The Innovative University: Changing the DNA of Higher Education From the Inside Out

Speaker: Clayton M. Christensen, Robert and Jane Cizik Professor of Business Administration, Harvard Business School

Overview

In the business world, sustaining success is difficult because disruptive innovations make it hard for entrenched market leaders to stay on top. To date, higher education institutions have competed with each other, but the industry has avoided a disruptive innovation. However, online learning represents a significant disruptive threat; it has all of the elements of disruptions that have occurred in other industries.

Context

Professor Christensen described the pattern of innovation that occurs in most industries and explained how this pattern could play out in higher education.

Key Takeaways

- **In industry after industry innovation follows a repeatable pattern.**
  Professor Christensen’s research has been driven by the observation that success is very hard to sustain. Most companies that were viewed as unassailable leaders at one point were unable to sustain their success. Professor Christensen’s research led him to conclude that failing to sustain success is not a result of bad management; it is due to challenges in managing innovation. This research has yielded a series of conclusions about how innovation plays out in industry after industry. Repeating patterns include:

  — A trajectory of performance improvement. In every market there is a trajectory of performance improvement that customers are able to utilize. There is also a trajectory of improvement that innovating companies provide as they introduce better and better products. The trajectory of technological progress almost always outstrips the ability of customers to use this progress. This means that products that initially “aren’t good enough” eventually outstrip what most customers need.

  — Sustaining and disruptive innovations. There are two types of innovations:

    - Sustaining innovations. These are innovations (some minor and incremental, some dramatic) that sustain the trajectory of performance. They help companies make better products at higher margins for existing customers. Sustaining innovations help incumbents retain their position.

    - Disruptive innovations. These are innovations where new entrants disrupt existing market leaders. These innovations aren’t more sophisticated. The disruption occurs by bringing to market a simpler, lower-cost, lower-margin, inferior product that takes root with a different set of customers.

Steel mini-mills provide an example. They had a 20% cost advantage over integrated mills, but initially produced inferior products. At their outset, the only segment mini-mills could serve was the undemanding low-end rebar segment. Rebar customers liked mini-mills’ lower price and didn’t mind the inferior quality. And the integrated mills didn’t mind giving up the rebar business, at it represented just 4% of sales and produced low margins.

Over time, mini-mill quality improved, while competitive pressures drove rebar margins down. In pursuit of better margins, the mini-mills went upmarket into new segments—and the rebar pattern repeated itself. Eventually mini-mills killed integrated mills.

"When a disruptive innovation comes at the bottom of the market, principles of good management make it difficult for smart people to go after it.” — Clayton M. Christensen

- From centralization to decentralization. Most industries start with complicated products that can only be accessed by wealthy people with expertise to use a product. When a disruption occurs, it expands the market to larger populations by making products that are more affordable and simpler to use.

- Targeting non-consumption. Disruptive innovations start by targeting non-consumers, who aren’t purchasing any product in a given category. For example, when transistor radios came out, they didn’t target people who had radios; they targeted people who didn’t own a radio and who saw this new option as “good enough” and “infinitely better than nothing.”

- Creating new measures of performance. Disruptive innovations don’t compete on the same measures as existing products. Transistor radios didn’t compete based on sound quality. Their key measures of performance were flexibility, fun, and mobility.

- The new technology sucks customers in. As a new technology takes root, it improves, gets good enough, and gets old customers to adopt this new technology. The new technology does not get sucked into the old companies and business models.

- Industries evolve from vertically integrated to having standard components. Early in the history of an industry, the companies making the products have to make all of their components. Ford initially had to make all of the components for their cars, and IBM initially had to make all of the components for their mainframe.
computers. As industries evolve, standards emerge. In an industry’s later stages, the companies that win don’t produce all of the components; they integrate components made by others, as Dell and HP have done.

— Disruption brings new leaders. The leader in one period is almost never the leader after a disruption. When the leaders in one generation are able to maintain their position in the next generation, they have done so by setting up a completely different business unit. A new business unit doesn’t have to compete with an existing business for resources and isn’t forced to conform to an existing business model.

- **Disruptive innovation hasn’t occurred in all industries, including higher education. It requires extendibility.**

There are anomalies where disruptive innovation has not occurred, such as hotels and restaurants. Holiday Inn and McDonald’s each came in at the low end of their markets, but didn’t move upmarket like the mini-mills.

Studying these anomalies led Professor Christensen to conclude that for disruption to occur requires that the disruption be “extendible,” which enables it to be extended upmarket. Often it is a technology that makes an innovation extendible and disruptive. Mini-mills could leverage their extendible low-cost technology to move upmarket, but Holiday Inn and McDonald’s possessed no extendible technology. The only way for those companies to move upmarket would be to replicate the cost structure of those above them. When replication occurs, disruption does not occur.

To date, higher education has not been disrupted because there haven’t been any extendible technologies. In higher education, existing players have competed via sustaining innovations (like nicer facilities and cafeterias) and new entrants have replicated the offerings of the existing players. The effect of this replication, the sustaining innovations, and the lack of a low-end disruptive innovation has been to drive prices up roughly 8% per year.

> "Rather than an enterprise that keeps bringing better products at lower cost, we find ourselves [in higher education] replicating each other . . . which is characterized by very high rates of inflation."
> —Clayton M. Christensen

- **Online learning has the potential to be disruptive to higher education.**

Over the next 20 years, there is a good chance that online learning could disrupt higher education.

> "[Because of online learning] I am worried that an industry that historically wasn’t amenable to disruption in the future might be.”
> —Clayton M. Christensen

Here is why online learning is such a serious threat:

— **It meets the criteria for disruption.** Online learning is a simple, low-cost offering that targets non-consumers. As with integrated steel mills, existing higher education industry participants perceive their product to be superior (which it is), don’t feel threatened by this inferior product because it targets non-consumers, and don’t want to compete with the new entrants who are offering an inferior, lower-margin product.

— **The technology provides extendibility.** Higher education has avoided disruption because there have been no extendible threats. To compete, a new entrant simply replicated the model of the existing players. But online learning doesn’t entail replication; it leverages a new technology that is extendible.

— **Industry maturity eliminates the need for vertical integration.** Previously, universities have been vertically integrated (like Ford and IBM). They both created and taught knowledge. Universities also have been horizontally integrated, with teachers available to teach all possible subjects. The more integrated a university, the more successful it was. Performance has been measured based on the creation, breadth, and teaching of knowledge. Institutions have been measured by the percent of the faculty with Ph.D.s and other advanced degrees, and the universities these degrees came from.

But like other industries, higher education no longer needs to be vertically integrated. There is so much knowledge available that institutions don’t need to produce their own; they can teach knowledge that already exists. This is what online learning does (just as integrators like Dell have bundled components made by others). With the disruption of online learning, performance will be measured based on teaching, not the creation of knowledge. Also, online learning can provide each student a customized learning experience, which today’s colleges and universities don’t provide.

The risk is that higher education will follow the pattern of innovation and that the current leaders in this field will be disrupted by online learning, which over time will go upmarket. The pattern in other industries includes: continuing to measure performance as it has always been measured; waiting too long, remaining tied to the current business model; and as a result, being susceptible to a disruptive innovation. Hopefully in 20 years today’s higher education institutions will still be in good shape—but this may not be the case.

**Other Important Points**

- **Learn more.** At ACE’s request, Professor Christensen and Henry Eyring of BYU-Idaho have collaborated to write a paper titled *The Innovative University: Changing the DNA ofHigher Education*, based on their soon-to-be-released book by the same title.