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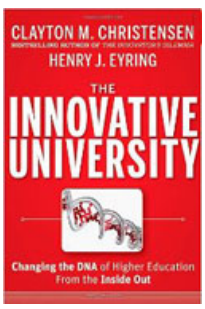
How Disruptive Innovation is Remaking the University

In *The Innovative University,* authors Clayton M. Christensen and Henry J. Eyring take Christensen's theory of disruptive innovation to the field of higher education, where new online institutions and learning tools are challenging the future of traditional colleges and universities. Key concepts include:

- **A disruptive innovation brings to market a product or service that isn't as good as the best traditional offerings, but is less expensive and easier to use.**
- **Online learning is a disruptive technology that is making colleges and universities reconsider their higher education models.**

by Clayton M. Christensen & Henry J. Eyring

Editor's note: *It has been more than a decade since the publication of* The Innovator's Dilemma, *in which Clayton M. Christensen introduced the idea of disruptive technologies—those unexpected products and services that shake up the market not because they are better than the traditional competition, but because they are are cheaper and easier to use. In The Innovative University, Christensen and* ***Henry J. Eyring*** *take the idea of disruptive innovation to the field of higher education, where new online institutions and learning tools are challenging the future of traditional colleges and universities. In this excerpt, they discuss the idea of a university's DNA.*



In the absence of a disruptive new technology, the combination of prestige and loyal support from donors and legislators has allowed traditional universities to weather occasional storms. Fundamental change has been unnecessary.

That is no longer true, though, for any but a relative handful of institutions. Costs have risen to unprecedented heights, and new competitors are emerging. A disruptive technology, online learning, is at work in higher education, allowing both for-profit and traditional not-for-profit institutions to rethink the entire traditional higher education model. Private universities without national recognition and large endowments are at great financial risk. So are public universities, even prestigious ones such as the University of California at Berkeley.

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CLAYTON M. CHRISTENSEN

Clayton M. Christensen is Kim B. Clark Professor of Business Administration at Harvard Business School.

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Price-sensitive students and fiscally beleaguered legislatures have begun to resist costs that consistently rise faster than those of other goods and services. With the advent of high-quality online learning, there are new, less expensive institutional alternatives to traditional universities, their standing enhanced by changes in accreditation standards that play to their strengths in demonstrating student learning outcomes. These institutions are poised to respond cost-effectively to the national need for increased college participation and completion.

A disruptive technology, online learning, is at work in higher education, allowing both for-profit and traditional not-for-profit institutions to rethink the entire traditional higher education model.
For the vast majority of universities change is inevitable. The main questions are when it will occur and what forces will bring it about. It would be unfortunate if internal delay caused change to come through external regulation or pressure from newer, nimbler competitors. Until now, American higher education has largely regulated itself, to great effect. U.S. universities are among the most lightly regulated by government. They are free to choose what discoveries to pursue and what subjects to teach, without concern for economic or political agendas. Responsibly exercised, this freedom is a great intellectual and competitive advantage.

Traditional universities benefit society not just by producing intelligent graduates and valuable discoveries but also by fostering unmarketable yet invaluable intangibles such as social tolerance, personal responsibility, and respect for the rule of law. Each is a unique community of scholars in which lives as well as minds are molded. Pure profit-based competition would produce fewer of these social goods, just as increased government regulation would dampen the great universities' genius for discovery.

Ideally, the faculty members, administrators, and alumni who best appreciate the totality of the university's contributions to society will, in the spirit of self-regulation, play a leading role in revitalizing their beloved institutions. They have the capacity to determine their own fate and in so doing take the indispensable university to new heights.

In performing that critical task, they must understand not only current realities, especially the threat of competitive disruption, but also how universities have evolved over the past several hundred years. Even more than most organizations, traditional universities are products of their history. That history is shared, because most universities have emulated a handful of elite American schools that began to assume their modern form a century and a half ago. Prominent among them were Harvard, Yale, Johns Hopkins, Cornell, and MIT. Together, they have evolved to share common institutional traits, a sort of university DNA.

Much as the identity of a living organism is reflected in its every cell, the identity of a university can be found in the structure of departments and in the relationships among faculty and administrators. It is written into course catalogs, into standards for admitting students and promoting professors,

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and into strategies for raising funds and recruiting athletes. It can be seen in the campus buildings and grounds. These institutional characteristics remain the same even as individual people come and go.

Pioneering institutions such as Harvard and Yale first began granting Ph.D.s in the mid-nineteenth century. As graduates of their doctoral programs joined the faculties of other universities, they took their experiences and expectations with them. With the support of ambitious university presidents, they strove to make their new academic environments like those from which they had come. This internal drive was reinforced by external systems for accrediting, classifying, and ranking universities. It also became embedded in a common academic culture. As a result, even the smallest and most obscure universities bear many of the essential traits of the greatest ones.

Much as the identity of a living organism is reflected in its every cell, the identity of a university can be found in the structure of departments and in the relationships among faculty and administrators.
University DNA is not only similar across institutions, it is also highly stable, having evolved over hundreds of years. Replication of the DNA occurs continuously, as each retiring employee or graduating student is replaced by someone screened against the same criteria applied to his or her predecessor. The way things are done is determined not by individual preference but by institutional procedure written into the genetic code.

There is evolution in the university, though its mechanism typically is not natural selection of random mutations. As a general rule, the university alters itself only in thoughtful response to significant needs and opportunities. Entrepreneurism occurs within fixed bounds; there is rarely revolution of the type so often heralded in business or politics. This steadiness is a major source of universities' value to a fickle, fad-prone society.

Yet the university's steadiness is also why one cannot make it more responsive to modern economic and social realities merely by regulating its behavior. The genetic tendencies are too strong. The institutional genes expressed in course catalogs and in standards for admitting students and promoting faculty are selfish, replicating themselves faithfully even at the expense of the institution's welfare. A university cannot be made more efficient by simply cutting its operating budget, any more than a carnivore can be converted to an herbivore by constraining its intake of meat. Nor can universities be made by legislative fiat to perform functions for which they are not expressly designed. For example, requiring universities to admit underprepared students is unlikely to produce a proportional number of new college graduates. It is not in the typical university's genetic makeup to remediate such students, and neither regulation nor economic pressure will be enough, alone, to change that.

COMMENTS

ANONYMOUS
I am not surprised. We are still running a model that is 2000 years old or so. Education really needs a flip upside-down and technology is already doing it by providing so much information to the public directly. What education needs is a way to be able to educate more people at their own pace, in their own space, catering to their needs, not industry's. That means education is now a consumption driven by real curiosity which requires more room for mature students in the model also. Innovation, creativity, ingenuity and risk are not things one can project manage. They do not fit into a time frame. They occur as more information comes in at the right time. The more meaningful and appropriate the information, available when it is sought is the real meaning of being a student for life. Current university models are not conducive to innovation and high levels of information, technology or the modern learning requirements, mod
ern work and world issues. The only way is to provide everyone with more flexibility in every aspect of education. This frees up more time and thinking power on creativity and innovation because it's clear and focused ideas that still drives progress, not just a few years of basic knowledge. Basic knowledge anyone is capable of obtaining, anywhere now. Universities need to see their roles as long term educators if they want to stick around is my opinion.

ANONYMOUS
"Innovation, creativity, ingenuity and risk are not things one can project manage. They do not fit into a time frame. They occur as more information comes in at the right time."

Perhaps if project time was allocated in anticipation of these events occuring this wouldn't be a problem. Isn't it the task of management to project the risks for any given project? Seems risk avoidance as oppose to taking any risk is what education is doing. This is why education is behind the learning curve of industry. They do not practise what they preach (mostly). But this is expected since industry has concetrated resources for tool creation that leads to 'the next thing'.

ANONYMOUS
I went to university in the '60s. It was a time of the democratization of universities. Overall that was a positive and interesting and exciting time. However, the students were generally not those who needed "remedial education." And the universities were not expected to provide "job training." The goals and overall the results were "intelligent graduates and valuable discoveries [and the universities fostered] unmarketable yet invaluable intangibles such as social tolerance, personal responsibility, and respect for the rule of law." It was assumed that you had mastered the basics; if you had not done so, then you personally were responsible for catching up. Introductory English courses assumed that you had mastered the basics of English grammar and were capable of writing a coherent, literate essay. Math and science classes assumed that you had mastered the basics. The introductory courses did provid
e fast reviews to make sure students could identify holes to be filled, but their purpose and intent was not "remedial." We discussed ideas, listened to different perspectives, experimented with different forms, stayed awake reading supplementary materials, we formed small groups that frequently continued class discussions outside of class. Most of us, I think, developed the intellectual skills we needed to continue to learn once we were out of school. Perhaps I would sum it up as saying that they taught us to think actively, taught us how to learn on our own, and gave us a life-long love of learning. A lot of the details have changed in the intervening years, especially with new scientific discoveries, but my professors, at what was considered a rather mediocre university, taught me the tools to continue learning as the world changed around me.

Fast forward 20 years to when my daughter went to university. There was a lot more emphasis on "job training or "career training" and the intangibles seemed to get lost under the weight of "practical" or perhaps "remedial" courses. The pressure was strong to prepare students for "careers" rather than fostering an atmosphere of learning, of discourse, of exposure to new or different ideas, of different cultures, different ways of looking at the world...

And now my grandchildren are ready for college. I hope that they are able to have professors like mine--the ones who were passionate about their subjects, who were interested in everything, who showed us how to see from different angles, who provided a place to examine our thoughts and beliefs, who taught us to keep learning for our lifetimes. I don't want them to be mired in remedial classes or job training. If they have the tools from a good liberal education, then, yes, they can go on-line and learn the specifics in new areas, etc.

On-line education is great for learning facts, for reviewing the basics, for learning "how to," for learning languages. For "life-time learning" the internet is great! However, it is not a good substitute for a university. You don't get the intangibles on line. You don't get to listen to those other students in the classes whose backgrounds, educations, interests, etc are different from yours.

I suspect that too many universities are trying to do "job training." When we graduated in the '60s, we were not expecting to step in to some high-level position. We ended up starting out as "entry level" employees. The difference was that our educations enabled us to go beyond those entry level jobs fairly quickly because we knew how to learn what we needed to for the promotions. We were flexible and innovative. Many of us ended up with careers--sometimes multiple careers--that had little obvious relationship to our major fields--and yet, as I speak with contemporaries 50 years

later, again and again I hear how some specific courses taken during those university years were all important to our later lives and careers.

Perhaps the innovations in education will split off the "job training" from the universities. People who want to train in specific fields will take their courses on-line. People who want the benefits of a liberal, multi-faceted education will opt for the traditional universities. The on-line resources will enable the traditional universities to tell students to take the "remedial" courses on line and get those off their plate. This should work for the professors as well. Now they won't have to be burdened with a zillion sections of Basic X and will be able to teach the more interesting courses in their specialties.

JACVK SAVIDGE FOUNDER/CHAIRMAN, THE PROOF OF CONCEPT INSTITUTE (501C3)
Change does require risk. Any risk taking to effect change must be balanced with expectation assumptions for reward. One risks for success, change outcomes, when the perceived reward for success is greater than perceived risk of failure. University management prudence, as in all large institutions, create the perceptions the risks and rewards of change.

Not hopeless for universities but extremely difficult.

TOM SKALAK VICE PRESIDENT FOR RESEARCH, UNIVERSITY OF VIRGINIA
Universities are indeed a "great" social institution, because they have remained committed to create new knowledge, educate the next generation, and disseminate new knowledge in ways that include the human talent that creates revolutions, innovations that create new economies, and practices that alter national and global habits and societies, improving life for many people. At UVa, for example, the #2 public university in the nation (U.S. News), founded by Thomas Jefferson, we produced an engineering professor who later founded MIT - thus sparking a $1.4 T contribution to the U.S. economy over time. The Declaration of Independence, authored by Jefferson, has allowed this nation to thrive, although it was an idea - not a "product" in modern parlance. We seek to continuously re-invent UVa today. It is the secret to our vitality.

So, the "great" universities do innovate and create new imagined futures. Indeed, new ideas change the world! In today's world, we see how private sector decision-making and government regulatory systems combined to produce a major economic crash a few year ago and subsequent recession affecting many Americans. Also, at progressive universities including UVa and a few others around the country, we now see private corporate partners eager to partner with our faculty to gain access to "new ideas" that can launch new small business or new products and create high-value jobs - much needed jobs - for the U.S. economic re-birth. We still lead the world in innovation and ideas - thanks to the deep reservoir of knowledge creation at U.S. research universities. And, this talent and ideation power is spread around the U.S. - not centered only in traditional bastions or hubs such as Boston and Palo Alto. At UVa, a new model for porof-of-concept research called the Wallace H. Coulter Translational Research program has produce a remarkable 7-1 return on investment (independently audited) over a five year period with $5M invested in biomedical innovation projects - these projects improve human health and create jobs in the U.S. economy. It is truly "science serving humanity". Others involved in this success story include Stanford, Duke, Michigan, Drexel, Case Western, and Boston University. In addition, when such proof of concept funds are applied to individual investigators around the nation, similar 7-1 ROI is produced, demonstrating the "democratization of Innovation" - by placing funds and good process with talent wherever it is found - and it is found throughout this nation. This is evidence that indeed the American pioneer spirit to explore, discover, and invent still persists - and that it alone is the key to new value creation for the nation. No amount of shifting strategies or funds management can ac complish what innovation and new ideas can offer. So let's celebrate what American talent has to offer, let's submerge the old mythology of a few great universities on whom the nation's innovation depends, and let's recognize and scale-up successful innovation models such as the Coulter programs to those entrenched insitutuions where status quo prevails and experimentation has ceased due to fear of losing existing reputation. The only way to retain a reputation is to move forward via taking risks to be at the frontiier - not by proclaiming that the future will be determined by those who were successful in the past. That is a recipe for making the U.S. indeed into a relic. Let us imagine the future and act to create our dreams! That is the American tradition, and we need to enable those still capable to use their fullest energies to realize it now.

Tom Skalak
Vice President for Research
University of Virginia

BOB VASS DESPERATE, MBSW
I think it was Albert Einstein who said 'Not everything that counts can be counted, and not everything that can be counted counts' Worth remembering in a world with too many financial analysts ...?

RAJAGOPALAN
The University system is facing challenges on many fronts. Online learning can address challenges of scale and cost but still would be limited by affordances.
For a country like India, where higher education faces a trilemma of cost, scale and quality - as Devesh Kapur puts it - online learning delivered sensibly can address some challenges for sure.

More thoughts after reading Clayton Christensen's book.

SURENDRA DUKLAN INDEPENDENT INNOVATOR, GREEN INNOVATIONS
I appreciate the idea of online education,because the the mind of the student remains free from the unwanted disrupted ideas of his fellow students & teachers.One can shape his actions according to his interest and capability.As in the case of research studies most of the students & teachers now depends on the internet. Sometimes the university education proves irrelevant to the desired objectives. As it was in my case I got my post graduation in economics,but innovated bio product (botanical antimicrobial polymer & Disinfectants) through the online study and research,due to the availability of variety of experts and wide knowledge through internet.

KAPIL KUMAR SOPORY COMPANY SECRETARY, SMEC(INDIA) PRIVATE LIMITED
That times and needs are changing very fast has to be realized by society and hence innovation to match the challenges has to be an ongoing process. Our educational institutions are no exception to this requirement. Unfortunately, the process of change there is extremely slow.
I have experienced this during interactions with the teachers of schools/colleges/university I attended over three decades back. The teaching system is still outdated. In some spheres we do find improvements to make the students job-worthy but certain aspects such a development of soft skills is still not given desired attention in India and could be in many other countries as well. This leads to, besides unemployment and underemployment, lack of employability.
Change is, therefore, inevitable and this needs to be on the institution's active agenda.

JAY SOMASUNDARAM SYSTEMS ANALYST
I loved Professor Christensen's original work, and look forward to reading his new book. However, it appears that in focusing on universities (the process) rather than the products of universities, the authors may have missed some of the distruptive innovation that is transforming higher education to be much more economical.

Two principal products of universities are learning and accreditation (ie certification that a person has certain knowledge and skills). There is what Krip calls the "the parallel postsecondary universe" that typically dissociates these two products. That is, one supplier provides the accreditation, and the customer is free to shop around for none, one or more suppliers for the learning. This market reform allows some customers to achieve orders of magnitude savings.

In the US, there is some dissociation for many professions, with certification provided by professional bodies, but they still generally demand an appropriate university degree as a pre-requisite. An example of complete dissociation is the UK accounting body, the ACCA.

These concepts are elaborated in our paper http://hdl.cqu.edu.au/10018/7281.

STEVE FLICK PRINCIPAL, Q9C QUALITY CONSULTING
In the author's words: "Until now, American higher education has largely regulated itself, to great effect." American higher education has always been susceptible to the "generosity" of big business; see Stanford University, for one example. Land grant colleges were once subsidized by the US government in order to provide the opportunity for higher education to all; now, they go begging for private funding because the government has dropped education from its highest priorities in the last generation. Private donors now regulate universities, buying the "right" to determine what is and isn't taught and limiting the availability of higher education to all but the chosen few.

ANONYMOUS
I teach at a state university. The university wants research, students want A's by any means necessary, and professors want to keep their jobs. The processes governing that mess is choking the life out of actual learning. How sad.

DAVID PHYSICK CONSULTANT, GLOWINKOWSKI INTERNATIONAL
This is an interesting discussion but in considering how the universities can distribute its product, service, experience, is it really new. Consider how the Australians have distributed education across the outback via the school's radio service. Also, in the UK, in the remoter parts of Scotland, small individual schools have been hooked together so the subjects can continue to be taught cost effectively. Also, my own experience of taking an MBA while continuing to work with the magnificent Open University is a truly positive memory. The fees issue will cause new tertiary education consumers to consider carefully how they access the next stage of education. People argue about missing out on the social interaction yet sociologists are already writing about how teenagers, so secondary education consumers, are more solitary and communicate virtually.

ALEX BOTTSWOOD, BOTTSWOOD HOUSE, LTD.
The U.S. Armed Forces offered correspondence courses at no cost to those serving their country for over a sixty years. The advent of distance education via the internet is not new, only the distribution channel is more immediate. Hardly a radical disruptive innovation. Quality learning has not changed since Socrates pupils sat in circle to learn from a great teacher - the catalytic

innovation needed is how to motivate today's university instructors to teach passionately.

JUAN ANTONIO AGUIRRE CHAIR FOR ENTREPRENEURSHIP, UNIVERSIDAD LATINA COSTA RICA
Profesor Christensen ideas are not only applicable in the USA but in Latin America as well.In a global world with the in internet spanding the globe, and english becoming the universal language, the developing world universities are the major targets of the competition of excellent on line universities from countries around the world. The problem is that in developing countries the resistance to change is secular due to their political history and what are known as "karaoke" professor are in control of the admisntrative posintion because they are afraid of change . Is sad to say, buy maybe the only way to change and improved education in developing countries is the online option or wait until the present power structure dies off but maybe by them it will be to late and changes maybe even more difficult. Salutation to authors they do not know how true is what they are talking about elsewhere.

RICK STUDENT OF DISRUPTIVE INNOVATION, SELF
Just for conversation's sake, lets accept that the University system is not going to disrupt itself.

We accept that typical incumbent's first response to perceived disruption is to move upmarket, do we not?

And we also know that this leads to repeated abandonment of the current 'low end' products by the incumbent until insufficient mass remains for the incumbent to remain viable.

So then by all accounts (and speaking in the MOST general of terms), unless something unprecendented happens, some morphed version of the University of Phoenix will eventually usurp Harvard.

My question then is:
Is that any more of a tragedy than when mini-mill technology usurped US Steel?

Schumpeter said (and I believe that most agree) that the process of creative destruction is the unique aspect of capitalism that leads to permanent increases in a society's standard of living. He also contends (and I believe we can also agree with this) that the bumps along that road are challenging.

The beauty in all of this is that if all of that is true (and given that Clayton Christensen has demonstrated time and time again that it is not only true, but inevitable), it would appear that the world can not only live without Harvard, but it will actually be a better place when that happens.

Thanks for considering - I'll try and tune in now and again to find out where you believe this reasoning might be flawed.

DAVID PRENSKY FACULTY, THE COLLEGE OF NEW JERSEY
I found Innovative University to be a fascinating book. It is unlike most recent critiques of higher education that label administrators as corporate and profligate and faculty as selfish and underworked. In these typical critiques, the critics then call for significant changes in administrative and faculty behavior to put higher education back on track. Christensen and Eyring have a less malevolent view of administrators and faculty at traditional colleges and universities, even though they recognize that most institutions have been too eager to adopt new programs that imitate research institutions and too slow to adopt necessary, and potentially disruptive, innovations. In the book, they recommend that colleges and universities be more strategically savvy: stick to what they do best, stop trying to imitate the big research institutions, and adopt the disruptive organizational, fiscal, and technological innovations that are being
so effectively adopted in the for-profit sector.

Christensen and Eyring's recommendations are usually sound, but may be quite a bit more difficult to implement than they admit in their book. It is important to note that they are advocating significant organizational and fiscal disruption, not just the technological innovation of online learning that many see as the biggest change in higher education. For example, their advocacy of the Boyer model for faculty work that widens the scope of traditional pure research to include application will reduce costs but will require a major reorientation of faculty hiring, incentive, and tenure systems. Such a change in faculty work will also require a major reorientation of the doctoral programs that produce new faculty. Therefore, changing faculty work, particularly incentive and tenure systems, is more likely to occur at an evolutionary amble than revolutionary speed. Indeed, it may not occur at all without some sort of significant external shock. Their recommendation for strategic c
hanges for most institutions may be similarly optimistic. Strategic change is very difficult to achieve at colleges and universities that have a shared governance model. Current administrators and faculty have a vested interest in the current system, one that has enshrined a shared decision making process that keeps the institution on an even, but slow-to-change keel. It is not a surprise that the quick-moving innovators in higher education are those institutions that have a different governance model, such as the for-profits.

ANONYMOUS
I think the emergence of e-learning and online campuses is timely and auspicious for people living in the ICT age. it could not have been otherwise for a good number of reasons: It actualises and leverages life-long learning. It is cheaper and more convenient for working adults. The Online campus defies time and space and provides a universal forum for knowledge production and dissemination. It should complement what goes on in the ivory towers in certain respects and discipines.
Felix Njoku

ALISON IREDALE SENIOR LECTURER, UNIVERSITY OF HUDDERSFIELD
"As a result, even the smallest and most obscure universities bear many of the essential traits of the greatest ones".
maybe there is a resemblance to the natural world here in the resemblance to fractals. I can't claim to have been taught in a "great university", however I do adapt, change, add to and pass on the great teaching that I have received from all my experiences. Interesting post. Thanks.

AKNATH TECH ENGINEER, EMIRATES ALUMINIUM
Individual at the initial phases of their careers, irrespective of industry sector, tend to specialize & expert. Most will concentrate on their particular role, such as operation or maintenance. Some focus on gaining a professional qualification, such as Chartered Engineer or Doctor. If successful they can rapidly develop to become respected professionals in one area of expertise. These areas are, however, typically of a specialist nature and a career move to a new organisation may not offer enormous career development opportunities or increased responsibilities.
The innovative eagerness through MBA is essentially a generalist qualification designed to widen the student's horizon in order to take account of all the major functions of a business as well as their interactions in day to day practice. Because its focus is general rather than specialist, the MBA is targeted at those who can make a contribution to strategy and INNOVATE. They may have general management ambitions, but not necessarily. They may also be senior specialists who need a rounded view of an enterprise in order to maximise their particular contribution, and for who better performance in a current job may be as important as early ambitions for promotion. As always luck prevails, sometimes with destructive approaches also paid off; but do admit "right decision in wrong time is a wrong decision", so timing to act is to be better placed.There is nothing genetic, constrains and legislative. Be optimistic and act.

Harvard Business School Working Knowledge
Baker Library | Bloomberg Center
Soldiers Field
Boston, MA 02163
Fax: **1.617.495.6791**
Email: **Editor-in-Chief**

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