer-generated. As students work through one exercise question after another, they are given the options of attempting to answer the question, asking for a hint, or watching the relevant tutorial. Students are not “done” with the exercise until they have answered ten questions correctly in a row. The interface software feeds the students’ choices and success into a database that can be used to track their progress and level of competency, which allow parents and tutors to become involved in the process. The software also integrates concepts of network video games: points and badges are awarded for achievement.

Once a few schools in California started using the program in the classroom, the great potential of the Khan Academy’s interactive software quickly became apparent to teachers. The students each proceeded at their own pace and even worked on different concepts, but the teacher could now see who was falling behind on what concept and respond dynamically. Rather than leading instruction for a whole class at the same pace, the teacher could now play the role of supporting instruction for each student at his or her own pace.

Khan Academy programmers work closely with teachers to achieve an optimal fit between the software interface and the needs of both teachers and students. The interface now allows peer-to-peer interaction and tutoring. Courses are heavily concentrated in math and basic science and now range from elementary to college level. Finance is also covered, with courses on such topics as credit default swaps and debt loops.

The Khan Academy has won numerous awards and has been applauded by Bill Gates, who has called it “the future of education.” Google has joined the effort with a multimillion-dollar donation to expand the Khan library and translate it into other major languages.

Using Private Sector Innovation to Boost Productivity

How the U.S. responds to these challenges is now up to policymakers and higher education leaders. If innovation is stifled through restrictive regulations, discouraged by funding formulas that fail to reward quality and outcomes, or simply thwarted by complacency within traditional institutions, then the U.S. is likely to lose its edge to faster-moving international competitors. Solving higher education’s productivity crisis will not come about through incremental change. It will require encouraging innovation within the institution and embracing new technologies and new business models emerging from the private sector.

Many of the most promising initiatives to reshape higher education are coming from private sector companies and grassroots entrepreneurs with the ideas and energy to challenge the status quo. Unlike traditional higher education, the private sector has a strong incentive to innovate. Promising technologies can attract the large amounts of capital necessary to quickly scale up products and services to meet consumer demand. Acting under the discipline of the market, products that fail to satisfy consumer need fade quickly, while those that succeed grow rapidly, particularly in technology-related fields. The philanthropic sector also has a vital role to play in driving innovations outside of traditional institutions. Foundations can fund research on new learning and teaching models, pilot experimental programs, and ensure that innovation reaches low-income and first generation students.

Investor interest in the postsecondary education market has been growing and there are signs that a new wave of private sector-led innovation is emerging that could reshape higher education unless new federal regulations, set to go into effect July 1, 2011, scare away potential funding sources. According to the chief executive officer at one private equity firm, “There are things that are happening in education, because of demographics and technology, that are creating opportunities for businesses to be spawned and grow. And that attracts money.” Since 2007, more than $1.1 billion of merger and acquisition (M&A) activity in education innovation has taken place, compared to a total of $218 million in the preceding four years. According to the investment bank Berkery Noyes, activity in the postsecondary industry accounted for 8 out of 10 of the largest transactions in 2009. However, the firm noted that financial investors have been moving away from for-profit colleges and companies to the K–12 sector, in part because of new proposed federal regulations.

This next wave of innovation, powered by information technology and online learning, has the potential to be transformative. In e-learning alone, it is estimated that by 2015, 25 million postsecondary students in the United States will take classes online, with the number of students who take classes exclusively on physical campuses falling from 14.4 million in 2010 to just 4.1 million in 2015. The U.S. market for distance
learning-related products in higher education is estimated to grow at a five-year rate of almost 7% per year, reaching 6.1 billion by 2015. The Department of Education estimates the total U.S. market for postsecondary education is more than $386 billion.

The rise of the for-profit sector improved access for those seeking a career-focused education and helped usher in the era of online learning. But for this new wave of education innovation to be truly transformative and ensure America’s place as a leader in producing a highly educated citizenry, it not only needs to continue expanding accessibility (particularly into underserved populations), but to lower costs and improve the quality of student learning in a way that prepares more Americans to succeed in the global knowledge economy.

Four Higher Education Challenges That Must Be Addressed

Breaking the unsustainable cost spiral

For students, families, and taxpayers, paying for college has become an increasingly expensive proposition. Over the past 20 years, tuition rose four times faster than the consumer price index and far outstripped growth in health care spending. A study by the American Institute for Economic Research looked at consumer prices over a 20-year period from 1990 to 2010 and found that only the cost of tobacco products, up 378%, grew faster than college tuition and fees, which were up 286%. The study found that prices increased the most for products and services subsidized or influenced by government.

In the 1980s, college funding shifted from a low-tuition, high-appropriation model to a high-tuition, high-student-aid model. According to the College Board’s 2010–11 report on college costs, public four-year in-state tuition and fees averaged $7,605 and total expenses for a residential student for one academic year averaged $16,140 (the comparable figure for private four-year schools was $36,993). As students and families contemplate the value of higher education, they are now looking at a sticker price of about $65,000 for a public four-year degree and nearly $150,000 for a private four-year degree and are asking tough questions about the return on such a large investment.

Until recently, students were protected from absorbing cost increases in education by a steady flow of state and federal financial support and university subsidization through endowments and alumni giving. With a ballooning federal deficit, the retirement of the baby boom generation, and massive entitlement programs to finance, the federal government is not likely to fund student grant aid at a rate that will allow it to keep pace with inflation and college costs. States face their own challenges, primarily in the form of competing budget priorities: public schools, prisons, transportation, and health care. Growth in state funding for Medicaid programs has a strong correlation with decreases in funding of postsecondary education. Twenty-five years ago, states spent nearly 50% more on their colleges and universities than they did on low-income health care programs. Now it is the reverse. The rise in tuition to 37% of total public higher education budgets has not been enough to offset state government cutbacks.

With the government’s inability to fund higher education at traditional levels and tuition maxed out as a source of revenue, the need to alter the basic cost structure of postsecondary education is inescapable. As a recent Lumina Foundation report noted, “Refusing to budge from the existing cost structure of American higher education will doom the attainment agenda to failure. A business-as-usual financing model will effectively guarantee our country further declines in attainment…leaders of higher education institutions instead must think strategically about how the shape of higher education must change.”
Expanding access and building capacity to reach the underserved and adult population

Raising attainment levels will require reaching an increasingly diverse and non-traditional student population. Rising minority enrollment, particularly among Hispanics, accounted for almost three-quarters of the increase in college participation in 2008, and about half of all Hispanic students are the first in their family to go to college (compared with 28% of white students). Many students, even if they make it to college, do not persist to completion. Nationally, only 60% of whites, 49% of Hispanics, and 40% of African-Americans who start college hold a bachelor’s degree six years later.

Many minority students and working adults begin their education at local community colleges, but most of them will not graduate, and half will drop out before their second year. Owing to the inadequate preparation of many students for college-level work, about 60% of enrollees will have to take at least one remedial course, with only a third of those students ever moving beyond the developmental education stage. Just as troubling are the discrepancies in attainment by income level. Students from the highest-income families are almost eight times as likely as those from the lowest-income families to earn a bachelor’s degree by age 24.

What used to be called “non-traditional” students are now the majority of the student population in higher education. More than half of students enrolled are over 25, and about one-third of students are working full-time while pursuing their education. In addition, about one-fifth of the U.S. working population started college but never finished. Reaching these 37 million Americans and helping them attain higher levels of education is essential to boosting national competitiveness and reaching the administration’s college completion goal. Although there are programs and pathways for these adult learners to re-enter the higher education system and earn degrees, most colleges do not make this population a priority and fail to provide the expertise or support services necessary to keep them engaged and on track.

The failure to reach and graduate more students with the skills necessary to compete in a global knowledge economy has forced U.S. companies to shoulder most of the burden for addressing the skills gap, spending billions of dollars in training and remediation for their employees through tuition reimbursement programs, internal training, internships, and apprenticeships. In 2010, the private sector spent approximately $53 billion on job training which accounted for 53% of all U.S. job training expenditures, far surpassing the amount spent by the federal government on such programs.

Meeting President Obama’s goal of making the United States the world leader in educational attainment by raising the nation’s college graduation rate to 60% by 2020 will require adding at least 8 million graduates, with 5 million earning degrees or certificates from community colleges. However, with state budgets strained, analysts have warned that the higher education system as currently constructed does not have the capacity to reach the President’s goal.

Creating better, and measurable, student learning outcomes tied to 21st century workforce needs

The movement toward greater transparency and accountability in other industries has led to a call for higher education institutions to move beyond the credit hour and the diploma as proxies for learning and to demonstrate more clearly whether their graduates can think critically, reason analytically, solve problems, and communicate clearly and cogently. Reputation and rankings derived from input measures such as class size, student-faculty ratios, and alumni giving are no longer sufficient as a true gauge of academic quality and employers are finding it increasingly difficult to rely upon the degree as indication of adequate preparation for the workforce.
Recent reports and studies raise serious questions about whether the skills being taught in college are the ones employers value. A study conducted for the Business Roundtable revealed that half of U.S. employers see a sizeable gap between their needs and the skills of their employees. A survey of human resource professionals determined that only about one-quarter of four-year college graduates are perceived to be excellent in many of the most important skills, concluding, “the future workforce is here, and it is ill-prepared.”

In their book *Academically Adrift*, authors Richard Arum and Josipa Roksa analyzed assessment data, student surveys, and transcripts and found that 36% of students “did not demonstrate any significant improvement in learning” over four years of college. The authors cite lack of rigor as the major contributing factor in students’ failure to improve their critical skills.

The United States is now falling behind other nations that are increasing attainment rates at a faster pace. According to Claudia Goldin and Lawrence Katz of Harvard, the average skill level of the U.S. workforce continually improved until the mid-1970s. Since then, educational attainment rates have stagnated. The median worker in the U.S. labor force today has a high school degree plus just over one year of post-high school education. This attainment level may have been enough to lead the world a generation ago, but the economy now demands higher levels of skills and knowledge. With almost every other industrialized country raising its educational attainment and the well-educated baby boomer generation starting to retire, the U.S. is in serious danger of losing its productivity edge.

Despite these disturbing reports, the accountability movement has not yet prodded institutions to adopt meaningful, comparable measures of student learning, although a number of universities have started to move in that direction. Adoption of quality assessment tools will help change the culture of higher education from one based on reputation to one based on results. As one international education expert noted, “One thing we completely lack in higher education is any measure of quality. We know how much it costs, but have no idea of its outcomes except its economic impact. It does not tell you if the degree is really worth it.”

**Ensuring U.S. global competitiveness in higher education**

The democratization and globalization of higher education poses opportunities and threats to U.S. competitiveness. Fast-growing economies such as China, Singapore, and India are keeping more of their students at home by offering higher-quality education and better economic opportunities. While the U.S. still attracts more talent from abroad than any other country, its market share is falling, from 25% in 2000 to 19% in 2007. China now receives more foreign students than it sends overseas and has become a significant provider of graduate-level education. The emergence of a new global

**SPOTLIGHT INNOVATIONS**

Knewton

**Founded by a former executive of Kaplan, Inc., Knewton is pioneering the field of adaptive learning. It developed the core of its business in the field of test preparation, chiefly for the SAT, LSAT, and GMAT, which allowed it to refine the technology of real-time adaptive testing. It is now seeking to revolutionize learning in higher education, applying the same adaptive learning technology to entire college courses and programs of study.**

Knewton recently announced a new, cutting-edge partnership with Arizona State University (ASU) to integrate its technology into two remedial math classes for entering students, in addition to two other introductory math classes at ASU. Its model relies on a sophisticated application programming interface (API) that manipulates and shapes course material according to each student’s strengths and weaknesses as the student moves through the course. Rather than merely dumping a standard textbook into electronic format, Knewton’s API creates an individualized electronic textbook for each student over the course of the student’s semester.

Knewton’s innovation is primarily one of scale and precision. It seeks to mine the data generated by each student’s learning patterns to a far greater degree than similar learning systems. Its sophisticated API does not merely identify the lessons on which the student needs the most help; it also responds dynamically to each student’s learning style so that course material can be presented in text format to some students, in graphical or interactive exercise format to others, and in video or even video-game format to still others.

Knewton combines the data-mining savvy of Google with the social networking and multimedia capability of Facebook. When students log in to Knewton, they find their way to the materials they most need to learn, in the formats most appropriate for them—and to the peers who are most likely to be helpful in mastering the material. When teachers log in to Knewton, they can see not only how their students are progressing generally, but a much more complete picture of each student’s strengths, weaknesses, proclivities, and needs.

Knewton is developing its API as an open source program that users will be able to build on and adapt to their needs. The platform will include the points and badges familiar to video game aficionados and will have a social networking capability to enhance peer-to-peer interaction and tutoring.

Knewton was among 31 startups selected in 2011 as a Technology Pioneer by the World Economic Forum at Davos.
DeVry University

One of the leaders in career-focused education, DeVry now serves more than 85,000 students at more than 90 locations in the U.S. and in Canada.

Using a combination of online learning and classroom instruction, DeVry offers associates, bachelors, and masters degrees in a wide variety of disciplines, generally oriented to business and specific trades. Courses and programs are developed quickly in response to workforce needs; for example, DeVry now has a number of program offerings focused on cyber security, one of the most rapidly expanding fields in information technology. It also offers courses in technical fields that are well-suited for online instruction, and in which student ability varies widely—a context in which the dynamic, modular course system of online delivery is ideal. Students can take courses in areas such as health information technology, game and simulation programming, network and communications management, and network systems administration.

DeVry programs are offered in most locations—and most can be done either in the classroom, online or in a flexible combination of the two. For students who are already in the workforce, often with family and work responsibilities, that flexibility is an enormous boon. It opens the door to higher education—including graduate school—to an enormous population of students who would not be able to attend a traditional college or university.

DeVry reports that more than 90% of its graduates on the active job market are employed within six months of graduation. DeVry was highlighted in a recent McKinsey report, Winning by Degrees: The Strategies of Highly Productive Higher Education Institutions (November 2010), for its best practices in improving educational productivity by consolidating core supports and services across its campuses. DeVry Inc., was also named to the 2010 InformationWeek 500 List of Top Technology Innovators in America for the creation and development of its “iLabs,” an online environment that allows hands-on, learn-by-doing experience with the flexibility for students to access the lab from anywhere on campus or at home.

“brain race” means that while more of the world’s population is being educated at higher levels, the competition for talent has intensified. As the United States retains less foreign talent, it must generate more at home.

In addition to the decline in attracting overseas talent, the United States faces another competitive challenge from the global growth in distance learning. Communications and information technology has created a global market for education with the ability to deliver customer-specific online products and services anytime, anyplace. The International Finance Corporation estimates that the global demand for higher education will expand from 97 million students in 2000 to 262 million students in 2025 and calculates that the size of the private higher education market is approximately $350 billion worldwide—and growing fast.44

Countries such as Australia are capitalizing on the global demand for higher learning and boosting their economy. International education is Australia’s third largest export industry, generating $18 billion in exports in 2009—now 50% larger than tourism-related travel—and has grown by 94% since 2004. South Korea has invested heavily in developing state-of-the-art facilities and software in an attempt to capture the global e-learning market.45 The Organization for Economic Cooperation and Development (OECD) notes that “[t]he real competition will come—and the real savings—with online programs, where you are moving not students around but content around… In the 1950s and 1960s we laughed about Japanese cars because they were cheap. Now they are cheap and good.”46

Digital education is playing a critical role in advancing the democratization of education in many countries with private, for-profit institutions playing a prominent role in meeting global demand. Policymakers will need to create a regulatory environment that allows U.S. higher education providers to expand into the global e-learning arena as fast as other nations, not only to ensure a valuable source of revenue, but to ensure the U.S. remains the leader in attracting and educating talented students from around the world.

Hope on the Horizon: Promising Innovations in E-Learning

Technology’s ability to take limited educational resources and scale them quickly and affordably to learners across the campus or across the globe is starting to pay off as potentially “game-changing” innovations are emerging from a host of startup ventures. The ultimate impact of these new technologies will depend on whether higher education leaders embrace and integrate them into new business models and whether policymakers create a climate that sustains rather than stifles new providers and products. Many of these emerging innovations challenge the basic cost structure, delivery system, and organization of traditional higher education and in doing so, point the way to a new future for education leaders who want to transform their institutions to save them.
Innovations in access

YouTube sensation Khan Academy, started by a former hedge fund analyst, offers informal but highly engaging video lessons on topics such as quadratic equations, photosynthesis, credit default swaps, exchange rates, and the French Revolution. By the end of 2010, Khan Academy had more than 2,100 videos that are viewed an average of 70,000 times a day.47 Khan Academy’s software keeps track of students’ progress and level of competency, which allows parents and tutors to become involved in their student’s learning in high-need areas. Peer 2 Peer University is another nontraditional learning model—an open education project that organizes learning outside of institutional walls and gives learners recognition for their achievements, but no credit or degree. Peers teach each other in courses covering subjects such as software skills, music theory introduction, and finance.

The hugely popular TED site presents crisp, beautifully packaged, and engaging lectures from the world’s leading experts on an array of subjects, including science, culture, technology, arts, and business. TED’s mission is to use the power of ideas to change attitudes and lives by building a global clearinghouse of free knowledge and inspiration from the world’s most inspired thinkers. TED is now curating a set of free online educational talks designed to stimulate discussion on how to fundamentally reform teaching using videos and other technology.48

Innovations in affordability

StraighterLine provides students an easy way to lower the cost of a degree by offering online access to general education courses like English composition or college algebra for a single fee of $999 for up to 10 courses. This equates to a savings of more than 90% versus the first-year tuition at many colleges.49 StraighterLine courses have been evaluated and approved for transfer by the American council on Education.

Flat World Knowledge has taken on one of the biggest cost-drivers in education—textbooks—by offering free, peer-reviewed textbooks to students worldwide. Flat World’s open license and online editing platform enables professors to modify the content and create the book most appropriate for their course. Flat World also provides integrated audio and video, interactive tools, search capabilities, and other features with their online books.50

Western Governors University (WGU) has turned the entire structure of higher education on its head, awarding credit based on students’ demonstrated competency in a subject, rather than requiring the completion of a certain number of credit hours. All courses are online, and students are given an option to test out of courses before they take them. Students proceed at their own pace, guided by a mentor who helps them manage their course schedule. This model allows the average WGU graduate to receive a B.A. in two and a half years, significantly increasing the affordability of a college degree.51

Innovations in quality

2tor works with major universities by supplying them with the expertise, technology and capital to translate traditional classroom courses into high-quality synchronous and asynchronous learning experiences. Using the 2tor platform, online students are able to engage in real time with their in-class counterparts and professors via video. 2tor offers selective universities a way to maintain quality, but also extend their reach and enhance their revenue opportunities. 2tor partnerships include online master’s programs in social work and education with the University of Southern California and an online M.B.A. program with the University of North Carolina at Chapel Hill.52
Knewton is pioneering the field of adaptive learning, developing software that manipulates and shapes course material according to each student’s strengths and weaknesses as the student moves through the course. Its technology also responds dynamically to each student’s learning style so that course material can be presented in text format to some students, in graphical or interactive exercise format to others, and in video—or even video-game—format to still others.53

To their credit, some traditional universities are embracing the challenge to lower costs, improve learning, and ensure that their graduates leave with the skills necessary to land jobs in critical fields. For example, Carnegie Mellon’s Open Learning Initiative is developing personalized interactive e-courses in areas such as statistics, logic, biology, and French to help improve the online learning experience. The University System of Maryland, working with the National Center for Academic Transformation, is a leader in redesigning courses to produce better learning outcomes more efficiently. Arizona State is partnering with Knewton and applying its adaptive learning technology to the university’s largest online math courses. Brigham Young University-Idaho, led by the former dean of Harvard Business School, redesigned its academic calendar to make more efficient use of campus space and allow students to graduate much faster. A number of community colleges are establishing innovative industry partnerships, designing curricula tailored to the needs of local employers.

These efforts are notable, and many campuses are striving to increase completion rates while keeping costs down. But without the proper incentive to embrace innovation, most colleges and universities will continue to hope that when endowments rise, alumni giving picks up, and the economy recovers, they can return to business as usual. The dean of University of California, Berkeley law school has described the business strategy of higher education leaders in California as “faith-based fundraising.” “Everybody sits around and holds hands and says, ‘We are so good; surely next year Sacramento will give us what we deserve.’”54

The Challenge: Embracing and Enabling Innovation

The question is not whether higher education in the U.S. will be transformed, but how. For years, colleges and universities have been regional monopolies, protected by a system of accreditation and a host of state and federal regulations that create high barriers to entry. However, an array of forces is acting to disrupt all aspects of the traditional business model of higher education. Increasing international competition, a decline in state and federal funding, the tapping out of tuition as a funding source, changing demographics, a more mobile population, new tech-savvy students who expect anytime, anywhere customized learning, and the emergence of new technologies and commercial providers are just some of the factors threatening the status quo.

If colleges and universities can become more productive, they will survive and prosper. As one of the leading experts on the American university, former University of Michigan President James Duderstadt, noted, “The most critical challenge facing most institutions will be to develop the capacity for change ... universities must seek to remove the constraints that prevent them from responding to the needs of a rapidly changing society.”55

Increasing higher education’s capacity for change will require working with the private sector by seeking out joint ventures and new university–business partnerships to boost productivity and speed the integration of advanced technologies into their institutions. A global survey of university and corporate executives by The Economist found that respondents believed corporate–academic partnerships will have to “form an increasing part of the university experience at a time when locating funding and controlling costs are key concerns....”
To attract these corporate partnerships, institutions will need to demonstrate a commitment to advanced technologies. The survey also found that only one in five respondents believed their domestic academic institutions were quicker than companies to develop and implement new technologies, with roughly 66% saying the reverse was true.56

Transforming higher education will require a commitment from policymakers and other leaders to reform—and, in some cases, completely overhaul—the current outmoded regulatory and fiscal framework. State legislators need to reconsider the basic input-driven funding model for their states’ colleges and universities. Federal policymakers need to retool the way higher education is financed and regulated in light of advances in technology and the need to increase U.S. competitiveness through improved higher education attainment. And university leaders need to rethink their basic business model and incorporate new technologies that increase productivity.

Innovation can save higher education, but it has to be allowed to flourish. As discussed in the next section, too many barriers stand between what students need and what private entrepreneurs and visionary campus leaders can deliver. These barriers include the following:

• A state and federal financing system that funds enrollment instead of completion and fails to provide incentives for efficiency and quality student learning outcomes;

• An antiquated accreditation system that stymies new providers and is based largely around educational inputs instead of educational excellence;

• A complex 50-state regulatory structure that is poorly suited for the reality of online education; and

• Federal regulations that discourage new entrants, prevent innovation, and drive up costs.

As education is delivered through new distribution systems, just about every component of higher education will change, including the number of purchasers (students); the cost of inputs (materials, supplies, physical plant, and teachers); speed of delivery; and how quality is determined.57 Technology has evolved “beyond simply being able to deliver educational content in schools, to the point of being able to create richer, more active and interactive learning experiences in the world. And, for the first time, doing so is scalable and affordable…”58

No one knows exactly what the future of higher education will look like, but the emergence of online education and other innovations will fundamentally alter the way students learn and teachers teach. The Boston consulting firm Eduventures notes that education needs innovations that will transform the learning experience beyond just screen imitations of the traditional brick-and-mortar curriculum. According to Eduventures’ Richard Garrett, the real possibility of e-learning has yet to be tapped. “We’re still at a pretty rudimentary stage. Will it be games? Will it be simulations? Will it be social networking? Will it be something we haven’t yet come across?”59

StraightenerLine

StraightenerLine’s innovation is attacking the adverse cost spiral of higher education: It offers perhaps the most affordable for-credit online courses on the Internet. It keeps costs down by presenting McGraw-Hill textbook material in simple electronic format using Blackboard’s highly-regarded learning management system, allowing students to work through the material on their own. Online tutoring is provided by SMARTTHINKING. Students are given three options to pay for the courses. One featured offer is taking an entire school year for $999—10 three-credit courses over a year. Students also have the option to pay $399 per course, or $99 per month for a course: one-tenth the cost of tuition at most colleges.

StraightenerLine offers 17 three-credit courses, mostly introductory and remedial courses in math, science, and business. It does not grant degrees, so it cannot be accredited. Students therefore do not have access to federal student aid funds to pay for classes. At its inception, offering courses but not degrees posed a challenge for StraightenerLine. For many students, the primary value of taking more affordable courses would be lost without the ability to receive transferable college credit, and accredited schools are often suspicious of granting transfer credits for classes taken at nonaccredited schools.

StraightenerLine was able to overcome this hurdle by entering into agreements with more than 20 accredited, degree-granting institutions guaranteeing transfer credit for StraightenerLine classes. A chart on StraightenerLine’s website allows students to see exactly what courses at partner institutions their StraightenerLine courses will be considered equivalent to. This allows students to plan their program of study toward a degree at one of the partner institutions starting from StraightenerLine courses, or even concurrently. In addition, the American Council on Education’s College Credit Recommendation Service has evaluated almost all nine StraightenerLine courses and approved them for transfer credit, which virtually guarantees credit at more than 1,000 participating colleges and universities.

These agreements and certifications for transfer credit do not merely allow students to save the cost of as much as a year of tuition at a degree-granting institution, they allow StraightenerLine to give students a way to reduce their debt for the same credits. They also give StraightenerLine the ability to offer courses as part of the course of study at accredited degree-granting institutions.

StraightenerLine has been lauded by a number of publications for lowering the cost of college and potentially shaking up the higher education industry through its a la carte model of course offerings.
If the United States is going to educate more of its population to higher levels of attainment, policymakers will have to reconsider basic assumptions about the way higher education is funded and regulated. Higher education leaders will also have to take a hard look at their institution’s capacity for change and assess whether they are embracing technology in a way that lowers costs and improves quality.

Currently, a number of obstacles prevent innovation from transforming higher education to the degree it has transformed other sectors of the economy. Nearly every federal agency is involved in regulating some aspect of higher education, creating onerous compliance burdens. The financing system at the state and federal levels provides few incentives for colleges to control costs or improve learning outcomes. And the antiquated accreditation system creates significant barriers to entry for new providers and imposes significant costs on existing ones. This section examines some of the major obstacles to innovation and suggests principles for reform.

Background

Higher education institutions are affected by regulation at three increasingly interrelated levels: federal rules, accreditation agency policies, and state authorization. Federal law and regulations have the greatest impact through the conditions attached to Title IV student aid (such as Pell Grants and federally subsidized student loans). Those conditions, which in most cases apply to traditional schools as well as for-profit providers, seek to set minimum performance standards in categories such as default rates in student loan repayments, success in attaining gainful employment, and the percentage of a school’s revenue that must come from nonfederal sources. Besides meeting federal requirements, in order to participate in federal loan programs, an institution must be accredited by an accrediting agency recognized by the Secretary of Education and must be authorized under state law to do business in each state it is operating. Accreditors are generally autonomous, but they face specific federal requirements that are growing increasingly complex and pervasive.

The rising demand for more affordable education linked to workforce needs has placed considerable pressure on the regulatory framework for higher education. With its potential to leverage online learning to offer education services to a vastly wider market at much lower costs than traditional schools, for-profit education has expanded at an almost revolutionary pace. Its ability to respond to a growing mass-market demand for education that other business models cannot easily satisfy has propelled the industry’s growth. But because the for-profit industry absorbs a disproportionate amount of Title IV funds, leaves some students with high debt burdens and default rates, and shows consistent profit margins in excess of the national average, the industry faces significant opposition. This has led to expanded regulation of the for-profit industry and a much heavier oversight role by state and federal officials.

The key question facing policymakers and stakeholders in the rapidly evolving education sector is how to craft regulations and provide incentives that allow the strong market forces propelling growth in the industry to drive quality, innovation, and positive student outcomes. While the government has a role in setting standards to provide consumer protection and ensure accountability for outcomes, many of the concerns fueling calls for greater regulation are ones the market can—and should—take care of on its own.

Regulations that help create a level playing field and increased transparency for informed choices by consumers and investors are good for markets. But the current regulatory framework in higher education, particularly with respect to the for-profits, takes a heavy-handed approach that punishes an entire
industry for the transgressions and mistakes of a few. This approach threatens to stifle innovation across all sectors. The effect of many of these regulations is to restrict the transition from traditional classroom instruction to nontraditional formats and business models, thus preventing or delaying innovations that could drive down costs and improve access. Many of these regulations create significant barriers to innovation while hurting the very people they are meant to protect.

The Current Debate

Recent congressional hearings on the for-profit education industry and an adverse (though criticized) report from the Government Accountability Office (GAO)\(^6\) have spurred a flurry of regulatory activity and policy changes aimed at restricting the activities of for-profit institutions. The GAO report cited a number of bad practices in the for-profit sector where misrepresentation was used to increase enrollments and encourage borrowing. For-profits have been a particular focus for those in favor of heavier regulation: These schools enroll about 12% of college students nationwide but receive nearly a quarter of Pell Grant and federal student loans, and they represent 43% of federal student loan defaults.\(^6\)

These reports and congressional hearings have sparked a contentious debate about the value of for-profit providers. Much of the policy response has been aimed at forcing the for-profit and distance learning industries to behave and structure themselves more like traditional institutions, and to cut off federal funding for institutions that deviate from the processes and student outcomes that are more typical of nonprofit institutions.

On the other side of the debate are those who see innovations such as distance learning and new business models as the future of higher education in both the traditional and for-profit sectors. They point to the potential of online learning to provide education for a vastly greater population of students at a small fraction of the cost, with the quality of education meeting and often greatly exceeding that of traditional classrooms. They argue that the lower earnings, lower completion rates, and higher default rates of students at for-profit schools are largely a fraction of the cost, with the quality of education meeting and often greatly exceeding that of traditional classrooms. They argue that the lower earnings, lower completion rates, and higher default rates of students at for-profit schools are largely a function of the socioeconomic status of the students to whom they cater.

Pointing to the adverse cost spiral now afflicting traditional institutions, other proponents of innovation argue that all institutions will need to adopt new technologies and business models in order to survive. The governance model of traditional universities is not generally conducive to change except of the most incremental sort, and faculty and staff worry about the threat posed by new models and for-profits to the core academic values and traditions of higher education.\(^6\) Faculties are particularly concerned about the emergence of new online-based teaching methods. Though there will always be a place for face-to-face instruction, the online learning platform can provide many traditional teacher functions more cheaply.

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**SPOTLIGHT INNOVATIONS**

**Western Governors University**

Western Governors University (WGU) was founded in 1997 as a nonprofit virtual university by 19 western governors. Its educational model is based on one of the most promising aspects of online learning: the ability to measure student progress in terms of competency rather than classroom hours. It currently enrolls more than 20,000 students in all 50 states, and graduates more than 2,000 students per year. It offers both undergraduate and graduate degrees in four colleges: the College of Business, Teachers College, College of Information Technology, and College of Health Professions. There are scores of majors and concentrations for bachelors and graduate degrees, and it is fully accredited.

WGU has no teachers. Instead, its faculty creates the curriculum for WGU’s classes by packaging the offerings of online providers and electronic textbook publishers. Each student is assigned a mentor who guides that student from the first day of school through graduation. Students must take a minimum load of courses to maintain satisfactory academic performance.

WGU’s principal innovation as a purely online school is that course credit is awarded on the basis of demonstrated competency. Students get credit for knowing the course subject matter regardless of how they learned it. This is a major boon for WGU’s students, whose average age is 36 and who have often acquired substantial knowledge and skills on the job. About 66% of them work full-time. Another advantage for these students is tuition: it is only about $6,000 per year. WGU has no minimum grade point average (GPA) or standardized test scores for admissions. It is virtually an open-enrollment school, except for an entrance assessment.

WGU is a career-oriented school, and it takes career placement seriously. It regularly surveys employers to assess their level of satisfaction with WGU graduates. It reports that 95% of employers rate WGU grads as equal to or better than employees who graduated from other colleges or universities. WGU has also won numerous awards, including a 21st Century Award for Best Practices in Distance Learning from the U.S. Distance Learning Association. Its president, Robert Mendenhall, has won the McGraw Prize in Education, which McGraw-Hill awards to innovative educators.

\(^{6}\) Mendenhall, has won the McGraw Prize in Education, which McGraw-Hill awards to innovative educators.
SPOTLIGHT INNOVATIONS

2tor

2tor represents the entry of online learning into the traditional higher education realm. Founded in 2008 by Princeton Review founder John Katzman, 2tor works with college and university faculty to develop high quality e-learning versions of their course materials.

Traditional institutions face a highly unfavorable cost spiral and increasing competition from for-profit e-learning-based online schools. For traditional colleges that realize they will have to transform and adapt to the new learning paradigm if they are to survive, 2tor offers an intriguing solution. According to one board member, “What is unique about 2tor is that they are the first online education program to go after elite programs at elite schools.” It has partnered with the schools of education and social work at the University of Southern California (USC), the business school of the University of North Carolina, and the nursing school of Georgetown University.

Another innovation of 2tor is the cost structure. One obstacle at traditional institutions is that there is little incentive to reallocate resources to invest in cutting-edge technologies. Funds are stretched to the limit, and resources for big investments in totally new systems are scarce. 2tor solves that problem by supplying not just the product but also the capital to buy it: 2tor typically invests more than $10 million in each program it helps launch. Schools can then pay for the new capabilities out of their operating budgets—which can balloon substantially once a 2tor-based program is launched. USC’s graduate program in teaching traditionally enrolls about 75 students on campus. Now it has about a thousand students online—paying the same tuition. With this business model, 2tor has raised tens of millions of dollars from investors. Fast Company magazine named it one of the top five education startups to watch.

Like Knewton, the 2tor platform is reminiscent of Facebook. This multimedia, social-networking interface allows students to take classes, access course materials, complete exams, watch lecture videos, chat with other students, and sign up for office hours—all online. 2tor also has online labs of its own, including a Certification Map and a Teaching Jobs Portal to help prospective teachers plan their career preparation and find the best jobs for them throughout the country.

Federal and State Regulations

Not surprisingly, the federal regulatory footprint has continued to grow as the federal government has assumed a larger role in funding higher education. The federal government first became a major player in the education industry with the 1944 G.I. Bill. In response to the proliferation of for-profit institutions of dubious quality, the 1952 G.I. Bill made accreditation a criterion of institutional eligibility for G.I. Bill funds. Federal involvement in shaping higher education began in earnest with the 1965 Higher Education Act (HEA), which established the Title IV aid programs that eventually led to the modern Pell Grant and federally subsidized student loans of today. The 1965 HEA made accreditation the essential criterion of eligibility for Title IV funds, and for-profit schools then began aggressively pursuing accreditation. By 2005, most degree-granting for-profit institutions were accredited, as were about half of the non-degree-granting schools.

In the early 1990s, federal law began to condition institutional eligibility for federal student aid funds on meeting key metrics. The 1992 HEA reauthorization created a number of new rules and modified some existing ones. Among the new rules was a requirement that schools maintain a cohort default rate no greater than 25% (increased to 30%, effective 2011); a requirement that no more than 85% of a school’s revenue could come from federal student aid (later raised to 90%, and known as the “90/10 rule”); and a requirement that students spend at least 50% of their course time physically in a classroom (later eliminated for teleconferencing and online-based distance learning).
Federal regulations have continued to develop apace in breadth and complexity. Colleges and universities are now so burdened by the expanding thicket of federal regulations that “it is probably fair to say there is not one institution in the country that is able to be in complete compliance with all of these federal laws.”

On October 29, 2010, the Department of Education again weighed in with another set of federal rules, promulgating the controversial “program integrity” regulations, set to go into effect July 1, 2011. The final new rule expands the definition of misrepresentation and removes the safe harbors for incentive compensation in admissions offices. It requires that schools be authorized in each state where they have students, as if they were physically present in the state. And it provides a problematic new definition of “credit hour.” In addition, a proposed new rule on gainful employment will significantly add to the regulatory burden.

States are also major players in the oversight and regulation of postsecondary education. In fact, they play the leading role in higher education funding, governance, and policy. As states have shifted more of the funding burden to students through tuition increases, they have, in some cases, given institutions greater autonomy. However, states have yet to overhaul the basic funding structure of higher education or engage in the long-term strategic planning necessary to create the right incentives for innovation.

Gainful employment

On July 26, 2010, the Department of Education proposed a new rule on “gainful employment,” which applies almost exclusively to for-profit institutions. The new rule is complicated and likely to prove a significant burden for these institutions. Under the proposed scheme, the department would assess, on a program-by-program basis, whether a program provides training that leads to gainful employment. It would apply two tests, one based on debt-to-income ratios for former students and the other based on loan repayment rates. Every eligible program at an institution would have to meet both tests to maintain eligibility for federal student aid funds.

The department notes in its regulatory impact analysis that as a result of programs losing Title IV eligibility under the new rule, “between 16,000 and 30,000 students would leave programs without immediately enrolling elsewhere.” But the department estimates that several hundred thousand could be displaced. Independent studies go even higher, noting that nearly one in five institutions would not meet the new requirements, and that as many as a third of all students at for-profit institutions could be displaced. This outcome would directly conflict with the Obama administration’s stated goal of raising college attainment to 60% by 2020.

Just as troubling is the proposed rule’s intentional interference with market forces. “Institutions are also expected to adjust their pricing as a result of the regulation,” states the proposed rule. One of the department’s explicitly stated goals is to lower operating margins from the current 17% to 7%, in line with most other American industries. Crafting regulations to accomplish what should be left to market forces is an example of unnecessary and intrusive bureaucratic overreach.

Finally, the sheer complexity of the rule and its attendant reporting requirements will require institutions to devote significant resources to longitudinal tracking of students for...
years after they leave school. Like other regulations, this will favor major players and discourage smaller and newer market entrants—often the most dynamic sources of innovation. Moreover, requiring information on education outcomes from the for-profit sector but not from the traditional sectors raises a question of fairness: Why should the traditional institutions, which account for most of the student loan volume and the defaulters, be exempt from having to report on their productivity and performance and protected from losing eligibility for federal funds if they fail to prepare their graduates for employment?

While the proposed regulations have the right overall intent of attempting to focus on outcome measures, they miss the mark considerably because of a fundamental lack of fairness and excessive complexity. A better approach would be to require all colleges and universities to disclose information on graduate employment rates, earning levels, and the average indebtedness of students upon graduation, along with other relevant outcome measures. This would let students make more informed decisions about the college that is appropriate for their needs.

**State authorization**

Another federal proposal that threatens to set back the online learning movement is the so-called “state authorization” rule. Currently, every state has its own rules and regulations for the chartering, authorization, and oversight of higher education institutions. Many states allow for-profit schools to operate with just a business license. In career fields where the state issues licenses and certifications, such as teacher preparation for K–12 public schools and nursing, the impact of state authorization goes far beyond mere licenses to operate as a business. In the case of teachers and nurses, clinics and supervised internships are commonly required, which complicate the task of distance learning.

The final rule provides that, in order to remain eligible for federal student aid funds, postsecondary institutions that offer courses to students in a state in which they are not physically located must meet that state’s requirements for educational institutions operating in the state, and must be able to document the authorization on request of the Department of Education. This puts the federal government in the inappropriate position of enforcing state statutes. No safe harbors were established for, for example, an institution that enrolls only a handful of students in a given state, although six states currently exempt institutions from state approval or licenses based on the institution’s accreditation. According to Eduventures, some 2.5 million students were enrolled in online education courses, mostly without significant state regulation of out-of-state providers.70 This could change under the new rules.

A handful of states assert jurisdiction over online courses offered to their residents by institutions outside the state, but most do not. Many states may not even possess the capacity to handle the increased licensing workload that will be required to specifically authorize all out-of-state providers of online insurance. There do not appear to be any reliable cost estimates for the industry of complying with the new requirement, and there is no way for institutions to guarantee that they have met the department’s interpretation of any state’s regulations.71

It is not clear how states are preparing to comply with this requirement, which goes into effect July 1, 2011. The response of state regulators could vary widely among states, increasing regulatory uncertainty and chilling the business environment for many institutions. Some states, such as California, are highly regulated and create significant obstacles to innovative new providers. Others, such as Oregon, are moderately regulated but do not pose as many obstacles to innovation. Still others, such as Utah, impose little regulatory burden on for-profit schools. The greatest impact will be felt by smaller providers, but all online providers, both for-profit and nonprofit, will be affected. Larger, more established institutions will be much better able to absorb the significant increases in licensing cost of obtaining authorization, but the net result of the regulation will be to drive up costs to students.

The expansion of e-learning is national (and even international) in scope and should rest on a consistent and harmonized national regulatory framework that reflects the reality of technological advances that allow anytime, anywhere learning. New technology requires a new approach. Instead of mandating that online providers comply with a 50-state regulatory regime, the federal government should let state leaders develop common standards and requirements for the authorization of online education providers.

**New definition of “credit hour”**

Another federal rule that goes into effect on July 1, 2011, is a new definition of “credit hour.” Under the new definition, a “credit hour” must “reasonably approximate” not less than “one hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week” for the duration of the term, or “an equivalent amount of work.” The new definition has created considerable confusion, particularly among providers of adaptive and distance learning. The great potential of adaptive learning is that it eliminates the time factor and focuses on student achievement. The idea is for the student to attain mastery of course material as quickly as possible. The new credit hour definition unfortunately seems to cut the other way, focusing not on achievement but on the amount of time spent working on course material.

A “Dear Colleague” letter from the Department of Education was meant to answer some of the questions raised by the new rule. If anything, the letter has created even more confusion. For example, in answer to the question “How would an institution apply the definition of a credit hour if the institution offers asynchronous online courses that are not also offered in a classroom setting?” the Dear Colleague letter states,

There is no “seat time” requirement implicit in the definition of a credit hour. An institution that is offering
asynchronous online courses would need to determine the amount of student work expected in each online course in order to achieve the course objectives, and to assign a credit hour based on at least an equivalent amount of work as represented in the definition of credit hour.72

The fact that equivalencies must be determined on the basis of an “amount of work” rather than a level of achievement seems to contradict the assurance that “there is no ‘seat time’ requirement implicit in the definition of a credit hour.”

Federal regulations have traditionally stayed away from intrusion into core academic concerns such as defining and setting minimum standards for credit hours. In addition, the new definition of credit hour has created considerable regulatory uncertainty. Regulations that create complex and burdensome reporting requirements (such as the gainful employment rule) are bad enough for innovation. But regulatory uncertainty is even worse, because it creates often prohibitive risk to pursuing innovation at all.

State and Federal Funding of Higher Education

Public colleges and universities are heavily subsidized at the state level with state appropriations typically made directly to state college and university systems through enrollment-based funding formulas that create strong incentives for institutions to seek top-line funding rather than bottom-line cost efficiencies. States typically do not provide incentives for universities to cut costs while maintaining or increasing access and quality and provide little transparency to taxpayers trying to determine whether they are getting their money’s worth on their investment.

With state budgets severely constrained by the need to fund public schools, transportation, prisons, and health care, support for higher education is unlikely to return to historical levels. State policymakers will need to overhaul state funding formulas to create incentives for universities to become more productive and require universities to focus on education outcomes such as graduation rates, degrees awarded to at-risk students, and the success of graduates in finding employment. Performance-based funding would give universities incentives to reallocate resources toward meeting state strategic goals, including ensuring that their students graduate with skills valued by employers.

With enrollment growing twice as fast as four-year institutions, community colleges are the primary vehicle for many states seeking to raise attainment rates and enhance the skill level of their adult population. Offering low tuition costs and open enrollment, two-year colleges are an attractive option for many students. Unfortunately, most students who start at community college fail to earn a degree or certificate (only 40% complete their programs), and many are stuck in remedial education.73

SPOTLIGHT INNOVATIONS

National Center for Academic Transformation

The National Center for Academic Transformation (NCAT) is a nonprofit headed by Carol Twigg. NCAT’s Program in Course Redesign was launched in 1999 with funding from the Pew Charitable Trusts to demonstrate the potential of online learning to both improve student outcomes and reduce costs. NCAT worked with 30 different institutions to redesign their high-enrollment introductory courses. Of the 30 schools, 25 showed marked improvements in learning outcomes; a similar proportion showed improved retention. On average, the course redesigns reduced costs by more than a third.

NCAT works through a multistage process of consultation with faculties and higher education leaders to develop online learning programs aimed at both improving student outcomes and reducing costs. First it develops a strategy for program innovation, which it calls proof of concept. Then it analyzes and disseminates the results, both in terms of improved student outcomes and cost reduction, in order to identify the specific techniques and practices that work best and are likely to be most successful at scale. NCAT is able to scale its proof of concept up to the system level in order to help transform whole institutions.

NCAT’s ability to help transform whole university systems is a key element in its success. The shared governance model and tight budgets of traditional public universities and colleges can create major obstacles to innovation at the institutional level. Some experts believe that public universities and colleges will have to be transformed systemwide by leaders that have embraced strategies of innovation and are willing to make the organizational and funding changes necessary for their colleges and universities to adapt.

NCAT has been widely hailed as one of the few breakthroughs in the area of lowering the cost of instruction while improving learning outcomes. It has helped bring major innovation to the state university systems of Arizona, Mississippi, New York, Tennessee, and the University of Maryland. NCAT is supported by the Bill & Melinda Gates Foundation, among other major foundations.
Spotlight Innovations

MyEdu

MyEdu empowers students to take control of their college experience, graduate faster, and save money. MyEdu began as an Internet startup that was founded in 2008 with venture capital financing. The company’s first product, Pick-a-Prof, was an online portal that helped students pick their professors. The new portal, MyEdu, helps students select the best courses and degrees, build a graduation map and choose the best professors, and provides a variety of methods for tracking and improving performance.

The MyEdu platform brings together information on colleges, career salaries, degree catalogs, course listings and descriptions, semester schedules, professor ratings and reviews, key dates, textbook lists, and Advanced Placement and transfer credit equivalencies. Its innovation is that it provides, through a single portal, key information that students need to make well-informed choices as they navigate college. Full of graphics, easy-to-use data tables, and social networking, the portals help students complete their degrees on time with considerable potential cost savings.

According to MyEdu, students have used their site to improve their performance and save money by navigating through college faster:

- Ninety-three percent of MyEdu users obtain a GPA of 3.0 and above.
- Seventy percent of MyEdu students graduate on time, compared with 36% nationwide.
- Students save 20% of college costs by avoiding extra semesters.

MyEdu has worked with more than 750 universities to accumulate and create the largest warehouse of academic data in the U.S. and has been used by more than 1 million students.

According to a national expert on community colleges, “One of the reasons graduation rates are as low as they are is because it’s never mattered. There’s been no funding policy, no accountability policy, no policy whatsoever that has made it matter.”

As with four-year colleges, state and local funding for community colleges has been based on enrollment, giving colleges little incentive to increase completion rates or help students mired in remedial programs. Fortunately, some states are now starting to provide outcome-based funding to community colleges based on "momentum points" that are awarded based on students’ progress through college to a degree, certificate, or completion of college-level math courses and other gateway courses. Since community colleges will account for much of the growth in higher education, policymakers need to change the incentive structure to reward completion of degrees and certificates and success in moving developmental students to college-level coursework.

The federal government plays a secondary role in supporting and financing American higher education, but still provides the bulk of the funding for student financial aid and significant support for basic and applied research. Federal financial aid funding is driven by eligibility criteria and is also not linked to institutional productivity or any incentives to manage costs.

Accreditation Agency Policies

Perhaps the most significant barrier to innovation is accreditation. To be recognized by the Secretary of Education, accreditation agencies are required to establish, apply, and enforce eligibility standards. To qualify for federal Title IV funds, a degree-granting institution of higher learning must be accredited by one of the 19 regional or national accrediting organizations. More specialized institutions (generally vocational schools) must be accredited by one of the several dozen specialized accrediting organizations recognized by the Secretary of Education. The federal rules on recognition of accrediting organizations, and the corresponding policies of those organizations, tend to keep institutions of higher learning shackled in traditional models, a barrier to innovation for traditional schools and for-profits alike.

For providers, getting and maintaining accreditation is an expensive and hugely difficult undertaking. An institution seeking accreditation must first undergo an eligibility review to achieve candidate status. Within two to five years, after another comprehensive review, the institution may be granted initial accreditation. After five more years, it undergoes another review for reaffirmation of accreditation. It then enters a 10-year cycle of comprehensive reviews, with periodic interim reporting requirements. Along with outside experts, staff of accrediting organizations review written materials, conduct site visits, and write reports.
This lengthy procedure is an obstacle particularly when trying to launch a new institution. The prospects are uncertain (40% of applicants at one major accreditor are never accredited) and the long delay poses obstacles to new providers that invariably want to market themselves as high-quality institutions and need to qualify for federal student aid. To avoid these problems, it has become common practice for for-profit companies to buy existing institutions that are already accredited. This practice has allowed the rapid expansion of enrollment at schools that were struggling or failing under the traditional model. However, in some cases the institutional transformation from traditional schools with modest enrollments to much larger distance learning operations has raised concerns among federal officials and at accrediting organizations.

Illustrative of the way accreditation handicaps innovation is the Higher Learning Commission of the North Central Association of Colleges and Schools (NCACS), one of the largest regional accrediting agencies, covering 19 states. It has been at the forefront of efforts to tighten accrediting rules, with the effect of making innovation more difficult. Now, when an existing accredited institution is purchased, it “must remain essentially the same institution that the Commission examined when it last reaffirmed accreditation” or be returned to candidacy status in the accreditation process. Jurisdictional requirements have also been tightened: To be accredited by NCACS, an institution must now be both incorporated in one of the member states and have substantial operating presence there—a bar to distance learning institutions that operate outside the NCACS region. The NCACS has also proposed a new set of policy changes that will make it more difficult for traditional institutions to innovate under new management, constricting both innovative investment and access to capital for financially struggling institutions.

Accreditation is a barrier to innovation because it is focused on traditional institutions, and the institutional models that are emerging as a result of e-learning and the proliferation of for-profit schools that cater to a nontraditional demographic are very different. As Kevin Carey of Education Sector notes, the “relatively small and essentially collegial” world of accreditation appears ill-equipped to adapt to the rapidly changing world of higher education that has “radically increased both the size and diversity of the collegiate student body and the number of possible modes of serving them.”

Accreditation is an area where wholesale change is unavoidable. It may make sense to pursue an entirely new regulatory framework for quality control in which accreditation agencies oversee traditional institutions that want to remain under their supervision, and a new oversight body organized around outcome-based standards is formed for more innovative providers, all under a federal umbrella. Since the traditional education sector is facing an increasingly inescapable need for sweeping transformation, the accreditation rules for traditional institutions should be changed to permit more focus on student outcomes and success in meeting workforce needs—the metrics most relevant in any successful transformation of traditional higher education.

Spotlight Innovations

Collegiate Learning Assessment

One of the major deficiencies in higher education is its inability to measure the quality of student learning and determine how much students are actually learning from enrollment to graduation. National and international rankings of universities often rely on subjective measures such as reputation or objective but misleading input measures such as student selectivity or resource expenditures. One potential solution to this problem is the Collegiate Learning Assessment (CLA), launched in 2000 by the Council for Aid to Education. The CLA is built to help institutions assess and improve students’ higher-order thinking skills that are crucial to success in life and the workplace.

The CLA presents students with realistic problems drawn from the arts, sciences, and engineering, complete with a document library. The test requires students to apply what they have learned to new situations and make recommendations. There is no “right” or “wrong” answer; the quality of the response is what matters. Students’ written responses to the tasks are evaluated for their abilities to think critically, reason analytically, solve problems, and communicate clearly and cogently. According to the CLA, this assessment approach is based on applying what students know to new situations and “is designed to be consistent with recent definitions of knowledge that shift away from the simple recall of information to the location and use of appropriate information in real settings.”

To date, more than 500 institutions and 250,000 students have participated in the CLA. A New York Times article noted that “the CLA is light years ahead of the fill-in-the-blanks format of most standardized tests.” The National Commission on the Future of Higher Education recommended the CLA as a useful tool for universities to measure and report value-added in student learning.
The challenges facing higher education cannot be overcome without fundamental transformation brought about by strong institutional leadership coupled with policy reforms that enable private sector-led innovation. The cost spiral will continue without innovations driven by e-learning and incentives built around increasing productivity. The vital goal of dramatically expanding access to higher learning for traditionally underserved populations can only be met by expanding capacity through online learning. Increasing student achievement will require both traditional and for-profit schools to invest more heavily in academic quality and the development of quality measures. Regulations and incentives should be crafted to open the way for the most dynamic innovation, while rendering the true costs, risks, and potential benefits as transparent as possible for prospective students. A healthy education industry, in which price is an accurate and reliable reflection of value, should be the goal of regulators and educators alike.

Reforms are needed in several areas:

Regulations should be aligned with the national policy priority of raising attainment and increasing access. There is broad political consensus that raising attainment and increasing access should be overriding policy goals for higher education. Neither can be achieved if regulators impose complex, unnecessary, and unfair new restrictions on providers trying to satisfy consumer demand for quality education at an affordable price. The right kind of regulation can be helpful for the education industry. Regulations should level the playing field for quality providers that play by the rules and root out bad actors in both the commercial and nonprofit sectors. A more constructive regulatory approach would bring about greater transparency in the costs, risks, and benefits of different education options so that prospective students can make well-informed decisions. Regulations should not seek to shield traditional practices and institutions from legitimate market forces and urgently needed innovation.

The federal and state rules governing interstate education—particularly distance learning—should be rationalized to accommodate the pervasive presence of Internet-based e-learning. The new federal rule directing states to enforce licensing and authorization requirements in each state where online institutions provide education services is an inappropriate and needless restriction on the development of the most promising new model of higher education—distance learning—and could undermine states’ discretion in enforcing their own regulatory schemes. The rule will be particularly stifling for the smaller, newer market entrants that are typically the source of the most dynamic innovations. Like telecommunications, new online learning technology has disrupted the marketplace and made much of the current regulatory structure obsolete. The federal government should look to state leaders to develop common standards and requirements for the authorization of online education providers and the new education formats that are emerging.

Federal quality assurance regulations should be fairly applied to all sectors and should be focused on providing the consumers of education with useful tools to compare institutional performance. The solution to ensuring quality in higher education is not to federalize academic decision-making on issues such as credit hours or to set up complex regimes that put the government in the business of micromanaging students’ educational choices. The key to providing transparency for prospective students around institutional outcomes is allowing them to compare institutions according to the factors of value and quality that are most critical to them. The determinants of value and quality will be different for different populations, but students, parents, and taxpayers should all have access to comparable data on such measures as cost and price, graduation rates, and student learning outcomes. Transparent measures of education outcomes among institutions should allow dynamic and innovative institutions a way to demonstrate that they could deliver a better “product”—in terms of the specific demand they are
trying to satisfy—than other institutions, and a way for traditional institutions to show that they, too, can provide an affordable, quality education that prepares their graduates for success.

**Accreditation should be reformed to focus on educational outcomes and make it easier for new providers to enter postsecondary education.** Accreditation has long been used as a proxy for quality, but there is ample evidence that academic rigor and student learning has declined. The current system of accreditation does not ensure educational excellence and can be used to protect failing institutions and programs from competition and accountability. In addition, accreditors impose a labor- and paper-intensive burden on traditional college and universities that is often divorced from an assessment of educational outcomes. The current subjective and antiquated system of accreditation is ill-suited for the new world of e-learning, with diverse students taking many different educational paths and learning through many different channels. The entire model of accreditation should be overhauled to permit more educational entrepreneurship and a greater focus on objective institutional and program outcomes.

**Financing of higher education should reward productivity and performance.** Current state and federal financing of education reinforces the importance of input metrics such as class hours and numbers of students—measures unrelated to productivity or performance. State funding should be redirected to create incentives for schools that make education more affordable while increasing or maintaining access and quality. The complex federal system of student aid, which also provides little incentive to universities to hold down costs and improve productivity, should also be reformed.

The question is not whether higher education will be transformed, but how. Advances in communications and information technology have begun disrupting the business models of traditional colleges and universities by creating a global market for knowledge delivered in new ways and in new formats. But these technologies can also save higher education by helping it become far more productive than it is today.

Many of the most promising innovations are coming from private ventures and grassroots entrepreneurs who are rethinking established practices, finding new and flexible ways to serve underserved populations, and improving educational outcomes. Whether this new wave of innovation is allowed to flourish and help solve higher education’s productivity crisis is up to policymakers and higher education leaders. If innovation is stifled through restrictive regulations on e-learning and other innovations, discouraged through funding that fails to reward quality and outcomes, or simply thwarted by complacency within traditional institutions, then the U.S. is likely to lose its edge to faster-moving international competitors.

The U.S. higher education system has long been one of the country’s crown jewels. With the right leadership and policy choices, it will remain so.

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**SPOTLIGHT INNOVATIONS**

**Moodle**

One of the major breakthroughs in bringing more efficiency to the classroom and increasing student engagement is the development of learning management systems. These systems use Web-based technology that allows teachers to create and deliver content, monitor student participation, and assess student performance. One innovator in this field is Moodle, an open source e-learning platform that grew out of the Ph.D. thesis of Australian Martin Dougiamas. As he writes on his website, “Unfortunately, the subject of my thesis, Moodle, became popular beyond my wildest dreams and I’ve been somewhat preoccupied with it to the detriment of my final thesis-writing year.”

As of March 2011, Moodle, which stands for Modular Object-Oriented Dynamic Learning Environment, now has more than 41 million users in 213 countries. The software platform helps teachers and schools create online versions of their courses. Moodle has many of the features of the typical e-learning platform, such as electronic versions of course material, multimedia capability, support for examinations, assessments, grading, content delivery, and calendars. But unlike other learning platforms, Moodle embraces an open source philosophy and assures its users that, regardless of the ownership of the company, the software will remain free to the public for use and modification. Because it is open source, with more than a million registered users exchanging ideas and programming code, it is continuously evolving.

Moodle has features that allow it to scale to very large deployments and hundreds of thousands of students, yet it can also be used for a primary school or an education hobbyist. Many institutions use it as their platform to conduct fully online courses, while some use it simply to augment face-to-face courses. Because Moodle is free, universities can spend more on support and customization for their faculty’s needs.
About the Authors

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Endnotes


ii While private sector innovation and collaboration is also essential in helping commercialized university research, it is not the focus of this paper.


12 The target date for reaching 60% attainment differs among advocates. The Obama administration has called for reaching the goal by 2020. The Lumina Foundation, one the most influential nonprofits in higher education, has set 2025 as the target date.


15 Ibid.
16 The proposed federal regulations include the “program integrity” rules released by the Department of Education in 2010 and scheduled to take effect July 1, 2011. These rules are discussed in Part II.


22 Ibid.


Business case studies on “disruptive innovations” show that if the innovation in question can provide the core customers of the traditional players with a better product at a cheaper price, then the entrants whose business model is based on the disruptive innovation will force traditional players out of the market entirely. Typically the only exceptions are where the traditional institution forms an autonomous unit that is totally free to establish its own business model and compete for customers against the parent institution—even to the extent of eventually becoming the dominant power within the institution.


Note: The Department of Education has stated they will not enforce state authorization rules until July 1, 2014, as long as institutions are making good faith efforts to identify and obtain the necessary authorization. Letter from Eduardo Ochoa, Assistant Secretary of Education for Postsecondary Education, April 20, 2011.

Letter from Eduardo Ochoa, Assistant Secretary of Education for Postsecondary Education, March 18, 2011.


Ibid.