Technology and the Evolving Business Model in Higher Education

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In the United States, higher education is in a period of disruption. The student loan crisis has raised questions about the value of a college degree. Private- and public-sector employers have expressed concerns about the "skills gap," and whether graduates are truly prepared for the workforce. And institutions are finding it more challenging to recruit the right students and engage them in their learning.

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Introduction

Technology is changing the business model for colleges and universities in myriad ways.

Regardless of whether institutions are primarily about educating students in person or online, technology is providing new tools to track and encourage student success and to reshape how colleges think about retention and completion. In turn, these efforts have a major impact on the economic health of colleges.

For the many colleges that now offer courses or full programs online, technology is expanding the universe of potential students and creating a range of business models to serve those students.

The articles in this compilation explore the strategies some colleges are using, and the challenges faced by institutions as they seek to use technology to strengthen their financial bases.

Inside Higher Ed will continue to cover these issues, and welcomes your reactions to this booklet and your suggestions for future coverage.

--The Editors
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News

A selection of articles by *Inside Higher Ed* reporters

Georgia Tech's Next Steps

By Carl Straumsheim

Online master's program in computer science -- a much-watched attempt to apply the MOOC model to for-credit programs -- may not be the big revenue generator the institute projected it would be, but administrators deem it a success and plan to expand it.

Georgia Institute of Technology is working on expansion plans for its affordable online master's degree program in computer science, even though the program isn't growing at the rate it first anticipated.

"We will start another program," Georgia Tech President G. P. Peterson said during an April 2016 interview with *Inside Higher Ed*. "We're very pleased with the success of the program, and we're looking to expand it into other areas."

The program was an early pioneer in using courses built on the model of massive open online courses to award credit. Amid the hype about MOOCs and their lackluster completion rates, this was one of a handful of projects that many have been watching (and maybe fearing as competition) -- and the institute priced it aggressively. Online students pay $170 a credit hour, compared to $561 for in-state students in the face-to-face program. Together, the institute's strong reputation, the low price point of the program and the potential to enroll many more students than can fit in a physical classroom presented a promising model.

In 2016, more than two years after launch, the program has seen its first students graduate. Administrators and faculty members at the institute describe it as a success. Students find it challenging but re-

warding. Does it matter, then, if the program is not enrolling as many students or generating as much revenue as the institute thought it might three years ago?

"I couldn't be happier with where we are," said Charles L. Isbell Jr., a senior associate dean and professor in the College of Computing. "When I say that the program is successful, I mean it by the financial measures -- we've got tons of students -- but to me the big success is we've been able to take a bunch of people who are already clearly qualified and the vast majority of whom would never have been able to get an advanced degree from a great place because they were not

mobile. Now they can."

Under the contract terms agreed to in 2013, Georgia Tech and online education provider Udacity planned to quickly grow the program in its first three years. According to projections for the 2015-16 academic year, the program would surpass 13,000 total full-standing degree-seeking students and generate more than $19 million in tuition and fees, leaving a profit of about $4.7 million to be split 60-40.

Those projections have proved overly optimistic. The program has not been a "big revenue stream," Peterson said. With 3,358 students, the program is a "positive cash flow at this point" and the institute is "beyond break even," but he expressed doubt that the program will reach the 10,000-student mark. Administrators in the College of Computing floated the 10,000-student figure as a best-case scenario back when the program was announced.

Isbell, however, said the institute is tracking enrollments by looking at the total number of courses students take. On average, students take 1.5 courses during the fall and spring and one course in the summer. According to those numbers, he said, enrollment is where the institute expects it to be.

In any case, enrollment appears to be trending up. The institute recently received its 10,000th application to the program, and the number of applications for the next admission cycle is up about 50 percent, Isbell said.

The institute did not share specific information about the program's finances, but Isbell indicated that the fixed costs of running the program are due to drop. Course development has been a major expense -- Peterson said the institute spends about $350,000 to create each course -- but with 20 courses in its inventory and another seven or eight lined up for this fall, the institute will soon have "more than enough" to satisfy student demands, Isbell said.

"Since all of those things are behind us, the revenue we get from tuition covers our variable costs and the small fixed costs that we have by producing two courses a year instead of 12," Isbell said. "We are certainly at the point where we are self-sustaining."

AT&T subsidized the program's launch with a $2 million investment, then later made an additional $1.9 million commitment. The company has received a return on its investment. AT&T offers a tuition assistance program, and its employees made up more than 20 percent of the 2,359 applicants to join the first cohort. About five employees are among the program's first 20 or so graduates, who finished the program in December.

"Our business relies more and more on computer software as we transition from a telephone company to a mobile- and software-centric business," an AT&T spokesperson said in an email. "We need more software engineers, network engineers and data scientists. … Through this program we will help ensure a great pipeline for these roles and others going forward. AT&T will tap into the program as training ground as well for internal employees."

The one thing holding the program back from quickly growing its enrollment may be the challenge of growing its support staff, Isbell said. The program isn't yet pushing up against its limit, but there are questions "on the horizon" if it continues

to grow at the same rate, he said.

"The biggest problem that we have is that as you get more students, you need more TAs, more people who are going to grade, more people who are going to be advisers," Isbell said. "Luckily because we're at the stage of self-sustainability, we know we're going to grow. … It's not about whether we can handle 3,000, 10,000 or 20,000; it's about how quickly we can get [there]."

Once the first applications for the online program arrived, Georgia Tech was surprised by how the demographics differed from the applications to the face-to-face program. The institute's face-to-face cohorts tend to have more men than women and international students than U.S. citizens or residents. Applications to the on-line program, however, came overwhelmingly from students based in the U.S. (80 percent). The gender gap was even larger, with nearly 9 out of 10 applications coming from men.

The number of international ap-

> " The biggest problem that we have is that as you get more students, you need more TAs, more people who are going to grade, more people who are going to be advisers. "

plicants is gradually rising, but the institute is exploring ways to make the program more appealing to students scattered around the world. Isbell said the institute is looking at partnering with universities and companies abroad to make sure students can take advantage of lo-cal resources. Peterson suggested that might come in the form of 20 employees of the same company working their way through the program together as a cohort.

"It's important to feel like you're not alone," Isbell said. He said the fact that students are organizing themselves into communities on Facebook, Google+, Reddit and other platforms is another sign of the program's success.

The institute isn't yet offering any specifics on how the program's model will be adapted to other disciplines. Peterson said the institute is considering fields such as cybersecurity, data analytics and supply chain engineering -- areas "where we have significant expertise." ∎

https://www.insidehighered.com/news/2016/04/27/georgia-tech-plans-next-steps-online-masters-degree-computer-science

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Logging Off, Dropping Out

By Paul Fain

Hard data on which students are failing to use learning management software can help colleges intervene to boost retention rates.

Knowing how often college students log onto learning management software is one of the best ways to predict whether they will stick with their studies or drop out.

That finding, which comes from a trove of data collected by Civitas, an education technology company that does predictive data analytics, might seem like common sense: students who don't do their course work are less likely to graduate.

But engagement data from learning management systems (LMS), said officials at colleges that are clients of Civitas, can be sliced and diced to much better predict which students are likely to struggle, and to help colleges act on that information.

Strayer University hired Civitas in 2013. Joe Schaefer, the chief technology and innovation officer for the large for-profit chain, said the university had previously relied on the standard metrics most colleges use to predict student success, such as grade point averages, scores on standardized tests, demographics,

academic standing and whether students attend college full time or part time.

"Student engagement trumps everything, by far," said Schaefer.

Over all, Civitas said that for a sample of 600,000 students at 23 institutions, engagement data accounted for 2 of the 10 top predictors for the retention of first-year students. Sometimes it was the No. 1 predictor.

At one research university, which Civitas did not identify, about 88 percent of students remained enrolled after their first year, Civitas said. But the university's persistence rate dropped to 76 percent for students who interacted with the learning management system on fewer than five days during the first two weeks of the term, versus 92 percent for students with five or more days of activity during that period. The percentage dropped to 48 percent, meaning more than half will drop out, for students who used the software on one day or fewer.

Colleges can use that level of

specificity about which students are falling behind to reach out and offer support, such as a meeting with an academic adviser, said Laura Malcolm, vice president of product management at Civitas. And the behavioral data tend to be more telling than static predictors like a student's background or GPA.

The data tell more than whether or not students log on to the LMS, Malcolm said, offering specificity such as whether they check a syllabus or participate on a discussion board. It also shows how a student varies from his or her peers.

Even so, Malcolm said she was surprised by the consistency of the findings, which applied both to online and on-ground programs (LMS engagement is a bit more of a retention predictor online, not surprisingly).

GPAs in particular seem to lag in comparison to engagement data as a predictor, according to Civitas, which found that almost half of students who drop out -- across a sample of two million students -- had a

GPA of 3.0 or higher.

Marie Cini, the provost and vice president for academic affairs at the University of Maryland University College, said the finely tuned data from Civitas on LMS engagement help to ensure students succeed. And UMUC starts tracking student behavior even before the first day of a term.

The university looks to see whether students are logging onto material for a course before it begins, she said, to see whether they're starting to prepare.

"We can tell you on day zero, before classes start, which students are likely to succeed," said Cini.

Schaefer said Strayer also pays particularly close attention to students in the beginning of a term.

"You need to catch them early," he said. "We look at engagement of students relative to other students."

The university has experimented with asking faculty members and coaches to reach out to students with low levels of engagement during various intervals as courses progress. The goal, Schaefer said, was to "constantly monitor the relative engagement, particularly the ones who change" during the term.

One Strayer project, which featured faculty interventions with students the university knew were falling behind based on Civitas-provided data, resulted in a 5 percent increase in class attendance, a 12 percent bump in students who passed the course, and an 8 percent decrease in those who dropped the course.

The most successful approach, Schaefer said, was when faculty members reached out via phone, email or even video and sought to have "real and meaningful human conversations" with students.

Asking, "Are you OK?" and "How can I help you?" seemed to make a difference, Schaefer said.

The LMS engagement information from Civitas doesn't explain why a student is disengaged. It's just a signal, said Malcolm, but a valuable one.

"It's a key early signal that they can use with students," she said. "The more you focus on behavior, the more predictive it becomes." ∎

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Contours of a New Discipline

By Carl Straumsheim

Conference at Georgetown University discusses how to train future ed-tech leaders and whether creating a new discipline is the answer.

Does higher education need a brand-new discipline to train its next generation of ed-tech leaders, or should the work take place across disciplines in a reworked teaching and learning center?

Those were some of the questions broached during a conference in May 2016 at Georgetown University to discuss how developments in the fields of ed tech, instructional design, learning analytics and higher education leadership are changing colleges -- and what colleges should do in response.

One idea, which would touch on all of those topics, is a new kind of teaching and learning center. Tentatively called the Georgetown University Institute of Learning and Design, or GUILD, the institute would include instructional design support but expand into new areas, such as research and interdisciplinary degree (and nondegree) program production.

The idea of the institute, which

some hope could be a model for other colleges, is to provide education that is more focused on course redesign, analytics and change than may be the norm for some teaching and learning centers, and also for some programs that train higher education administrators for senior positions.

Attendees at the conference, many of them with jobs that bridge

Georgetown's Edward J. Maloney

technology and pedagogy, spoke of the need to train people like themselves and faculty members -- and

to conduct research that would inform policy debates about the future of higher education.

Edward J. Maloney, executive director of Georgetown's Center for New Designs in Learning and Scholarship (or CNDLS, which is pronounced "candles"), is behind the proposal for GUILD. Maloney helped found CNDLS, which he said has "become well ensconced in the fabric of teaching and learning at the university," but as the center enters its 16th year, Maloney decided to sketch an outline for the next decade and a half.

"If we're going to be innovative going forward, we have to touch on research, we have to start training people for things we think are important," Maloney said in an interview. "[The proposal] was really an attempt to answer the question, 'How does Georgetown continue to adapt and grow?'"

Many teaching and learning centers, including CNDLS, organize

their work around projects. They might have a handful of faculty development programs and offer media production and course development services. While that approach has served the university well, it "limits research opportunities and has had to manage an increasing tension in allocation resources between current on-campus support and experimental innovations in pedagogy," according to Maloney's proposal.

GUILD's three main components, in comparison, would feed off one another, the proposal imagines. The research conducted by faculty members in the center would shape the programs they create (and vice versa), and teaching in those programs would bring about innovations in course design.

"The institute brings together the strengths of an academic department, a university support service and a cluster of research laboratories into one unit," the proposal reads. "We believe this tight integration is paramount to the success of any one of its elements and that the whole will be stronger than the sum of its parts."

More broadly, Maloney writes, GUILD "has the potential to serve as a design lab for rethinking the organizing principles of the structure of a college or university in a way that recognizes that the future of higher education is the tighter integration between curricular, co-curricular and administrative functions."

Achieving those goals will require a "paradigm shift," Maloney said, especially since the proposal calls for "[bringing] together what are often seen as the disparate roles of faculty and administration." The suggestion is a "provocative" one, he acknowledged, but he said there is value in exploring areas of collaboration that require the input of faculty members, administrators and staffers.

"We sit in a fairly complex ecosystem," Maloney said. "We can recog-

UMBC's John Fritz

nize and try to nurture it, or we can continue to try to hang on to a legacy model."

The GUILD proposal is just that -- a draft, a case study. It may never be fully realized, Maloney said. But parts of it are already in the works. Also this spring, a graduate executive committee approved a proposal from CNDLS to create a master's degree in learning and design. Its concentrations, which will roll out once a year for four years, will cover learning design, instructional technology and innovation, learning analytics, and higher education leadership.

A Stand-Alone Discipline?

The conversation about GUILD, which one attendee called the "anchor" of the conference, builds on a report from the Massachusetts Institute of Technology that looked at the future of online education. Like the GUILD proposal, the report recommended a more interdisciplinary approach to research to improve teaching and learning.

The report also called for colleges to train a new kind of professional: learning engineers. A cross between a faculty member and an instructional designer, the learning engineer would combine subject area expertise with technical know-how.

The response to that idea has been mixed, including among the people in attendance at the conference, said John Fritz, assistant vice president of instructional technology and new media at the University of Maryland Baltimore County. He said he personally likes the concept of the learning engineer and the idea of exposing more instructional designers to learning analytics.

"Like it or not, sometimes I wear many hats," Fritz said. "I'm working with faculty, supporting their teaching. I'm also focused on student success. A lot of my research is on analytics. The theme that came out of the meeting is that we don't have the right language to describe what we do, let alone perpetuate it."

Georgetown is the latest research university to ask whether colleges need to look across their traditional dividing lines to tackle the challeng-

es facing higher education today -- particularly how colleges should prepare themselves to adapt to changes in demographics, funding and technology without sacrificing the quality of their programs.

Educational technology is seen by some as a potential remedy, but some of its shortcomings -- particularly the issue of making a difference for a large number of students -- still give some proponents pause.

"There's a sense that educational technology has come pretty far, achieved a great deal, but it has strong limitations," Bryan Alexander, an ed-tech consultant who was in attendance at the conference, said in an interview. "How do you expand it? One way is to have educational technology taken seriously as an academic discipline."

Others were more hesitant. Maloney said he did not intend for the conference, which he helped organize, to launch a new discipline, but rather to start a conversation about how there are "contours of a discipline forming."

Others yet said a discipline would have to be broader than just ed tech, perhaps incorporating some of the

> **" We sit in a fairly complex ecosystem. We can recognize and try to nurture it, or we can continue to try to hang on to a legacy model. "**

topics that GUILD hopes to cover and borrowing insight into how the brain learns from fields such as neuroscience and cognitive psychology.

The topic still ended up being the "dominant conversation," Maloney said. And toward the end of the conference, attendees broke into group to debate which basic questions such a discipline would set out to explore.

"If biology has to answer 'What is life?' what questions do we have?" Alexander said.

The group came up with three. The first: How can colleges best improve teaching and learning? The second: How should colleges position themselves to respond to external changes? The third: What are the aims of higher education?

Together, Alexander said, the questions target teaching, institutional transformation and broader ethical concerns.

But the components that would make up that new academic discipline aren't a perfect fit, Alexander said. The main problem with the thought experiment, he said, was that "it felt like we were duct-taping two worlds together -- learning science and educational technology."

Spinning off into a stand-alone discipline to strengthen the field could also have the opposite effect, Alexander said. By requiring participants to have graduate training, colleges risk shutting out "accidental technologists" in other disciplines, he said.

"To create and defend a discipline, you have to be exclusive," Alexander said. "You have to rule things out. You risk burning bridges and excluding too much." ∎

The Evolving Online Education Market

By Carl Straumsheim

The 13th and final annual report on online education enrollments by the Babson Group shows how much the market has grown since 2002 -- and how little it has changed.

The Babson Survey Research Group is ending its influential report on the number of students who study online and how chief academic officers feel about the delivery method, citing a "coming of age" of the online education market.

Yet the 13th and final annual report, released in February 2016, shows that perceived skepticism among faculty members toward online education remains, and that many colleges continue to have no interest in online courses.

With the federal government now including distance education students in the Integrated Postsecondary Education Data System, or IPEDS, the Babson Group said it will shift its focus away from estimating how many students take online courses. The group isn't giving up on research, its co-director Jeff Seaman said, but will discontinue its annual report in favor of interactive publications -- including a new website and infographics -- and in-depth papers on strategy, policy and more.

The Babson Group hinted at that development in 2015, when it dropped its own estimates of how many students take online courses in favor of the IPEDS data. The 2016 report is a hybrid, combining IPEDS enrollment numbers from fall 2014 with results of a survey on attitudes and practice the group conducted during fall 2015.

The introduction of the final report, titled "Online Report Card: Tracking Online Education in the United States," notes the inadvertent way in which the report became a barometer of online education attitudes.

"It began when Frank Mayadas of the Alfred P. Sloan Foundation posed a simple question: 'How many students are learning online?' " the report reads. "It was soon evident that no one knew the answer, and, more importantly, that no one was working on getting the answer. We took on the task, one we thought that, while very interesting, would be a one-off, to address a specific question about numbers."

In an interview, Seaman said the Babson Group may begin to survey people at other links of the academic "food chain," examining attitudes about online education among presidents and chancellors or pedagogical approaches among faculty members who teach online, for example.

"The questions that we need to answer now are not the ones that we posed back in 2002," Seaman said. "It's time for a different design for a different era."

The original report, published in September 2003, was full of questions. Armed with survey data, the Babson Group set out to answer whether administrators, faculty members and students would accept online education as a delivery method. More than a decade later, some of those questions remain unanswered.

Looking at enrollment numbers, the answer for students is "absolutely," Seaman said. The original report estimated that more than 1.6 million students took at least one online course in fall 2002, with 578,000 of them studying exclusive-

ly online. The most recent IPEDS data, dating to fall 2014, show those numbers have grown to 5.8 million and 2.85 million, respectively. The Babson Group partnered with the WICHE Cooperative for Educational Technologies to analyze the enrollment data.

The answer is not as clear-cut for administrators and faculty members. Between 2002 and 2012, more and more academic officers said online education was a critical part of their institution's long-term strategy. Since then, however, the share appears to have plateaued at around two-thirds of respondents. Seaman pointed out that the colleges that remain negative about online education are the ones that don't offer any online courses.

"We've basically reached a point where everybody for whom [online education] is important for their institution is fully on board," Seaman said.

While student enrollments have grown, administrators say faculty members at their institutions remain skeptical about the value and legitimacy of online education. In fact, faculty attitudes have hardly budged over the lifetime of the report.

In fall 2002, about 27 percent of administrators said faculty members accepted online courses as a legitimate method of delivering education. When the Babson Group ran its survey last fall, 29.1 percent of administrators said the same. The report describes that lack of progress as a "continuing failure of online education."

FACULTY AT MY SCHOOL ACCEPT THE VALUE AND LEGITIMACY OF ONLINE EDUCATION – 2002 TO 2015

Very Little Impact

When the Babson Group worked on the first report, Seaman said, there was an expectation that online courses would "take higher ed by storm." Other than helping students who may not have been able to physically attend classes pursue higher education, distance education has had "very little impact," he said.

"For me, the biggest failure is how little change [distance education has] made to higher ed," said Seaman, adding that colleges could have used online education to rethink pedagogical approaches. "It's a missed opportunity."

After nearly 16 years of surveying academic officers on the same questions, Seaman said he is still surprised by some of the responses. This year, he highlighted the growth rates of the different sectors of online education. Most significant, he said, is the fact that the for-profit sector continues to shrink.
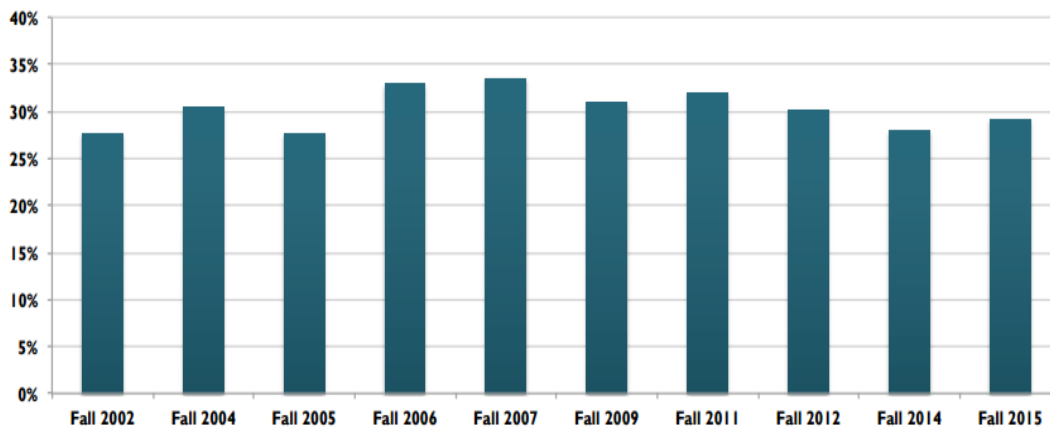
Between 2012 and 2014, for-profit colleges lost 101,045 online students -- a full 10 percent of their online enrollments. Many of those colleges have been forced to close. Private and public nonprofit institutions, in comparison, added 196,054 students. After years of dominating the online education market, for-profit colleges now make up the smallest sector.

Seaman said the Babson Group is still in the process of picking which topics its future in-depth reports will cover. A preliminary version of the website containing the interactive IPEDS data can be seen here. ∎

Library Bound

By Carl Straumsheim

Hamilton College's library and Information Technology Services, long-time cohabitants on campus, tied the knot in 2013. Why is that model, rare at large institutions, appealing to smaller ones?

Joan Hinde Stewart's tenure as president of Hamilton College may be remembered as the time when the liberal arts college fully committed to a need-blind admissions policy. But in a fall 2015 meeting with *Inside Higher Ed*, Stewart stressed what she considered another of her top accomplishments: merging the library and information technology operations into one department.

Most colleges keep their libraries and IT departments separate, but at many smaller colleges -- and particularly liberal arts institutions -- administrators see a merger as a way to curb administrative costs. Others, however, see combining two departments with significantly overlapping responsibilities as the best way to serve their faculty members and students. Hamilton says it belongs to the latter group.

"With the impact of new technologies on the production and retrieval of knowledge, such a merger seems to me the way of the future," Stewart said in a statement. "At Hamilton it was the result of extensive conversation and careful planning."

That process dates to Hamilton's 2002 strategic plan, which proposed renovating and expanding the library. It was also aided by a series of coincidences may have made the merger less controversial than at other colleges, said David L. Smallen, vice president for libraries and information technology.

The college's librarian, Randy Ericson, announced his intention to retire in 2011. Stewart then charged a Committee on the Library of the Future to chart the library's path for the next decade. In its final report, the committee stopped short of endorsing a merger, but said the library should consider collaborating more closely with other departments on campus -- departments such as Information Technology Services (ITS), for example, which for decades had conveniently been located in the library and led by Smallen.

The merger became a reality two years later, as Hamilton announced the two departments would form the Library and Information Technology Services (LITS).

"We lived together for 40 years before we got married," Smallen said. "There's no substitute for people interacting with each other over the coffeepot. That was a real benefit."

Broadly speaking, the new department's mission is to teach students how to use information and technology to make well-informed decisions later in life, Smallen said -- in other words, preparing them "for the world in which they're going to live." The new department is also better positioned to support Hamilton's growing Digital Humanities initiative and its consortium with three other liberal arts colleges to experiment with online education, among other projects that require both library and technology expertise, he said.

The merger has also improved the flow of communication, Smallen said. Hamilton, like the majority of colleges and universities, is doing its best to keep up with the changing scholarly publishing landscape. The college does much of that work through consortia, he said, and the merged structure ensures important news -- for example about electronic academic monographs -- reaches both librarians and IT staffers.

"It's those kinds of moments where the problem being addressed

has elements of both information and technology that this kind of organization really shines," Smallen said.

Since the original departments were already located in the same building, much of the actual merger consisted of gradually bringing staffers with complementary job responsibilities together, Smallen said. Take Hamilton's instructional technologists and research librarians, for example. Initially following the merger, they retained their titles but worked together in one group with two separate leaders. One year into that arrangement, the head instructional technologist retired, and the group renamed itself the research and instructional design team.

LITS is now an organization of about 60 people, with smaller departments dedicated to tasks as diverse as acquisitions, computer repair and jazz archiving. No staffers lost their jobs as a result of the merger, Smallen said. The college is instead using retirements -- there have been about four in total -- as "opportunities for further integration and rethinking."

"If you merge the organizations, you should do it for strategic purposes, not to save money or just for efficiency," Smallen said. Hamilton wasn't trying to fix an "organizational problem" with the merger, he said, but to find the best way to support

the college's academic programs "in a world in which information and technology are changing in many different ways."

Ann Campion Riley, president of the Association of College & Research Libraries, said mergers are typically seen as a way to cut costs, since the college only needs to pay one dean or director. Mergers often become controversial for that reason.

Indeed, at some liberal arts colleges, library directors have resigned in protest or been fired after disagreements about the future of

Hamilton College's Daniel Burke Library

the library. The role of technology has been a central topic in several of those cases.

Colleges may also be attracted to the "synergies" between libraries and IT departments, Riley said. When it comes to teaching students about information literacy, for example, the two departments can make for good partners, she said.

The reason mergers are popular at liberal arts colleges is simple, Riley said: the departments are smaller, meaning a merger doesn't create a "big, unwieldy organization."

Still, mergers at liberal arts colleges haven't always been successful. Gettysburg College considers itself one of the first liberal arts college to attempt one. The college moved its IT staffers into the library in February 1994, creating a new department it dubbed Information Resources.

"It was hoped that a merger would meet critical technology goals, consolidate resources and eliminate redundancy," Jamie Yates, the college's director of communications and media relations, said in an email. "In these areas the merger was successful."

Information Resources only lasted for three and a half years, brought down by factors such as cramped accommodations, opposition from faculty members and an "unwieldy and unworkable" team structure. The initiative also lacked a "grassroots planning process," Yates wrote.

Smallen said he recommends colleges at least consider a merger, even though the timing may not be right on every campus.

"Organizations are what they are," he said. "You can't really force these issues." ∎

MIT's New Model

BY CARL STRAUMSHEIM

Massachusetts Institute of Technology will explore stackable credentials and massive open online courses as an alternative path to earning a master's degree.

The Massachusetts Institute of Technology plans in 2016 to launch the first of what could be several pilots to determine if pieces of what it has provided face-to-face can be delivered through massive open online courses.

The institute in late 2015 announced an alternative path for students to enroll in its supply chain management program and earn a master's of engineering in logistics degree. Instead of students being required to move to Cambridge, Mass., for the duration of the 10-month program, MIT will offer half of the program through MOOCs, saving students tens of thousands of dollars in tuition.

Learners who complete the MOOCs but can't afford or simply aren't interested in finishing the degree won't walk away empty-handed. MIT will offer those learners a new microcredential, called a MicroMaster's, and is working with other organizations that offer supply chain management programs to ensure they will accept the credential toward degree completion.

MIT has for years expressed an interest in using MOOCs and other technologies to cut down on the time students spend on campus. In a 2013 report on the future of MIT, a task force urged the institute to explore new models of education and "take advantage of … disruptions rather than ignoring them."

In an interview with *Inside Higher Ed*, MIT President L. Rafael Reif echoed that conclusion. "I'd rather we disrupt ourselves than be disrupted by somebody else," he said.

By letting students complete their first semester through MOOCs, MIT is effectively offering a "try before you buy" promotion. The institute calls this inverted admissions -- taking courses and then applying, as opposed to the traditional other way around.

MIT is the latest institution to use low-cost MOOCs as a stepping-stone to a degree. Earlier this fall, edX and Arizona State University launched Global Freshman Academy, which offers students an opportunity to enroll in a MOOC, complete course requirements and -- if they are satisfied with their performance -- pay the university to receive credit.

The University of Illinois at Urbana-Champaign has used a similar model for its iMBA program, which allows students to complete much of the curriculum before deciding whether or not to apply to the university's College of Business and pursue the full M.B.A. degree.

George Siemens, a MOOC researcher who leads the Learning Innovation and Networked Knowledge Research Lab at the University

of Texas at Arlington, said those examples suggest the institutions are showing a willingness to remake themselves.

"We are finally starting to see that process unfolding now as universities are responding to trends in technology and society broadly," Siemens said in an email. "What has been called disruption -- [competency-based education], boot camps and so on -- will be appropriated by universities. This is the start."

Richard DeMillo, the Charlotte B. and Roger C. Warren Chair of Computing at the Georgia Institute of Technology, said the MicroMaster's path is "yet another indication that the old models [of higher education] are vulnerable." (Georgia Tech is already well underway with its own MOOC-powered degree program.)

"My guess is that once learners find out that this is a better, more effective learning experience, they will come pouring in," DeMillo said in an email.

MIT will offer the first MOOC starting in February. Since it will take some time for the institute to convert all five of the courses offered during the first semester of the program into MOOCs, the first cohort is unlikely to graduate before June 2018, Reif said.

MIT may launch similar pilots in other programs in the coming years, Reif said. Before the institute makes a final decision about whether or not to expand the model, "it would be great to see at least once class graduate, if not two," he said.

Officials at MIT hope the pilot will provide them with answers to questions about admissions, course quality and need-based financial aid, Reif said.

He was unable to say specifically how MIT will ensure learners who complete the MOOCs will quickly be evaluated for admission into the residential program, but suggested learners may be able to announce their intent at an early stage and complete the paperwork before finishing the last MOOC.

MIT's website states learners who "do exceptionally well" in both the MOOCs and proctored exams will "significantly enhance their chances of being accepted to the full master's program."

The institute is also searching for corporate partners that would be willing to offer financial aid. MIT expects many of those who choose the MicroMaster's path to come from outside the U.S., meaning they will not be eligible for federal aid. Those students will only pay about half of the $65,446 students in the residential program pay for tuition, but a semester priced at more than $30,000 could be a significant barrier.

Although MIT hopes the Micro-Master's path will increase access to the supply chain management program, the expansion will also come with increased costs for the institution, as it may have to accommodate the program doubling in size.

The residential program, which MIT will continue to offer for the time being, normally enrolls about 30 to 40 students, Reif said.

MIT plans to track student performance and if students on the Micro-Master's path receive comparable job offers as residential students during the pilot, Reif said.

"If it goes well, I do expect that the faculty at MIT would want to expand this program," Reif said. "If there are many, many, many more people who prefer to try out the program [online] … that's what we'll gravitate toward, inevitably." ∎

The Language of Learning Analytics

By Carl Straumsheim

Caliper, an initiative to standardize collection and reporting of learning analytics, is nearing release. Can colleges and vendors learn to speak the same language?

The world of learning analytics is full of metaphors. Educational-technology companies are "islands," disconnected from one another. Data are locked away in "silos." As an initiative to standardize the collection and reporting of learning analytics nears a public launch, can colleges and vendors learn to speak the same language?

"Analytics" is one of the hottest buzzwords in education. For ed-tech companies, it is also a selling point. By using vendors' suites and solutions, colleges will gain access to data about why some students succeed and where and when others stumble -- or so the pitch goes.

But there's a catch, said Linda Feng, senior product manager for analytics and SIS integration at Instructure. "The whole premise is that all that data has to be in their world," she said.

Step outside that world and try to take the data to another platform, and it quickly becomes a conversation where both sides are speaking in different languages.

Colleges are rarely tied to a single vendor. They may be tracking course enrollment patterns with one system, retention with another and tools to measure engagement with yet another -- and those systems all produce data. Extracting data from those tools and platforms is one issue; making the data say something meaningful about what students are doing is another.

"All these systems have their own languages that are written for their own needs," said John Whitmer, director for platform analytics and research at Blackboard. "In order to talk a common language, we have to agree to a common vocabulary.... If you don't have a common vocabulary, you can't write the world's most beautiful poem."

Blackboard, Instructure and the more than 320 other vendors and universities that make up the IMS Global Learning Consortium have for years been working to agree on which words go into that vocabulary, and their work is finally nearing

its version 1.0 release. Known as Caliper, the vocabulary -- called metric profiles -- and the mechanisms to detect the words in it -- sensors -- will serve as a framework for tracking and reporting learning analytics.

Should Caliper be supported by a large number of colleges and vendors, it could become the standard for how student learning data are collected. But Caliper is still only available as a release candidate to members of the consortium and is still "a couple of months" away from public availability, said Rob Abel, CEO of IMS. The larger market of colleges and vendors, which will help determine if Caliper becomes a widely adopted standard, has yet to

take a look at the framework.

Until the public release, IMS and its members are therefore managing expectations.

"Whenever standards are sold as the magic that solves all problems, that's a concern to me," Abel said, before resorting to another metaphor. "They're not. They're just plumbing."

'What Data Can I Get?'

It is difficult to speak concretely about how Caliper will be used when that decision ultimately rests with colleges and vendors -- which is perhaps why people resort to metaphors to explain what the framework is. On its own, Caliper is not a dashboard or an app that automatically explains how students learn. Those tools must be built on top of the framework.

"[Caliper is] certainly not going to figure out what the best analytics approach is, but it's going to make it easier for institutions to get data from applications so they can actually understand what it is and process it," Abel said. "We think that's about right for the market where it is now."

That approach is similar to how the consortium developed the Learning Tools Interoperability framework. LTI didn't create Khan Academy, ProctorU and Wikipedia, but it created a standardized way for those organizations to make their tools embeddable in learning management systems and other platforms.

Caliper builds on the interoperability framework, Abel said. Now that apps and platforms can easily connect to one another, he said, "Then the next natural question you ask is, 'Well, what data can I get?'"

While only a handful of colleges and vendors are ready to ask themselves that question, Abel said, some Caliper work group members have begun to identify potential use cases. One common idea is the potential they see in capturing and reacting to real-time data.

> " In order to talk a common language, we have to agree to a common vocabulary.… If you don't have a common vocabulary, you can't write the world's most beautiful poem. "

The University of Kentucky is perhaps farthest along with its plans. Vince Kellen, a senior vice provost and chief information officer there, said the university plans to extend its early warning system using data collected from when students engage with course content. Kellen co-chairs a Caliper work group tasked to look specifically at how learning analytics could power real-time messaging systems.

"If a student disengages in the middle of a term, we sometimes don't know if it's because of finances, if classes are too difficult or if they're not sure if they belong here from a social standpoint," Kellen said. "By getting that interaction data, we can do a better job of de-

tecting that sooner. If we can interact with the student sooner, we can help them better."

Another co-chair, the University of Texas at Austin's Phillip D. Long, expressed interest in a similar system. "The thing we have done the least well at most large universities is in providing feedback," said Long, an associate vice provost at UT-Austin.

Such a system would first have to learn the pathways students take through content on their way to a passing grade before it would know when to flag when students are headed in the wrong direction, Long said. Once it has learned those patterns, he said, the system could, for example, notify an adviser when a student fails to review before an important quiz.

"When students are actually engaged in activities and assignments is when the opportunity is most present for being able to influence their thinking," Long said. "We've never been in a position where the technology has had this degree of temporal responsiveness."

The universities are also motivated to participate in IMS on Caliper out of a concern that sitting out would mean vendors get to decide who controls the data collected by tools and platforms, Kellen said.

"There's a danger that the vendor community can say, 'This is our data, not yours, and you have to pay us to learn how you teach students,'" Kellen said. "I disagree with that. The

academy needs to have the line of sight to the student in digital form."

Becoming a Movement

Dan Rinzel, senior product manager for analytics at Blackboard, said that wariness of vendors is one of the reasons why the company is a member of the consortium.

"It is important for us to participate and be early adopters in the specification for the purpose of participating well in the ecosystem and being good data stewards," Rinzel said. "There's some undercurrent of unease that some institutions have about where the data resides, who has access to it, and we definitely see ourselves … making sure that there's no sense that data is being locked away."

Blackboard became the first company to have one of its products complete the Caliper certification process. The company doesn't have any immediate plans to build anything on top of the framework, but

decided to support Caliper "in the interest of supporting standards and standards-based work," Whitmer, the Blackboard director, said.

D2L has yet to run its learning management system, Brightspace, through the process, but it helped lead the Caliper work group. The company has already announced

> " If a student disengages in the middle of a term, we sometimes don't know if it's because of finances, if classes are too difficult or if they're not sure if they belong here from a social standpoint. "

plans to support Caliper.

In some cases, vendors' plans for Caliper are not that different from those of colleges and universities. Instructure, which develops the learning management system Canvas, is also exploring the uses of real-time data. In a proof of concept demonstrated earlier this year, the company showed a dashboard updating in real time as a fake student

navigated to a quiz, submitted it and received a grade. The company is working on a "live event stream" that builds on that proof of concept, Feng, the Instructure senior product manager, said.

"Similar to how LTI tools became a movement, Caliper also needs to become a movement," Feng said. "No one vendor by themselves is going to be motivated to do Caliper on their own."

Early interest from Blackboard, D2L and Instructure is "almost a sure sign that [Caliper is] going to succeed," Abel predicted. Normally, vendors are "reticent" to support new standards, he said. Before the public release, more vendors need to test their products, and more how-to documentation needs to be written, he said.

"We're the first to say we think analytics in higher education is a 20-year project, and we're in year one or two," Abel said. ∎

Ed Tech's Funding Frenzy

By Carl Straumsheim

Consumer-facing technology and emerging markets lead the way as investments in ed-tech companies yet again reach an all-time high. But who isn't being funded?

With $2.51 billion invested in educational-technology companies during the first half of 2015, investors continue to defy fears that interest in the sector is waning. Yet analysts say the staggering figure distracts from what and who isn't being funded.

Lynda.com in January 2015 set the pace for what has already become a record-setting year for investments in ed tech, announcing an investment of $186 million. The online learning platform, which was later acquired by LinkedIn for $1.5 billion, still holds the record for the largest funding amount in 2015, but investors have found plenty of other investment opportunities.

Between January and June, investors poured $2,512,803,700 into ed-tech companies, eclipsing the record high $2.42 billion invested in all of 2014 -- the first year investments broke the $2 billion barrier.

Five years earlier, during the turmoil of the global recession, investments only totaled about $600 million.

The data come from a white paper released by market research firm Ambient Insight, and includes investments in learning-technology companies in 118 countries serving both K-12 and higher education. Since the white paper only covers "instructional products directly involved in the learning process" -- excluding, for example, a $200 million funding round to a lending platform that also offers peer-to-peer student loans -- the total amount of investments directly or indirectly related to education is likely much larger.

Even with those qualifiers, Ambi-

ent Insight calls the results from the first six months of 2015 "astonishing" and "unprecedented." Among ed-tech companies, meanwhile, there is a sense that investors are only beginning to take the market seriously.

"Relative to the size of education as a market, venture investment into the space is a small fraction of what it should be," said John Baker, founder and CEO of learning management system provider D2L. "Given the contribution that education
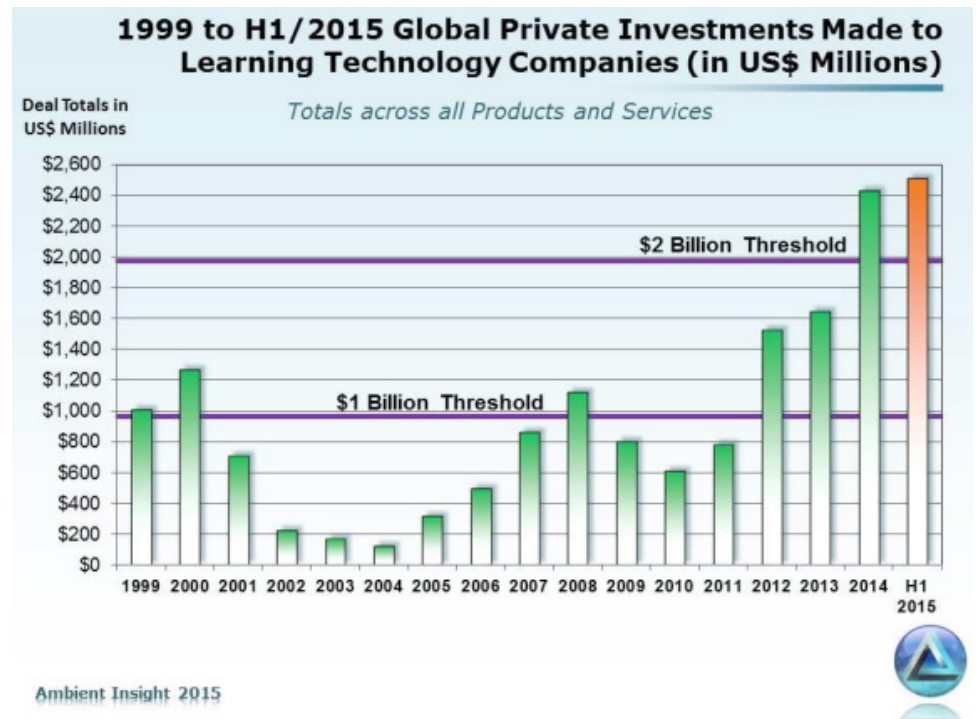
makes to overall society, GDP -- you name it -- we're still well below what we should be seeing."

Another roundup of deals, which looked at funding of venture capital-backed companies, found investments reaching $1.6 billion during the first two quarters of 2015, up from $944 million in 2014.

One reason for the growth seen in 2015: more companies are getting funded, and investors are cutting those companies larger checks. In 2014, 13.4 percent of the 336 companies invested in received $10 million or more; so far this year, that share is up to 27 percent. Funding rounds larger than $100 million, previously a rarity, are growing more common. In the last 17 years, only 10 companies have cracked nine digits, but 2015 has already seen four such deals.

A second reason may be that the ed-tech market is still unsettled, and that investors are searching for eventual success stories. A previous *Inside Higher Ed* analysis, using data from research firm PitchBook, suggested many companies that received one round of venture capital funding received follow-on deals.

Investors are also finding new places to spend their money, for example in growing markets in Asia and South America. Twenty Chinese companies account for $798.6 million of the total dollars invested during the first half of 2015, already topping last year's total of $634.4 million. That figure dwarfs the money invested in companies operating in India ($137 million) and Brazil

1999 to H1/2015 Global Private Investments Made to Learning Technology Companies (in US$ Millions)

Deal Totals in US$ Millions

Totals across all Products and Services

$2 Billion Threshold

$1 Billion Threshold

Ambient Insight 2015

($97 million), but those countries are still on track for a manyfold increase in funding over last year. As a point of comparison, investments in Brazilian ed-tech companies previously peaked at $5.3 million in 2013.

Chinese companies hold five of the top 10 spots on the list of the largest funding amounts obtained this year; American, four; Brazilian, one.

Consumer Facing Up, Higher Ed Down

China is the "big growth driver" behind the 2015 numbers, said Max Woolf, a senior analyst with the research firm Eduventures. But the money invested in Chinese companies may be less impressive than it initially appears, he added. "If you think about the spending per learner in China, it's really a drop in the bucket," he said.

While the takeaway from this year's market activity appears to be uninhibited growth, some segments of the market are trending down. Companies that primarily serve colleges and universities, for example, do not appear to be attracting investors' interest. In fact, those companies received nearly $100 million less in funding during the first half of 2015 compared to the previous year -- $152.3 million versus $251.7 million.

Apart from learning management system provider Instructure's $40 million funding round, "it looks like investors are staying away from [higher education] learning-tech companies," Sam S. Adkins, chief researcher at Ambient Insight, said in an email.

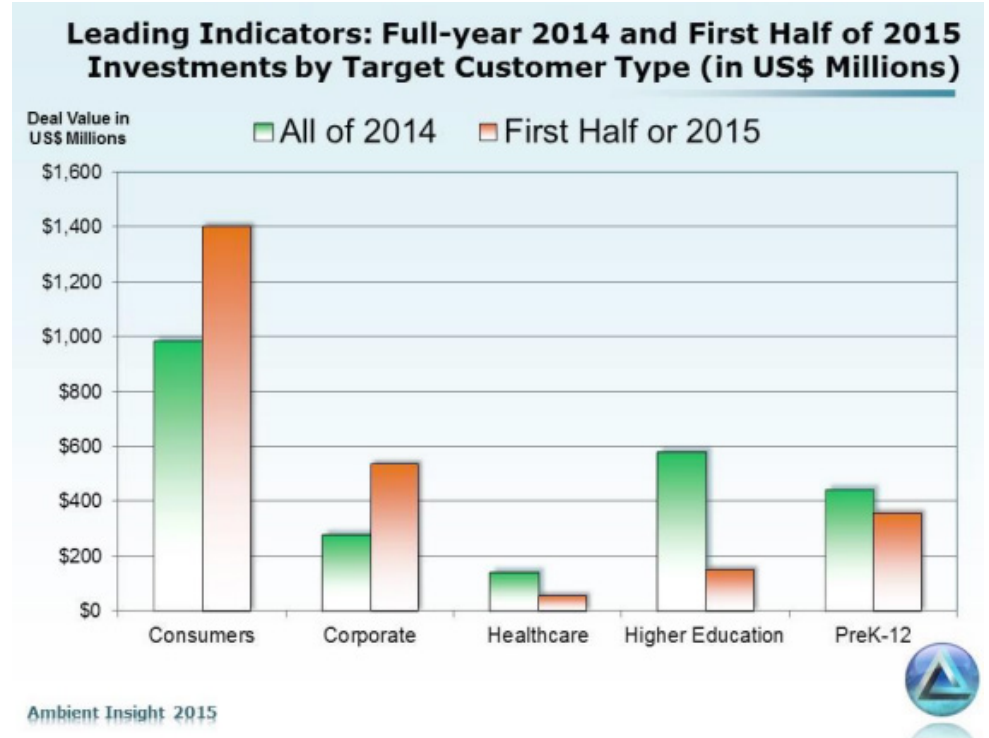Adkins, who wrote the white paper, pointed out that the higher ed-

ucation-facing sector of the ed-tech market pulled in a total of $579.6 million in 2014. "Things would have to pick up significantly for the [higher education] sector to accomplish that this year," he said.

Consumer-facing companies, however, are receiving more funding than ever before. Adkins notes in the white paper that there was "virtually no investor interest in consumer-facing learning-technology companies between 2003 and 2009," but since 2012, funding for those companies has grown from $626 million to $1.41 billion.

Adkins said he was not sure if the trend signals that investors' behavior is changing. "There is huge interest in consumer-facing ed-tech companies (what we call retail education) but I don't know if those investors used to fund [higher education-facing] companies," he said.

Interest in consumer-facing companies is not restricted to education. Apple is the world's most valuable company, and appears destined to become the first $1 trillion company in the U.S. Facebook's market value has reached $275 billion, passing General Electric.

But the education sector presents some specific quirks that may

Leading Indicators: Full-year 2014 and First Half of 2015 Investments by Target Customer Type (in US$ Millions)

Deal Value in US$ Millions

☐ All of 2014   ☐ First Half or 2015

Ambient Insight 2015

make investors more likely to favor consumer-facing companies, Woolf said.

Colleges have long sales cycles, infrequently replacing administrative and other types of software. Federal regulations also make education a challenging market to navigate, he said.

To complicate matters, the line between higher education- and consumer-facing companies may be blurring. Even learning management system providers such as D2L, which traditionally have mea-

sured their success by how many colleges adopted their system, now offer products aimed at individual faculty members and students. Still, D2L's Baker said, the higher education-facing model is "critical."

D2L, which was founded in 1999, waited until 2012 before it took in any outside investment -- $80 million. Two years later, it had raised another $85 million.

"I've been in the space long enough to have heard investors having no appetite whatsoever for ed tech," Baker said. "I see that diminishing." ∎

Health Care and Higher Ed

By Kellie Woodhouse

The two industries differ in key ways but face several similar and pressing challenges.

NASHVILLE, Tenn. -- In an era of increasing scrutiny and growing financial difficulty, health care and higher education face many of the same challenges: disruption, rising prices, consumer criticism, decreasing public funds and an increasing need for collaborations and mergers.

"There's a huge amount of discussion in health care around quality," said Emme Deland, senior vice president for strategy at New York-Presbyterian Hospital, during the National Association of College and University Business Officers' annual meeting here in July 2015.

"So I was thrilled to find that you're being asked the … question 'Is college worth it?' It's the same question that's being asked of health care: What's the value that we're actually delivering?"

That's a cogent question, Deland says, highlighting how when she received her M.B.A. from Columbia University in the late 1970s, the cost was about $4,000 a year. Her daughter recently entered the business school and the cost is expo-

College Tuition Has Outpaced Medical Inflation

Price Changes Since 1985
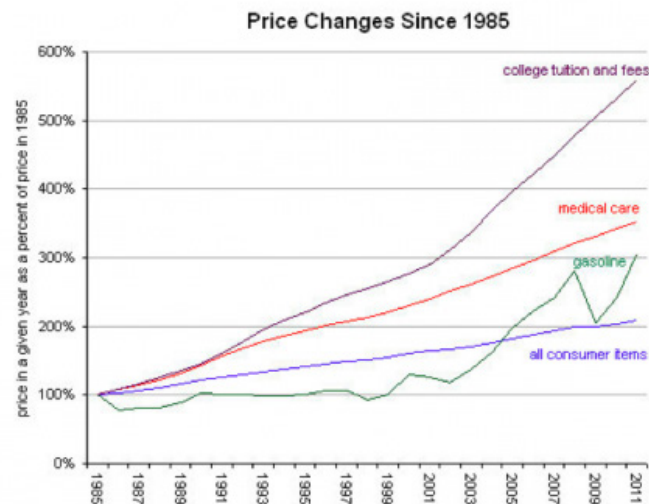
nentially more, at $60,000 a year.

She cited statistics from her strategy office that show the price of tuition and fees, on average, grew over 550 percent from 1985 to 2011 -- easily outpacing the roughly 350 percent rise in the price of health care during that time.

"We're doing a really good job of increasing our charges faster than any other industry," Deland said of

higher education and health care.

Meanwhile, she acknowledged the massive enterprise of health care spending, including criticisms of wasteful spending. Health care is a roughly $2.9 trillion annual industry in the U.S., and some estimate that as much as $750 billion is being spent wastefully each year.

The rising price of health care and higher education, and cost of deliv-

ery, are far from the only things the two sectors have in common.

Both are learning how to live with less public money.

Just as state appropriations in public higher education have declined in recent decades, the Affordable Care Act is translating into less federal money for hospitals and health care systems. Deland estimates that New York-Presbyterian is poised to lose at least $1.5 billion in federal dollars over the next five years because of changes resulting from the ACA.

Meanwhile, both industries are being disrupted by new technologies -- especially online delivery systems. In higher education, that in part means MOOCs and online and interactive components to traditional courses (Deland said three of her friends have forgone graduate courses for MOOCs instead).

In health care, hospitals and sys-tems are exploring teleheath delivery systems in which patients receive maintenance care, follow-up appointments and medical information through telecommunication devices like computers and smartphones. The practice has the power, according to Deland, to "truly revolutionize the delivery system of health care" and create much more consumer-friendly care.

Hospitals and health systems have also been merging and acquiring one another with increasing frequency. Deland said that in recent decades New York City went from having about 75 independent hospitals to six hospital systems.

And while the scale and scope of mergers in higher education is much smaller, universities and colleges are having to find more ways to work together and create efficiencies as they try to trim costs.

For both industries, adjusting to new challenges has been an uphill climb.

The NACUBO conference is titled "The Tempo of Change," in part because colleges and universities are grappling with how to adapt to an era of financial difficulty and increased scrutiny and in part as a play on Nashville's nickname, Music City.

Health care is learning to adapt to a similar reality, Deland said.

"In health care, that tempo has accelerated to almost epic proportions," she offered, adding later: "Academic medical centers are profoundly good at sticking our heads in the sand because 'we're different, we're special.'"

But in order to thrive in ever-changing environments, hospitals and universities have to tackle challenges with their eyes wide open.

"This is not a short road," Deland readily admits. ∎

Views

A selection of essays and op-eds

Going Online, Being Digital

By Peter Stokes

After more than 25 years of technology-enabled education, college leaders are shifting their focus to how digital technology can improve learning of all kinds, Peter Stokes argues.

It's taken decades, but educational technology is finally beginning to change the way we think about education itself -- not just the way we deliver it.

Twenty-four years ago, I taught my first writing course in a classroom kitted out with 25 computers. A few years later, I team taught my first online and hybrid courses via threaded discussion boards and asynchronous email-based class discussions, respectively. Of course by that time, the pioneers in the field had already been at the online learning game for years.

In those days, online learning was about experimentation -- seeing what the new technology could do. Soon, though, online learning became a means to an end, in the form of rapid market expansion and tuition growth, aided by 100 percent year-over-year growth rates in the mid-1990s and driven by the early entrants in the market -- for-profit universities and continuing and professional education divisions at nonprofit universities.

A couple decades on now, we see millions of students pursuing degrees wholly online and millions more taking the odd online course for credit, while still millions more are signing up for non-credit-bearing MOOCs. That goes some way to underscoring the fact that online learning is an established and ma-

turing field. But it's also flattening out. Today the growth has slowed, almost to a standstill, and thus the high-octane revenue growth phase may be behind us.

This may explain, in part, why the field is starting to be talked about in new ways, particularly as new sorts of institutions get involved, as the motivations for deploying an ever-growing number of learning technologies gradually begin to shift, as learning scientists leverage the growing quantities of data captured by these technologies and as the organizational structures online learning operates under begin to take new shape.

If the era of online learning over

the past two decades was in large measure about revenue growth, the present moment is about something else.

Evidence of this change can been seen in a subtle shift in how we talk about this work. Where once we spoke consistently about "online learning," now, more and more often, I hear higher education leaders talking about "digital strategy" -- a shift in terminology that signals, I believe, a significant change in how we are thinking about the utility of learning technologies.

The phrase "online learning," for example, might be said to be associated with other terms, like growth, tuition streams, content development and professional master's degrees. By contrast, the phrase "digital strategy" is associated with a more diverse and inclusive set of terms, like pedagogy, market relevance, undergraduate and graduate programs, as well as online and residential learning experiences. If online learning was, more often than not, about money, then digital strategy is about how we think about, define and structure learning.

As Claudia Urrea, a lecturer at MIT's recently established Office of Digital Learning, put it to me, "It's no longer just about putting content online but an opportunity to rethink learning."

Kevin Bell, who serves as executive director for online curriculum development and deployment at Northeastern University, put it somewhat more forcefully: "There needs to be a digital strategy for face-to-face courses, as well."

Interestingly, both MIT and Northeastern have been busily realigning their organizational structures in the digital realm to assist them in yielding a broader kind of payoff. The Office of Digital Learning at MIT, headed up by Dean Sanjay Sarma, is a relatively new organization into which established initiatives now report -- such as OpenCourseWare, founded more than 15 years ago, and MITx, launched in 2012 and the precursor to MIT's collaboration with Harvard, called edX.

Last fall, Northeastern brought on Chris Mallet from Western Governors University to serve in a new role as vice president of online programs, and while the job title underscores the familiar and still persistent use of "online" as a term of art, the new role was conceived as a way of integrating and expanding a diverse set of teaching and technology-related initiatives. Other institutions are similarly reorganizing, adding new layers of management and governance to oversee and harmonize their increasingly diverse digital holdings.

In 2014, James DeVaney joined the University of Michigan as its associate vice provost for digital education and innovation, with the explicit aim, he told me, of making his office's services "obsolete -- in a good way -- so that academic units are thinking about the innovative use of technology in all their learning environments." Within a few years, DeVaney added, "I would like to see the word 'digital' removed from our unit name."

One way to account for this shift in thinking is the growing awareness of the potential for educational technologies to enhance teaching and learning broadly and to strengthen the value that colleges and universities are delivering at their very core.

"I see the shift not as one from online to digital," said Eddie Maloney, the executive director of the center for new designs in learning and scholarship at Georgetown University, "but as a shift from a content-driven or faculty-driven curriculum to an intentional design and assessed curriculum. It's really about a growing focus on learning design."

Indeed, where the online era was characterized by efforts to make technology-enabled courses just as good a classroom courses, digital strategy and learning design are about making education better -- regardless of the medium.

Of course, this isn't to say that there aren't still institutions out there looking to grow revenue by de-

livering programs online. And even institutions like Harvard are seeking to generate income from initiatives like HBX, an initiative at Harvard Business School, with its online courses in business fundamentals targeting alumni, corporate and other audiences. Likewise, of course, there are certainly countervailing examples to the structural integration underway at places like MIT, Northeastern and Michigan. Southern New Hampshire University and Champlain College, to name just two examples, have intentionally set out to create organizational separation between their on-campus and online learning activities, and with strong enrollment growth to show for their efforts.

For others, though, the ambitions are different. According to Josh Kim, director of digital learning initiatives at Dartmouth College, and author of *Inside Higher Ed's* "Technology and Learning" blog, "Places that really want to protect their brand -- like Brown, Yale, Georgetown, Dart-

mouth -- are experimenting with low-residency online programs in professional schools and they are having real success, which is driving some rethinking about what we need to be doing to improve our core product. At Dartmouth, it's a quality play. We want to bring new techniques into residential teaching but also create sustainable programs."

To the extent that this shift in emphasis from online learning to digital strategy can produce sustainable programs of enhanced quality, we can undoubtedly expect to see more institutions pursuing the path of learning design informed by digital experimentation.

While it may yet be too early to say for sure whether this shift will be long lasting, if it is, we should expect to see evidence of it in some very prominent places. As DeVaney put it, "I think we'll know if this shift is real when we see more institutions differentiating around this. Hopefully we'll see mission statements that look different, too."

Kathleen Ives, chief executive officer of the Online Learning Consortium, agrees, noting, "Digital is becoming mainstream. But for an institution to succeed it has to be part of their vision and mission and has to permeate across their organization."

Bell at Northeastern argues that truly effective digital strategy will have to go a step farther even than connecting diverse institutional activities. "Digital leadership should not just be about harmonizing initiatives," he said. "It should also be about harmonizing our messaging and conveying our unique philosophy to the communities we serve -- and at Northeastern, the emphasis is on online experiential learning."

In other words, the shift to digital strategy will only be significant if it enables institutions to not only think and teach differently, but also to talk more effectively about who they are and what makes them different at the very core.

∎

Bio
Peter Stokes is a managing director in the higher education practice at Huron Consulting Group.

https://www.insidehighered.com/views/2015/07/30/its-time-shift-discussion-online-learning-digital-strategy-essay

What We've Learned From MOOCs

By Candace Thille, John Mitchell and Mitchell Stevens

Massive open online courses have not lived up to their early hype -- what could? -- but they've made important contributions nonetheless, write John Mitchell, Mitchell Stevens and Candace Thille.

Back in 2012, massive open online courses entered public consciousness accompanied by grand promises of revolution. MOOC proponents, often backed by private venture capital, promised to make higher education more nimble and accessible than ever before. Three years in, at least, it hasn't worked out that way. Our own assessment is that MOOC mania brought lots of hype, promising technology, some compelling if nascent science and broader recognition of a huge problem that no silver bullet can solve.

Our own university began encouraging new experiments with online learning in 2012. Two of us were at Stanford then, helping to produce massive open online courses based on recorded video lectures, multiple-choice questions and audience discussion, conveyed via the Internet to millions of people at no cost to them.

Faculty members responded enthusiastically. By 2013 a new campus operation was created to support online instruction. It helped our faculty produce 171 online offerings, including 51 free public MOOCs offered repeatedly, reaching nearly two million learners.

No doubt about it, we contributed to MOOC mania. Here's what we learned.

First, MOOCs are not college courses. They are a new instructional genre -- somewhere between a digital textbook and a successful college course. Although they can provide much richer learning experiences than a printed book alone, current MOOCs pale in any comparison with face-to-face instruction by a thoughtfully invested human instructor.

No education policy that has current MOOCs replacing quality classroom instruction should be taken seriously. That said, most MOOCs provide free or low-cost learning opportunities, so it makes good sense to view them as positive enhancements to the overall education ecosystem. Letters of praise and thanks from thousands of grateful MOOC learners from all walks of life attest to the contributions of this new genre.

Second, MOOCs are no panacea for educational inequality. Ample research now makes clear that the preponderance of MOOC users worldwide are college-educated men in highly industrialized countries. MOOCs have not provided a remedy for deep-rooted disparities in access to knowledge. Recorded video instruction based on classes at highly selective colleges cannot easily serve broader audiences of less prepared learners.

Third, simply transferring lectures online will not provide effective

learning on a massive scale. As anyone who has taken one can attest, MOOCs are not Socratic wonders. Most of them rely substantially on short lecture segments in a talking-head format, replicating online the stand-and-lecture pedagogies of conventional classrooms without scaling the discussion sections, office hours, late-night dorm-room study groups, drop-in tutoring, painstakingly graded homework and other components of a successful large college class.

Instructors often complain about the inability of current MOOC platforms to facilitate creative ways of interacting with learners, and they're right. The learning process is much more complicated than merely sitting in front of a computer screen. Successful online resources have been developed and rigorously evaluated, but they require careful learning design and engineering to engage students in meaningful activity.

Fourth, on another positive note, MOOCs have raised awareness about how online learning technology might be used to support the science of learning. Every keystroke people make when they interact with an online instructional offering leaves a data trace that can be gleaned to support learning research. Research with MOOC data has enabled us to see where people get discouraged in difficult lessons and how they can be encouraged to persevere.

As educators design more complex online tasks that scaffold and reveal learners' thought processes, and analyze the data generated by learner interactions, we will probably improve the effectiveness of online learning and advance science generally. Since ancient times teaching has been regarded as an art: subtle, complex and hard to specify. Computational descriptions of how people interact with learning material, teachers and one another make it possible to pair that art with new kinds of empirical knowledge.

What no technology can solve is a failing business model for U.S. higher education. Citizens benefit most from education early in their lives when they are least able to pay for it themselves. Yet students and their families are now being asked to pay ever-larger proportions of the cost of higher education as government support for college has increasingly taken the form of subsidized loans.

Sticker prices for tuition and fees at residential colleges have risen faster than the rate of inflation for decades, making what was once called a "traditional" college experience, complete with dorm rooms and verdant campuses and football teams, into a luxury service. Using present technology, effective online courses are more expensive to produce than in-person classes and we do not know how to scale them to massive audiences without corresponding costs.

At the same time college completion and ongoing professional development have become more essential for success in the labor market. Students, parents, entrepreneurs and politicians alike are eagerly seeking alternative forms of higher education, and for a brief moment back in 2012 many wanted to believe that the simple Internet technologies embodied in MOOCs would be the next big thing. It's not that simple.

MOOCs have not fixed higher education, but they are poignant reminders of the urgent problems of college cost and access, potential forerunners of truly effective educational technology, and valuable tools for advancing the science of learning. That's progress. ∎

Bio
John Mitchell, Mitchell Stevens and Candace Thille are professors and co-directors of the Lytics Lab atStanford University.

https://www.insidehighered.com/views/2015/09/22/moocs-are-no-panacea-they-can-help-improve-learning-essay

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