DISRUPTIVE INNOVATION

Tesla's Not as Disruptive as You Might Think

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In the fall of 2014 an investor contacted HBS professor Clayton Christensen with a friendly challenge. Christensen is best known for his theory of disruptive innovation, which describes how firms that introduce rudimentary products can eventually overrun established players by systematically improving the products until they meet the needs of mainstream consumers, generally at low prices. The investor, a shareholder in the electric vehicle company Tesla, suggested that Tesla's founder, Elon Musk, is creating a new model of disruption, in which products start at the high end and move down. During its 10-year history Tesla has made just 59,500 cars, most of which cost upwards of $100,000. But it expects to introduce a model in late 2015 with a sticker price of about $70,000, and in 2017 it plans to launch one for $35,000. Musk is outspoken about his goal: to create an affordable mass-market electric vehicle that will supplant gasoline-powered cars.

It was the kind of challenge Christensen loves—he believes that the best way to improve a theory is to study anomalies. (Aviation, he has said, was dramatically improved by studying early crashes.) He assigned his research associate Tom Bartman and colleagues at HBS's Forum for Growth and Innovation to conduct a deep study of Tesla to determine whether the firm really is pioneering top-down disruption and to assess any other companies that might disrupt the global automobile market.

> If demand rises, researchers believe that GM, Toyota, and others could shift to electric vehicles relatively quickly.

The time is ripe for such examination. As the theory of disruptive innovation celebrates its 20th birthday—it was first articulated in a 1995 HBR article—recognition is growing that it has been co-opted as a trendy buzzword and applied to businesses that aren't truly disruptive. "The word is [now] used to justify whatever anybody—an entrepreneur or a college student—wants to do," Christensen told *Bloomberg* last year, responding to criticism of his work in the *New Yorker*. Bartman says that the popular press routinely cites Tesla and Airbnb as examples of disruptive innovations. Airbnb's business model seems to fit the definition, he adds—but does Tesla's?

"It's Going to Be a Significant Disruption"

COURTESY OF POLARIS INDUSTRIES INC.

In 2011 Polaris, a Minnesota-based manufacturer of snowmobiles and all-terrain vehicles, bought Global Electric Motorcars, a small division of Chrysler that makes battery-powered "neighborhood electric vehicles." Although NEVs cannot exceed 35 miles per hour and lack many features of cars, they could eventually steal enough market share to disrupt the automobile industry. HBR recently spoke with Scott Wine, Polaris's chairman and CEO. Edited excerpts follow.

Why did you buy GEM?

To investigate, Bartman's team posed five questions it uses to evaluate disruptive innovations. First, does the product either target overserved customers (by offering lower performance at a lower price) or create a new market (by targeting customers who couldn't use or afford the existing product)? Second, does it create "asymmetric motivation," meaning that while the disrupter is motivated to enter higher performance segments over time, existing players aren't motivated to fight it? Third, can it improve performance fast enough to keep pace with customers' expectations while retaining its low cost structure? Fourth, does it create new value networks, including sales channels? Fifth, does it disrupt all incumbents, or can an existing player exploit the opportunity?

We liked the fact that they had built a brand in the electric vehicle space as a relatively small company. They were reasonably innovative and had distinctive styling. With our R&D, distribution, and manufacturing capabilities, we saw an opportunity to expand the market.

Is there much of a U.S. market for NEVs?

My father lives in a small town in Virginia, and my father-in-law lives in Sun City, Arizona. They use their NEVs year-round. In most cities you can drive these vehicles everywhere. We think the market is significant.

How far upmarket could NEVs go?

Most of the market for vehicles like these is filled by golf carts—they're used by golf courses and then sold to local dealers. We offer a reasonably nice upgrade to that. We've made the braking system and the ride and handling better. We've added stereos and heaters. We don't talk about future product plans, but we have 600 engineers thinking about how to make our vehicles better. When we launch a new model, in the not-too-distant future, it will be an opportunity to do exactly what Clay Christensen's work says. It's going to be a significant disruption.

As Bartman worked through the questions, it became clear that Tesla is not a disrupter. It's a classic "sustaining innovation"—a product that, according to Christensen's definition, offers incrementally better performance at a higher price. There's nothing rudimentary about Teslas, which compete on price against cars by BMW and Mercedes.

The question of what Tesla is matters greatly to established automakers and their suppliers and investors. "If Tesla is following a disruptive innovation strategy, theory predicts that it will continue to see no strong competitive response," Bartman says. "However, because it's a sustaining innovation, theory predicts that competitors will emerge. Our analysis concludes that a competitive response won't happen until Tesla expands outside its current niche of people who prefer electric vehicles to gas-powered cars—but if it expands by creating more variety (such as SUVs) and more-affordable vehicles, competition will be fierce."

Think about it this way: All-electric vehicles accounted for just 119,710 of the 16.5 million automobiles sold in the U.S. in 2014—seven tenths of one percent of the market. Established carmakers are paying little attention to EVs not because they're clueless but because so few people want EVs. (And they aren't completely ignoring EVs; consider the all-electric Nissan Leaf and Chevy Volt, each of which outsold Tesla in 2014.) Tesla is betting that preferences will change—that someday millions of people will want electric vehicles. If that happens, Bartman believes that GM, Toyota, and others could shift to EVs relatively quickly, using their existing manufacturing capabilities, supplier networks, and dealerships to fend off the threat.

None of this suggests that Tesla won't become profitable in its niche. "It's an amazing car," says Bartman. And Tesla might expand to lower price points, although lowering its cost structure could prove a challenge. But if its goal is to dominate the industry or thwart existing global automakers, "it's

chosen a very difficult strategic path," Bartman says.

If Tesla won't disrupt the industry, what could? Bartman's research points to the "neighborhood electric vehicle"—a low-speed vehicle that resembles a souped-up golf cart. NEVs are used by security on university campuses, for transportation in retirement communities, and for delivery in cities. They cost just a few thousand dollars and are cheap to operate and easy to park. And their manufacturers are starting to add features found in conventional cars. "Disruptive theory is all about the disrupter being better suited for people who use it early on and then improving over time," Bartman says. Particularly in the developing world, NEVs could eventually be what PCs were to minicomputers or what desktop copiers were to giant Xerox machines. Starting at the bottom still makes strategic sense.

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