What do Borders, Kodak, and Blockbuster have in common with American higher education? All three organizations failed and are currently in bankruptcy. Borders is gone, Kodak is suffering a lingering death, and Blockbuster was bought by Dish, which is gradually shrinking what was left of the company. Is the same fate in store for U.S. colleges and universities? Most people would argue that the answer is no, just as the managers of these three companies argued that new technologies would not affect their business models.
I do not believe that all U.S. colleges and universities will disappear as a result of new technologies, but clearly some will. If higher education institutions embrace the status quo, they will no longer be in control of their own fate.

What is the evidence that there is a serious threat to American higher education?

- The Minerva Project (http://www.minervaproject.com/) proposes to create a top-tier for-profit research university. Students will live together on different campuses around the world, and top professors in their fields will stream online classes to student seminars.

- Georgia Tech has announced a professional Online Master of Science degree in Computer Science (OMS CS) earned through MOOCs in conjunction with Udacity (http://www.udacity.com) and AT&T. The program estimates tuition at below $7,000 for the three years of coursework, expects to enroll 10,000 students at any given time, and has arrangements with 4,500 centers for proctoring examinations.

- Ten large public university systems flagship universities are forming a partnership with Coursera (https://www.coursera.org): “Joining Coursera will be the State University of New York system, the Tennessee Board of Regents and the University of Tennessee systems, the University of Colorado system, the University of Houston system, the University of Kentucky, the University of Nebraska, the University of New Mexico, the University System of Georgia and West Virginia University. Some systems plan to blend online materials with faculty-led classroom sessions. Others will offer credit to students who take the courses online followed by a proctored exam on campus.”

- Generation Rwanda (http://www.generationrwanda.org/) is starting a university based entirely on Massive Open Online Courses (MOOCs). The goal is to have a 400-person university in Rwanda with MOOCs providing the content and with teaching fellows handling discussions and tutoring students. Southern New Hampshire University will test and certify associate’s degrees. Full-year tuition is estimated at $1,500 a year or less. Currently only 1 percent of Rwanda’s population has a college degree. 4

The Art of Survival

How can institutions address the threat to higher education? In The Search for Survival, I proposed a model for surviving disruptive technologies. New technologies enable an innovator to develop a new product or service that is great for the innovator but that can prove extremely disruptive for incumbents. Incumbents often fail to respond because of various factors that inhibit recognizing the threat and taking action:

1. **Denial.** We are all accomplished at denying that something will happen. Amherst’s faculty voted against participating in MOOCs, Duke’s faculty voted against an agreement to join a consortium offering online courses, and faculty in the philosophy department at San Jose State sent an open letter to Michael Sandel, a Harvard professor with a MOOC survey course, refusing their dean’s request that they use the course. Denial in higher education is alive and well. 4

2. **History.** Colleges and universities go back to the colonial days in the United States, but a past history of success is no guarantee of future success.

3. **Resistance to change.** Most of us resist change because it is full of uncertainty and risk.

4. **Mind-set.** Kodak managers and employees had a mind-set that stressed film, not digital photography. Our mind-set in higher education is the traditional class that meets in a physical classroom.

5. **Brand.** Just as Borders, Kodak, and Blockbuster had well-known brands, many of our colleges and universities work hard to create and maintain a brand, for example the Ivy League and the Big Ten.

6. **Sunk costs.** Kodak had a huge industrial campus with manufacturing plants, a large sunk cost that was not needed for digital photography. Colleges and universities have very large investments in buildings and grounds, laboratories, and libraries, all of which are sunk costs. Accountants say to ignore sunk costs in making decisions, but that is hard to do when the physical campus contributes to brand and to emotion, especially alumni emotions.

7. **Profitability.** Profitability is not an issue per se for non-profit higher education institutions, but colleges and universities must remain fiscally sound to continue in business.

8. **Lack of imagination.** Kodak could not imagine film being replaced by the Internet in the world of digital photography. Blockbuster could not imagine trips to the video store being replaced by mailed DVDs and streaming videos. Can colleges and universities imagine a future that differs from the higher education experience of the last two hundred years?

Whether or not incumbents recognize the threat and take action will determine their fate. There are three outcomes in the survival model. The first is to morph one’s business model to accommodate a
technological disruption. This outcome is the least traumatic and the easiest to accomplish. The second is to abandon one’s present business model and adopt a new one. This outcome is a very difficult undertaking. The last is to fail. This outcome means declaring bankruptcy and/or going out of business entirely (e.g., Borders).

MOOCs and Online Learning

The debate about online education—and MOOCs in particular—generates much confusion because there are so many options for how these technologies can be applied. Generally, however, use of these technologies falls into four categories:

- **Traditional Classes.** This category of instruction is what we have done for hundreds of years, with limited technology. Students meet with an instructor in a classroom setting.

- **Online Classes.** These classes are probably the most misunderstood. There are two subsets within online: synchronous and asynchronous. Asynchronous online means that students work on their own schedule, without live interaction with a faculty member. This kind of class is associated, unfortunately, with for-profit institutions and sometimes dubious business practices. Synchronous online represents the “high end,” where all students and the instructor meet together online and each appears in a video window.

- **Blended Classes.** Many instructors regard blended classes as the best alternative to traditional classes. In a blended course, there is little or no live lecturing; the instructor provides video lectures and other multimedia materials for students to view at their convenience, and class time is devoted to interaction through discussion and problem-solving. Usually a blended class is shorter than a traditional class because students are viewing the lectures outside of class time.

- **MOOCs.** This relatively new technological innovation has captured the most attention in the press, partially because of courses that have tens of thousands of students participating. MOOCs began as free courses to extend the reach of institutions and are evolving into a new way of teaching for-credit courses and programs.

My Experience

In the 2012–13 academic year, I taught a synchronous, fully online course to 24 part-time MBAs at three of our campuses, using Adobe Connect. Our sessions lasted 60 minutes, twice a week, during which we discussed the issues in the course; all lectures were recorded on video, and students viewed them at their convenience. The software for the interactive sessions placed me and each student in a separate window on the screen, with live audio and video.

I also taught another technology-enhanced course, to full-time MBAs. This was a blended course. I did no lecturing in class; students viewed video lectures, and class time was devoted to cases and discussion.

My third technology-enhanced class was a MOOC—“Surviving Disruptive Technologies”—which I offered through the University of Maryland and Coursera. I spent many hours, well over 100, planning the content for each of the seven weeks of the course, developing PowerPoint slides for each video, and recording and editing the videos. Coursera recommends that videos be not much longer than ten minutes—which takes a lot of planning, given that a typical in-class lecture lasts for an hour or more.

I adopted the technology platform recommended by Coursera: a Wacom tablet connected to my desktop computer running Camtasia video capture and editing software. The tablet displays a screen that duplicates the monitor on my PC and that lets me annotate slides by underlining and circling points or by writing on the slide with a pen. Coursera recommends that instructors provide some action on the screen; no one wants to experience “death by PowerPoint.” Camtasia also lets me use a window on the slide to show a video recording of me while I present the materials. Some instructors do not like to appear in these videos. I included my video as a part of the presentation because I wanted to create a sense that the student and I were having a conversation.

I had two superb associates helping me prepare and offer the course. The
first was Frankie, a miniature dachshund. In the first video for each lesson, I held Frankie in front of the camera and discussed an overview of the topics for each week. In many respects, Frankie was more popular than I was, and he helped establish an informal tone for the class. My second, human associate worked during the class to monitor discussion boards and let me know when I should enter a response. She also chose people, from those participating in the discussion boards, to invite to weekly Google Hangouts. In addition, I had excellent support from the instructional design staff at the University of Maryland Division of Information Technology.

I am not fond of objective, multiple-choice tests. Instead, the thousands of posts during the course. A few hundred students completed a preliminary survey, and I counted slightly under 100 countries represented. Google Hangouts were popular with a small number of students; I found that these sessions made me feel more like I was teaching a regular course because I had direct, interactive contact.

My course was free to the students, and Coursera encourages instructors not to use texts or materials that require purchase by the students. As a result, I did not give college credit—and I would not do so in the future for the course as offered. However, with the purchase of articles and cases and with a way to verify students’ identities on their submitted work, I would be very comfortable offering a MOOC for credit.

MOOC students completed two assignments: a midterm; and a final project that required them to identify a disruptive technology in their countries and answer a series of questions about it. Both exercises employed peer grading. If students wanted credit for their submission, they had to grade (anonymously) four other submissions. Coursera’s platform supports peer grading; it performs the random assignments of papers to be graded and awards the median grade to each student.

Compared with some of the very large MOOCs, mine was more like a seminar. Of the 16,000 students who registered, 8,000 started the class. The first week, about 4,000 were active, a number that had dropped to 2,800 by the last week. Between 600 and 700 students completed the term project. The discussion boards were very active, with

probably because the course was free and students knew I was volunteering to teach it, I received extremely positive feedback throughout the seven weeks. Near the end of the course, a group of students started a “thank you” topic on the discussion board, where they posted expressions of appreciation to me (and to Frankie).

What is my conclusion, based on a sample size of one? I believe that MOOCs have great potential. I am amazed at students’ acceptance of MOOCs. Given that we have about a year’s experience with MOOCs, compared with hundreds of years of experience with traditional courses, I think MOOCs are here to stay. We will solve the problems of verifying students’ identification, providing course materials, proctoring exams and exercises, and giving more personal attention to students in these massive classes. I recently read an article by an academic, writing in a leading journal, who wished that MOOCs would just go away. I believe that is the wrong attitude. We should wish for MOOCs to continue to improve because they offer great potential, not just for college students in the United States but for current and potential students around the world.

The Opportunities
Technology-enhanced learning has the potential to transform education and to raise the level of education globally. Millions of students can experience a highly regarded faculty member teach a course that they could never attend on campus. Imagine what this ability could do for developing countries with undereducated populations. Colleges and universities can extend their educational mission around the globe. Generation Rwanda is a great example of creating a university based on MOOCs taught by faculty at leading institutions.

MOOCs and online learning also have the potential to change the cost structure of higher education. As noted above, Generation Rwanda expects to offer tuition of $1,500 or less per year, and Georgia Tech’s online MS in computer science is targeted at under $7,000 for the entire program. MOOCs do not require classrooms, dorms, or athletic teams. To maintain quality and integrity, however, for-credit MOOCs need proctoring and, hopefully, some local discussion of the issues in the courses.

The key word here is flexibility. Even with a heavy travel schedule, a student can take the new online MBA program (starting in January 2014) offered by the Robert H. Smith School of Business at my institution, the University of Maryland. Students can join a synchronous online class from a hotel room or a Starbucks. In addition, we hope to move to a blended format for our part-time MBA program; doing so will reduce the
lengthy time spent in class after a full day of work (currently, classes are held from 6:30 to 10:00 p.m.).

At the undergraduate level as well, students can spend less time on campus and substitute online classes for part of their college careers. This strategy would make college available to more students, since they could live at home part of the year and have part-time jobs. An undergraduate who has limited or even no time on campus misses much of the college experience, of course, but if the option is between getting no college education or getting a college education online, then the online alternative is good for the student and his/her country.

**The Threats**

The first threat to American higher education is that MOOCs and online courses will raise the level of competition too high for some institutions to survive. Colleges and universities have always competed to admit the best students, but for the most part, once a student matriculated, he/she tended to stay at the same institution. With online courses and MOOCs available from a number of institutions, competition will become more intense and will move to the level of individual courses. Will a student at the University of Maryland want to take a freshman economics course from a Maryland faculty member, or will the student prefer to take a proctored MOOC from a Noble Prize–winning economist at another university?

The second major threat to American higher education is that getting a college degree will become so unaffordable that students will be forced into online alternatives that do not involve being on a campus. Colleges and universities could lose students to alternatives that are based completely on MOOCs, with local discussion leaders and proctors. A MOOC-based university could operate with a cost structure that is orders of magnitude less than a traditional U.S. university.

A final threat to American higher education involves the faculty, who are the ones ultimately responsible for coping with disruptive learning technologies. How should faculty members respond? Some are in a state of denial and are trying to keep their institutions from participating in MOOCs and other kinds of online learning. This strategy is a little like Kodak trying to stop digital photography or Blockbuster trying to stop streaming videos. It is simply not going to work. Some faculty have suggested taking a wait-and-see attitude. In a recent meeting, a colleague of mine asked if we could just not do anything for two years and see how things develop. Two years of doing nothing is likely to put a university too far behind to ever catch up.

College and university leaders should not assume that since the current model has been successful to date, it will continue to survive. Leaders overcome faculty members’ resistance to change? Colleges and universities are used to maintaining a leisurely pace of change; that pace will not work with today’s fast-moving technologies.

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Coursera, founded fifteen months ago, counts more than four million students having taken its courses.9

The only way to succeed in a competitive market is to compete vigorously. Blockbuster waited too long to start a DVD-by-mail program and a streaming-video business; it failed at both partially because it could not execute. Colleges and universities cannot afford to follow the same path. One strategy is to compete by offering a wide range of products to meet the needs of customers—that is, students. If an institution cannot compete by offering a wide variety of courses and programs, another strategy is to become a niche player and become the best in the world in a few, specialized courses or programs. Colleges and universities also need to compete on quality as a service business. Students will continue to choose courses primarily on the reputation of the instructor but also, now, on the reputation of the institution offering the course. Finally, institutions need to compete by providing a variety of ways for students to participate in programs, from online and blended courses and degrees to MOOCs. The college or university will want to produce and market its own MOOCs and allow students to take proctored MOOCs from other institutions as a part of their programs of study.

Colleges and universities also need to look at their cost structures. There is growing concern that higher education is becoming unaffordable except for...
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What about the faculty? If any response to disruptive technologies is to succeed, faculty members must be persuaded to adopt new technologies. Based on my own experience, I can testify that (1) teaching in a new way is frightening, and (2) preparing online and blended courses and MOOCs takes an incredible amount of time and effort. To have a chance of success, colleges and universities will need to make massive investments in supporting faculty through salary overloads, teaching assistants, and a technological and consulting infrastructure for developing new courses.

The best and possibly the only strategy for individual faculty is to figure out how to adopt technology and how to add value. A faculty member does much more than teach; he/she decides which topics are the most important in a course, structures the course, develops teaching materials, and delivers instruction. What should the economics professor do when confronted by an economics MOOC from a Nobel Prize winner? One answer is to incorporate into the class not only that MOOC but also a MOOC from another economist who disagrees with the first one. An economics course featuring parts of MOOCs from Larry Summers and Glenn Hubbard would be compelling. The professor could design the course to include their debates and could lead discussions of the topics in the course. In that way, the professor is adopting technology to add value to the economics course.

But let’s return to the survival model for higher education institutions. What do college or university leaders need to do immediately to compete?

- Create a sense of urgency that the institution needs to be proactive in meeting the challenges of technology-enhanced learning.
- Establish an associate provost position for blended and online learning to provide leadership on campus.
- Develop programs for different markets; being a first-mover will be an advantage in establishing your brand and attracting students.
- Provide faculty incentives for transitioning their courses to blended and online formats; it takes an incredible amount of time to create any type of online course.
- Offer new online degree programs at the “high end,” with synchronous online classes and interaction between faculty and students.
- Create and offer MOOCs to build your brand and to have a favorable balance of payments when students start taking MOOCs from other institutions.
- Consider offering a degree through MOOCs.
- Create a support staff to provide infrastructure and consulting for faculty and students.
- Strive to become more efficient and reduce overhead; look first at the number of administrators who do not teach.
- Close marginal programs; you cannot afford them any longer.
- Examine the physical campus and building plans; consider converting some dorms to “hotel dorms” for students who spend some time on campus and some time away from campus taking online courses.
- Develop a plan for classroom buildings and physical space as in-person lectures disappear.
- Look at teaching potential across a range of possible delivery modes when hiring and promoting faculty; there is no need for a star lecturer, but there is a need for faculty members who can connect with students via video technology.
- Prepare to meet a greater demand for teaching, and consider the impact that this demand will have on research.
- Carefully review the resources devoted to varsity athletics, which are irrelevant to most online students.
- Above all else, act boldly and imaginatively. Using different technology-enhanced learning options, develop scenarios for how the institution might look in the near future and in the longer term.

To survive in a time of rapidly changing technology, colleges and universities need to change their existing business models. Each higher education institution needs to develop a strategy that will take advantage of the opportunities presented by technology-enhanced learning to expand its educational mission and provide flexibility for
Can the Current Model of Higher Education Survive MOOCs and Online Learning?

its students. Developing such a strategy requires leaders to overcome factors that can inhibit them from taking a proactive response to technological innovation. In the end, a strategy for transforming the institution and a strategy for surviving the disruption become one and the same.

Notes

7. I feel that Adobe Connect has a practical limit of 20 to 25 students at one time, given the size of the video windows and the effort required to manage a class meeting online.
8. These weekly interactive online sessions using Google Hangouts were limited to ten people at a time. The sessions were streamed live to YouTube and were recorded there for later viewing.

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