Disruptive Innovation: An Powerful Avenue for SMEs

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Abstract While usually been considered by established businesses as an attack, disruptive innovation provide an appropriate innovation approach for SMEs through new market discovery. This article tries to explore the opportunities offered by disruptive technology and how SMEs could benefit from disruptive innovation. The process and features of disruptive innovation and a managerial framework for disruptive innovation are discussed. SMEs should grasp the opportunities of disruptive innovation to target massive low-end market and new markets to their advantage.

Key words Disruptive Innovation, SMEs, Disruptive Technology

1 Introduction
Recent empirical studies have convincingly demonstrated a consistent, albeit disturbing, pattern of results with respect to the management of technological innovation. In almost every industry studied, especially in hi-tech industry, a set of leading firms faced with a period of discontinuous change fails to maintain its industry’s market leadership in the new technological era.

In his book “The innovator’s dilemma”, Christensen (1997) points out the failure of companies to stay atop their industries when they confront certain types of market and technological change. It’s not about the failure of simply any company, but of well-managed companies that have their competitive antennae up, listen astutely to their customers, invest aggressively in new technologies, and yet still lose market dominance. Tushman and O’Reilly (2004) also summarize this point in their research. They describe how W.E.Deming highlighted this recurring theme in a long list of diverse industries, including watches, automobiles, cameras, stereo equipment, airlines, and color televisions. What Deming was trying to point out was that in each of these industries the most admired and most established firms rapidly lost their coveted market positions.

The mysteries behind the stories of the failures of well-managed companies are the disruptive innovation which has become a hot research topic in technological management. In contrast, some SMEs are the original challengers and the ultimate winners in these disruptive technological changes. Through disruptive innovation, SMEs start capturing markets at the lower end and then move up the value chain, putting greater pressure on market leaders.

This article intends to explain in detail how disruptive innovation provides a whole new innovation strategy to SMEs. How SMEs should do to create new, affordable products/services for the un-served mass markets, especially in developing countries, by taking advantages of this disruptive innovation. This paper is organized as follow. The next section briefly explains what disruptive innovation really is and how it works by using “good enough” technology to satisfy customers in low-end or new market. It is followed by analyzing the features of disruptive innovation and why DI is an appropriate innovation approach for SMEs. Then a managerial framework of disruptive innovation is provided. The paper ends with some management methods of disruptive innovation for SMEs which would like to benefit from promoting the disruptive innovation approach.

2 Disruptive Innovation Process
Christensen(1997) points out that in almost every industry the rate of technological product improvement surpasses the ability of most customers to use the increased functionality. Well managed companies seek to augment their products, making them even more attractive to the most profitable customers in their markets. These product improvements are sustaining innovations. At the same time well managed companies often “overshoot” customers more than they need or ultimately are willing to
Occasionally, disruptive technologies emerge. They result in worse product performance, at least in the near-term, when compared with current technologies used in the established market. They are hence largely overlooked by the incumbents.

However, Disruptive technologies bring to a market a very different value proposition. Products based on disruptive technologies are typically cheaper, simpler, smaller, and, frequently, more convenient to use, etc., which allow them to be used by new entrants at the lower end or in a new, niche market. Then in a few more years, as the products offered by a disruptive innovator improve to a stage where its performance could meet the performance of the mainstream market, customers may rapidly switch over to this new technology which they have ignored in the past, hence causing a major “disruption” to the incumbents. This process is illustrated in Figure 1.

**Disruptive Technologies**

(Performance Overshoot)

Disruptive innovation generally develops in three distinct phases. In the first phase, the innovation creates a new, noncompetitive niche market independent of the established business. In the second phase, the new market expands and slows the growth of the established business. In the third phase, the disruptive innovation, having improved greatly over time, significantly reduces the size of the old market.

### 3 Disruptive innovation: An appropriate approach for SMEs

#### 3.1 The Features of Disruptive innovation

For disruptive technologies to succeed, two conditions should be satisfied.

Firstly, there must be performance overshoot in the mainstream market, causing customers to be over-served. We have discussed it before in the second part and illustrated in Figure 1. This occurs frequently in high-tech products/services as competitors intensify their R&D and try to be the first to introduce new features to satisfy the high-end market needs.

Second, incumbents must be attracted to higher-end/higher-margin markets, hence willing to run away when attacked from “below”. Although a disruptive business will eventually attack established markets (the area of displacement), it originates in a space outside the existing markets (Figure 2). That is the reason why it is so difficult for managers in established companies to recognize disruptions as opportunities. They may see a market developing but incorrectly conclude that it is outside their company’s scope for products or customers.
So, new customers must be found outside the established market, sometimes the low-end of existing market. Disruptive innovations serve those who are currently nonconsuming but want to move upmarket and accomplish things they can’t with available products or services.

3.2 Disruptive Innovation and SMEs

While large firms have a resource advantage, small firms are better able to respond to unexpected developments in the field. Rapid technological advances require the prompt decision-making, quickly action to changing business environment, internal flexibility, more willingness to take risks, lack of bureaucracy, and entrepreneurial spirit typical of small firms in order to maintain or develop competitive advantages. At the same time, SMEs tend to be more focused on producing products for niche markets rather than the mass.

Many researches (Acs and Audretsch 1992, Pavitt et al.1987, Kleinknecht et.al.1993 Santarelli and Piergiovanni 1996) indicate that SMEs had an innovation rate (the number of innovations per employee) considerably higher than that achieved by larger enterprises.

According to Christensen (1997), the established companies that investing aggressively in disruptive technologies is not a rational financial decision for them to make, has three bases. First, disruptive products are simpler and cheaper; they generally promise lower margins, not greater profits. Second, disruptive technologies typically are first commercialized in emerging or insignificant markets. And third, leading firms’ most profitable customers generally don’t want, and indeed initially can’t use, products based on disruptive technologies. By and large, a disruptive technology is initially embraced by the least profitable customers in a market. Markides and Geroski (2005) described 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.

According to what have been discussed before, SMEs seem to take more advantages than big companies in the development of disruptive innovation.

4 A Managerial Framework for Disruptive Innovation

Meyers and Marquis’(1969) seminal article on industrial innovation presented a model of innovation based on a study of several hundred industrial innovations. The simplicity of the original model appealing is used as the basis for exploring when and why disruptions take place. In Figure 3, a managerial framework for disruptive Innovation is proposed to illustrate how SMEs can achieve disruptive innovation. The market and technology scanning skills are use to help SMEs to bring forward new innovation ideas. The identifications of disruptive innovation markets and disruptive technology niches will help the SMEs to make decision of new idea selection. Here the author focus on discussing the front-end of the framework, that is the idea conceiving and idea selection parts.
The first step in locating new customers is identifying a new market by market scanning which mainly focus on low-end demand in existing market and new demand outside the existing market. Managers can use three criteria to do that: First, the disruptive innovation must be undervalued by current customers. Second, it must compete against nonconsumption; that is, it must allow people to do things they couldn’t do in the past for lack of money or skill. And third, it must help people accomplish things that they are already trying to do but can’t with the available products or services. By using these criteria, executives can develop the intuition they need to look outside their established markets for customers in a disruptive market. The aim of market scanning is to identify customers’ value curve and discover opportunities of value creation.

Secondly, SMEs could identify the disruptive niches by using technology scanning and technology value analyzes method. As you can see in Figure 4, While analyzing the performance of mainstream product A and product B, blank zones are identified, which show the niches for disruptive innovation. Some good enough technologies are needed to seize these opportunities.

5 Conclusions
While usually been considered by established businesses as an attack, disruptive innovation provide a
powerful avenue for growth through new market discovery for SMEs. In every industry changed by disruption, the net effect has been total market growth. SMEs should grasp the opportunities offered by disruptive innovation to target massive low-end market and new markets especially in developing countries like China to their advantage.

References