



# Disrupting College

How Disruptive Innovation Can Deliver Quality and Affordability to Postsecondary Education

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# Executive summary

America is in crisis. Employers say paradoxically they cannot find the right people to fill jobs even though the country is facing its highest unemployment rates in a generation. Competition with a rising China and India and their vast populations lend urgency to the need for the country as a whole to do a better job of educating its citizens.

The institutions to which the country would turn to help tackle this challenge—its colleges and universities—are facing a crisis of their own. There is a rising chorus of doubts about how much the institutions of higher education that have been such a part of the country's past successes can be a part of the answer. Graduation rates have stagnated despite a long track record of serving increasing numbers of students over the past half century. None of America's higher education institutions have ever served a large percentage of our citizens—many from low-income, African-American, and Hispanic families. The institutions are now increasingly beset by financial difficulties, and the recent financial meltdown is but a shadow of what is to come. The further looming state budget crises spell difficult times for many colleges and universities. And there is a growing acknowledgement that many American universities' prestige came not from being the best at educating, but from being the best at research and from being selective and accepting the best and brightest—which all institutions have mimicked.

Our country's dominant higher education policies have focused on expanding access for more than half a century—allowing more students to afford higher education. Yet changing circumstances mandate that we shift the focus of higher education policy away from how to enable more students to afford higher education to how we can make a *quality* postsecondary education *affordable*. The challenge before the country also mandates a new definition of quality from the perspective of students—so that the education is valuable to them and that through it they improve their lives and thus improve the country's fortunes, too. And if a postsecondary education is fundamentally affordable—meaning lower in cost, not just price—this will also answer the question of how to extend access by enabling students to afford a higher education.

This report tackles these questions by treating the industry’s challenges, at their core, as problems of managing innovation effectively. It examines the industry of higher education through the lenses of the theories that have emerged from our research on innovation. A theory, by its very nature, is forward looking. It is a statement of what causes what and why, so a good theory allows you to predict the result of taking a certain action ahead of time. The theories employed in this paper were built inductively and have been tested deductively across categories and through anomalies. They have been employed to make innovation far more predictable in a range of sectors, from the for-profit to the nonprofit to the governmental and from the highly regulated to the deregulated.

This report does not provide “the answer” to fixing higher education. The problems confronting the country and its institutions of higher education are multifaceted and complex in nature. They defy an easy fix, especially given the diversity of higher education institutions in this country that are often in very different circumstances. Instead, our hope is that shining these challenges through the lens of these theories on innovation will provide some insights into how we can move forward and a language that allows people to come together to frame these challenges in ways that will create a much higher chance of success.

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## The disruptive innovation of online learning

The theory of disruptive innovation has significant explanatory power in thinking through the challenges and changes confronting higher education. Disruptive innovation is the process by which a sector that has previously served only a limited few because its products and services were complicated, expensive, and inaccessible, is transformed into one whose products and services are simple, affordable, and convenient and serves many no matter their wealth or expertise. The new innovation does so by redefining quality in a simple and often disparaged application at first and then gradually improves such that it takes more and more market share over time as it becomes able to tackle more complicated problems.

A disruptive innovation has a couple key elements or enablers that are particularly salient to the future of higher education. The first is a technology enabler. This allows the innovation, which starts in a simple application and competes first against nonconsumption—by serving people who were not able to be served or were not desirable to serve—to be “upwardly scalable” and improve year over year without replicating the cost structure of the old products and services it gradually replaces.

Online learning appears to be this technology enabler for higher education. It is for the first time disrupting higher education—and indeed helps explain much of the rapid growth in the up-start for-profit higher education sector over the last 10 years, even as many colleges and universities have struggled financially and had to cut back. Roughly 10 percent of students in 2003 took at least one online course. That fraction grew to 25 percent in 2008, was nearly 30 percent in the fall of 2009, and we project it will be 50 percent in 2014.<sup>1</sup>

The second element of a disruptive innovation is a business model innovation. Disruptive innovations are plugged into new models, which allow organizations to serve a job to be done in the lives of customers at this new lower price point or in this new, far more convenient fashion without extra cost. Plugging a disruptive innovation into an existing business model never results in transformation of the model; instead, the existing model co-opts the innovation to sustain how it operates. What this means is that, generally speaking, the disruption of higher education at public universities will likely need to be managed at the level of state systems of higher education, not at the level of the individual institutions, which will struggle to evolve. And if private universities are able to navigate this disruptive transition, they will have to do so by creating autonomous business units.

Furthermore, what we see when we examine the existing institutions of higher education through this lens is that for decades now they have offered multiple value propositions around knowledge creation (research), knowledge proliferation and learning (teaching), and preparation for life and careers. They have as a result become confluences of the three generic types of business models—solution shops, value-adding process businesses, and facilitated user networks. This has resulted in extraordinarily complex—some might say confused—institutions where there are significant coordinative overhead costs that take resources away from research and teaching.

A typical state university today is the equivalent of having merged consulting firm McKinsey with Whirlpool's manufacturing operations and Northwestern Mutual Life Insurance Company: three fundamentally different and incompatible business models all housed within the same organization. Using online learning in a new business model focused exclusively on teaching and learning, not research—and focused on highly structured programs targeted at preparation for careers—has meanwhile given several organizations a significant cost advantage and allowed them to grow rapidly.

This emerging disruptive innovation also presents an opportunity to rethink many of the age-old assumptions about higher education—its processes, where it happens, and what its goals are—and to use the disruptive start-up organizations to create institutions that operate very differently and more appropriately to address the country’s challenges. The first of these assumptions is that prestige is the domain of institutions that accept the best students and do the best research. Knowledge was scarce during the rise of America’s top universities and colleges, which implied that research and teaching should be coupled tightly. Yet that is no longer the case, as the amount of information on the Internet now attests. Online learning can enable learning to happen in a variety of contexts, locations, and times; it allows for a transformation of curriculum and learning. And tightly structured programs that do not offer students the ability to chart their own paths but are laser focused on preparing students for a career will often be beneficial both for mitigating costs and improving student outcomes for those historically poorly served by college. Policy and rankings should therefore not discourage their creation.

This emerging disruptive innovation also allows for an escape from the policies that focus on credit hours and seat time to one that ties progression to competency and mastery. Online learning courses can easily embed actionable assessments and allow students to accelerate past concepts and skills they understand and have mastered and instead focus their time where they most need help at the level most appropriate for them. Time is naturally a variable in online learning, so these courses can instead hold outcomes constant—and outcomes will be a more appropriate measure for judging students and institutions. Shifting policy to focus on outcomes rather than the build up of ancillary services for their own sake will encourage these services to wrap around and support each institution’s core value proposition and its students’ core jobs to be done.

Online learning is a natural medium and platform for many of these changes. And using the old assumptions and policies to measure its disruptive emergence is inappropriate and could hamstring the innovations so that they fail in their promise to deliver a more affordable, higher quality system for many more of the country’s population.

Several recommendations for policy makers flow from these observations. Policy makers should:

- **Eliminate barriers that block disruptive innovations and partner with the innovators to provide better educational opportunities.** It is critical to promote new, autonomous business models that have the freedom to re-imagine higher

education. Policymakers should not frame the disruptive players as threats, and instead see them as opportunities to bring affordable education to more people.

- **Remove barriers that judge institutions based on their inputs such as seat time, credit hours, and student-faculty ratios.** Too many of the disruptive innovations in higher education still focus on inputs and are time based. Policymakers should open up the policy environment to allow more institutions to use online education to move toward next-generation learning models focused around things such as competency-based learning with actionable assessments, not just make the traditional model of education more convenient.
- **Not focus on degree attainment as the sole measure of success.** Degrees are a proxy for skill attainment, but they are far from a perfect one, as seen in the amount of retraining that employers do as well as the current unemployment figures. Real outcomes and real mastery—as often shown in work portfolios for example—are more important.
- **Fund higher education with the aim of increasing quality and decreasing cost.** Policymakers should change access to federal funding from the all-or-nothing one of today to a sliding scale based on how one does relative to its peers on these dimensions. We call the formula we propose to jumpstart this policy a QV Index. The QV Index formula is composed of the 90-day hire rate plus change in salary over some amount of time divided by total revenue per conferral plus retrospective student satisfaction plus the cohort repayment rate indexed to credit scores.
- **Recognize the continued important of research institutions.** These institutions of higher education remain vital—indeed those that focus on research as well as those that train people for the academy will still be critically important for the country’s future. Most of America’s elite colleges and universities will continue to fulfill this job. But we should no longer force those institutions that are focused on teaching and learning to compete on the same metrics and play by the same rules. Pushing these institutions to adopt a mission of knowledge creation has created institutions that have two conflated value propositions and business models—and added significant overhead costs. We need institutions focused solely on knowledge proliferation—and need to regard those that do a good job on this dimension as being of high quality at what they were meant to do.

Recommendations for existing institutions of higher education also emerge from an understanding of disruptive innovation. These colleges and universities should:

- **Apply the correct business model for the task.** These institutions have conflated value propositions and business models, which creates significant, unsustainable overhead costs.
- **Drive the disruptive innovation.** Some institutions have this opportunity, but to do so, they need to set up an autonomous business model unencumbered by their existing processes and priorities. They can leverage their existing fixed resources in this autonomous model to give themselves a cost advantage over what to this point have been the low-cost disruptive innovators.
- **Develop a strategy of focus.** The historical strategy of trying to be great at everything and mimic institutions such as Harvard is not a viable strategy going forward.
- **Frame online learning as a sustaining innovation.** Institutions can use this new technology to disrupt the existing classroom model to extend convenience to many more students as well as provide a better learning experience.

American higher education is facing complex challenges, but there is significant reason for hope. Understanding the causal forces at play that have led us to where we are now and how these same forces will continue to interact and play out is critical to fashioning a dialogue that can shape the road ahead. Policymakers and heads of universities can use this understanding to come together to harness these forces and put in place the conditions to foster innovations that drive quality for students—and allow both the students and the country to move toward a much brighter future.

# The shift in higher education

The United States is facing its highest unemployment rates in a generation. Yet many employers say they cannot find qualified Americans to hire.<sup>2</sup> The country's higher education institutions are seemingly a natural partner to help solve this problem, but they are facing their own set of problems. The majority of the world's top-ranked universities remain in the United States according to most rankings as well as public perception around the world.<sup>3</sup> Yet stagnation, financial struggles, and a rising chorus that questions their actual quality and what value they provide students increasingly besets the industry as a whole. There is doubt about whether the institutions as we have traditionally known them can be a part of the answer to America's problems.

Challenges from abroad make the answer to this question all the more pressing. The United States has maintained its technological leadership in the world in significant part because our universities have attracted the highest-potential engineers and scientists from throughout the globe.<sup>4</sup> These graduates found that America was an attractive home for them, as it was filled with opportunity to practice their professions and start the companies that have been the engine of America's prosperity. This structural advantage is ceasing to exist.

As the economies of Israel, China, and India prosper, fewer of their best technologists feel the need to remain in, or even come to, the United States to pursue their career opportunities. The United States cannot afford to waste any talent or limit any of its citizens from realizing their fullest human potential given China and India's sizable population. The United States population had the largest percentage of adults between the ages of 25 to 34 with a high school diploma and college degree 30 years ago, but university-level graduation rates across OECD countries have nearly doubled since then, and they have largely stagnated in the United States. The percentage of U.S. adults in that same age range with college degrees now lags behind that of many countries.<sup>5</sup>

The United States' dominant higher education policies during the past 50 years have focused on expanding access—allowing more students to afford higher education through such mechanisms as Pell Grants, student loans, and subsidies. These policies have had remarkable success, as the number of students enrolled in postsecondary institutions in the United States has tripled since 1965. Expanding access is still important. But as the above numbers illustrate, the strategy that has worked so well in the past has reached its limits. We can't get to where we need to go from where we have been.

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## The economic crisis in traditional higher education

Many of America's colleges and universities—hereafter called “traditional universities”—are plunging into economic crisis despite consistent increases in overall spending across higher education.<sup>6</sup> Although the cancerous 4.9 percent annual cost increases plaguing the health care industry—9.8 percent in nominal terms—have grabbed the headlines most recently,<sup>7</sup> the *prices* in higher education have been increasing even more rapidly as of late.

Undergraduate tuition has risen dramatically—at a 6.3 percent annual clip for nearly the last three decades—or 10 percent in nominal terms.<sup>8</sup> According to the American Institute for Economic Research, the price of college tuition and fees increased 274.7 percent from 1990 to 2009, which was a faster increase than the price of any basket of goods and services outside of “cigarettes and other tobacco products.” The increase in the price of college ranks higher than even “hospital services, nursing homes, and adult day care,” which ticked in at a 245 percent increase over the same time period, whereas the overall Consumer Price Index increased 71 percent.<sup>9</sup> The increase in the true cost of higher education has actually been hidden from many students and families over the years because gifts from alumni, earnings from private university endowments, subsidies from state tax revenues for public universities, and federal subsidies for students have been used to mitigate some costs. But universities are exhausting these mechanisms.

Endowments that took decades to build were decimated in 2008. State-supported schools have increasingly been shifting the burden of tuition to students and their families over the last 15 years,<sup>10</sup> but students and their families were largely shielded from this until 2004, as aid increased so rapidly that the net price to students fell on average. Offsetting government dollars have not kept up as of late.<sup>11</sup> State universities have felt the budget crunch and resorted to all sorts of devices to

try and stay afloat including cutting back on the number of students they enroll—at the very time the country needs more of its population to be educated. Severe governmental budget crises have only exacerbated the trend of shifting the costs of higher education to students and their families, which is likely to be far more intense in the future.

Federal, state, and local governments have enormous obligations to fund the health care costs of their current and retired employees—as well as the aging baby boomers.<sup>12</sup> The appetite of these health care budgets will be far more difficult for lawmakers to suppress than spending on higher education, and we can say with some confidence that past budgetary crises in higher education are but a shadow of things to come. Even as universities have raised tuition prices year over year, as a whole they are facing economic models that are breaking. This means that these traditional institutions are unlikely to reach the populations we have not historically been able to educate well in the past—those who are all too often from low-income, African-American, and Hispanic populations.

These changing circumstances mandate that we shift the focus of higher education policy away from how we can enable more students to afford higher education no matter the cost to how we can make a quality postsecondary education affordable. This mandates a new definition of quality from the point of view of the students—so that the education is valuable to them by improving their lives along with the country's fortunes. If a postsecondary education is fundamentally affordable—meaning lower in cost, not just price—this will also answer the old question of extending access by enabling students to afford a higher education.

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## The rise of a new educational model

Even as the traditional universities' economic models are showing themselves to be increasingly unviable, there is another group of universities whose financial health is strong and their enrollments are booming.<sup>13</sup> This group is made up predominantly of the for-profit universities, although they are certainly not the only ones in this group. The for-profit universities have increasingly provided capacity for the higher education sector at a time when educating more students is crucial. They have grown three to four times faster than the public and not-for-profit universities over the last decade. And the for-profit sector now serves 9 percent of all postsecondary students in the United States, up from a mere fraction of a percent a decade ago.<sup>14</sup>

The brands of these schools are weak. Other than student loan assistance and federal Pell grants, they receive little subsidy from government. They do not discount their prices and mask the full cost of the education like at most traditional universities, so students bear the full brunt of the costs through tuition—although the relatively low debt repayment rates at these universities does suggest that the government is still seriously subsidizing the costs of the education over a longer time horizon. And yet they are rising from the crises that beset conventional universities. Students are flocking to fill their literal and virtual classrooms, and they are thriving financially.<sup>15</sup>

The fastest-growing for-profit universities have driven innovation with online learning more aggressively than their not-for-profit and public university counterparts—and their growth has coincided with the explosion in enrollments in online learning, which itself grew 17 percent from 2007 to 2008. Twenty-five percent of students took at least one online course in 2008.<sup>16</sup> How can we square this explosion in enrollment and healthy finances with the troubled budgets at traditional universities, many of which are cutting back the numbers of students they serve?

The success of these online attackers and the crisis among many of higher education's traditional institutions may seem unusual, but it is far from unique. We are seeing steps in a process called disruptive innovation that has occurred in industry after industry. It is the process by which products and services, which at one point were so expensive, complicated, and inconvenient that only a small fraction of people could access them, become transformed into ones that are simpler, more convenient, lower in cost, and far more accessible.

What the theory of disruptive innovation suggests is that the business model of many traditional colleges and universities is broken. Their collapse is so fundamental that it cannot be stanchied by improving the financial performance of endowment investments, tapping wealthy alumni donors more effectively, or collecting more tax dollars from the public. There needs to be a new model. The only question is whether traditional universities will undertake this replacement themselves, or whether community colleges, for-profit universities, and other entrant organizations aggressively using online learning will do it instead—and ultimately grow to replace many of today's traditional institutions.

This emerging disruption, still in its early stages, offers an opportunity to answer the challenge posed above: to redefine the meaning of quality in higher education and make a quality education fundamentally affordable. The current traditional

institutions that dominate the higher education landscape do what they were built to do very well. The most elite of them will even likely maintain that elite position and continue to do the things for which they were built. It is not that the traditional universities have failed, but instead that they have succeeded so spectacularly, as we explain below.

The problem is that we are now asking them to do something for which they were not built. Traditional universities were not designed to address a metric of quality around effectively serving all students around their distinct needs and desired jobs outside of the academy, no matter their incoming academic achievement. Asking universities to do this represents a seismic shift in how society, broadly speaking, has judged high quality—moving away from a focus on research and knowledge creation and instead moving toward a focus on learning and knowledge proliferation. Indeed, there is a significant and legitimate question of whether many of the institutions in this first wave of educational disruptive innovation will be the ones to make the transformation given that they too have come of age when student outcomes were not prized by the mechanisms and policies through which they received funds.

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### About the Center for American Progress

The Center for American Progress is a nonpartisan research and educational institute dedicated to promoting a strong, just and free America that ensures opportunity for all. We believe that Americans are bound together by a common commitment to these values and we aspire to ensure that our national policies reflect these values.

We work to find progressive and pragmatic solutions to significant domestic and international problems and develop policy proposals that foster a government that is “of the people, by the people, and for the people.”

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### About Innosight Institute

Innosight Institute’s Education Practice’s mission is to apply Harvard Business School Professor Clayton Christensen’s theories of disruptive innovation to develop and promote solutions to the problems of education. The primary focus currently is the U.S. K-12 public education system, although the Practice also works on the problems confronting higher education and education outside the U.S.

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Center for American Progress



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