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Tottering Ivory Towers

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The higher education business should look to earlier episodes of technological tumult to gauge its future.

Board meetings of college trustees can be depressing affairs these days. Simply passing on rising costs—some of them externally imposed, others the harvest of bad or avaricious executive judgments—to compliant customers is rapidly becoming a thing of the past. Prospective students and their anxious parents are increasingly resistant to tuition hikes and crushing debt. Young Americans realize that a degree no longer ensures a full-time job related to their major; indeed, employer surveys indicate that more than half of America's graduates cannot find full-time work in their primary field of study. True, some majors, such as engineering, assure a good return on investment, but others, like psychology, do not. Meanwhile, the ability of colleges to mask the real-world benefits of their degrees is eroding fast thanks to scorecards from *U.S. News*, *Kiplinger's*, and *Forbes*. Families now incline to toss the glossy brochures and do the math.

Even more worrying and confusing to college presidents and trustees is the challenge coming from purveyors of online education products, from both for-profit companies and some of their own kind. In particular, the appearance of “massive open online courses” (MOOCs) over the past few years has thrown many of them for a loop. As others have warned, more such innovations are in the works.¹

Still, it's hard for most college leaders to believe that the “sage on a stage” business model truly could be doomed. It has lasted for more than 2,000 years, after all, with just a few minor modifications like PowerPoint, email, and online research. However, if today's college leaders—even at the Ivies—believe they can merely tweak their business models to carry them into the future, then they are in for an even more unpleasant surprise. They should ponder the still recent experience of the music industry, film and television, booksellers, and news media. If they did, they would soon recognize that the higher education

industry is encountering a multi-pronged and existential threat composed of successive waves of disruptive innovation. This disruption will force top-to-bottom changes in the very concept of higher education and its relationship with the broader economy.

Change in an industry can be both rapid and brutal, especially when new technology is involved. A century ago, harness- and saddle-makers could tweak their business models all they liked, but they were flattened nevertheless by the automobile industry. Take the convulsions in the radio industry triggered by the invention of the transistor. From the 1930s to the 1950s the vacuum-tube radio was an expensive piece of furniture in the living rooms of middle-class homes throughout America and Western Europe. In the typical family, father controlled the programming, and his choice likely was some combination of sports, news, and big band music. In England, where I was raised, we kids spent most evenings enduring the syrupy strains of Mantovani, Britain's rather lame answer to Glenn Miller.

But in 1955 Sony of Japan introduced the mass-produced battery transistor radio. It was cheap, plastic, and the sound was, well, pretty awful. But that didn't matter. It wasn't aimed at dad. It was marketed to teenagers, a customer base completely ignored by firms like RCA and the makers of high-quality vacuum-tube technology. Crackly sound was good enough for rock 'n' roll, especially if one listened to it under the bed covers rather than in the living room. But Sony didn't stop there. It steadily improved the technology while still focusing on its new listeners. Within a decade the transistor radio had been perfected into a direct competitor to RCA and the old technology, delivering similar quality at a fraction of the size and cost. That combination of comparable quality and sharply lower cost enabled the transistor radio to invade the living room market, crushing established industry leaders and transforming the family sound system.

Or think about the disruption of the newspaper industry. The old business model, essentially unchanged for 200 years, rested on three legs. The first of these involved a large capital investment in a network of quality journalists and news collectors, with papers like the *New York Times* or the *London Times* maintaining bureaus worldwide, feeding stories to their own mastheads and selling features to networks of regional papers. Smaller outlets couldn't possibly challenge such behemoths. The second leg was cross-subsidization of this costly news collection and feature-writing through advertising and classifieds, keeping copy prices down, circulation up, and advertisers happy. And third, in many markets the high-entry costs of starting a newspaper (large printing presses, distribution networks, and so on) often meant papers enjoyed a regional monopoly (or sometimes separate morning and afternoon papers), making overall industry economics even more stable.

Then the internet arrived. Three convulsions quickly followed. Suddenly breaking news in print became available 24/7 from a multitude of sources. True, the information on this airline crash or that African war was not of the same quality as a *New York Times* story, but for many it was good enough. There were words and pictures, and you didn't have to wait until tomorrow morning for them. Like the transistor, internet news appealed to new customers who were usually interested in good-enough news as long as it was cheap and immediate. And just like the transistor radio, as internet news improved in quality, it began to compete directly for traditional newspaper customers.

The second convulsion followed the appearance of new kinds of news intermediaries like the *Huffington Post*. These new ventures aggregated news put out by newspaper bureaus and hired their own young, low-paid journalists to package and customize that news and opinion for specific cadres of consumers. Tracking software and other technologies permitted such customization at little or no cost, but this was something most printed newspapers couldn't do.

Meanwhile, a third front opened up thanks to online advertising and free or low-cost information lists, such as Craigslist. These lists cut deep into the revenue source that had permitted newspaper cross-subsidization and hence profits.

The newspaper industry is still reeling from this triple whammy as shell-shocked newspaper barons scramble to find new business models that can withstand this new technology and upstart news suppliers. Like many industries facing such disruption, some newspapers have tried to incorporate the new technology to spruce up or protect their existing business model. For instance, the *New York Times* and many other prestige newspapers set up online versions of the paper with paywalls denying access to some content for non-paying readers. Interestingly, the strategies of some universities facing online competition have been similar. The university equivalent of the newspaper paywall strategy, pursued especially by prestige institutions like Harvard and Yale, has been to offer free glimpses of popular academic performers through a publicly available program, such as Harvard Extension's offering of Michael Sandel's famed course on justice, while maintaining tuition-based degrees.

Yet newspapers quickly discovered that the paywall strategy only works well if the content offers more value than regular news and opinion, such as one can find at the *Wall Street Journal* or the *Economist*. Many universities have copied that strategy, using a paywall for casual, non-student customers who want supplementary course content and feedback. They restrict the valuable branded

degree credit only to those willing to pay big tuition bucks. Watching Sandel is free, but the cost of getting Harvard credit for his class is comparable to regular tuition.

Nevertheless, college presidents should note that the paywall strategy hasn't stopped U.S. newspaper revenues from plunging to half their 2000 levels nor has it kept large newspapers like the *Boston Globe* off the auction block. Other papers have shut down entirely. Even the venerable *Washington Post* survived for only a few years with cross-subsidies from the other profitable commercial ventures in its holding company. Today it's a side-project for Amazon's Jeff Bezos.

In practice, the strategy of trying to absorb competing services rarely does more than buy time. Experts on disruptive innovation, like Harvard Business School's Clay Christensen, point to typical patterns and experiences that should be dire warnings for university leaders hoping to ride out change.

One such pattern is that the entrepreneurs with new technologies and new business models typically aim first at customers who have been ignored or underserved by traditional industry leaders. That makes it easy for the current industry leaders to ignore them—a critical mistake—leaving the upstarts to occupy a sector of the market of little interest to industry leaders. Sony went after teenagers, who typically are not in the market for expensive electronic furniture or crystal-clear, concert-quality sound. Online news aggregators first aimed at busy multitaskers sitting at their computers, and at young people with distinct tastes and only casual interest in the news. Their targeted customer initially was not the lawyer in Brooklyn or in London who was interested in reading a three-part, prize-winning article on the Middle East or relaxing with the crossword.

The same has been true in higher education. Early versions of online courses appealed to students who could not easily maintain a regular schedule, or who needed more time to understand material. Major universities are beginning to introduce more blended online courses into their regular programs as a tweak to their offerings, but most see these as an added benefit for their traditional students rather than as tools to build completely new markets for nontraditional customers, such as part-timers or would-be students who simply cannot afford a traditional degree.

This attitude is reinforced by another common feature of the new products that will eventually disrupt an industry's primary market: Initially, they aren't very good. Sony's cheap, staticky, and easily breakable plastic radios seemed safe to ignore. The Apple I, introduced in 1976, hardly seemed a harbinger of doom to the managers of IBM's mainframe monsters. So it is no surprise today to read

college presidents denigrating MOOCs and the cheap, no-frills degrees being rolled out in Texas and Florida. You get what you pay for! Look at the huge non-completion rate for MOOCs! Online interaction can't replicate the true college experience! (Even if the tab for the latter runs in the tens of thousands of dollars.)

Overlooked in this slough of disdain, however, is an important stage of disruptive innovation. Left alone in markets largely ignored by industry leaders, upstart innovators can refine their products and introduce new versions, steadily improving quality while retaining the price advantage and other features that make them attractive to underserved customers. It is that period of refinement that eventually produces the real giant-killers. New technology and its adaptation to markets proceeds in waves of innovation. The clunky Apple I sold just a couple hundred units, but the elegant Macintosh, introduced twenty years later, ransacked the computing industry.

That's why the shortcomings of MOOCs today should be of little comfort to the higher education establishment. The *New York Times* was indeed premature to declare 2012 to be "The Year of the MOOC", because the model is still in a feverish period of refinement and experimentation all over the world. For example, Britain's Open University—itself a pathbreaker launched in 1971 with a television and radio platform—has now created a MOOC called Futurelearn with university partners and non-university partners such as the renowned British Museum. France's École Polytechnique is offering MOOCs in French. Educators all over Africa and in Brazil see MOOCs as the teaching equivalent of telemedicine. These business model innovations allow a new technology to leapfrog over old technologies and business models, as the cellphone has done over the landline, making new communications networks widely available in the once telephone-starved countries of eastern Europe or Africa, or in the streets of Cairo.

The MOOC is evolving quickly. Coursera is among the MOOC providers exploring intriguing innovations such as peer grading to measure individual student performance at very low cost. Meanwhile, Udacity has started offering MOOCs for credit, as well as a complete online MOOC-based master's degree in partnership with the Georgia Institute of Technology, one of America's top technical schools, for less than \$7,000. It is these second-wave and subsequent developments that will become the true Macintosh-style devastating threats to expensive, top-heavy traditional higher education and its business model.

Low-cost ventures of so-so quality also pose a potentially devastating threat by undermining cross-subsidies in a traditional business model. Website advertising and Craigslist were deadly to the economics of newspapers because experienced journalists and news bureaus need cross subsidies to survive, just

as full-service hospitals do. The reason why getting a few stitches in the ER can cost a small fortune is that ER procedures make possible high-quality care in low-revenue generating areas such as pediatrics. That, in turn, is why the growth of walk-in clinics and other providers offering low prices for low-cost services is such a threat to big hospitals. The breakup of such cross-subsidized services is often referred to as “unbundling”, and it is a worrying phenomenon for “full-service” providers in any industry. This is precisely what we are seeing in higher education.

As with hospitals and newspapers, bricks-and-mortar institutions of higher education are particularly vulnerable to unbundling. Universities are modular institutions, and lower-cost competitors can easily siphon off customers and revenue from individual modules. For instance, universities are partly a hotel and food service industry, and partly sports and entertainment centers. They have invested heavily in buildings and services that package these elements together at essentially one price. But this makes them vulnerable to competitors that find much less expensive ways to provide discrete modules like housing or even basic first-year classes—or that simply shed costly facilities like libraries or student centers, as online colleges have done.

Indeed, the most challenging and decisive feature of unbundling and competition for the low-cost parts of the college bundle of services comes from the fact that the price of academic information is falling nearly to zero. Why pay a ton of money to sit with 300 other freshmen, listening to a Nobel Prize winner you will never actually meet on campus, when you have access to everything he has written, maybe even video versions of his lectures, free of charge on the internet? Johns Hopkins University professor Jakub Grygiel grumbles that such online courses lack the illuminating back and forth of the live seminar.² That was true just months ago, but it’s fast becoming an exaggeration. Virtual class exchanges on Blackboard or GoToMeeting, or sometimes even Twitter, can be as stimulating as in-person seminars—and they come complete with links to citations and a record of the conversation that can be perused later.

But what about the social “college experience”? Well maybe that can be unbundled, too. Does undergraduate college have to last four years, or could the residential, networking, or sports elements occupy just part of the period of study at much less total cost? Britain’s Open University has for years brought students on campus for just a few weeks each year. It retains a similar model today using online classes instead of its original televised courses. Yet it is number three in the UK for student satisfaction, tied with Oxford. Moreover, for many young people today online networking provides the relationship of choice for professional purposes, not just for social life. For them, Facebook, LinkedIn,

and texting can be a more efficient and even more personal way of building and maintaining future career contacts than paying for a dorm or hanging out at a college gym.

While HBS's Christensen and others focus mainly on technological and business-model developments that lead to disruption, it's important not to overlook the importance of public policy as a spur or an obstacle to fundamental change in an industry. Sometimes a law or regulatory decision can trigger dramatic change.

Consider in this light the Federal Communications Commission's 1976 Execunet decision that deregulated long-distance telephone service in the United States by ending AT&T's monopoly. That led to the invasion of the U.S. business and residential telephone market by firms that previously had been restricted to small markets. For instance, the Southern Pacific Railroad had maintained an extensive microwave communications system along its rights of way for its own benefit and for some private business lines. But regulation had prevented the company from using its internal network as the backbone for a new line of business offering telephone service. The FCC decision changed all that and allowed it, along with companies like MCI, to offer telephone service in direct competition with AT&T. The new company's name? Southern Pacific Railroad Internal Network Telecommunications—SPRINT. It has done pretty well.

Sweeping change in higher education is also being held back, at least temporarily, by regulation. The biggest impediment is accreditation. Portrayed as upholding quality standards, today the accreditation of colleges and universities is actually little more than a protectionist barrier benefitting existing institutions. Federal student loans are only available for accredited institutions. That means many new education ventures feel they must apply for accreditation, which can be an expensive, time-consuming, and uncertain process.

It is unlikely that today's colleges and universities will be able to hide behind accreditation for long, however. For one thing, there is growing interest in new ways of measuring the quality of a degree. The variety of scorecards now available, for instance, means students and their parents have much better and more granular measures of quality than accreditation provides. For another, employers are gradually making greater use of independent, competency-based measures and credentialed courses rather than relying on accredited degrees and credit hours (derided as "seat time" by its critics). Try getting a job in computer network management if you can't show which Microsoft Certified Systems Engineer courses you have passed. Meanwhile, Udacity is partnering with Google, AT&T, and other technology firms in an "Open Education

Alliance” to provide top-level technical skills. Nevertheless, when it comes to alternatives to accreditation, the United States is generally playing catch-up with some other countries. In Britain, for instance, students can earn employer-union certified City & Guilds qualifications while studying at almost any institution, and there are standard competency measures in a variety of professional fields.

Federal action may be on the way. The Obama Administration is already encouraging colleges to seek approval for degree programs that are based on competency measures rather than credit hours. And legislation now circulating on Capitol Hill would allow states to create alternative forms of accreditation, possibly in conjunction with business groups, which would essentially break open the traditional system and undercut the power of traditional universities.

Big change will happen in America when employers start routinely recognizing alternatives to traditional degrees at traditional, accredited universities. That may not be too long in coming. Employers are increasingly frustrated with graduates who don't demonstrate the skills their transcripts suggest they have. In a *New York Times* interview, Google's senior vice president for people operations, Laszlo Bock, admitted that transcripts, test scores, and even degrees are less useful than other data as predictors of employee success.³ In this environment, an industry-led move to create a more dependable measure of knowledge and ability than a transcript will become increasingly attractive.

When the process of innovation moves in from the edges of higher education and begins to disrupt the business models of leading public and private institutions, what will higher education look like? Considering the pattern in other industries, how should existing colleges and universities respond to the threat to their survival? Can they respond?

The critical lesson from the transformation of other industries is that it is likely to be a disastrous mistake to assume you can just tweak an existing business model and be all right. That can work only for a while. When online airline booking was new but technically challenging to use, travel agents adopted it to make their jobs easier and more profitable. But once it became user-friendly it destroyed their jobs, more or less the same way that essentially free information about stocks and bonds destroyed the traditional careers of stock dealers and bond salesmen.

In education even the most established and financially secure institutions will have to revamp their business models to survive. Yale, MIT, and Harvard, among the high-status schools, do seem to be taking online education innovations seriously, experimenting with special course offerings through extension programs and lower-cost degrees such as accelerated executive

MBAs. Some are even trying to set the pace by developing MOOCs of their own, such as the edX venture launched in 2012 by MIT and Harvard and now offered to other schools.

But it is unlikely to be smooth sailing even for them. Innovative deans and college presidents often face tenured faculty who resist change. Moreover, they have a valuable and costly brand to protect, and elites who offer lower-end goods and services do court danger. Top clothiers like Nordstrom had to be careful about the perception of their valuable brand when they opened discount stores. Likewise, the more elite universities attach their brand names to less expensive, second-tier products, the more they endanger their brand and invite their primary customers to question the extra value they get for their \$40,000 in annual tuition. They risk unbundling themselves from their own prestige.

What of the rest? Where value-for-money rather than a tony brand is the competitive edge, colleges are more inclined to consider partnerships designed to gain an edge. For instance, several U.S. state university systems, including the State University of New York and the University System of Georgia, have teamed up with MOOC giant Coursera to offer online courses and test out new business models and teaching methods. Some international partnerships are reshaping graduate education in professional fields. The for-profit Kaplan University maintains a facility in Singapore, for instance, with academic partners all over the world, from Murdoch University in Australia to several universities in Britain. And Arizona State University hit the headlines recently thanks to its pathbreaking agreement with Starbucks, allowing the coffeehouse giant to offer tuition-free degrees. These arrangements help established universities to reduce costs while building up a more sophisticated online presence that could eventually become a core feature of their business models.

Some of the second- and lower-tier institutions are willing to change their brands in pace-setting ways. Take Southern New Hampshire University, once just a small, typical private New England college. It now offers several broad paths for a degree: at its original 300-acre wooded campus in Manchester; at regional centers in New England; or predominantly online, where students can opt for professional certification as well as degrees. Always on the cutting edge, it has just launched a nationally available, self-paced \$10,000 competency-based degree program through a new venture called College for America. It's designed for working adults and their employers, and will center on project-based learning rather than traditional lectures and credit hours, in conjunction with partner employers, including McDonald's, Anthem Blue Cross, and Gulf.

Nathan Harden predicted in these pages not so long ago that thanks to the online revolution roughly half the nation's colleges and universities will cease to exist within the next fifty years. He's probably right, though many may end in

mergers. But I suspect the pace of change will be much faster than that. Harden is likely right, too, about many of the structural changes we can expect, given the history of other industries. He sees a war for survival, as we've seen in the newspaper industry, with the "bottom feeders", as he somewhat disparagingly calls them, disappearing entirely or turning into vocational institutes.

But while most low-quality degree factories undoubtedly will go out of business as full colleges, a likely scenario is that the general unbundling of educational services will lead to a new array of institutions delivering degrees and degree equivalents. Some will be aimed at students seeking solid credentials at low cost with no frills; others will provide a more face-to-face experience than is typically the case today with online education. In other words, the models will collapse on one another to some extent from both directions.

The no-frills option will be an enormous boon to young people from poorer neighborhoods who need college-level skills to have any chance of upward economic mobility. These young Americans are ill-served by today's costly and inflexible system. What they need and want is a combination of self-paced, online learning, supplemented by talented teachers rather than occasional sightings of big names who would rather be doing research. No-frills ventures are more likely to have "campus" classes taught after hours in high schools or in Skype tutorials at home, with a standard competency-based credential accepted by employers and that accurately measures student skills. And they will likely cost a lot less than today's traditional degrees, as well as being as good and in many instances better and more marketable than them. The \$10,000 degree probably is just the beginning of a sharp price reduction that will do much to spur upward mobility for millions of young people born into lower-income families.

An unbundled education does not have to be provided the same way or in the same location each year. Education innovator Salman Khan of Khan Academy speaks in *The One World Schoolhouse* of future students transferring frequently, getting pieces of the overall package at different institutions. Given the concerns of both students and employers about the real-world value of a college education, an integral part of gaining a useful credential can and should be experienced, he believes, as an intern or apprentice in work settings. Southern New Hampshire University recognizes this with College for America. The University of Southern California now emphasizes serious career planning and student experience with partners in the working world as essential for marketing the value of its degree. More formal apprenticeships are much less common in the United States than in Europe, but with companies stressing the importance of an appropriately skilled and trained workforce as the most important factor in their location decisions, they may begin to take firmer root here. In Charlotte, North Carolina, for instance, the German company Siemens

and other firms partner with Central Piedmont Community College to offer paid apprenticeships and associate degrees with a guaranteed job after graduation. Expect many more developments like these.

To survive in this rapidly changing world, existing institutions will have to do two things well. First, just like newspapers establishing paywalls or airlines selling seats at different prices to different customers, they will have to learn how to “price discriminate” rather than depend on cross-subsidies to maintain the elite and expensive parts of their brand. Not everyone wants to rub shoulders with top professors in tutorials. Many would gladly do the bulk of courses online. Some students want a credential as quickly and cheaply as possible. But others are willing to pay more for a high level of interaction, just as some people pay more for “concierge” physicians who are available outside of regular hours and spend more time with patients. They don’t all need to pay the same tuition or have access to the same level and range of services, any more than people flying from New York to Paris in the same plane pay the same or get the same service or seat size.

Second, they will have to determine their true competitive advantage. Is it a beautiful campus? Is it small seminars with world-class academics? Future professional contacts? Or is it good quality classes at a low price? They will need to perfect and build on that advantage, and let someone else deliver other parts of the total higher education package. This means many colleges must accept that much basic course content will be delivered by other providers for free or nearly for free. We’ll see a steady increase in basic courses provided less expensively and closer to home by community colleges and new ventures, often in formal partnership with universities and perhaps some businesses. Expect the equivalent of intramural or intervarsity sports to be organized by local high schools. And expect the distinction between college degrees and employer-sponsored credentialing to blur.

As a result, many of today’s universities may end up providing only a couple of years of higher-level courses themselves. Indeed, the degree of the future is likely to become a customized collection of educational experiences and credentialed courses with many of today’s colleges and universities becoming managers of a range of courses and experiences. The value of the college’s brand, and the prices it can charge, will depend on how well it can assemble a package of in-house and contracted-out courses and services customized for each student—and on the overall quality of that package.

Some American university leaders will try to navigate these fraught times with a few tweaks here, a few layoffs there, and perhaps extra PowerPoint classes for the faculty. They will fail. Some will make concessions, using new technology for add-on services, while trying to build a moat around the traditional business

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model. They will also court failure. The ones who succeed truly will have learned the lessons of survivors in the consumer electronic, newspaper, and other industries facing the existential threat of disruptive innovation.

¹See Nathan Harden, “The End of the University as We Know It”, *The American Interest* (January/February 2013).

²Grygiel, “The MOOC Fraud”, *The American Interest* (January/February 2014).

³Adam Bryant, “In Head-Hunting, Big Data May Not Be Such a Big Deal”, *New York Times*, June 19, 2013.

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