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The "Promises" of Online Higher Education: Reducing Costs

Executive Summary

The notion that MOOCs and other online courses will reduce the costs of providing higher education and the price students pay for it is a key part of the presumed "promise" of online learning. The question of whether these courses can actually deliver on these grand claims has rarely been explored–and for good reason. Legislators offering up MOOCs instead of funding, administrators building the "efficiencies" and "innovation" sections of their résumés with MOOCs, and corporate providers of MOOC-related goods and services are not likely to look hard at the costs of actually developing and offering such courses.

This paper looks at the trend of charging students more for online courses and at developments in MOOCs that also point to increased costs for students desiring actual degree credit. In sum, the push for more online courses has not made higher education cheaper for students. The promise has always been that it will –but that day always seems to be in the future.

A tally of the often-hidden costs of producing high-quality MOOCs and other online courses suggests that these courses are not actually cheaper for colleges and universities either. In fact, if done well, they can even cost more to produce than traditional face-to-face classes.

The evidence on time faculty put into a single MOOC, not to mention the array of technical support, hardware, and software required to put one on, suggests that while some costs may go down in online courses, others go up to offset any purported "savings." While the public, legislators, and even college administrators assume online courses offer savings because of their "repeatability," the expanded class size they make possible, and the reduced labor costs that result, the expectation that online classes will be cheaper to offer than traditional face-to-face ones is a pipe dream.

In fact, instead of reduced costs and lowered prices, we can expect even more pressures on colleges to increase tuition to cover the ever-expanding array of costs associated with the rush to go online.

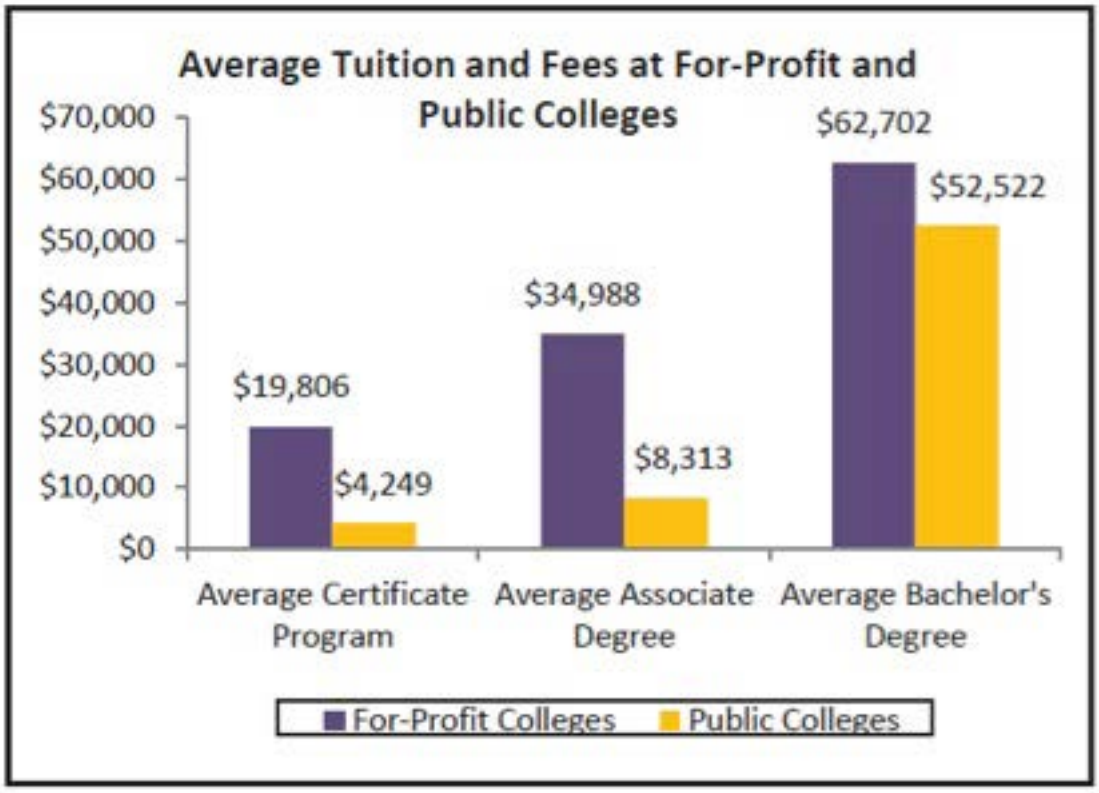
With all that is at stake for the futures of millions of students and for our society, a harder look at the real costs of online higher education is long overdue. At a minimum, there should be more complete accounting by universities of the costs to produce online courses, more comparative data on tuition prices for face-to-face and online credit-bearing courses, and greater openness and transparency about the terms of contracts between public colleges and online providers.

Although it's often assumed, if not promised, that online technologies will reduce the costs of providing higher education and the price students pay for it, the facts suggest otherwise.

Are Online Courses saving money for students?

No. Many online courses are, in fact, more expensive.

For example, tuition at for-profit colleges, which have the highest concentration of online courses and programs, is considerably higher than in traditional colleges and universities.[1] In 2009, the average tuition was $14,000 a year at for-profits; $2500 at public community colleges; and around $7,000 at 4-year public colleges. As the chart below from a 2012 U.S. Senate report shows, the cost of certificates and degrees varies significantly as well[2]:



Increasingly, many public and non-profit colleges are expanding their own online degree programs; and very often they are charging students more, not less, for these online courses. For example, while four years of full-time enrollment in a face-to-face Business Administration program in the California State University system will cost $21,888 in 2013-14, that same degree will cost $47,700 when taken at the Fullerton campus through CalState Online, the system-wide online venture of the California State University system.[3]

Four years of online coursework for a Business Administration degree through for-profit colleges cost even more:

- $49,560 at Ashford University,
- $60,000 at Capella University,
- $66,780 at Kaplan University, and
- $70,200 at the University of Phoenix.[4]

MOOCs, or "Massive Open Online Courses," seem (and are billed as) in a class by themselves: they are "open" to anyone who wishes to enroll, and they are free. No wonder they are touted as a revolutionary, democratizing innovation that will make education available everywhere—at no cost.

Will they lower the cost of college degrees for students?

Not according to campus Presidents around the country. Only 8% of those responding to a recent Gallup survey agreed strongly that MOOCs will be a solution to the rising cost of education for students.[5]

One reason why has been pointed out by Patricia MacGuire, President of Trinity College: "The idea that this is going to stay free and these companies have the best, most altruistic motives is just not believable," she said. "Somebody is going to make a lot of money off of this."[6] This fact may not have dawned yet on everyone, but it is obvious to those in "the ed tech business" where much of the conversation about MOOCs centers squarely on how the companies offering them will make money. [7]

While the "business model" or the "how" of profit-making from MOOCs is still a work in progress, the general trajectory is clear. MOOCs are free now just as many educational TV shows and books from the public library are free; if you just want an "educational experience," you can watch a documentary, read a book, or take a MOOC. But if you want a degree or a certificate or anything from the MOOC that carries real value in the "marketplace," you will have to pay.[8]

Already, for instance, students are being charged for "certificates of completion," and there is considerable talk about charging them for what is called "premium services."

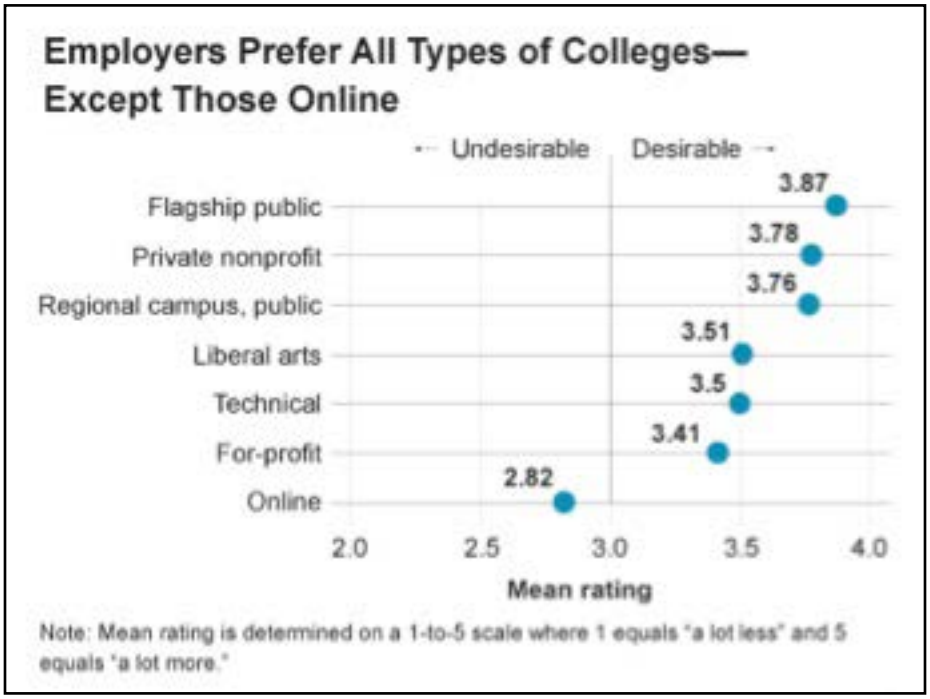
"Premium Services" for MOOCs works like this. MOOC providers are collecting massive amounts of data on students by offering their courses "for free." When they reach large enough numbers, their database will make it profitable to charge a subset of users for "extra" services. With MOOCs, students could pay for "pseudo-transcripts," for instance, or detailed information that tells potential employers how they did in particular courses—even in comparison to other students in that course or other students in a larger database.[9]

If the numbers enrolling are "massive" enough, the courses can remain free – if virtually valueless in the marketplace. According to venture capitalist John Doerr (one of the main backers of the MOOC provider, Coursera) if a sufficient number of people out of "millions of learners" pay for premium services MOOC providers could easily make a healthy profit.[10] As this observation suggests, the corporate provider and investor enthusiasm for the "massiveness" of MOOCs may not be so much about spreading knowledge as it is about getting a big enough set of potential consumers to generate profits.[11]

The bottom line for students? The push for more online courses has not made higher education cheaper for them. The promise has always been that it will –but that day always seems to be in the future.

Even if online providers are able to create demonstrable savings for students compared to face-to-face higher education, there is still the issue of value for dollar.

For many students who do not come from rich families, increased job opportunities and upward mobility are an important (but certainly not the sole) value of a higher education degree. There are many reasons to question whether online degrees are a good value for money on that score, not the least of which is the result of a survey showing that employers do not respect online universities.[12]



Even MOOCs, which get a halo of legitimacy from being offered by respected institutions, will not "compete" with the real deal. The educational prestige and competitive employment edge will stay with the traditional universities and the more privileged students who attend them.[13]

With MOOCs and online higher education being directed primarily at middle- and lower-income students[14] and non-elite institutions, we need to ask not only whether those students are getting value for their educational dollar but also whether we as a country are, under the banner of "increasing educational access," actually increasing social inequality.[15]

Is online education saving money for colleges and universities?

There's an assumption that online courses must be cheaper for colleges and universities to offer; but once again, there is no evidence that online courses, done well, are cheaper than face-to-face classes. In fact, there is considerable evidence that good online courses can be expected to cost even more than face-to-face courses.

Who says?

College presidents around the country, for one, are skeptical that MOOCs will help their bottom line. In a 2013 Gallup survey only 2% strongly agreed that MOOCs will be a solution for "the financial challenges colleges face."[16]

Richard Ekman, President of the Council for Independent Colleges, offers one reason why: "Advocates … insist that [online] courses are more cost-effective. This argument, too, is overstated: The presumed price advantage of the nontraditional approach all but disappears because the higher attrition rate and longer time-to-degree overwhelm any savings."[17]

E-learning experts agree.

In fact, saving money is "one of the worst reasons" to get into online education, according to Joel Hartman, vice provost and chief information officer at the University of Central Florida.[18]

Phil Hill, an e-learning expect who has advised universities about developing online programs, has also cautioned: "Quality online education costs real money – registration systems, instructional design, course instructors, academic oversight and quality assurance, LMS and collaboration systems, student services, marketing and enrollment support. Someone has to pay." [19] Many of these costs (and others such as IT infrastructure, technology maintenance, help desks, for instance) aren't always obvious to non-experts in online learning and can often function as costly "financial gotchas" for institutions once programs are underway.[20]

Saul Fisher has provided perhaps the most detailed analysis of costs associated with online courses.[21] He begins by addressing the common belief held by the public, elected leaders, and even college administrators that online courses must be cheaper to produce than face-to-face courses. On the face of it, Fisher admits, the notion seems uncontestable. After all, there is no need for classrooms (and their associated costs); more students can be put in a class since space is no barrier; and fewer instructors are needed as a result. Fisher shows, however, that this "no-brainer" scenario is actually an unrealistic ideal because the efficiencies assumed to follow in online courses are either elusive or else offset by new costs that can outweigh any savings.

For instance, while there is an assumption that higher initial production costs for online courses can be recaptured through repetition of the course, all quality courses have limited shelf life that cuts into those presumed savings. What actually happens is that while short-term iterations of online courses may be cheaper (after high initial costs for production), costs rise sharply when it is necessary to re-create or retool the course.

As for the claim that more students can be enrolled in an online course than a face-to-face one, Fisher responds that this apparent "efficiency" has to be weighed against effectiveness or "quality of output." As the dismal completion rates for MOOCs suggest, that "output" is uneven.

Even labor savings, Fisher shows, are an unfilled promise in online courses: "Instructional technologies MAY cut the need for INSTRUCTORS, but they ALMOST ALWAYS increase the number of persons needed to design, develop, deliver, support, and sustain instructional technologies—not to mention the costs of licensing software, obtaining rights to intellectual property, and training faculty and staff. When we add all these costs up, he concludes, "The comparable cost of the all-in-one faculty member found in traditional teaching environments begins to look far more attractive."

Fisher could hardly be firmer in his conclusion about cost savings in online courses: "There can be no guarantees—or even rational expectation—that online instruction either becomes very inexpensive over time, or costs much less than traditional instruction." In fact, "the ideal scenario is simply a pipe dream." [22]

The Costs of College/Corporate Partnerships

For a variety of reasons (including daunting costs such as those mentioned above and lack of technical expertise among most college administrators), many universities have begun contracting with a variety of companies to assist in expanding online programs.[23] These for-profit companies, such as Pearson, Embanet, Learning House, Bisk, Deltak, Academic Partnerships, 2U and scores of others are known as "enablers" or BSPs (Bundled Services Providers). They provide a wide variety of online learning services to universities, such as course development, marketing, and IT support.

Paying for these services can also drive up a college's costs–significantly. According to Paul LeBlanc, President of Southern New Hampshire University, the companies usually take about 50% of all tuition revenue generated by the online courses using their services.[24] One for-profit company, Academic Partnerships, collects a full 70 percent (down from an original 80%) of the tuition revenue from one "partner," Lamar University.[25]

Even more recently, established public and non-profit private colleges and universities are beginning to partner with MOOC providers, such as Udacity, Coursera, and EdX. Since MOOCs themselves are "free," it might be reasonable to expect real "bargain basement" deals for colleges and universities, but that is far from the case.

Perhaps the most extensive analysis of costs of these partnerships for colleges is provided by Christopher Newfield, who has examined the contract between Udacity and Georgia Tech to offer a Master's degree program in Computer Science. In "Where are the Savings?" he concludes that there are no significant savings for Georgia Tech in this deal.

Laboriously unpacking spreadsheets and contractual details, he discovers that Udacity and Georgia Tech will spend roughly $3.1 million for a projected 200 students the first term at a cost of roughly $15,700 per student per year.[26] Hardly a savings.

Further, to realize the $19 million in revenue projected for Year 3 of the program, the project will need 8,700 full-time paying students, an unreasonable number actually "larger than the total number of computer science master's degrees granted in 2009-10 in the United States."

Not only will this deal fail to save the university money; it could, according to Newfield, actually cost the university money over the long run while bringing huge benefits to Udacity:

> Udacity gets the intellectual content for a master's program of 20 courses at an upfront cost of $400,000. It borrows Georgia Tech's reputation as its own, at a huge discount (no training of graduate students, no support for labs, no decades of accumulated know-how through which Georgia Tech earned its reputation). It acquires these courses for a proprietary platform: Georgia Tech cannot offer these OMS CS courses, created by its own faculty, to a competing distributor.
>
> Udacity expects Georgia Tech faculty members to maintain and update course material, and can use their latest version. While requiring that Georgia Tech not compete with it, it can take Georgia Tech-created courses and offer them to tens or hundreds of thousands of non-registered students — and sell a program certificate for those courses. These courses will differ from Georgia Tech's in being "minimally staffed to rely on course assistants only for student assessment," but will use Georgia Tech's content to compete with Georgia Tech's and all other masters' programs. With these courses, Udacity enters the master's certification business, selling a complete degree program without a degree's intellectual ecology, physical infrastructure, interpersonal venues, and sunk costs.

As uneven as it seems, the Udacity deal with Georgia Tech is not outside the norm in the MOOC arrangements with non-profit colleges that have been made public.[27] EdX, another MOOC provider that could be expected to offer better deals since it is a non-profit entity, requires that EdX get paid first—and paid handsomely. Even for courses developed by the home institution and simply delivered through EdX's platform with no other services provided, EdX gets the first $50,000 from the course, an additional $10,000 for each repeat plus 50% of all revenue generated above that. Any services, of course, cost extra.[28]

The bottom line for public and private non-profit colleges and universities? While online service providers and "enablers" often promise and elected officials and others often believe that online learning will decrease a college's costs, that is not what is happening.[29] If anything, we can expect even more pressures on colleges to increase tuition to cover the ever-expanding array of costs associated with the rush to go online.[30]

Why the push?

If online education isn't saving money – and may actually be costing students and colleges more, why is there is such a push for more of it? The reasons are complicated, to be sure; but the fact is that snappy slogans, massive amounts of corporate money, and a great deal of wishful thinking have created a bandwagon mentality that is hard to resist.

Faculty who raise questions about costs, student success, or educational quality are often ridiculed as Luddites; and college administrators who weigh pros and cons can find themselves pushed to the curb.[31]

It is just much easier to join the crowd. Faculty, staff, and administrators who do so with enthusiasm and without question are regaled as "innovators." Online supporters in state legislatures get credit for "doing something" about the higher education crisis and offering "solutions" that don't require significant state investment.[32] Add to these pressures (as discussed in "The 'Promises of Online Higher Education: Profits," a parade of savvy corporate leaders promising unprecedented educational opportunity just around the corner (while making staggering sums of money along the way), and it's little wonder the push is on.

But the real bottom line for students, their parents, and our country is this: There is simply no substitute for public investment in higher education, and there is no single cheaper teaching modality or low-cost "magic bullet" that will meet our need for qualified college

graduates.

With all that is at stake for the futures of millions of students and for our society, a harder look at the real costs of online higher education is long overdue. At a minimum, there should be more complete accounting by universities of the costs to produce online courses, more comparative data on tuition prices for face-to-face and online credit-bearing courses, and greater openness and transparency about the terms of contracts between public colleges and online providers.

ENDNOTES

[1] Tom Harkin, "Emerging Risk?: An Overview of Growth, Spending, Student Debt and Unanswered Questions in For-Profit Higher Education."

[2] Tom Harkin, "Emerging Risk?: An Overview of Growth, Spending, Student Debt and Unanswered Questions in For-Profit Higher Education."

[3] California State University website: http://www.calstate.edu/budget/student-fees/mandatory-fees/1314-feeschedules.shtml . Cal State Online website: https://www.calstateonline.net/cso/home/fullertonBABA.

[4] Ashford University website: http://www.ashford.edu/static/programdisclosures/?p=obaba; Capella University website: http://www.capella.edu/online-degrees/bachelors-business-administration/cost-transfer-credits; Kaplan University website: http://www.kaplanuniversity.edu/business/business-administration-bachelor.aspx; University of Phoenix website: https://www.phoenix.edu/tuition_and_financial_options/estimate-tuition-and-expenses.html.

[5] Gallup-Inside Higher Ed. "College and University Presidents Panel-Inaugural Survey Findings. May 2, 2013.

[6] Wilson, Emily. "The Huge Growth of MOOCs Threatens America's Great Public University System."

[7] For discussions of how companies will make money on MOOCs, see Steve Kolowich, "How Will MOOCs Make Money?," Ramin Sedehi and Damian Saccocio, "A Financially Viable MOOC Business Model," and Steve Kolowich, "How EdX Plans to Earn, and Share, Revenue from Its Free Online Courses."

[8] "Free" products and services as a way to generate profits are commonplace in the ed tech business where companies often offer free wares to recruit customers to a new technology and increase future sales ("Catching On At Last: New Technology is Poised to Disrupt America's Schools, and Then the World's.")

[9] For a fuller discussion of this process see Robert Meister's analysis in Irene Ogrizek, "MOOCs Undermine the Public Higher Education Sector."

[10] John Markoff, "Online Education Venture Lures Cash Infusion and Deals with 5 Top Universities."

[11] Dropouts may be an educational problem, but they are not a problem for the MOOC bottom line, as Daphne Koller, one of the founders of Coursera, has pointed out: "The [students] who drop out early do not add substantially to the cost of delivering the course…The most expensive students are the ones who stick around long enough to take the final, and those are the ones most likely to pay for a certificate" (Steve Kolowich, "How Will MOOCs Make Money?").

[12] Karin Fischer, "A College Degree Sorts Job Applicants, but Employers Wish It Meant More."

[13] As Sarah Kendzior has pointed out in "When MOOCs Profit, Who Pays?", "MOOCs…cannot replace the barrier of prestige… Employability rests not on intelligence or hard work, but on the acquisition of credentials…Even if MOOCs provided an education equal to that of a traditional university, they cannot provide the institutional cachet that makes one competitive on the job market."

[14] See analysis by Peter Sacks, author of Generation X Goes to College, who has studied U.S. Department of Education databases to determine who online students are ("Is Online Learning for Steerage?").

[15] Tressie McKillan Cottom ("For-Profit Colleges: Organized for Urgency and Social 'Pain'?") has argued that this is the case and that educational "status competition has never been so expensive for the most socially vulnerable."

[16] Gallup-Inside Higher Ed. "College and University Presidents Panel-Inaugural Survey Findings."

[17] Richard Ekman, "'Disruptive Innovation' Is No Elixir."

[18] Marc Perry, "Think You'll Make Big Bucks in Online Ed? Not So Fast, Experts Say."

[19] Michael Feldman, "Requiem for a Heavyweight: Lessons to Learn from UC-Online."

Getting a handle on costs is difficult. For-profit companies are certainly not interested in highlighting costs or collecting "big data" on this topic, nor are administrators who champion these programs. At this point, cost analysis is sketchy. For anecdotal accounts of faculty time involved in MOOC preparation, see accounts given by MOOC professors in Yvonne Belanger and Jessica Thornton, "Bioelectricity: A Qualitative Approach- Duke University's First MOOC" and in Steve Kolowich, "The Professors Who Make the MOOCs."

[20] EDUCAUSE webinar, "Beyond the MOOC Hype: Getting Serious about Online Learning."

The much-vaunted partnership between Udacity and San Jose State University to offer several online courses certainly encountered a number of "financial gotchas." As reported in the San Jose Mercury News, after it was discovered that many students didn't own computers and were struggling in the course, the school had to buy computers and hire an extra teacher to help students through the course. Even after these extraordinary expenditures the results were still astonishingly poor (Ry Rivard, "Udacity Project on 'Pause.'")

[21] Saul Fisher, "The Market for Higher Education at a Distance: Traditional Institutions and the Costs of Instructional Technology." For more specific discussion of costs in producing MOOCs, see Rachelle DeJong, "What Do MOOCs Cost?"

[22] As an example of the real costs associated with quality online higher education, Fisher points to the Open University in the United Kingdom as an example. While the Open University is a highly respected, indisputably effective provider of higher education, its courses are more expensive per student than any other college or university in the UK.

[23] For a partial list of companies, see the chart published in Inside Higher Education (Doug Lederman, "Pearson Doubles Down Online"):

[24] Paul LeBlanc, "The New For-Profits."

[25] Patrick Michels, "Randy Best Is Going to Save Texas' Public Universities Or Get Rich Trying."

[26] In a rejoinder to Newfield, Sebastian Thrun, CEO of Udacity, responds with important details about the real costs of putting courses online:

Should a top-notch Masters degree really be the result of throwing together and repackaging existing course content? Georgia Tech, Udacity, and AT&T are committed to the highest quality of education. Digitization of content incurs costs. This is not just about translating and putting an offline course online, but transforming existing content such that is developed specifically for the medium and for the online learning experience" ("Thoughts and Financial Transparency in Our Masters in Computer Science with Georgia Tech").

[27] Because these are private companies, obtaining clear and detailed information about the full costs for colleges and universities can be difficult. Christopher Newfield, who obtained the contract between Georgia Tech University and Udacity through a public information request, had this to say about the difficulties of fully investigating claims made in the contract: "If we're being offered transparency, we should get the full spreadsheets on this deal, including out-year cost estimates. But such spreadsheets are considered legitimately proprietary information, trade secrets retained for the advantage of Udacity over its competitors–including public universities. It's economically logical that Dr. Thrun [CEO of Udacity] isn't offering real transparency here. He is of course functioning as a businessman" ("Waypoints in the MOOC Debates, Part III: The Udacity-Georgia Tech Contract").

[28] Steve Kolowich, "How EdX Plans to Earn, and Share, Revenue From Its Free Online Courses."

Some college and university leaders have raised the issue of non-monetary costs for institutions involved in these partnerships.

Paul J. LeBlanc, President of Southern New Hampshire University, an institution heavily involved in online education, raises a number of questions about the role of for-profit Bundled Service Providers and their effect on non-profit institutions:

Are for-profit companies in the process of claiming another large portion of the higher education pie and doing so largely under the radar screen?
Are BSPs important enablers that will allow nonprofit higher education to reclaim the online marketplace from the huge for-profits,

or we trading one kind of for-profit – institutions that are easy to recognize and understand – - for another that is more insidiously embedded within our sector?
What does it mean for any institution to give over so many of its activities to a third-party provider?
How will accreditors and regulators come to think about these disaggregated structures given that the regulatory environment is largely built on the notion of the integrated institution?
Are institutions that enter into BSP contracts sufficiently safeguarding their authority over key functions and decisions and against the recruitment abuses that plagued so much of for-profit higher education?
Are we comfortable with so much tuition revenue leaving our institutions to enrich shareholders and owners of for-profit companies? Put another way, how much do we give away to for-profits before our institutions lose their standing as nonprofits and become fronts for what in reality become much more mixed entities? ("The New For-Profits")
The Provosts at major universities in the Midwest have also raised various concerns, including costs and loss of institutional control (CIC Ad Hoc Committee for Online Technology, "CIC Online Learning Collaboration: A Vision and Framework.")

Other concerns about serious non-monetary costs –in fact, real potential dangers of public/partner relationships–have surfaced recently. In a December 2012 court settlement, for instance, the New York Institute of Technology was found legally and financially liable for actions of its for-profit partner (Joseph G. Casion and Joshua E. Gewolb, "In Online Partnerships, Legal Compliance Is Key").

Tiffin University has encountered accreditation problems because of over-reliance on unaccredited for-profit companies to offer its courses (Paul Fain, "Setting Limits for Outsourcing Online"). Alumni and trustees at Thunderbird Business School have expressed serious concerns about how such a proposed relationship will threaten the reputation of that school and the value of its degrees for all students (Cory Weinberg, "Thunderbird Business School Tries to Calm Dissent Over Deal With For-Profit").

In response to nearly universal criticism, a bill in the California State Legislature requiring state colleges and universities to accept online courses from unaccredited providers for their degrees was recently withdrawn (Ry Rivard, "MOOC Bill Dead for Now").

[29] Online technology has not been a budgetary boon for K-12 education either. There huge costs and numerous "financial gotchas" have created enormous profits for ed tech companies but forced schools to cut other programs to pay for the newest technology. For a discussion of the costs of instructional technology for K-12 education, see Todd Oppenheimer's The Flickering Mind: Saving Education from the False Promise of Technology (2003 Random House), especially the chapter titled "The Spoils of Industry Partnerships."

[30] Joshua Kim ("Why MOOCs May Drive Up Higher Ed Costs") has argued that MOOCs will actually increase college costs for another reason. Their presence and the ways they will change expectations about higher education will, he argues, "put new cost pressures on institutions, introducing new expenses over and beyond the direct cost of producing and delivering a MOOC." More demand will be placed on colleges and universities to provide something "extra" beyond the "content" that anyone can get for free through MOOCs. That is likely to involve more face-time interaction with instructors and more active learning, valuable but costly aspects of higher education.

[31] The case of Teresa A. Sullivan, President of the University of Virginia, dismissed (but later reinstated for not pushing online education hard enough, is instructive.

[32] More than one legislator has pointed to "the promise of online" as a reason for not investing in public universities. For example, see the statements made by Iowa Governor Terry Brandstad (Rod Boshart, "Branstad Cautions Against Overbuilding at Regent Campuses.")

WORKS CITED

Belanger, Yvonne and Thornton, Jessica. "Bioelectricity: A Quantitative Approach-Duke University's First MOOC." Duke Space, February 5, 2013 (http://dukespace.lib.duke.edu/dspace/handle/10161/6216).

Boshart, Rod. "Branstad Cautions Against Overbuilding at Regent Campuses." Quad-City Times, June 24, 2013 (http://qctimes.com/news/state-and-regional/iowa/branstad-cautions-against-overbuilding-at-regent-campuses/article_7e5775e3-7885-5fb0-b6d1-290aea807f6b.html).

Breneman, David W., Pusser, Brian, and Turner, Sarah E. Earnings from Learning: The Rise of For-Profit Universities. Albany, New York, 2006. Kindle edition.

Casion, Joseph G. and Gewolb, Joshua E. "In Online Partnerships, Legal Compliance Is Key." Chronicle of Higher Education, June 17, 2013 (http://chronicle.com/article/In-Online-Partnerships-Legal/139837).

"Catching On At Last: New Technology is Poised to Disrupt America's Schools, and Then the World's." The Economist, June 29, 2013 (http://www.economist.com/news/briefing/21580136-new-technology-poised-disrupt-americas-schools-and-then-worlds-catching-last).

CIC Ad Hoc Committee for Online Technology. "CIC Online Learning Collaboration: A Vision and Framework," June 15, 2013 (https://s3.amazonaws.com/s3.documentcloud.org/documents/716121/cic-online-learning-collaboration-a-vision-and.pdf).

DeJong, Rachelle. "What Do MOOCs Cost?" Minding the Campus, September 17, 2013 (http://www.mindingthecampus.com/originals/2013/09/what_do_moocs_cost.html).

EDUCAUSE. "Beyond the MOOC Hype: Getting Serious about Online Learning." Webinar. February 11, 2013 (http://www.educause.edu/eli/events/eli-webinar-beyond-mooc-hype).

Ekman, Richard. "'Disruptive Innovation' Is No Elixir." University Business, September 2012 (http://www.universitybusiness.com/article/%E2%80%98disruptive-innovation%E2%80%99-no-elixir).

Fain, Paul. "Setting Limits for Outsourcing Online." Inside Higher Ed, August 5, 2013 (http://www.insidehighered.com/news/2013/08/05/tiffin-u-drops-ivy-bridge-college-partnership-altius-over-accreditors-concerns).

Fischer, Karin. "A College Degree Sorts Job Applicants, but Employers Wish It Meant More." Chronicle of Higher Education, March 4, 2013 (http://chronicle.com/article/The-Employment-Mismatch/137625/#id=overview).

Fisher, Saul. "The Market for Higher Education at a Distance: Traditional Institutions and the Costs of Instructional Technology." Chapter 6 in Breneman, Pusser, and Turner, Earnings from Learning. Kindle Edition.

Gallup-Inside Higher Ed. "College and University Presidents Panel-Inaugural Survey Findings." May 2, 2013 (http://www.gallup.com/strategicconsulting/162170/gallup-college-university-president-panel-inaugural-report.aspx).

Harkin, Tom. "Emerging Risk?: An Overview of Growth, Spending, Student Debt and Unanswered Questions in For-Profit Higher Education." Report for U.S. Senate Health, Education, Labor and Pensions Committee, June 24, 2010. http://www.harkin.senate.gov/documents/pdf/4c23515814dca.pdf.

Hill, Phil. "Requiem for a Heavyweight: Lessons to Learn from UC-Online" (http://mefeldstein.com/requiem-for-a-heavyweigh-lessons-to-learn-from-uc-online/).

Kendzior, Sarah. "When MOOCs Profit, Who Pays?" Aljazeera, July 29, 2013 (http://www.aljazeera.com/indepth/opinion/2013/07/201372911456721749.html).

Kim, Joshua. "Why MOOCs May Drive Up Higher Ed Costs." Inside Higher Ed, March 11, 2013 (http://www.insidehighered.com/blogs/technology-and-learning/why-moocs-may-drive-higher-ed-costs#ixzz2YT255C5O).

Kolowich, Steve. "How EdX Plans to Earn, and Share, Revenue From Its Free Online Courses." Chronicle of Higher Education, September 30, 2013 (http://chronicle.com/article/How-EdX-Plans-to-Earn-and/137433/).

Kolowich, Steve. "How Will MOOCs Make Money?" Inside Higher Ed, June 11, 2012 (http://www.insidehighered.com/news/2012/06/11/experts-speculate-possible-business-models-mooc-providers#ixzz2a3t25CdE).

Kolowich, Steve. "The Professors Who Make the MOOCs." Chronicle of Higher Education, March 18, 2013 (http://chronicle.com/article/The-Professors-Behind-the-MOOC/137905/#id=overview).

LeBlanc, Paul J. "The New For-Profits." Inside Higher Ed, May 31, 2013 (http://www.insidehighered.com/views/2013/05/31/nonprofit-colleges-should-be-wary-new-breed-profit-players-essay#ixzz2aFcjpSRd).

Lederman, Doug. "Pearson Doubles Down Online." Inside Higher Ed, October 17, 2012 (http://www.insidehighered.com/news/2012/10/17/pearson-buys-embanetcompass-expand-its-online-learning-business).

McKillan Cottom, Tressie. "For-Profit Colleges: Organized for Urgency and Social 'Pain'?" Presentation at the Southern Sociological Society meeting, 2013. (http://www.slideshare.net/tressiemcphd/for-profit-colleges-organized-for-urgency-and-social-pain-20015445).

Markoff, John. ”Online Education Venture Lures Cash Infusion and Deals with 5 Top Universities.” New York Times, April 18, 2012 (http://www.nytimes.com/2012/04/18/technology/coursera-plans-to-announce-university-partners-for-online-classes.html?_r=2&).
Michels, Patrick. “Randy Best Is Going to Save Texas’ Public Universities Or Get Rich Trying.” Texas Observer, August 29, 2012 (http://www.texasobserver.org/randy-best-is-going-to-save-texas-public-universities-or-get-rich-trying/).

Murphy, Katy. “San Jose State’s Online College Course Experiment Reveals Hidden Costs.” San Jose Mercury News, June 2, 2013 (http://www.mercurynews.com/ci_23366281/online-college-course-experiment-reveals-hidden-costs).

Newfield, Christopher. “Waypoints in the MOOC Debates, Part III: The Udacity-Georgia Tech Contract.” Remaking the University, Jun 25, 2013 (http://utotherescue.blogspot.com/2013/06/waypoints-in-mooc-debates-part-iii.html#comments).

Newfield, Christopher. “Where Are the Savings?” Inside Higher Ed, June 24, 2013 (http://www.insidehighered.com/views/2013/06/24/essay-sees-missing-savings-georgia-techs-much-discussed-mooc-based-program#ixzz2aprv6olf).

Oppenheimer, Todd. The Flickering Mind: Saving Education from the False Promise of Technology. New York: Random House, 2007.

Oppenheimer, Todd. “The Spoils of Industry Partnerships.” Chapter 8 in Oppenheimer, The Flickering Mind.

Ogrizek, Irene. “MOOCs Undermine the Public Higher Education Sector.” University World News, May 25, 2013 (http://www.universityworldnews.com/article.php?story=20130522073402754#comments).

Perry, Marc. “Think You’ll Make Big Bucks in Online Ed? Not So Fast, Experts Say.” Chronicle of Higher Education, March 30, 2011 (http://chronicle.com/blogs/wiredcampus/think-youll-make-big-bucks-in-online-ed-not-so-fast-experts-say/30663).

Rivard, Ry. “MOOC Bill Dead for Now.” Inside Higher Ed, August 1, 2013 (http://www.insidehighered.com/news/2013/08/01/controversial-california-bill-outsource-student-learning-dead-until-2014-or-later).

Rivard, Ry. “Udacity Project on ‘Pause.’” Inside Higher Ed, July 18, 2013 (http://www.insidehighered.com/news/2013/07/18/citing-disappointing-student-outcomes-san-jose-state-pauses-work-udacity).

Sacks, Peter. “Is Online Learning for Steerage?” Minding the Campus, May 2, 2013 (http://www.mindingthecampus.com/originals/2013/05/is_online_learning_for_steerag.html).

Sedehi, Ramin and Saccocio, Damian. “A Financially Viable MOOC Business Model.” University Business, February 2013 (http://www.universitybusiness.com/MOOCBusinessModel).

Thrun, Sebastian. “Thoughts and Financial Transparency in Our Masters in Computer Science with Georgia Tech.” Udacity Blog, June 24, 2013 (http://blog.udacity.com/2013/06/sebastian-thrun-thoughts-and-financial.html).

Weinberg, Cory. “Thunderbird Business School Tries to Calm Dissent Over Deal With For-Profit.” Chronicle of Higher Education, August 2, 2013 (http://chronicle.com/article/Thunderbird-Business-School/140837/).

Wilson, Emily. “The Huge Growth of MOOCs Threatens America’s Great Public University System.” Alternet, June 18, 2013 (http://www.alternet.org/education/who-profits-moocs?page=0%2C1).