What Is Disruptive Innovation?

Twenty years after the introduction of this influential theory, the authors revisit what it does—and doesn't—explain.

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The theory of disruptive innovation, introduced in these pages in 1995, has proved to be a powerful way of thinking about management strategy. Leaders of small, entrepreneurial companies praise it as their guiding star; so do executives at large, well-established organizations, including Intel, Southern New Hampshire University, EMC, and Salesforce.

Unfortunately**,** disruption is in danger of becoming a victim of its own success. Despite broad dissemination, the theory's core concepts have been widely misunderstood, and its basic tenets frequently misapplied. Furthermore, essential refinements in the theory over the past 20 years appear to have been overshadowed by the popularity of the initial formulation. As a result, some critics of the theory mistakenly see shortcomings that have already been addressed.

There's another troubling concern: In our experience, too many people who speak of "disruption" have never read a serious book or article on the subject. They loosely use the term to invoke the concept of innovation in support of whatever it is they wish to do. Many researchers, writers, and consultants use "disruptive innovation" to describe *any* situation in

which an industry is shaken up and previously successful incumbents stumble. But that's much too broad a usage.

The problem with conflating a disruptive innovation with any breakthrough that changes an industry's competitive patterns is that different types of innovation require different strategic approaches. To put it another way, the lessons we've learned about succeeding as a disruptive innovator (or defending against a disruptive challenger) are not useful to companies facing dissimilar circumstances. If we get sloppy with our labels or fail to integrate insights from subsequent research and experience into the original theory, then managers may end up using the wrong tools for their context, reducing their chances of success. Over time, the theory's usefulness will be undermined.

This article is part of an effort to capture the state of the art. We begin by exploring the basic tenets of disruptive innovation, using Uber as a counterexample. Then we point out some common pitfalls in the theory's application, how these arise, and why correctly using the theory matters. We go on to trace major turning points in the evolution of our thinking and make the case that what we have learned can help us predict growth businesses more reliably.

First, a quick recap of the idea: Disruptive innovation is a process that allows a smaller, less well-resourced company to successfully challenge established incumbent businesses. Specifically, as incumbents focus on improving their products and services for their most demanding (and usually most profitable) customers, they exceed mainstream customers' needs. Disruptive entrants, meanwhile, develop simpler, less costly alternatives and don't try to

compete for the same customers. Over time, the quality of their offerings improves and eventually appeals to the majority of mainstream customers. (See the exhibit, “The Disruptive Innovation Model.”)

Is Uber a Disruptive Innovation?

Let’s consider Uber, the much-feted transportation company whose mobile application connects consumers who need rides with drivers who are willing to provide them. Founded in 2009, the company has enjoyed fantastic growth (it operates in hundreds of cities in 60 countries and is still expanding). It has reported tremendous financial success (the most recent funding round implies an enterprise value in the vicinity of $50 billion). And it has spawned a slew of imitators (other start-ups are trying to emulate its “market-making” business model). Is Uber disruptive to the taxi business?

Our answer is “no.” Uber’s financial and strategic achievements do not qualify the company as genuinely disruptive—although the company is almost always described that way. Here are two reasons why the label doesn’t fit.

Disruptive innovations originate in low-end and new-market footholds. Disruptive innovations are made possible because they get started in two types of markets that incumbents overlook. *Low-end footholds* exist because incumbents typically try to provide their most valuable, demanding, and profitable customers with ever-improving products and services, and they pay less attention to less-demanding customers. In fact, their offerings often overshoot the

performance requirements of the latter. This opens the door to a disruptor focused (at first) on providing those low-end customers with a "good enough" product.

In the case of *new-market footholds*, disruptors create a market where none existed before. Put simply, they find a way to turn nonconsumers into consumers. For example, in the early days of photocopying technology, Xerox targeted large corporations and charged high prices, in order to provide the performance that those customers required. School librarians, bowling-league operators, and other small customers, priced out of the market, made do with carbon paper or mimeograph machines. Then in the late 1970s, new challengers introduced personal copiers, offering an affordable solution to individuals and small organizations—and a new market was created. From this relatively modest beginning, personal photocopier makers gradually built a major position in the mainstream photocopier market that Xerox valued.

A disruptive innovation, by definition, starts from one of these two footholds. But that was not the case with Uber. It is difficult to claim that the company found a low-end opportunity: That would have meant taxi service providers had overshot the needs of a material number of customers by making cabs too plentiful, too easy to use, too clean, and too safe. Neither did Uber target nonconsumers—people who found the existing alternatives so expensive or inconvenient that they took public transit or drove themselves instead: Uber was launched in San Francisco (a well-served market), and Uber's customers were people already in the habit of hiring rides.

Uber has quite arguably been increasing total demand—that's what happens when you develop a better, less-expensive solution to a widespread customer need. But disruptors *start* by appealing

to low-end or unserved consumers and then migrate to the mainstream market. Uber has gone in exactly the opposite direction: demonstrating competitive advantage in the mainstream market first and subsequently appealing to historically overlooked segments.

Disruptive innovations don't catch on with mainstream customers until quality catches up to their standards. Disruption theory differentiates disruptive innovations from what are called "sustaining innovations." The latter make good products better, in the eyes of customers who already value them: the fifth blade in a razor, the clearer TV picture, better mobile phone reception. These improvements can be incremental advances or major breakthroughs, but they all enable firms to sell more products to their most profitable customers.

Disruptive innovations, on the other hand, are initially considered inferior by most of an incumbent's customers. Typically, customers are not willing to switch to the new offering on the basis of lower prices. Instead, they wait until its quality rises enough to satisfy them. Once that's happened, they adopt the new product and happily accept its lower price. (This is the mechanism by which disruption drives prices down in a market.)

Most of the elements of Uber's strategy seem to be sustaining innovations. Uber's service has rarely been described as inferior to existing taxis; in fact, many would say it is *better*. Booking a ride requires just a few taps on a smartphone; payment is cashless and convenient; and passengers can rate their rides afterward, which helps ensure high standards. Furthermore, Uber delivers service reliably and punctually, and its pricing is usually competitive with that of established taxi services. And as is typical when incumbents face threats from sustaining

innovations, many of the taxi companies are scrambling to catch up. They are developing competitive technologies, such as hailing apps, and contesting the legality of some of Uber's services.

Why Getting It Right Matters

Readers may still be wondering, Why does it matter what words we use to describe Uber? The company has certainly thrown the taxi industry into disarray: Isn't that "disruptive" enough? No. Applying the theory correctly is essential to realizing its benefits. For example, small competitors that nibble away at the periphery of your business very likely should be ignored … unless they are on a disruptive trajectory, in which case they are a potentially mortal threat. And both of these challenges are fundamentally different from efforts by competitors to woo your bread-and-butter customers.

As the example of Uber shows, identifying true disruptive innovation is tricky. Yet even executives with a good understanding of disruption theory tend to forget some of its subtler aspects when making strategic decisions. We've observed four important points that get overlooked or misunderstood.

1. Disruption is a process. The term "disruptive innovation" is misleading when it is used to refer to a product or service at one fixed point, rather than to the evolution of that product or service over time. The first minicomputers were disruptive not merely because they were low-end upstarts when they appeared on the scene, nor because they were later heralded as superior

to mainframes in many markets; they were disruptive by virtue of the path they followed from the fringe to the mainstream.

Most every innovation—disruptive or not—begins life as a small-scale experiment. Disruptors tend to focus on getting the business model, rather than merely the product, just right. When they succeed, their movement from the fringes (the low end of the market or a new market) to the mainstream erodes first the incumbents' market share and then their profitability. This process can take time, and incumbents can get quite creative in the defense of their established franchises. For example, more than 50 years after the first discount department store was opened, mainstream retail companies still operate their traditional department-store formats. Complete substitution, if it comes at all, may take decades, because the incremental profit from staying with the old model for one more year trumps proposals to write down the fixed costs and write off the assets in one stroke.

The fact that disruption is often a gradual process helps to explain why incumbents frequently overlook disruptors. For example, when Netflix launched in 1997, its initial service wasn't appealing to most of Blockbuster's customers, who rented movies (typically new releases) on impulse. Netflix had an exclusively online interface and a large inventory of movies that people wanted to see, but delivery through the U.S. mail meant selections took five days to arrive. The service appealed to only a few customer groups—movie buffs who didn't care about new releases, early adopters of DVD players, and online shoppers. If Netflix had not eventually begun to serve a broader demographic, Blockbuster would have been right to largely ignore it: The two companies filled very different needs for their (different) customers.

However, as new technologies allowed Netflix to shift to streaming video over the internet, the company did eventually become appealing to Blockbuster customers, offering a wider selection of content with an all-you-can-watch, on-demand, low-price, high-quality, highly convenient approach. And it got there via a classically disruptive path. If Netflix (like Uber) had entered into business as a mainstream competitor with a better offering, Blockbuster's response would very likely have been a vigorous and perhaps successful counterattack. But failing to respond effectively to the trajectory that Netflix was on led Blockbuster to collapse.

2. Disruptors often build business models that are very different from those of incumbents. For example, general practitioner MDs operating out of their offices often rely on their years of experience to interpret patients' symptoms and test results to generate a diagnosis and treatment plan. We have elsewhere called this a "solution shop" business model. In contrast, a number of pharmacies now support convenience care clinics that use what we call a "process" business model: They follow standardized protocols to diagnose and treat simple disorders.

One high-profile example of using an innovative business model to effect a disruption is Apple's iPhone. The product that Apple debuted in 2007 was a sustaining innovation in the smartphone market: It targeted the same customers coveted by incumbents, and its success in the first year or two can likely be explained by virtue of product superiority. The iPhone's subsequent growth is better explained by disruption—not of other smartphones, but of the laptop as the primary access point to the internet. This was achieved not merely through product improvements but also through the introduction of a new business model. By building a facilitated network connecting

application developers with phone users, Apple changed the game. The iPhone created a new market for internet access and eventually was able to challenge laptops as mainstream users' device of choice for going online.

3. Some disruptive innovations succeed; some don't. A third common mistake is to focus on the results achieved—to claim that a company is disruptive by virtue of its success. But success is not built into the definition of disruption: Not every disruptive path leads to a triumph, and not every triumphant newcomer follows a disruptive path.

For example, any number of internet-based retailers pursued disruptive paths in the late 1990s, but only a small number prospered. Their failures are not evidence of the deficiencies of disruption theory; they are simply boundary markers for the theory's application. The theory says very little about how to win in the foothold market, other than to play the odds and avoid head-on competition with better-resourced incumbents. Once a company has succeeded in that foothold market, disruption theory becomes relevant.

If we call every business success a "disruption," then companies that rise to the top in very different ways will be seen as sources of insight into a common strategy for succeeding. This creates a dangerous opportunity to mix and match behaviors that are very likely inconsistent with one another and thus unlikely to lead to the hoped-for result. For example, both Uber and Apple's iPhone owe their success to a platform-based model: Uber digitally connects riders with drivers; the iPhone connects app developers with phone users. But Uber, true to its nature as a sustaining innovation, has focused on expanding its network and functionality in ways that make

it better than traditional taxis. Apple, on other hand, has followed a disruptive path by building its ecosystem of app developers in ways that made the iPhone more like a personal computer.

4. The mantra "Disrupt or be disrupted" can misguide us. Incumbent companies do need to respond to disruption if it's occurring, but they should not overreact by dismantling a still-profitable business. Instead, they should continue to strengthen relationships with core customers by investing in sustaining innovations. In addition, they can create a new division focused solely on the growth opportunities that arise from the disruption. To ensure the success of this new enterprise, it's critical to separate it from the core business. That means that for some time, incumbents will find themselves managing two very different operations.

Ultimately, of course, after years of stand-alone growth, the disruptive business will start to steal customers from the core. But corporate leaders should not try to solve this problem before it *is* a problem.

What a Disruptive-Innovation Lens Can Reveal

It is rare that a technological innovation is inherently sustaining or disruptive. And when new technology is developed, disruption theory does not dictate what managers should do. Instead it helps them make a strategic choice between taking a sustaining path or a disruptive one.

The theory of disruption predicts that when an entrant takes the incumbent competitors head-on, offering better products or services, the incumbents will accelerate their innovations to defend their business. Either they will beat back the entrant by offering even better services or products

at comparable prices, or one of them will acquire the entrant. The data supports the theory's prediction that entrants pursuing a sustaining strategy for a stand-alone business will face steep odds: In our seminal study of the disk drive industry, only 6% of sustaining entrants managed to survive.

Uber's success therefore warrants explanation. By the lights of disruption theory, Uber is an outlier, and we do not have a universal way to account for such atypical outcomes. In Uber's case, we believe that the regulated nature of the taxi business is a large part of the answer. Market entry and prices are closely controlled in many jurisdictions. Consequently, taxi companies have rarely innovated. Individual drivers have few ways to innovate, except to defect to Uber. So Uber is in a unique situation relative to taxis: Uber can offer better quality and even charge premium prices, and the competition will find it hard to respond, at least in the short term. It would have made little sense for Uber to have tried to enter the taxi business as a disruptor when it could make so much more money through sustaining innovations.

To this point, we've addressed only whether or not Uber is disruptive to the taxi business. The limousine or "black car" business is a different story, and here Uber is far more likely to be on a disruptive path. The company's Uber SELECT option provides more-luxurious cars and is typically more expensive than its standard service—but typically less expensive than hiring a traditional limousine. This lower price imposes some compromises, as Uber SELECT does not include at least one defining feature of the leading incumbents in this space: acceptance of advance reservations. Consequently, this offering from Uber appeals to the low end of the limousine service market: customers willing to sacrifice a measure of convenience for monetary

savings. Should Uber find ways to match or exceed incumbents' performance levels without compromising its cost and price advantage, Uber appears to be well positioned to move into the mainstream of the limo business … and it will have done so in classically disruptive fashion.

How Our Thinking about Disruption Has Developed

Initially, the theory of disruptive innovation was simply a statement about correlation. Empirical findings showed that incumbents outperformed entrants in a sustaining-innovation context but underperformed in a disruptive-innovation context. The reason for this correlation was not immediately evident, but one by one, the elements of the theory fell into place.

First, researchers realized that a company's propensity for strategic change is profoundly affected by the interests of customers who provide the resources it needs to survive. In other words, incumbents (sensibly) listen to their existing customers, who tend to prioritize sustaining over disruptive innovations. Researchers then arrived at a second insight: Incumbents' focus on customers becomes institutionalized in internal processes that make it difficult for even senior managers to shift investment to disruptive innovations. For example, interviews with managers of established companies in the disk drive industry revealed that resource allocation processes prioritized sustaining innovations (which had high margins and targeted large markets with well-known customers) while inadvertently starving disruptive innovations (meant for smaller markets with poorly defined customers).

These two insights helped explain why incumbents often responded ineffectively (if at all) to disruptive innovations, but not why entrants eventually moved upmarket to challenge incumbents, over and over again.

Here's the latest thinking that has emerged. Very often, low-end and new-market footholds are populated not by a lone would-be disruptor, but by several comparable entrant firms whose products are simpler, more convenient, and less costly than those sold by incumbents. The incumbents provide a de facto price umbrella, allowing many of the entrants to enjoy profitable growth within the foothold market. But that lasts only for a time: As incumbents (rationally, but mistakenly) cede the foothold market, they effectively remove the price umbrella, and price-based competition among the entrants reigns. Some entrants will founder, but the smart ones—the true disruptors—will improve their products and drive upmarket, where, once again, they can compete at the margin against higher-cost established competitors. The disruptive effect drives every competitor—incumbent and entrant—upmarket.

With those explanations in hand, the theory of disruptive innovation went beyond simple correlation to a theory of causation as well. The key elements of that theory have been tested and validated through studies of many industries, including retail, computers, printing, motorcycles, cars, semiconductors, cardiovascular surgery, management education, financial services, management consulting, cameras, communications and fiber optics, and computer-aided design software.

Making sense of anomalies. Additional refinements to the theory have been made to address certain anomalies, or unexpected scenarios, that the theory could not explain. For example, we originally assumed that any disruptive innovation took root in the lowest tiers of an established market—yet sometimes new entrants seemed to be competing in entirely new markets. This led to the distinction we discussed above between low-end and new-market footholds.

Low-end disruptors (think steel minimills and discount retailers) come in at the bottom of the market and take hold within an existing value network before moving upmarket and attacking that stratum (think integrated steel mills and traditional retailers). By contrast, new-market disruptions take hold in a completely new value network and appeal to customers who have previously gone without the product. Consider Sony's transistor pocket radio and the PC: They were largely ignored by manufacturers of tabletop radios and minicomputers, respectively, because they were aimed at nonconsumers of those goods. By postulating that there are two flavors of foothold markets in which disruptive innovation can begin, the theory has become more powerful and practicable.

Another intriguing anomaly was the identification of industries that have resisted the forces of disruption, at least until very recently. Higher education in the United States is one of these. Over the years—indeed, over more than 100 years—new kinds of institutions with different initial charters have been created to address the needs of particular population segments, including nonconsumers. Land-grant universities, teachers' colleges, two-year colleges, and so on were initially launched to serve those for whom a traditional four-year liberal arts education was out of reach.

Many of these new entrants strived to improve over time, compelled by analogues of the pursuit of profitability: a desire for growth, prestige, and the capacity to do greater good. Thus they made costly investments in research, dormitories, athletic facilities, faculty, and so on, seeking to emulate more-elite and highly regarded institutions. Doing so has increased their level of performance in some ways—creating richer learning and learning environments for students, for example. Yet the *relative* standing of higher-education institutions remains largely unchanged: With few exceptions, the top 20 are still the top 20, and the next 50 are still in that second tier, decade after decade.

In other words, all competitors (incumbents and new entrants alike) are playing by the same rules, so it is perhaps no surprise that incumbents are able to maintain their positions. What has been missing—until recently—is experimentation with new models that successfully appeal to today's nonconsumers of higher education and enable new entrants to move upmarket on a disruptive path.

The question then was this: Was there a game-changing technology or business model that would allow innovators to create a satisfying new offering in higher education without emulating the incumbents' high costs? The answer seems to be "yes," and the innovation is online learning, which is becoming broadly available. Real tuition is falling for online courses, accessibility is improving, and quality is improving, too. Innovators are making inroads into the mainstream market at a stunning pace, and disruption has not even begun in earnest.

The steepness of any innovator trajectory is a function of how quickly the enabling technology improves. In the steel industry, continuous-casting technology improved quite slowly, and it took 43 years for the minimill Nucor to equal the revenue of the largest integrated steelmakers. In contrast, the digital technologies that allowed personal computers to disrupt minicomputers improved much more quickly; after being in business only 12 years, Compaq had earnings on par with those of Digital Equipment Corporation, a previous industry leader. Understanding what drives the rate of disruption is helpful for predicting outcomes, but it doesn't alter the way disruptions should be managed. Disruptions that happen quickly are not fundamentally different from any other ones; they don't have different causal mechanisms or require different responses.

We should note again that what *seem* to be anomalies—apparently new forms of disruption, for example—are worth examining through the lens of disruptive innovation theory. Here is a current and salient example. One might be tempted to say that Tesla Motors is disruptive, even though its foothold is in the high end of the auto market (customers willing to spend $70,000 or more on a car). But the high end of any market is not uninteresting to incumbents, and so Tesla's entry, not surprisingly, has elicited significant attention and investment from incumbent competitors. If disruption theory is correct, Tesla's future holds either acquisition by a much larger incumbent or a years-long and hard-fought battle for market significance.

We still have a lot to learn. We are eager to keep expanding and refining disruptive-innovation theory, and much work lies ahead. For example, universally effective responses to disruptive threats remain elusive. The new conventional wisdom is that companies should create a separate division that operates under the protection of senior leadership to explore and exploit a new

disruptive model. Sometimes this works—and sometimes it doesn't. In certain cases, a failed response to a disruptive threat cannot be attributed to lack of understanding, executive attention, or financial investment. The challenges that arise from being an incumbent and an entrant simultaneously have yet to be fully specified; how best to meet those challenges is still to be discovered.

Disruption theory does not, and never will, explain everything about innovation specifically or business success generally. Far too many other forces are in play, each of which will reward further study. Integrating them all into an uber-theory of business success is an ambitious goal, one we are unlikely to attain any time soon.

But there is cause for hope: Empirical tests show that using disruptive theory makes us up to 50% more accurate in our predictions of which fledgling businesses will succeed." **[link to** http://www.amazon.com/The-Innovators-Manifesto-Deliberate-Transformational/dp/0385531664**]** As an ever-growing community of researchers and practitioners continues to build on disruption theory and integrate it with other perspectives, we will come to an even better understanding of what helps firms thrive.