

Strategies for Higher Education in the Digital Age

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SUMMARY

This article analyzes online technology strategically from the perspective of traditional (face-to-face) providers of higher education. Analysis of current and projected relative positions explains why face-to-face providers need to take online technology seriously. But both pure strategies—entirely face-to-face and entirely online—have significant limitations from their perspective, directing attention toward mixed or blended strategies, for which a strategic typology, illustrated with a broad range of examples, is provided. Moving from an entirely face-to-face approach to a blended one is likely to generate some implementation challenges, which are also addressed.

KEYWORDS: education, strategic management, technological innovation

Digitization is a common theme in many sectors, and education is no exception. One of the more critical issues confronting traditional face-to-face providers of education is how to react to the possibilities offered by online technology. This article sheds some light on this issue from three different perspectives.

The first section of this article applies simple strategic analysis to two polar cases, traditional face-to-face education with no online component and massive open online courses (MOOCs), entirely online and “low touch,” to help explain *why* online educational technology is worth taking seriously. The second section discusses *what* traditional higher education providers should do in response to the possibilities unlocked by advancing online technology. The third section touches on *how*: the (substantial) strategy implementation challenges that confront traditional higher education institutions as they move toward blending in online elements.

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The discussion within each of these sections is organized in terms of relatively specific propositions, eight in total. Given space constraints and large institutional differences within as well as across countries, the discussion centers on higher education in the United States even though at least some similar points might be made for other countries and for other educational tiers. The article also adopts the specific perspective of traditional (face-to-face) providers, and leans particularly heavily on examples from business education, reflecting my more than 30+ years teaching at leading business schools.

Why: Relative Positions

Professors, in the United States, at least—and from casual empiricism, many other parts of the world—still seem somewhat skeptical of online education. For example, according to the 2015 update of Babson Survey Research Group's Online Report Card, less than one-third of all respondents from U.S.-based institutions described them as having faculty who “accept the value and legitimacy of online education.”¹ That has basically been the level since the first Babson survey, in 2003.

Over the same time frame, however, online enrollments have registered sustained year-on-year increases—even while overall higher education enrollments have come under pressure and, since 2010, actually declined. By 2015, 28% of students in higher education in the United States were enrolled in at least one distance learning course, and 14% exclusively in such courses. Extrapolating these trends, the percentage of students allocating time and money to online higher education will soon exceed the percentage of faculty willing to affirm its value. Who's right: still-skeptical professors or students who are voting with the seats of their pants?

Since I am a professor of strategy, the obvious way that occurs to me to address this question is to analyze the relative competitive positions of these different educational models. Strategists in business have long emphasized such comparisons, and they have learned to parse relative competitive positions into costs and benefits to buyers—or, more precisely, buyer willingness-to-pay.² They have also developed many guidelines for assessing those “primitives.” Over time, there seems to have been an increasing emphasis on dynamics as well, one that includes (but goes beyond) tracing out costs and willingness-to-pay over time.³ How do these guidelines play out in the educational context?

For me, they proved very useful in counteracting my sense of disappointment after first offering a MOOC, on the Coursera platform, in winter 2014. From the assignments, discussion boards, and so on, the learning outcomes seemed inferior to what I manage in my face-to-face classes. But being structured about the analysis reminded me of three key points. First, to focus on learning outcomes is to take far too narrow a view of benefits to “buyers”—in this case, the students. Second, it is useful to analyze relative costs as well as relative willingness-to-pay. Third, it makes sense to think about how things will be, rather than just how they

are. Each of these three points, elaborated on in the three propositions that follow in this section, caused me to view MOOCs in particular, and online education in general, more favorably than my first direct experience of offering a MOOC.

To Fixate on Differences in Learning Outcomes Is to Think Too Narrowly about Benefits to Students

When I was deciding—not that long ago—whether to offer a MOOC, one of the first things I read was the meta-analysis sponsored by the highly regarded ITHAKA foundation, which begins with the statement that “there have been few rigorous efforts to produce compelling evidence of the learning outcomes associated with online courses at the postsecondary level.”⁴ Thus, like much of the literature that purports to analyze MOOCs and other online educational technologies relative to traditional educational providers, the ITHAKA analysis starts and stops with consideration of learning outcomes. These are, to be sure, a particularly interesting measure of the benefits delivered and the ones that academics naturally think of (e.g., my reflexive reaction to my first experience offering a MOOC), but they ought not be the only type of benefit considered. This is the point of proposition 1.

The literature on strategy suggests that if one really wants to adopt a student-centric perspective on the benefits afforded by online versus conventional educational models, one should supplement measures of learning outcomes with other considerations. Other obvious benefits from a student perspective include time spent (including travel), flexibility on the time dimension, the availability of capacity,⁵ and even the often-celebrated ability to work in one’s pajamas (or, with an asynchronous as opposed to synchronous MOOC, with a choice of ski-wear or swimwear)—all of which can be thought of as factors easing access to online education.

In addition, there are some interesting things that could be done with technologies that are already available and will increasingly be in evidence. Thus, as a referee pointed out,

There exists the ability to customize course content to individualized learning styles. Rather than one professor engaging all students the same way, each student can have material presented to them in the fashion that best fits their learning style. Second, more accurate and frequent online assessment [and feedback] methods support the ability for students to find their own way through the material—so that each student’s experience will be different.

Advances in data analytics help support these improvement possibilities as well as others. Advances to the ecosystem for higher education (e.g., new platforms for comparing credentials, digital/administrative support), new pedagogical methods (e.g., gamification), and new ways of blending online and face-to-face content (e.g., options such as regrounding that are discussed in the next section) also seem to fuel the ability to deliver better educational experiences online. Professional associations and interactions can help educational institutions tap

into each other's learning. As our stock of modularized digital educational content grows, recombination possibilities also grow in value.

Of course, traditional education providers also have some clear advantages from a student perspective that go beyond the usual measures of learning outcomes: for example, the ability to gain inspiration via personal interactions from brilliant teachers and peers, socialization (including network-building effects), and, in the case of the highest-rated institutions, reputations that influence both employers' and students' perceptions of the institution's ability to satisfy their needs (so-called signaling benefits).

How these benefit stacks compare in the aggregate is uncertain. But if one starts with the stereotypical view that online education still doesn't generate quite the same learning outcomes as face-to-face education, broadening the basis of comparison to include these other dimensions clearly expands the possibility of online technology comparing favorably with traditional educational models.

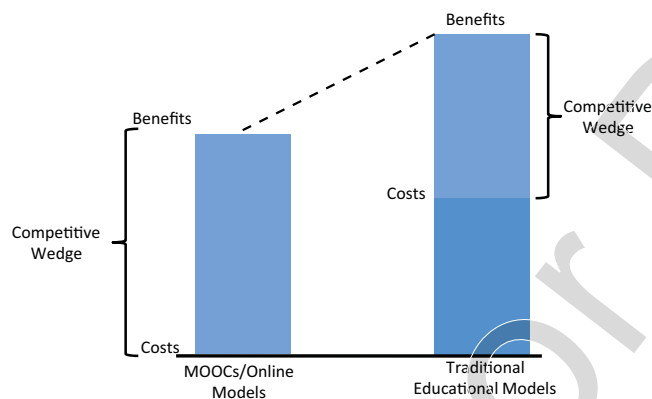
Even if that turned out not to be the case, however, there would be additional reasons to take online education seriously. First, comparing benefits from a "representative" perspective obscures key variations. For example, 47% of the students enrolled in my MOOC's first offering were from emerging economies—lower than the 75% of total university enrollment accounted for by such economies, but much higher than would be expected for the course's face-to-face version, offered at a high-status, relatively expensive business schools. Others have observed that online education is likely to perform better for subjects with knowledge that is factual and can be standardized than for "discursive" ones. Thus, Udacity, one of Coursera's leading competitors, has repositioned from offering broad general-purpose courses to a more vocational focus: offering structured lessons in areas such as coding.⁶

A second reason why, despite similar or possibly lower benefits to students, MOOCs and other online models deserve serious consideration has to do with the need to look at relative costs, not just relative benefits. If broadening the comparison to look at benefits beyond learning outcomes means that online models might compare favorably with traditional educational models, adding in costs definitely tilts the comparison in their favor.

Analysis of Relative Benefits Should Be Supplemented with Analysis of Relative Costs, Which Typically Makes Online Technology Look Relatively More Competitive

Strategists' emphasis on analyzing relative costs predates their emphasis on comparing benefits to buyers, and the ways in which they analyze costs have become increasingly systematized over the years. Strategists have also combined the analysis of costs and benefits into the concept of competitive advantage: the idea that a wider gap between the two—a bigger "competitive wedge"—implies a superior competitive position.

Discussions of costs in the context of education, however, have tended to be more hit-or-miss, for a range of reasons. Perhaps the most frequently mentioned is

FIGURE 1. Relative positions of MOOC/online versus traditional educational models.

Note: MOOC = massive open online courses.

that such analysis tends to be difficult to undertake in the educational sector. Another relates to the notion of “Bowen’s Law”: the tendency for real institutional cost per student to rise faster than costs in general over the long term.⁷ This is often treated—although not by Bowen himself—as an unfortunate but entirely unavoidable consequence of higher education’s labor intensity. And especially at institutions with high status, endowments, and tuitions, there is also a tendency—which Bowen describes as “buy the best”—to focus on or even fetishize quality and to treat cost as undeserving of serious attention. None of this, however, gets away from the analytical usefulness of looking—even roughly—at both relative costs and relative benefits when comparing online models to traditional ones to assess their relative positions.

Figure 1 depicts a stylized comparison of online models versus traditional education models from the (simplified) standpoint of a representative student. The figure examines both costs and benefits and shows that even when online models suffer significant differentiation penalties relative to traditional models—the possibility depicted in the figure—online models can benefit from a bigger competitive wedge—that is, enjoy a competitive advantage.

Figure 1 is, of course, too simplistic in assuming zero costs for online models. Even MOOC platforms have begun to charge for some of their offerings as they try to develop revenue models. And, more fundamentally, strategists recognize that it is better to base such analysis on supplier opportunity costs rather than on costs to buyers (or even the costs actually incurred by an organization). Thus, focusing on MOOCs being costless to students is unrealistic, at least in the long run: somebody has to pay for the costs of developing and delivering MOOCs, even if they are currently priced at zero. The costs of models that blend online and face-to-face education—the focus of the next section—are likely to be higher than the costs of a barebones MOOC, so a comparison of traditional education and MOOCs can be thought of as a way of bounding the cost comparisons between face-to-face education and online.

Even if one restricts the comparison to traditional education and MOOCs, the importance of fixed costs implies that relative cost positions are affected significantly by cohort sizes (if there are cohorts) and how many times a MOOC is offered. My back-of-the-envelope cost comparisons based on my first two experiences offering a synchronous MOOC suggest that the labor savings associated with offering a MOOC rather than a traditional course are significantly larger than the 26% to 57% range that Bowen estimated for offering a particular type of hybrid course. The costs of hiring a course assistant, reviewing and commenting on trends in discussion threads, connecting regularly with the students via email, issuing mid-course corrections, and so on seemed large to me the first time around. However, the second time around, it was much less of a strain to add the MOOC to my normal (face-to-face) teaching duties. Of course, from the standpoint of IESE (Instituto de Estudios Superiores de la Empresa), which sponsored my MOOC, the labor-related gains looked even larger since my salary stayed the same.

The other principal factor of production, capital, has attracted even less attention but exhibits even more dramatic differences. The cost required to develop MOOCs may seem large in absolute terms but turns out to be modest on a per-student basis. Thus, Wharton's meta-analysis of MOOCs cites a figure of \$70,000⁸ as the typical cost of creating a new MOOC and puts the implied cost per student at 50 cents. At IESE, the costs for developing my MOOC were in that range and—focusing just on enrollment the first time around—worked out to about \$2.50 per student. That figure omits the opportunity costs of my time, but using standard opportunity costs for tenured business school professors would, perhaps, double it.

Of course, added to the few dollars (at most) of costs per enrollee incurred by IESE and me are the costs incurred by Coursera, the platform provider. Through late 2015, Coursera received \$132 million in funding.⁹ While some of this was doubtless used to cover operating costs, ignoring that fact and dividing total funding by the 10.5 million students that Coursera enrolled in 2014 implies another \$13 per enrollee, adding up to a total capital cost of less than \$20 per enrollee per course. Note that the scalability of much of this infrastructure, unlike much of the fixed assets tied up in traditional higher education, would reduce these unit capital costs significantly as enrollment expands.

These figures should arguably be multiplied by a factor of 10 or even 20 if one focuses just on students who complete a MOOC (i.e., if—despite some arguments to the contrary¹⁰—one attaches a value of zero to students who drop in but then drop out). But even then, the implied capital costs are minuscule in relation to the capital investments incurred by traditional universities. For the top 30 U.S. universities (based on *U.S. News and World Report's* rankings), the value of total assets, excluding endowments but including student loans, came to \$352,000 per student. Assuming eight courses per student per year implies a capital cost per student per course more than 100 times as high as for MOOCs. And capital intensity for the bottom 30 universities ranked by *U.S. News and World Report* (out of a total of 200) still implies a capital cost per student per course that is well over ten

times as high as for MOOCs.¹¹ Also note that delays or failures in completing traditional courses of study—a particular problem at lower-ranked schools—would push these multiples even higher.¹² So would capitalizing the present cost of multiyear—in the case of tenure, indefinite—contractual commitments to faculty.

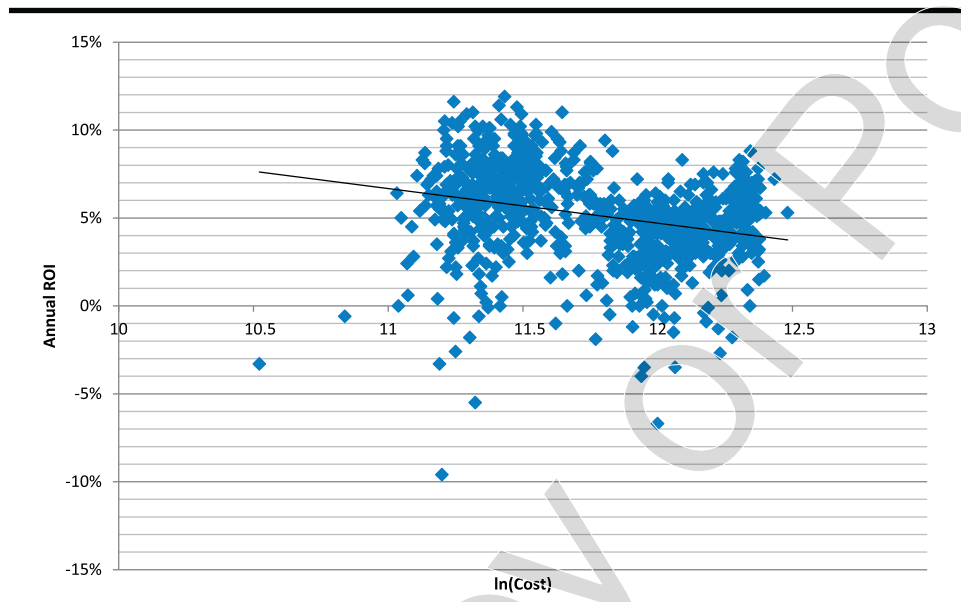
These calculations imply that online models typically have a large cost advantage, particularly in terms of being asset-light, over the conventional classroom model and that this cost advantage can at least partially offset any penalties in terms of benefits delivered and, presumably, willingness-to-pay. While the calculations underlying this conclusion are very rough, it isn't worth trying to make them much more precise, given proposition 3.

To Focus on Current Relative Positions Is to Forget about Technological Change That Can Shift Relative Positions over Time—Which, Again, Will Likely Make Online Models Look Relatively More Competitive

Looking at the likely dynamics of benefits and costs further enhances one's assessment of the position of online models relative to traditional models of higher education. To fully appreciate this point, think of MOOCs not as stand-alone offerings, but as a particular point on a trajectory of increasing effectiveness for online education. Conventional classroom education, in contrast, is a mature technology that, some would argue, hasn't changed much since cheaper paper permitted a shift from oral instruction to more reliance on the written word.¹³ Although the quality of online education may (or may not) currently be lower, it is likely to improve faster, thanks to more rapid technological progress. Proposition 1 already discussed some of the improvements online that are enabled by technologies that are already available and that are therefore likely to spread further. But there is also a distinct sense in which the technological envelope for online education continues to be pushed out over time: think of improvements in videoconferencing technology, holograms, and virtual reality.

Beyond pure technological progress, there is the human side of adaptation to—and coevolution with—technology. As Daphne Koller, the cofounder of Coursera emphasizes, some of the problems associated with how MOOCs have been received are related to attempts to replicate what we have long done face-to-face.¹⁴ These seem to be teething problems that are likely to be alleviated as course developers and teachers become more aware of the distinctive—rather than purely replicative—possibilities associated with online technology. Wanda Orlikowski stresses a distinct and, perhaps, even deeper mechanism that she refers to as sociomateriality: the fusion of technology and work in organizations.¹⁵ In the present context, her ideas make me think—especially in light of recent experiences teaching undergraduates—that today's students are much more receptive than the students of even ten years ago to treating online technology as a natural and even essential component of their educational experience. That is a good omen for online models.

Turning to the cost side, while one expects the quality-adjusted costs of online technology to continue to decrease, the even bigger story is the escalating

FIGURE 2. Costs and ROIs in U.S. college education.

Note: ROI = return on investment.

cost of traditional higher education—a trend that seems likely to persist unless something dramatic is done about it. Cost escalation has helped make education the biggest market in the United States after health care, and while the latter is still much larger, the educational sector has gained on it thanks to (even) faster price increases.¹⁶ This “cost disease” is generally attributed to the educational sector’s labor intensity: as Baumol and Bowen pointed out nearly 50 years ago, such industries are likely to experience particularly rapid cost increases since, over time, wages for comparably qualified workers have to increase at roughly the same rate in all industries.¹⁷ But there is probably more going on than that: recall that Bowen also underlines the importance of competition to “buy the best.”¹⁸ And the differences in capital intensity between high-ranked and low-ranked institutions suggest that labor may not be the only factor of production responsible: an inference that tallies, for example, with the observation that high-ranked institutions engage in competition to one-up each other in amenities offered to students.¹⁹

This is not the place to dissect cost disease, but to point out its consequences. Since 1983, costs of college in the United States have risen by almost five times the rate of inflation, while the salaries of college graduates have been flat for most of the last decade.²⁰ This hasn’t just marginalized the economic returns to a college degree at institutions in the bottom 10% or even the bottom 50%. Consider Figure 2, which shows, based on information collected by PayScale, what college graduates in the United States paid for their education and what they now earn. It shows, on average, a mildly negative slope to the cost–return on investment (ROI) relationship.²¹

Taken together, propositions 1 to 3 suggest that looking broadly at benefits to students, recognizing differences in both operating costs and asset intensity,

and thinking through time tend to lead to more favorable assessments of online educational technology than stereotypes about its inferior learning outcomes. If online models do manage to turn the corner and achieve a bigger “competitive wedge” in operating/recurring terms, their very low asset intensity magnifies the degree to which they threaten traditional higher education models. Given this very real possibility, how should the latter respond?

What: A Menu of Strategies

This section focuses on what traditional incumbents in higher education—who typically have significant commitments to physical capital and employee bases—should do in response to rapidly advancing online technology. It begins with a broad discussion of the relative importance of costs versus differentiation as levers for such institutions to improve their competitive positions. It then considers specific approaches that traditional institutions might adopt vis-à-vis online technology.

More Institutions of Higher Education Should Pay More Attention to Managing Costs

The historical emphasis on differentiation—and particularly learning outcomes—over costs in analyzing the relative position of educational models carries over to discussions of the kinds of improvement potential that online technology offers. Thus, Koller of Coursera focuses on productivity—the ratio of outputs/outcomes to costs²²—and argues that “if there is going to be productivity improvement in academic institutions, maybe it is not going to be in the denominator . . . perhaps it comes in the numerator.”²³

There is certainly much that can be done to improve the numerator, the quality of higher education, and, over time, online technology can surely help. Thus, even within the United States, which dominates global rankings of universities, one can point to problematic aggregate outcomes Arum and Roksa found that 36% of U.S. undergraduates made no statistically significant gains over their four years on campus on a widely used test of critical thinking, analytical reasoning, and communications skills.²⁴ An OECD (Organisation for Economic Co-Operation and Development) study indicates significant problems with numeracy: only 19% of U.S. college graduates achieved at least the fourth level on a five-level assessment, compared with 25% in other advanced economies.²⁵

That said, focusing on quality/differentiation as the primary target glosses over not only the discussion of cost disease, but also cuts in the funding of many public universities; student debts that have more than quadrupled over the last 10 years, to over a trillion dollars (a higher level than total U.S. credit card debt)²⁶; sharp declines in time spent studying outside class that are at least partly due to the need to work long hours to help offset rising costs; mounting sociopolitical concerns about lack of access to higher education for students from low-income families; and so on.

A handful of very richly endowed institutions, may be able to rely on endowment rather than tuition dollars to fund the increased costs associated with increased quality, but such a strategy seems infeasible for the vast majority of institutions, even many highly ranked ones. The cost challenge is clearest if one avoids conflating quality and willingness-to-pay—which modern strategy insists can be quite distinct. It is hard for me to imagine most U.S. higher education institutions significantly boosting their fees, given constraints on students' ability/willingness-to-pay, even if they do significantly improve the quality of their offerings.²⁷ Or as Moody's recently put it, flat tuition revenue may be the new normal for colleges in general.²⁸ If so, cost, not quality, might reasonably be seen as job one.

Of course, not everybody will agree. Thus, there are other ways of reducing the costs of traditional education, for example, by unwinding subsidies for research, reining in expenditures on amenities, and revamping administrative processes. Plus, it is likely to be easier—especially at well-heeled institutions where the economic pressures are not as immediately evident—to get people excited about improving the quality of education than about reducing its costs. Talk about cost reductions is usually assumed to imply headcount reductions or reduced wages and benefits (even though the discussion of cost reductions in the previous section focused on increasing capital efficiency). For all those reasons, a less controversial way of framing proposition 4 might be that it is important to look for opportunities to improve along both dimensions, cost as well as differentiation. That said, a trade-off between them *will* kick in at some level given the inconsistency of aiming for both the lowest costs and the most differentiated offerings.

The Pure Strategies of Completely Rejecting Online Technology or Switching over to It Entirely Both Have Significant Limitations, Making It Useful to Consider Mixed or Blended Strategies

Based on the discussion so far, traditional institutes of higher education shouldn't completely reject online technology. However, completely switching over to online also raises obvious issues for institutions with significant legacy commitments: an all-MOOC curriculum, for instance, would come close to obsolescing their entire operating infrastructure. While there is likely to be some redeployment of such resources as a result of incumbent shrinkage or exit, it is useful to think about whether there is anything that some incumbents, at least, might be able to do beyond harvesting or exiting (or going all-online). For some guidance in this regard, consider the lessons from another case example of an incumbent with significant commitments to physical and human resources facing the threat of online displacement: Barnes & Noble's (B&N) early efforts to fight off Amazon.com in book retailing. Following is a basic chronology.

Book learning. In the second half of the 1990s, Amazon's entry into online book retailing threatened B&N, the leading traditional book retailer in the United States, and its two key resources: approximately ten million square feet of physical selling space in stores whose value, properly capitalized, exceeded the company's annual

revenues, and 15,000 in-store employees. As I noted in the teaching note for the Harvard Business School (HBS) case that I wrote at the time:

If the online model does push past breakeven in operating terms, it can deliver spectacular returns on invested capital because it offers enormous advantages in terms of capital productivity . . . Online, one dollar in invested capital (total assets—cash and equivalents) is forecasted to support \$21.5 in sales, compared with \$3.5 in sales based on 1996 B&N data, or 82 cents in sales if the off-balance-sheet liabilities associated with the store leases are added into B&N's invested capital.²⁹

To its credit, Barnes and Noble reacted relatively quickly instead of ignoring the new technology, even though one can imagine all kinds of arguments that might have been made against reacting:

- Online book retailing may prove to be just a flash in the pan.
- Online will amount to only a small niche.
- The online model underserves purchasers because it does not let them handle books or provide the physical ambiance of B&N's Superstores.
- Online will cannibalize the physical stores, which are already under pressure.
- B&N does not have the skills and expertise to make an online initiative work.

B&N reacted by quickly setting up BandN.com as a leading online retailer by drawing on talent and content resources from outside the company—so that it offered both its physical superstores and an online interface. However, it kept the online venture separate, organizationally and operationally, from its traditional operations. The strategy for the traditional operations didn't seem to change: B&N continued to invest in expanding its network of physical stores, despite persistently poor returns. So, the company straddled the online and conventional channels without any operating linkages across the two.

I wrote then—and still believe—that B&N would have been far better off pursuing a different kind of strategy—one that I called recombination rather than straddling. This would have involved combining its unmatched store network with elements of online book retailing—for example, by using the stores to facilitate orders, delivery, and returns for the online business. The company finally began to move in this direction in late 2000 by introducing Internet Service Counters in the stores and allowing BandN.com products to be returned there. But this move came too late to allow it to challenge Amazon for leadership online. As of September 2015, some ask whether B&N itself can survive.³⁰

Especially with the benefit of hindsight, it *didn't* make sense for B&N to ignore the threat from Amazon.com. To its credit, it did respond, despite all the rationalizations for not doing so that could have been advanced—and probably were. In this respect, B&N was rather unlike most incumbents in business who, confronted with the threat of technological substitution—or what it has become fashionable to call disruption—often opt to do nothing.³¹

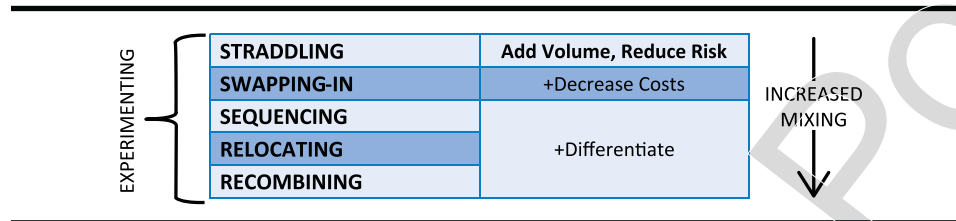
The B&N example also suggests, however, that it may not make sense to switch over entirely to one or more of the new models—at least not for incumbents with significant legacy commitments. Rapid technological evolution and ambiguity compound questions about switching over entirely (and, therefore, presumably creating a degree of lock-in) to a particular online model. The historical record suggests that technological change seems to be slow to spread in higher education: after all, it has been 80 years since the University of Iowa began to broadcast courses by television; 50 years since the Carnegie Foundation funded the AIM project to identify and systematize distance learning practices, including multimedia; more than 40 years since Coastline became the first college without a physical campus; more than 20 years since Jones University started offering accredited bachelor's and master's degrees online; and a dozen years since Massachusetts Institute of Technology (MIT) launched its OpenCourseWare initiative.³² Based on this record, as well as on what we know about the characteristics of higher education, incumbents still have some breathing room to try to figure out how to respond.

Consideration of the time dimension is, parenthetically, one of the reasons I avoid using “disruption” to describe the current state of affairs in higher education. Disruption theory, which has become enormously popular but has come in for a great deal of academic questioning far too often leads to advice to switch over to the lowest cost technology immediately.³³ Compare this with Clay Christensen's apocalyptic pronouncement (from 2013): “fifteen years from now, half of U.S. universities may be in bankruptcy.”³⁴ Or his suggestion that HBS get into MOOCs in a big way—which was rejected by that institution. As Joseph Schumpeter—sometimes considered the patron saint of disruption—noted nearly 75 years ago:

A new type of machine is in general but a link in a chain of improvements and may presently become obsolete. In a case like this it would obviously not be rational to follow the chain link by link regardless of the capital loss to be suffered each time. The real question then is at what link the concern should take action. The answer . . . will as a rule involve some waiting.³⁵

B&N's strategic options would have been rather different—and more limited—if it had faced an immediate threat of substitution from, say, an all-digital model rather than the hybrid model with which Amazon started out. But the introduction of the Amazon Kindle was still more than ten years away when the online threat originally surfaced—with another couple of years elapsing before Amazon's e-book sales surpassed its sales of printed books (which still dominate the general market).³⁶ Clearly, the pace of substitution matters.

If the pure strategies of ignoring or switching don't seem attractive, what are incumbents to do? Most of the recommendations in the educational sector advocate blended or mixed strategies. The basic idea is not new: mixing technology-enhanced learning with more-traditional classroom learning has been talked about for at least the last 30 years. Even early proponents of MOOCs have come around to this view: for example, Anant Agarwal, the CEO of edX, the online

FIGURE 3. A basket of blended strategies.

platform Harvard and MIT founded, suggests that “It doesn’t replace the campus. We really believe that, ultimately, the right model for learning is a blended model, where you blend the best of online and the best of in-person.”³⁷ But the B&N example also suggests that there is a range of ways to blend face-to-face and online models—and that not all of them may be equally effective.

It Is Useful to Go beyond “Mixing” or “blending” to Think through Distinct Blended Strategies

Figure 3 provides a (partial) taxonomy of blended strategies, arrayed *roughly* in order of the degree of blending attempted—and typically embodying ever broader ways of adding value. There is nothing particularly authoritative about this taxonomy: others can and have been offered.³⁸ The point of proposing it is to provide some structure to what would otherwise just be an incredible diversity of use cases.

Straddling is an example of minimal mixing or blending: the two channels are kept (almost) entirely separate. This was B&N’s initial strategy—that is, setting up B&N.com as a separate entity—but that did not work very well. Straddling offline and online channels is also very common in higher education, where, in addition to serving as a hedge (or a signal that one is actually doing something significant, whether or not that is true), it can unlock some revenue-generation possibilities even in the absence of any tangible linkages across the two channels.

In particular, online exposure offers the possibility of attracting additional students to classroom programs—even when the only things being shared across the two channels are the brand and some information that makes enrollees in the online channel more likely to apply subsequently to face-to-face programs. For example, I calculated that IESE might achieve breakeven on its investment in my MOOC by attracting a handful of additional students to its traditional in-class programs over multiple offerings of the MOOC. More broadly, for institutions that have limited physical capacity but other assets—such as reputations—that are strong enough to be worth leveraging, online technology affords a new space in which to monetize some of the value of the brand (among other objectives, of course). Thus, the first offering from HBS’s new HBX initiative was an online, for-pay CORE or Credential of Readiness, comprising three courses: business analytics, economics for managers, and financial accounting. It is targeted at a pre-MBA population, including college students on whom HBS has not previously focused.

By itself, this does nothing to change the in-class offering, but it does appear as if it can generate additional revenue—and buzz.

Swapping-in is a blended alternative that involves replacing significant amounts of classroom content with online content, primarily as a way of reducing costs, even if it does somewhat dilute the student experience. One (mixed) example is provided by San Jose State University, which, suffering from resource constraints and citing its location in Silicon Valley, tried to switch some courses from classrooms to online. A highly publicized failure resulted from attempts to persuade the philosophy department to teach from an online course on social justice put together by Harvard's Michael Sandel.³⁹ The department resisted publically, Sandel disassociated himself from any attempt to mandate use of his course, and the administration had to backtrack. But in the required undergraduate circuitry theory course, blending content from a MOOC with in-class, team-based instruction—a more elaborate approach than pure swapping in—seems to have led to significantly better learning outcomes than for its face-to-face predecessor.⁴⁰

Sequencing—one might also think of it as resequencing—encompasses a suite of blended strategies that take advantage of the new temporal possibilities afforded by adding online technology to the mix in a way that focuses not only on cost reduction, but often also on trying to improve benefits to the students—that is, differentiation. Note that educational institutions have more choices than B&N did along the time dimension because a course or educational program stretches out over time, unlike a book purchase. Consider some examples of this sort:

- One approach that has recently attracted attention is *modularizing*. The Christensen Institute, for example, has, according to its Executive Director of Education Michael Horn,

modularized the video resources [of the Khan Academy platform]; they are now free and discoverable both as part of an integrated sequence as well as in discreet [*sic*] objects organized by topic, so that people can personalize their learning about blended learning to get the resource they need when they need it.⁴¹

- More structured than modularization—and better known—is *splicing*: inserting some face-to-face interactions into a stream of online learning. Thus, I was encouraged by the results of an experiment in which students at Barcelona-based La Salle University followed my eight-week MOOC as one-half of a four-month blended course that included face-to-face discussions with Professor German Aragon (as well as one session with me). Although the sample size was small, research by my IESE colleagues, Giuseppe Auricchio and Evgeny Káganer, suggests that this approach improved both learning outcomes and classroom dynamics.⁴²
- Another interesting alternative is *phasing*, which emphasizes changes in delivery modes over longer time frames than those offered by a conventional course. Perhaps the most obvious use is with alumni, particularly remote

ones: apart from email communications, the use of online technology is still mostly confined to streamed webinar sessions. With the recent emphasis on lifelong learning, using new technology to create engagement over the longer run has some obvious appeal. Anant Agarwal has even proposed an alternative along these lines to standard four-year undergraduate programs: students might spend an introductory year learning via a MOOC, followed by two years attending university, and a final year starting part-time work while finishing their studies online.⁴³

Relocating, the next item in Figure 3, refers to a range of strategies that take advantage of online technology to change where different types of educational activities are performed. Several varieties of relocation strategies can be identified:

- Perhaps the most talked about example of relocation (although it could also be thought of as an instance of sequencing) is *flipping*: turning traditional teaching on its head by posting lectures online, to be viewed before class, and moving “homework” to the classroom, where activity learning and concept engagement are supposed to take place. But the notion that flipping what is done at home and what is done in the classroom is exactly the right way to blend seems, well, a bit flip. What seems right about flipping is its emphasis on not doing things in the classroom that can be done effectively online. Where it is weaker is in specifying what *should* be done in the classroom—and why.
- Another possibility is one I tried but was unable to implement on (the current version of) Coursera: *twinning*. Twinning involves courses with a significant face-to-face component but in which students from two (or more) locations are paired online for various projects/assignments. At IESE, we have already attempted this with Global Executive MBA groups on different sides of the Atlantic, in Barcelona and in New York. This approach also seems to be of particular interest to the other institution with which I am affiliated, New York University (NYU), which has global portals in New York, Shanghai, and Abu Dhabi.
- A third approach to relocating might be described as *regrounding*. A new operations course at NYU Stern not only posts lectures and readings online but also involves visits to sites in greater New York (e.g., visiting a Benihana restaurant instead of reading a conventional case about its operations), followed by classroom discussions. This model regrounds learning activities in the field, rather than at home or in the classroom, and apparently yields more concept engagement than more simplistic flips.
- Yet another (expensive) approach might be described as *hubbing*. HBS, as part of its HBS Live initiative, has invested in a new semicircular classroom, ringed by 60 flat-panel display screens that can give geographically dispersed participants a sense of actually having an in-person discussion.

Finally, *recombining* can involve more subtle and thorough forms of remixing than structural changes across temporal or spatial dimensions. A simple illustration is provided by B&N's error of omission: its initial failure to use its physical stores to facilitate orders, delivery, and returns for the online business. Such recombining wouldn't have affected the basic structural elements since B&N already had a network of physical stores *and* an online operation. However, it could have tied them together in very different ways.

In an educational context, recombining can not only encompass many small changes but also span multiple additional dimensions, some of which were cited earlier: new technologies, educational methodologies, course/program elements, and so on. It can be especially helpful in enhancing the efficacy of some of the approaches emphasized in constructive theories of learning—discovery, hands-on, experiential, collaborative, project-based, and so on—so as to boost engagement, regardless of whether they are implemented inside or outside the classroom. Recombining is obviously a category that could usefully be unbundled further.

How are optimal choices from this list of blended strategies likely to vary across higher educational institutions? Some broad generalizations can be offered. In line with the earlier discussion, only institutions that are very “well-off” are likely to have much discretion in how they approach online education; others' responses are likely to be heavily influenced by cost pressures. This probably has implications for how far down the sequence of blended strategies listed in Figure 3 such institutions can look. The caveat that may indeed expand their strategy spaces has to do with outsourcing, which is likely to be prominent in this arena. There is some obvious economic logic to having individual institutions specialize in the provision of face-to-face education around (outsourced but hopefully customizable) online platforms.

Having said as much, I must add that I would not want to be too definite at this point in recommending specific strategies for particular types of institutions. The idea behind offering up the list was to provide a sense of the richness and complexity of the palette of possibilities. Add in the novelty of many of the possibilities and the implied uncertainty about how they will fare and it becomes clearer why, in many respects, it makes more sense to think of the present period as a time for exploration rather than one for immediate option selection followed by single-minded implementation.

How: Strategy Implementation

While it is useful to emphasize the role of *experimenting* across a range of strategies, simply running a lot of experiments is no substitute for taking a more systematic approach. While the appropriate responses to online technology in higher education are subject to many contingencies, it *is* possible to specify some guidelines that merit attention from most institutions.

Given Both Ambiguity and a Wide Range of Strategic Options, Strategy Implementation Should Be Seen as a Process That Is Subject to Some Clear Guidelines

Given the amount of ambiguity in the environment and how quickly it is evolving, there are large opportunities to learn about online learning, in addition to adding value directly through (some of) the blended strategies discussed above. My own experiences offering a MOOC and observing the two institutional contexts in which I operate suggest that a lot of what we know about investments in new technology with significant learning objectives carries over to the specific case of an educational institution investing online. Consider some specific guidelines (loosely) based on the literature that seem to apply to higher education:

- Start with an inventory of existing efforts. Any large educational institution is likely to have dozens, if not hundreds, of projects—admittedly of very different scale and scope—undertaken or under way that are relevant to its online journey.
- Given ambiguity, as well as the wide range of strategic options, work on a portfolio of initiatives rather than a megaproject. And given competition for resources between existing activities and new ones, setting an overall percentage target for total investments dedicated to the latter may help prevent them from getting crowded out.
- Think strategically about where to get started. In a multi-program context, in particular, picking the right program to start out with greatly increases the likelihood of success. Thus, at many business schools, a focus on the part-time rather than the full-time MBA may be appropriate.
- Maximize the learn-to-burn ratio, which implies not only picking promising areas to work in but also doing so on the cheap.⁴⁴ Set triggers to avoid continuing to pour money down rat holes because of psychological escalation of commitment.
- Emphasize the development of usage-flexible resources—not only digital content, but also the capabilities and skills to support new initiatives in environments that are still geared toward delivering classroom-based learning.⁴⁵
- Put organizational mechanisms in place to ensure a focus on new initiatives and to facilitate coordination not only *across* these initiatives but also *between* them and the “mainstream”—important, given the considerable sources of inertia that might otherwise block progress.
- Sequence activities and reviews and adjust rapidly, including abandoning them if exit triggers are hit.
- Enhance learning through personnel choices, information-sharing, post-audits, and so on through deliberate attempts to learn from other institutions.

These guidelines should suggest some clear do's and don'ts. Actually following them is likely to also require a process of organizational transformation.

Successful Implementation of Blended Strategies in the Context of Higher Education Is Also Likely to Require a Process of Organizational Transformation

The natural tendency when experimenting is to conduct experiments in new areas—in this case, with online technology. But given the importance of getting blending right, there must also be experimentation with the “core”—with what happens in the classroom. Even sophisticated thinkers sometimes miss this point when considering the future of the university. Consider former MIT President Dr. Susan Hockfield's assertion that “while people don't like change, no one can deny you an experiment.”⁴⁶ I suggest, instead, that experimentation may be relatively easy in new areas—despite grumbling about resource diversion—but can be quite hard when it comes to existing ones, which are often subject to the NIMBY (Not In My Back Yard) syndrome.

NIMBY behavior isn't necessarily based just on selfishness or myopia. Many faculty and staff continue, as noted above, to see online learning as an inferior version of face-to-face education. That is one of the reasons that getting them to engage in the extra effort required to think about blending—as opposed to doing what they have always done—is difficult. The difficulty is reinforced by the fact that many institutions—as well as instructors—have yet to develop the capabilities and skills required to support online learning.⁴⁷ Although the question of how such capabilities might be developed is a key strategic issue,⁴⁸ space constraints preclude me from addressing it here. What I can do is note that in addition to this capability gap, considerations such as the intangibility and complexity of the education process, the fetishization of quality (and, relatedly, not-for-profit objectives), and the presence of an organized, politically powerful workforce in the form of faculty (compare them with bookstore employees) all point to need for commitment at the top to respond effectively to online models of education.

There are also some clear organizational implications. Disruption literature, which often advocates switching over completely to new technologies, also often suggests cocooning new initiatives from existing ones. But given the importance of blending, this is a recipe for *not* engaging in the necessary rethinking of the core. For that to happen, organizations need efforts to create strong linkages through mechanisms such as cross-staffing, multiple points of contact, and unification of reporting/decision structures at some meaningful level. Since resistance typically rears its head before key commitments are made—that is, in the experimental phase—experimentation both in the core and in new areas requires these mechanisms to be used relatively early in the process, before the way forward is entirely clear.

To illustrate the kind of experimentation I am talking about, as well as the sorts of resistance likely to be encountered, consider the educational institution with which I have had the longest involvement: HBS. Even in the era of MOOCs

and the rapid development of online educational technologies in general, there are considerable strengths to the traditional learning model at HBS: the case method. If the overriding objective is to make face-to-face interactions effective for learning activities that cannot be carried out well online, it is not clear how well the traditional Harvard model—(first-year) sections of more than 90+ students “discussing” material in an amphitheater—meets this test. The alternative “Harkness” model, with a dozen or so students engaging in facilitated discussions around a table, may well be more effective.

What if—and this is a big if—there were clear evidence that the Harkness model is more effective than the traditional Harvard model? Even so, many factors would continue to work against Harvard switching over to Harkness: the weight of tradition would be hard to overcome, the large sections are likely critical to social interactions both during the MBA program and after graduation, the physical infrastructure is (despite some experimentation with reconfigurable spaces) generally unsuited to smaller groups of students, and so on. And that is without even getting into financial considerations—although those are arguably less constraining at HBS than at just about any other major academic institution. With explicit encouragement from the top and other mechanisms of the sort described above, there *might* be some hope of such experimentation in the core; without them, however, it seems very unlikely.⁴⁹

Also note that a shift to smaller groups, however difficult, represents just a scalar shift. Initiatives that involve downgrading certain core activities (e.g., research) would be far more wrenching, but are what many see as being required. Kevin Carey’s well-researched *The End of College*, for example, argues that the hybrid model of the research university must be unbundled to separate out three distinct objectives: liberal arts education, practical training, and research. Yet I can imagine faculty—even at economically challenged institutions—fighting any proposal to cut research tooth-and-claw, as they generally care much more about research than they do about class sizes.

From the standpoint of teaching as opposed to research, a sensible overarching policy might be to focus the roles of online and in-class interactions around their comparative advantages. In particular, in-class interactions should be favored when judgment and socialization are important; when discussion of the reasons behind competing interpretations is critical to transformative learning and is best facilitated by face-to-face contact; when it is important to have a nexus to tie together not just homework, but fieldwork (or other activities pursued in the course of activity learning); and when promoting presentation/discussion skills is important.

Although this guiding policy is relatively easy to articulate, it is hard to implement because it requires a shift in mind-set. The famous quote attributed to the poet Yeats—paraphrasing Plutarch—states that “education is not about filling a bucket but lighting a fire.” Although most people would likely agree with this in the abstract, in practice, the way we run the educational sector *is* in terms of filling buckets—that is, classrooms. Highly reputed institutions will always fill their

“buckets,” while less-reputed ones struggle to reach capacity. But in both cases, the focus is generally on filling up, in fairly rigidly prescribed formats—the so-called tyranny of the credit hour—a specific number of classroom sessions of specified duration. Treating classroom time as a scarce resource to be valued highly and used carefully is very different from treating it as a bucket to be filled. Unless there is a dramatic shift in mind-set, it is hard to imagine even a sensible guiding policy ensuring good outcomes.

Will this mind-set shift actually happen? Clay Christensen once used to think so: “If anyone can beat the odds against being disrupted, it is our remarkably capable and committed colleagues in higher education.”⁵⁰

Another celebrated expert named Clay—my NYU colleague, Clay Shirky—takes a very different view:

We have several advantages over the recording industry, of course. We are decentralized and mostly non-profit. We employ lots of smart people. We have previous examples to learn from, and our core competence is learning from the past. And armed with these advantages, we’re probably going to screw this up as badly as the music people did.⁵¹

I hope Christensen is right, but I fear that Shirky may be.

Summary Thoughts

This article used simple strategic analysis to lay out the implications of online technology for traditional higher education providers. Propositions 1 through 3 suggest that to form a more realistic picture of the threats and opportunities of online technology, we need to look broadly at benefits to students, to recognize differences in both operating costs and asset-intensity, and to think through time. If online models do manage to turn the corner and achieve a bigger “competitive wedge” in operating/recurring terms, their very low asset-intensity magnifies the degree to which they threaten traditional models of higher education. Given this very real possibility, how should higher education institutions respond?

Propositions 4 through 6 remind us that it is important for higher education institutions to target costs as well as differentiation with online technology, to articulate the strategic logic of blending and to go *beyond* it to distinguish a range of online and offline strategies instead of lumping them all together as “blends.” Propositions 7 and 8 stress that given ambiguity, as well as the wide range of strategic options, strategy implementation is critical and should be seen not only as a process that is subject to some clear guidelines, but also as one that is likely to require a process of organizational transformation to be successful.

This analysis of higher education also has a more general point to it. Companies today focus on a slew of developments in digital space: changes that include big data and analytics, social media, mobility, and the proliferation of

devices in what used to be a computer-centric space. This should also serve as a reminder of the applicability of traditional strategic analysis to such situations—and the perils of simply labeling and dealing with all of them as “disruptions.”

Author Biographies

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