

Disruptive Innovation: In Need of Better Theory*

Constantinos Markides

Christensen's (1997) original theory focused on disruptive technologies. Over time, the same theory has been used to explain all kinds of disruptive innovations. This is a mistake. Different kinds of innovations have different competitive effects and produce different kinds of markets. They should be treated as distinct phenomena. This article summarizes what the academic literature has to say about two specific types of disruptive innovations—namely, business-model innovations and radical (new-to-the-world) product innovations. It argues that even though they share many similarities to what Christensen calls disruptive innovations, they are still different phenomena: they create different kinds of markets, pose radically different challenges for established firms, and have radically different implications for managers. It is only when the topic of disruptive innovation is broken down into these finer categories that progress can be made.

In a recent survey of the literature, Danneels (2004) examined the theory behind *disruptive technological innovation* and identified a number of issues that require further and deeper exploration. One of these issues is the actual definition of *disruptive innovation*. It appears that despite the widespread use of the term by both managers and academics, there is still a rather unclear understanding of what constitutes disruptive innovation.

In its original formulation, Christensen (1997) focused primarily on *technological innovation* and explored how new technologies came to surpass seemingly superior technologies in a market. Over

time, Christensen widened the application of the term to include not only technologies but also products and business models. For example, Christensen and Raynor (2003) list as disruptive innovations such disparate things as discount department stores; low-price, point-to-point airlines; cheap, mass-market products such as power tools, copiers, and motorcycles; and online businesses such as bookselling, education, brokerage, and travel agents.

Although I agree that all of these innovations are disruptive to incumbents, treating them all as one and the same has actually confused matters considerably. A disruptive *technological* innovation is a fundamentally different phenomenon from a disruptive *business-model* innovation as well as a disruptive *product* innovation: These innovations arise in different ways, have different competitive effects, and require different responses from incumbents. Lumping all types of disruptive innovations into one category simply mixes apples with oranges, which has serious implications on how we study disruptive innovations in the future (Henderson and Clark, 1990).

To appreciate this point, this article summarizes what the academic literature has to say about two specific types of disruptive innovations—namely, business-model innovations and radical product innovations—and then demonstrates that even though both are disruptive innovations, they nevertheless pose radically different challenges for established firms and have radically different implications for managers.

Business-Model Innovation

One type of innovation that tends to be disruptive to established competitors is business-model innovation. In earlier work (Markides, 1997, 1998), I called this type of innovation *strategic innovation*, which is a confusing term. *Business-model innovation* captures

Address correspondence to: Constantinos Markides, London Business School, Sussex Place, Regent's Park, London NW1 4SA, England. Tel: (+44) 20 7262 5050. Fax: (+44) 20 7724 7875. E-mail: cmarkides@london.edu.

*I would like to thank Tina Chini, Danneels Erwin, Michael Jacobides, Peter Moran, Yiorgos Mylonadis, and Freek Vermeulen for numerous helpful comments and suggestions.

the essence of this type of innovation without ambiguity. Business-model innovation is the discovery of a fundamentally different business model in an existing business. For example, Amazon and Barnes & Noble compete in the book retail business in fundamentally different ways. Similarly, Charles Schwab, easyJet, and Dell compete in their respective industries in substantially different ways from their competitors, such as Merrill Lynch, British Airways, and HP (or IBM).

To qualify as an innovation, the new business model must enlarge the existing economic pie, either by attracting new customers into the market or by encouraging existing customers to consume more. The requirement to enlarge the market implies that a business model innovation is much more than the discovery of a radical new strategy on the part of a firm. Thus, IBM's change of strategy in the early 1990s, radical as it may have been, is not what we call business-model innovation. On the other hand, companies such as Amazon, Schwab, Dell, Swatch, and Southwest are considered business-model innovators because they introduced new business models in their respective markets that attracted new consumers (and so enlarged their markets).

It is important to note that business model innovators do not discover new products or services; they simply redefine what an existing product or service is and how it is provided to the customer. For example, Amazon did not discover bookselling; it redefined what the service is all about, what the customer gets out of it, and how the service is provided to the customer. Similarly, Swatch did not discover the watch; it redefined what this product is and why the customer should buy it.

As shown in Table 1, new business models invade an existing market by emphasizing different product

or service attributes to those emphasized by the traditional business models of the established competitors. For example, whereas traditional brokers sell their services on the basis of their research and advice to customers, online brokers sell by promoting a different value proposition, namely, price and speed of execution. Similarly, whereas traditional airline companies sell their product on the basis of frequency, range of destinations, and quality of service on board, low-cost, point-to-point operators emphasize price. And whereas traditional business schools sell their product on the basis of quality and career placement, online schools like the Open University in the United Kingdom and University of Phoenix in the United States sell their education on the basis of flexibility and price.

Since innovators emphasize different dimensions of a product or service, their products or services inevitably become attractive (at least originally) to a different customer from the one desiring what the traditional competitors offer. As a result, the markets created around the new competitors tend to be composed of different customers and have different key success factors than the established markets.

Since the new markets have different key success factors, they also require a different combination of tailored activities on the part of the firm. For example, the value chain, internal processes, structures, and the culture that Amazon needs in place to compete successfully in the online distribution of books is demonstratively different from the one Borders or Barnes & Noble needs to compete in the same industry using their business model.

Not only are the new activities required different, but also they are often incompatible with a company's set of activities because of various trade-offs or conflicts existing between the two ways of doing business.

Table 1. Critical Performance Attributes Emphasized by Established and New Business Models

Industry	Performance Attributes Emphasized by Established Business Models	Performance Attributes Emphasized by New Business Models
Banking	Extensive, nationwide branch network and personal service	24-hour access, convenience, price
Insurance	Personal, face-to-face advice through an extensive agent network	Convenience and low commission rates
Airlines	Hub-and-spoke system, premium service, meals, baggage checking	Price, no frills
Brokerage	Research and advice	Speed of execution and price
Photocopying	Speed of copying	Price, size, and quality
Watches	Accuracy and functionality	Design
Steel	Quality	Price
Motorcycles	Speed and Power	Size and price
Bookstores	Chain of superstores offering nice environment and service	Wide selection, speed, price, convenience
Car Rental	Location (e.g., airports) and quality of cars	Location (e.g., downtown) and price
Computer	Speed, memory capacity, power	Design and user-friendliness

For example, by selling its tickets on the Internet just like its low-cost competitors, British Airways risks alienating its existing distributors, the travel agents. In the same way, if Unilever moves aggressively into private label, it risks damaging its existing brands and diluting the organization's strong culture for innovation and differentiation. The existence of such trade-offs and conflicts means that a company trying to compete in both positions simultaneously risks paying a huge straddling cost and degrading the value of its existing activities (Porter, 1996). The task is obviously not impossible, but it is certainly difficult. This logic led Porter (1980) to propose more than 20 years ago that a company could find itself stuck in the middle if it tried to compete with both low-cost and differentiation strategies.

Given that (1) new business models attract different customers from those that established companies focus on; and (2) require different and conflicting value-chains from the ones established companies currently have, it should come as no surprise that incumbent firms will, initially, have little incentive to adopt them or to respond to them.

However, over time, the new business models improve to such an extent that they are able to deliver performance that is sufficient in the old attributes established competitors emphasize and superior in the new attributes. At this point, even established customers begin to find the new way interesting and begin to switch. Inevitably, the growth of the disruptive innovation attracts the attention of established players. As more customers—both existing and new ones—embrace the new business model, the new business receives increasing attention from both the media and the established players. At a certain point, established players cannot afford to ignore this new way of doing business anymore, and they therefore begin to consider ways to respond to it.

Herein lies the dilemma for established firms: these new ways of competing conflict with existing ways. It is extremely difficult to make the two coexist in the same organization—hence the reason why these innovations are considered disruptive to the established firm.

Business-Model Innovations Are Different from Technological Innovations

It should be obvious from the discussion so far that business-model innovations—and in particular the

process by which they emerge and grow—share many similarities with disruptive technological innovations, which Christensen's (1997) original work examined. The similarities between the two have led some researchers to treat the two types of innovation as one and the same—this is a mistake.

Over the past 10 years, several researchers have explored business-model innovation in depth (e.g., Charitou, 2001; Gilbert and Bower, 2002; Hamel, 2000; Kim and Mauborgne, 1997; Markides, 1997, 1998; Slywotzky, 1996). As a result, we now know a lot about this kind of innovation, most of which seems to contradict the accepted wisdom on disruptive innovation.

One of the key findings of Christensen's work is that disruptive technological innovations eventually grow to dominate the market. Christensen and Raynor (2003, p. 69) make this point forcefully by arguing that "... disruption is a process and not an event ... it might take decades for the forces to work their way through an industry but [they] are always at work." Similarly, Danneels (2004, p. 247) summarized the existing theory on disruptive innovation by pointing out that "... disruptive technologies tend to be associated with the replacement of incumbents by entrants." If correct, such a fact carries a serious implication for incumbent firm: The only way to respond to the disruption is to accept it and then find ways to exploit it. Christensen and Raynor (2003) suggested that established companies could exploit a disruption only by creating a separate unit.

The available literature on business-model innovation does not support such an extreme position. What often happens in the case of a business-model innovation is that the new way of competing in the business grows—usually quickly—to a certain percent of the market but fails to completely overtake the traditional way of competing. For example, Internet banking and Internet brokerage have grown rapidly in the last five years but have captured only 10–20% of the market. Similarly, budget, no-frills flying as a way of business has grown phenomenally since 1995 but has captured no more than 20% of the total market. In market after market, new ways of competing grow to a respectable size but never really replace the old ways. Nor are these innovations expected to grow in the future to 100% of their markets.

Given such an outcome, then some of the accepted wisdoms on disruptive innovation need to be modified. First, new business models are not necessarily superior to the ones established companies employ,

a fact implying that it is not necessarily an optimal strategy for an established company to abandon its existing business model in favor of something new or to grow the new model alongside its existing business model. The decision should be based on a careful cost-benefit analysis and would depend on the specific circumstances of the firm as well as the nature of the innovation.

In his article in this issue, Christensen takes exception to this by arguing, “. . . I had simply assumed that the objective function of management should be to maximize shareholder value. If survival is instead the objective function, then quite possibly inaction is a good course of action.” In other words, if a firm chooses not to imitate the disruption or chooses to destroy it, then it must be doing so to survive rather than to maximize shareholder value. This is an interesting point, but no theoretical reason or empirical evidence exists to suggest that any action other than imitation is value destroying. In fact, Charitou and Markides (2003) demonstrated that in deciding how to respond to disruptive business-model innovations, incumbent firms have several options at their disposal. Most of these, including the “disrupt-the-disruptor” strategy that companies like Swatch have adopted, are indeed value enhancing.

The truth of the matter is that established companies would simply find most of these innovations unattractive—and not for the reasons articulated in Christensen (1997), though they undoubtedly play a role. Rather, most of these business-model innovations simply do not make economic sense for established companies. In its efforts to grow, the established firm has many other alternatives to consider, including investing its limited resources in adjacent markets or taking its existing business model internationally. Given its other growth options—and given its limited resources—the decision to invest in the disruption may rank low on its priority list.

The academic literature suggests three exceptions to this generalization. Specifically, established firms would, on average, find it advantageous to create disruptive business-model innovations in the following circumstances:

(1) When they enter a new market where entrenched competitors have first-mover advantages (e.g., Canon entering the copier market). In such a case, the new entrant must attack by breaking the rules (Markides, 1997; Porter, 1985).

(2) When their current strategy or business model is clearly inappropriate and the firm is facing a crisis (e.g., Kresge introducing the discount retail concept in the 1960s and renaming itself K-Mart)

(3) When they are attempting to scale up a new-to-the-world product to make it attractive to the mass market (Markides and Geroski, 2005) (This situation is discussed in the next section.)

A second sacred cow regarding disruptive innovations is that the best way for an established company to adopt and to exploit such innovations is through a separate unit. Presumably, this is the best way to overcome the inherent conflicts between the established business and the innovation. Yet, as argued elsewhere (Markides and Charitou, 2004), established companies could exploit disruptive strategic innovations in a number of ways, and they do not necessarily have to use a separate unit to do so.

Finally, even if the disruptive innovation is not superior to the established business model, incumbents need to find a way to respond to it. However, *response* does not necessarily mean that they have to adopt it. They could respond to the innovation not by adopting it but by investing in their existing business to make the traditional way of competing even more competitive relative to the new way of competing. Incumbents even have the option of counterattacking the innovators by trying to disrupt the disruptors. The different response options available to established firms were explored in Charitou and Markides (2003).

Radical Product Innovations

A second type of innovation that tends to be disruptive to the established competitors is radical innovation, which creates new-to-the-world products (e.g., the car, television, personal computers, VCRs, mobile phones). Radical innovations are disruptive to consumers because they introduce products and value propositions that disturb prevailing consumer habits and behaviors in a major way. They are disruptive to producers because the markets they create undermine the competences and complementary assets on which existing competitors have built their success. Because they are disruptive to both consumers and producers, these innovations are rarely driven by demand. Instead, they result from a supply-push process originating from those responsible for

developing new technologies (Markides and Geroski, 2005).

The available academic evidence (e.g. Klepper and Simons, 2000; Utterback, 1994) shows that markets emerging as a result of supply–push processes share certain characteristics:

- Despite enormous technological and product uncertainty, newly created markets are invaded by hordes of new entrants, sometimes numbering in the hundreds. Amazingly, this surge in firm population happens well before the new market starts growing.
- Not only is the new market flooded with hundreds of new entrants, but product variety in the young market also surges to amazingly high levels. In fact, the rate of innovation at the start of a market's life is the highest this market will ever see.
- Eventually, the wave of entry subsides and in turn is followed by what is sometimes a sharp, sudden, and very sizeable shakeout leading to the death of most of the early pioneers. The shakeout is associated with the emergence of a dominant design in the market, which signals the beginning of growth in the industry.
- All of this takes a long time to unfold. Thus, the structure of new markets remains remarkably fluid throughout most of the early years, and many more firms come and go than are left operating in the market when its structure finally settles down.

The end result of this is that the early pioneers that create these new-to-the-world markets are very rarely the ones that scale them up from little niches to big, mass markets. The companies that eventually scale up new markets jump into the market right before the dominant design emerges. But jumping in at the right time is not enough to conquer the market. The eventual winners not only time their entry into the market to perfection, but they also undertake a series of actions that grows the market from a niche into a mass market. Typically, this involves making heavy investments in exploiting scale economies, traveling down learning curves, developing strong brands, and controlling the channels of distribution to the mass market.

One of the strategies these latecomers use to scale up a market and steal it away from the early pioneers is similar to the process disruptive innovators use to upset established competitors (as described by Christensen, 1997). In particular, whereas early pioneers emphasize the technical attributes of the prod-

uct, latecomers shift the basis of competition away from technical performance to other product attributes such as quality and price by cutting the price of the product to a mass-market level while simultaneously improving the quality of the product to make it acceptable to the average consumer. All of a sudden, the product becomes attractive to the mass market, and rapid growth follows.

The irony is that in many cases, a late entrant captures the market even when their product is not as good as the products of the early pioneers. This happens for two reasons. First, as a result of the efforts of the early pioneers, the new product improves in performance to levels that either are good enough or even surpass customer needs. At that stage, any additional investments to improve the performance of the product further are not really necessary. But the early pioneers cannot help themselves: Their engineering cultures go to work, and sure enough, more and more money goes into research and development (R&D) to improve the product further and to add to its functionality. All of this occurs even with the full realization that their customers do not need—nor will they ever use—the added functionality.

Product overengineering is linked to a second change taking place: The extra investments and incremental additions to the product's performance do not come for free. The rising costs lead to rising prices. The high price, in turn, limits the attraction of the product to a small segment made up of technology enthusiasts and early adopters.

The combination of these two factors gives latecomers their chance to move in and steal the market away. They know that all they have to do is to produce a product good enough in performance but cheaper than what is on the market now. Their product may not be as good as the product of the pioneers, but this does not really matter. The early adopters are not attracted to these inferior products, but the average consumer is. To them, this product is good enough and cheap. Over time, the consolidators may improve the performance of their product to such an extent that even the technically astute customers begin to find them attractive—and so switch. However, this is not absolutely necessary. As long as they control the mass market, the consolidators are happy to leave a few little niches for other competitors to feed on. Their overriding objective is to make a product that is not necessarily the best—just one good enough in performance and superior in price.

Radical Product Innovations Are Different from Technological Innovations

Note again the similarities of this scaling-up process to the disruptive innovation process Christensen (1997) described. In fact, many of the examples of disruptive innovations that Christensen and Raynor (2003) use in their book (e.g., Black and Decker power tools, Honda motorcycles, Canon copiers, Seiko watches) are really examples of companies scaling up a niche market into a mass market. Therefore, if established companies want to achieve this kind of disruptive innovation, the way to do it is not as described in Christensen and Raynor (2003).

Markides and Geroski (2005) described how established companies could exploit such disruptive product innovations. Their thesis is that established companies should not even attempt to create such innovations but should leave the task of creating these kinds of markets to small, start-up firms that have the requisite skills and attitudes to succeed at this game. Established firms should, instead, concentrate on what they are good at—consolidating young markets into big, mass markets.

Practically speaking, what this means is that instead of spending valuable resources and managerial talent at growing new radical businesses inside, established companies should aim to create, sustain, and nurture a network of feeder firms—of young, entrepreneurial firms busy colonizing new niches. Through its business development function, the established company could serve as a venture capitalist to these feeder firms. Alternatively, it could develop formal strategic alliances with them or even could maintain minority equity stakes in them. Then, when it is time to consolidate the market, it could build a new mass-market business on the platform these feeder firms have provided. Since the younger firms do not have the resources, power, marketing, and distribution to scale up their creations, they should, in principle, be happy to subcontract this activity to the bigger firms, subject to a fair division of the spoils.

This might strike some people as too radical of an idea, but it is in fact a widely accepted business model in industries where companies live and die on their ability to continuously bring creative new products to the market—industries such as music and book publishing, Hollywood movies, theater plays, and art galleries. If this organization of work functions well in such creative industries, should we not at least

attempt to import it into other industries that aspire to become more creative?

Again, the point is not to suggest that this is a risk-free or trouble-free strategy for big companies to create disruptive new markets. Rather, I simply highlight how radically different this suggestion is from what is found in the disruptive innovation literature (e.g., Christensen and Raynor, 2003). What big established companies need to do to achieve this kind of disruptive innovation (i.e., radical product innovation) is fundamentally different from what they have to do to achieve either business-model innovation or technological innovation.

In Need of Finer Categories

The basic thesis of this article is that not all disruptive innovations are the same. In particular, I propose that technological, business-model, and new-to-the-world product innovations should be treated as distinct phenomena. All three types of innovation may follow a similar process to invade existing markets and may have equally disruptive effects on incumbent firms, but at the end of the day they produce different kinds of markets and have different managerial implications. It is only when the topic of disruptive innovation is broken down into these finer categories that progress can be made.

References

- Charitou, Constantinos (2001). The Response of Established Firms to Disruptive Strategic Innovation: Empirical Evidence from Europe and North America. Ph.D. diss., London Business School, London, UK.
- Charitou, Constantinos and Markides, Constantinos (2003). Responses to Disruptive Strategic Innovation. *Sloan Management Review* 44(2):55–63.
- Christensen, Clayton M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston: Harvard Business School Press.
- Christensen, Clayton and Raynor, Michael (2003). *The Innovator's Solution: Creating and Sustaining Successful Growth*. Boston: Harvard Business School Press.
- Danneels, Erwin (2004). Disruptive Technology Reconsidered: A Critique and Research Agenda. *Journal of Product Innovation Management* 21(4):246–258.
- Gilbert, Clark and Bower, Joe (2002). Disruptive Change: When Trying Harder Is Part of the Problem. *Harvard Business Review* 80(5):94–102 (May).
- Hamel, Gary (2000). *Leading the Revolution*. Boston: Harvard Business School Press.
- Kim, Chan and Mauborgne, Renee (1997). Value Innovation: The Strategic Logic of High Growth. *Harvard Business Review* 75(1):103–112 (January–February).

- Klepper, Stephen and Simons, Keith (2000). Technological Extinctions of Industrial Firms. *Industrial and Corporate Change* 6(2):379–460.
- Henderson, Rebecca and Clark, Kim (1990). Architectural Innovation: The Reconfiguration of Existing Product Technologies and the Failure of Established Firms. *Administrative Science Quarterly* 35:9–30.
- Markides, Constantinos (1997). Strategic Innovation. *Sloan Management Review* 38(3):9–23.
- Markides, Constantinos (1998). Strategic Innovation in Established Companies. *Sloan Management Review* 39(3):31–42.
- Markides, Constantinos and Charitou, Constantinos (2004). Competing with Dual Business Models: A Contingency Approach. *Academy of Management Executive* 18(3):22–36.
- Markides, Constantinos and Geroski, Paul (2005). *Fast Second: How Smart Companies Bypass Radical Innovation to Enter and Dominate New Markets*. San Francisco: Jossey-Bass.
- Porter, Michael E. (1980). *Competitive Strategy*. New York: Free Press.
- Porter, Michael E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. New York: Free Press.
- Porter, Michael E. (1996). What Is Strategy? *Harvard Business Review*. 61–78 (November–December).
- Slywotzky, Adrian J. (1996). *Value Migration: How to Think Several Moves Ahead of the Competition*. Boston: Harvard Business School Press.
- Utterback, James (1994). *Mastering the Dynamics of Innovation*. Boston: Harvard Business School Press.