Michael B. Horn - Testimony

Good morning, Chairman Alexander, Ranking Member Murray, and distinguished Members of the Committee. Thank you for giving me the opportunity to speak about barriers to and opportunities for innovation in higher education today.

My name is Michael Horn, and I am the cofounder and executive director of the education program at the Clayton Christensen Institute, a non-profit, non-partisan think tank with offices in Lexington, Massachusetts and San Mateo, California that seeks to transform our education system into a student-centered one that allows all students to fulfill their potential.

As we are gathered here today to explore the topic of innovation in higher education, it is appropriate that we address the concept of "disruptive innovation"—a catch phrase that is on the minds and tongues of many in colleges and universities.

Although it is true that disruptive innovation has arrived in higher education, the concept is all too often misunderstood and misapplied, so in my testimony today I am going to first define and explain the theory; talk about how it applies to higher education; then give some examples of potential disruptors emerging in higher education; and finally mention some of the policy implications.

Disruptive innovation is the force that transforms sectors where the products or services were expensive, complicated, inconvenient, and inaccessible and therefore only served people with the most expertise or the most wealth into ones where the products and services are affordable, convenient, accessible, and decentralized such that many more people can benefit from them.

It is the process that transformed computing. Before disruptive innovation, big mainframe computers that cost a couple million dollars to own and were limited to an elite population dominated the industry some 50 years ago. Thanks to disruption, computing is now a sector in which the majority of us carry around mobile devices in our pockets and pocketbooks that can do things no mainframe computer on the face of this earth could possibly have done over half a century ago.

Disruption is widespread. It is the process that has made everything from automobiles to retail and from service industries to non-profit, governmental, and highly regulated industries more affordable and accessible.

There are a few rules of disruptive innovation worth noting. Disruptions typically start in areas of what we call nonconsumption—areas where the alternative is nothing at all—outside of the mainstream. For example, the first Apple personal computers were sold as toys to hobbyists and children who couldn't afford a quarter-million dollar minicomputer and therefore, prior to the personal computer, had no access to computing. Second, they tend to be simpler than existing services; as a result, they take root in undemanding problems at the outset, and the sector's leading organizations tend to dismiss them because they don't look terribly good in comparison to the way people have traditionally thought of quality. But they also redefine the notion of what is quality and performance. As such, they don't fit neatly into existing regulatory structures and

often create new ones over time. Third, not only do incumbent organizations dismiss them because they at first appear to be primitive, but incumbent organizations also cannot successfully introduce them within their existing models, as the steps to doing so are counterintuitive for most parts of the mainstream organization. Finally, although disruptions start by only addressing simple problems, because they are driven by a core technology, they predictably and reliably improve over time to tackle more and more complex problems. As they do so, they retain their initial value proposition around affordability, accessibility, and simplicity and gradually serve more and more people until, at some point in the future, they supplant the old way of doing things for most people.

As we have studied the challenges and opportunities in higher education, what we have observed is that online learning, broadly defined, is the first disruptive innovation to appear in education since the advent of the printing press. Combined with competency-based learning—in which students progress upon true mastery of their learning, not because of an arbitrary time-based measure—we see huge opportunities to seize this disruptive innovation and transform our higher education system into a more affordable, student-centered one that, as a consequence, is able to serve many more students and transform our notion of quality and performance from measures of time and selectivity to learning and outcomes for all students.

True to form, we are seeing a variety of potentially disruptive organizations powered by online learning emerge from outside traditional higher education. These upstarts are reaching those students who need more education but for reasons having to do with convenience and accessibility, simplicity, and cost, are, at that point in their lives, nonconsumers of traditional higher education. The organizations are generally simpler, more focused institutions than our traditional colleges and universities and do not look like traditional higher education; they do not have four- or even two-year programs, they lack breadth, they do not do academic research, and they don't have grassy green quads. Accordingly, the existing regulatory structures do not know how to judge them. Even as many of our traditional institutions of higher education have paid lip service to the innovations these new entities are unlocking, by and large they have not harnessed their disruptive potential themselves. And although they are starting by solving simple problems, we can predict with certainty that this upstart sector as a whole will improve to solve more complex problems over time and further blur the lines around what is higher education. What's exciting is that with the help of these disruptions from the fringe, we have the opportunity to make a quality higher education fundamentally affordable and thereby allow many more people access to its benefits.

This committee is aware of the emerging class of online, competency-based universities, and is hearing from one today. Many of these institutions are following the classic patterns of disruptive innovation. I am going to focus my remarks on three other groups of organizations that are, in classic disruptive fashion, emerging from the fringe outside of traditional colleges and universities.

One such group is broadly known as the coding bootcamps—institutions ranging from General Assembly to Galvanize and from Flatiron School to Dev Bootcamp. These bootcamps, which are beginning to move beyond simply teaching coding skills, generally combine online learning with brick-and-mortar co-working experiences to offer students short, intensive, focused programs to

help students find jobs with their new skillset. And they are growing fast. One recent survey by Course Report found that in 2014, 6,714 students graduated from coding bootcamps specifically, a number that is expected to rise by 138 percent in 2015 to 16,056 graduates. To put that number into perspective, there were roughly 48,700 undergraduate computer science graduates from accredited universities in 2014. The average price of these coding bootcamps is $11,063, and the average length of a program is 10.8 weeks. As a result of their length and focus, they are far more accessible than traditional higher education for thousands who cannot go or return to a traditional institution of higher education for the length of time it would take to receive the corresponding skillset. In many cases, this just-in-time education is offering learning opportunities that would not even be available on many traditional campuses. And alternative financing mechanisms are emerging to help students afford the experience and send students signals about which programs offer the more promising pathway to success.

General Assembly is arguably the poster child for the sector. It offers full-time courses to help students make a career change, part-time courses to help students level up in their career, online courses, and online tutorials in topics ranging from web development to product management and from digital marketing to business foundations. Its full-time and part-time courses run eight to 12 weeks, and it works hard to connect students and employers, as it reports having a 95 percent job placement rate into a student's field of study. With campuses in 14 cities and five countries, General Assembly is already graduating over a thousand students per month and transforming higher education from a destination into an experience that one returns to over and over again through a journey of lifelong learning.

Another group of emerging programs is powered strictly by online learning and also helps students skill up in their career journeys. From Udemy to Udacity and Lynda.com, these programs are growing fast and have generally chosen to avoid playing in the traditional higher education arena. As an organization that emerged from a traditional university, Udacity presents an interesting case study, as it pivoted to teach the IT skills that employers need today—sometimes with employers building the courses themselves—and it has created a credential—the nanodegree—that many employers have endorsed and takes six to nine months to complete for a student studying 10 to 15 hours per week. The content in Udacity's online courses is free; enrolling in a course for credit costs roughly a couple hundred dollars per month. With enrollment in a course comes a much more immersive experience with hands-on projects and active coaching while still maintaining the inherent flexibility of online learning by having the courses available on-demand. And a new feature of the Nanodegree program will give students half the tuition back if they graduate within 12 months of enrollment. What's particularly noteworthy about Udacity beside that it is also seeking to turn education from a one-time event to a lifelong experience, is its work in creating the Open Education Alliance, an industry-wide alliance of educators and employers that include Google, AT&T, and Intuit. This alliance amounts to a de facto accrediting organization, as the employers' participation lends credence to the nanodegree credential that Udacity offers, such that traditional accreditation's seal of approval is far less meaningful outside of the access to federal dollars it brings. In other words, organizations like Udacity will ultimately build their credibility not from traditional accreditation, but from the reputations they develop based on the success of their students with employers.

Finally, some critics of these new programs observe that many of them are serving students who already have traditional degrees and therefore are well prepared to take advantage of the offerings, but that these programs are not useful for the majority of students who have not completed a college degree. Disruptive innovation theory suggests that there are several reasons that this pattern may not hold in the future, and, at least in some programs, that future is already present. A new program called The Guild is launching that explicitly plans to give adult students the skills and support to succeed in the middle skills economy. Another organization, LearnUp, presents an even starker counter-example, as it educates entry-level job seekers in America through leveraging online technology. Born from the experience its founders had in 2011 when they spent months in unemployment lines to understand why potential employees were struggling to get hired, the team concluded that job seekers not only often lack the skills they need to succeed in jobs, but also don't know what they need and what different jobs entail. LearnUp has now trained over 95,000 people for entry-level jobs, who, according to the company, stay longer and are 78 percent more effective than their peers. It also reduces the risk for its students because its employer partners, such as Staples and Old Navy, pay for the training and students can experience what a particular job is like quickly through LearnUp before actually being hired to ensure the fit is right.

With an understanding of the theory of disruptive innovation in place, it is unsurprising that all these potential disruptors are emerging outside of traditional higher education. And as U.S. Department of Education Under Secretary Ted Mitchell has noted, they pose particular problems to the existing regulatory structure that has long governed postsecondary education. With my remaining testimony, I will note three specific challenges.

First, and unsurprisingly given disruptive innovation theory, traditional accreditation was not built to assess these new kinds of providers, nor as incumbent institutions built around the existing order of higher education should we expect them to be able to do so in the future.

Second, these programs are emerging in a wide variety of fields that are constantly changing. As such, if the government is interested in funding low-income students to attend them, determining their quality through common, government-mandated assessments will be difficult and unwieldy at best and could stunt innovation. But my testimony suggests two other paths that could aid in judgments around quality: new financing mechanisms and employer-led de facto accreditation. Moving beyond today's all-or-nothing access to federal dollars that allows many students to avoid making rational quality-cost trade-offs may be important as well.

Third, these institutions collectively challenge the definition of higher education enshrined in current law, as they are programs and courses but not institutions. In the years ahead, they will increasingly push us to ask the question: what is college?

Thank you for your time today. I am excited that the committee is taking seriously the innovation emerging in higher education and asking how we can harness it to create a better future for all students.