

Entrepreneurial Strategies for Managing Disruptive Innovations

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Abstract:

Contemporary studies on disruptive innovations have identified entrepreneurship as veritable driver of the disruptive phenomenon. Disruptive innovation describes a new product or service that is so innovative that it disrupts the existing market and forces businesses in that market to devise new strategies for managing their business to avoid suffering huge losses and possibly going out of business. This paper integrates recent developments from entrepreneurship and innovation research streams to better understand the conditions and causal mechanisms that influence disruptive innovations. The rise and fall of firms especially in high technology industries under the dynamic effect of disruptive innovations have been a theme of inquiry that has fascinated many scholars in economics, technology and change management disciplines. This conceptual paper carried out a diagnostic review of disruptive innovations and found that disruption of existing market creates new phenomenon that ultimately delivers new value to consumers and the society. The study therefore recommended that organizations operating in today's digital dispensation should not fear disruptive innovations but rather embrace them and devise strategies for managing the disruptions to enhance their business bottom-line.

Key words: Entrepreneurial Strategies, Disruptive Innovation, Marketplace, Society

1. INTRODUCTION

This paper may start by asking the question, “what is innovation and what constitutes disruptive innovation”? Innovation, it must be emphasized, is not just systemic discontinuity. In simple business parlance, it means the creation of a new value and satisfaction for the customer and delivery of additional earnings to the enterprise. Innovation can also be conceived from two different perspectives. Firstly, innovation is seen as exogenous and driven solely by scientific advances. Secondly, innovation takes place as a response to demand for new products, processes and services. The proposition of this article is to examine conceptually how disruptive innovation in business can thwart existing order and create new market and value network that would deliver benefits to the customer, the organization and society.

One can therefore view disruptive innovation in business as an innovation that creates a new market and value network and eventually disrupts the present market and value thus displacing existing market network and establishing new order in the market place. Not all innovations are disruptive, even if they are revolutionary. For example, the first automobiles in the late 19th century were not disruptive innovations, because automobiles were expensive luxury items that did not disrupt the market for horse-drawn caravans. The market for transportation essentially remained intact until the debut of the lower-priced Ford Model T in 1908. The mass-produced automobiles were disruptive innovation, because they changed the transportation market, whereas the first thirty years of automobiles did not (Daniel, 2004).

Disruptive innovations tend to be produced more by start-ups and outsider entrepreneurs than by existing businesspeople and current market system. The business environment of current market leaders does not allow them to pursue disruptive innovations immediately because they are not profitable enough at first and because their development can take away scarce resources which are needed to compete against current competitors. A disruptive process can take longer to develop than sustaining innovations and the risk associated with disruptive innovations is higher than the risks that go with sustaining or incremental innovations (Geels, 2005).

Digitalization, internationalization, sustainability, and other current mega-trends as we see them today tend to further accelerate the pace of disruptive technologies and disruptive innovations.

There is no way to know exactly what the future holds for your industry as far as innovations are concerned, but if you learn to understand the way incremental innovations and disruptive innovations work, you can predict them and learn how to manage them to advantage (Christensen, Bohmer, & Kenagy, 2000.).

Disruptive innovation is quite different from sustaining innovation and most executives do not seem to understand this very well. Both sustaining innovation and disruptive innovation can either be incremental or radical depending on the expertise of the innovators and the situation in which the innovation is taking place. However, under normal circumstances, destructive innovation is radical in nature while sustaining innovation produces incremental outcome (Roy & Cohen, 2015).

2. LITERATURE REVIEW

2.1 Conceptual Framework

From inception, the original term used to refer to disruptive innovation phenomenon was “disruptive technology” which was coined by an American scholar called Clayton Christensen. This term later metamorphosed into “disruptive innovation” in order to accommodate all innovations that displayed the characteristics of destruction, disruption and displacement. Disruptive innovation is one primary means by which businesses can adapt or adjust to the demands of today’s complex and ever-changing business environment (Frontier, 2017).

Disruptive innovations tend to be produced by entrepreneurs in start-ups, rather than existing market-leading companies. A disruptive process can take longer to develop than the incremental approach in many ways. In every sector of the economy whether it is in developed or developing nation, technology is evolving at a very fast pace. The advancement in technology is changing the way we work, live and do business. Disruptive innovations improve products and services in ways that the market neither demands, nor expects, but which eventually become recognised as the optimum consumer choice (Rogers, 2003).

Investing in innovative technology that ultimately disrupts the market enhances organizational performance, but this can be risky to the operation of an organization in the short run. The

problem organizations face today is that they are reluctant to invest in new technologies that could disrupt the present organisational operations but has the potentiality to pay off tremendously in the future. It is argued that an organization's sustainability can only be achieved by thinking ahead and finding new solutions and creating new disruptive innovations which include organizational developments as well as developing new products for the target market (Roy & Cohen, 2015).

2.2. Four Strategies for Creating Disruptive Innovations

Although, it is often difficult and unfavorable for leading companies to create disruptive innovation themselves, it is far from being impossible (Rogers, 2003). Instead of falling into the trap of trying to force disruptive innovation to happen the same way as sustaining innovation, managers are advised to follow four strategies:

- (a) Give responsibility of disruptive technology issues to organizations whose customers need them so that resources will naturally flow to them.
- (b) Set up a separate organization small enough to get excited by small gains from initial disruptive moves to provide zeal for further action.
- (c) Think of your initial efforts at commercializing a disruptive technology as learning opportunities.
- (d) Do not count on breakthroughs immediately. Move ahead early and find the market for new products and processes emerging from disruptive innovations.

What we can gather from the four strategies given above is that disruptive innovation should be approached with courage and patience. The best approach to creating something disruptive is by doing it in a separate and autonomous unit, so that potential progress is not unnecessarily inhibited by any existing resources, processes, habits, or priorities (Michael, 2015).

2.3. Entrepreneurial Strategies for Managing Disruptive Innovations

An entrepreneur who has the foresight and the right strategy and can peep into the binoculars of the future and discern what tomorrow holds for his business would be always successful.

More and more people are grasping the importance of incremental innovations and disruptive innovations to business success. Innovative prowess is highly linked to holding a competitive advantage in the marketplace (Geels, 2005). Digitalization, internationalization, sustainability and other current mega-trends as we see them today tend to further accelerate the pace of disruptive technologies and disruptive innovations. There is no way to know exactly what the future holds for your industry as far as innovations are concerned, but if you learn to understand the way incremental innovations and disruptive innovations work, you can predict them and learn how to manage them to achieve superior performance (Christensen, Bohmer, & Kenagy, 2000.)

Disruptive innovation is quite different from sustaining innovation and most executives do not seem to understand this very well. Both sustaining innovation and disruptive innovation can either be incremental or radical depending on the business climate and the expertise of the innovator.

2.4. Striking a Balance between Disruptive and Sustaining Innovations

Investing in disruptive innovations is always necessary for long-term success especially for large companies, although it may not pay off handsomely for a while (Roy R. , 2014). If you only start investing when a disruptive technology has already gained significant momentum, you will not only have to increase your investment more to catch up with the competition but also do so from a base of declining revenue for your existing business, which usually proves to be impossible. Keep in mind that moderation is the key to success. If all attention is simply steered towards disruptive innovation, revenue and profit will usually start to decline, which in turn increases the risk profile dramatically.

Engaging in innovations is vital for success and growth. This requires constant incremental progress to be achieved through sustaining innovation, while gaining competitive advantage by creating new disruptive technologies. Balancing these two is not easy but it is ultimately the best way to pave the way for future growth (Christensen, Bohmer, & Kenagy, 2000.) .

2.5. Disruptive and Sustaining Innovations in Organizations

The best approach may not just be to choose one type of innovation and say: “I will run with this!” By understanding what types of innovation exist and how they affect the existing markets, a manager can start using this knowledge to analyze the business and anticipate how it will change over time (Daniel E. , 2006).

The part where many Managers make potentially costly mistake is the inability to strike a balance between sustaining and disruptive innovations. They often keep concentrating on sustaining innovation for too long and limit the growth and profitability of the business. Building disruptive innovation is very difficult, especially for large organizations just as Harvard Professor Clayton Christensen wrote in his book “The Innovator’s Dilemma” Christensen explained how the four principles of disruptive technology make it difficult for companies that dominate existing markets to create disruptive innovation. Many of those who have tried to take a shot at disruptive innovation have fallen short due to these challenges (Christensen C. M., 2003).

2.6. Christensen’s Four Principles of Disruptive Technology

- **Companies depend on customers and investors for resources:** “The highest performing companies have well-developed systems for killing ideas their customers do not want. As a result, these companies find it very difficult to invest adequate resources in disruptive technologies.
- **Small markets do not solve the growth needs of large companies:** To maintain their share prices and create internal opportunities for their employees, successful companies need to grow. It is not necessary that they increase their growth rates, but they must maintain them.
- **Markets that do not exist cannot be analyzed:** Companies whose investment processes demand quantification of market size and financial returns before they can enter a market get paralyzed when faced with disruptive technologies because they demand data on markets that do not yet exist.

- **Technology supply may not be equal to market demand:** The products that are currently in the mainstream eventually will overshoot the performance that mainstream markets demand, while the disruptive technologies that underperform relative to customer expectation in the mainstream market today may become directly competitive tomorrow.”

2.7. Advantages of Disruptive Innovation to an Organization

Many business leaders who may not be entrepreneurs to the core are frightened by the prospect of disruptive innovations and prefer the inexorable addiction to “sustained innovation” or the maintenance of the status quo. This mentality can help a company to expand and win marketing battle in many fronts but it cannot produce real revolutionary breakthrough in the marketplace (Miah & Omar, 2012). Opportunities for the future will present themselves only when a company opens its door to the possibility of something strategically new while creating a platform for growth. The culture of a company can evolve as a learning community that welcomes innovative and disruptive changes rather than fear them and this will advance the course of corporate entity profitably (Mountain, 2006). However, disruptive innovations are usually suppressed by the current market leaders when they start up since they yield little profit at the beginning. The development of destructive inventions would absorb the available scarce resources required by the company to carry out incremental innovations to remain competitive in the market. A disruptive process usually takes an extensive period to develop and improve unlike the incremental or sustaining one.

3. Theoretical Framework

3.1. Disruptive Innovation Theory

Clayton Christensen, Harvard Professor, studied the transformation of hard drive technology a quarter century ago using small start ups that offered better, faster and cheaper alternative services. Christensen’s theory was originally called disruptive technology theory. It was later tagged disruptive innovations theory to accommodate other innovations that feature destructive

characteristics. Christensen first witnessed disruption in his study in the late 20th century when he was a technical entrepreneur. His disruptive innovations theory adapted Schumpeter's entrepreneurship principles.

3.2. Creative Destruction Theory

Joseph Schumpeter came up with what he called Creative Destruction Theory which was based on the fact that business is based on the survival of the fittest. So, if a better faster and cheaper service is invented, it will eventually overtake the existing products, processes and services and render them obsolete. A good example is offered by Nokia 3010 which has long been replaced by Smart phones that offer better, faster and cheaper cost (Christensen & Sadtler, Harvard Business Review, December 2006.) These two theories; "Disruptive Innovation Theory" and "Creative Destruction Theory" simply emphasized that there will always be new technological innovations which would give rise to disruptions and destructions of existing products and services. The new products and services that will emerge from the rubbles of the current disruptions and destructions will be of better quality and cheaper and would provide additional satisfaction to customers (Daniele & Blade, 2015).

3.3. Examples of Disruptive Innovations

In the practical world, the popularization of personal computers illustrates how knowledge contributes to the on-going technology innovation. The original centralized concept (one computer, many persons) is a knowledge-defying idea of the pre-history of computing, and its inadequacies and failures have become clearly apparent. The era of personal computing brought powerful computers on every desk (one person, one computer). This short transitional period was necessary for getting used to the new computing environment but was inadequate from the vantage point of knowledge creation. Adequate knowledge creation and management come mainly from networking and distributed computing (one person, many computers). Each person's computer must form an access point to the entire computing landscape or ecology through the internet or interconnectivity with other computers, databases, and mainframes, as well as production, distribution, and retailing facilities. For the first time, technology empowers individuals rather than external hierarchies. It transfers influence and power where it optimally

belongs, that is, at the centre of the useful knowledge. Hierarchies and bureaucracies do not innovate, only free and empowered individuals do. Knowledge, innovation and self-reliance are becoming increasingly valued and promoted (Roy & Cohen, 2015).

3.4. Effects of High-Technology

High technology is technological core that changes the very architecture (structure and organization) of the components of the technology support net. High technology therefore transforms the qualitative nature of the tasks and their relations with the technology support network as well as their requisite physical, energy, and information flows. It also affects the skills required, the roles played, the styles of management and, coordination of work and the organizational culture (Daniele & Blade, 2015). This kind of technology core is different from regular technology core, which preserves the qualitative nature of flows and the structure of the support and only allows users to perform the same tasks in the same way, but faster, more reliably, in larger quantities, or more efficiently. It is also different from appropriate technology core, which preserves the technology support network itself with the purpose of technology implementation and allows users to do the same thing in the same way at comparable levels of efficiency, instead of improving the efficiency of performance.

3.5. Disruptive technology and Support Networks

In 2009, Milan Zeleny described high technology as disruptive technology and raised the question of what is being disrupted. The answer, according to Zeleny, is the support network of high technology. For example, introducing electric cars disrupts the support network for gasoline cars (network of gas and service stations). Such disruption is fully expected and therefore effectively resisted by support network owners. In the long run, high (disruptive) technology bypasses, upgrades, or replaces the out-dated support network.

Technology, being a form of social relationship, always evolves. No technology remains fixed. Technology starts, develops, persists, mutates, stagnates, and declines, just like living organisms. The evolutionary life cycle occurs in the use and development of any technology. A new high-technology core emerges and challenges existing technology support networks (TSNs), which are thus forced to co-evolve with it. New versions of the core are designed and fitted into an

increasingly appropriate technology support network with smaller and smaller high-technology effects. High technology becomes regular technology, with more efficient versions fitting the same support network. Finally, even the efficiency gains diminish, and emphasis shifts to product tertiary attributes such as appearance and style. This technological equilibrium state becomes established and fixated, resisting being interrupted by a technological mutation; then new high technology appears, and the cycle is repeated (Miah & Omar, 2012).

Regarding this evolving process of technology, Christensen argued that the technological changes that damage established companies are usually not radically new or difficult from a technological point of view. They do, however, have two important characteristics: First, they typically present a different package of performance attributes—ones that, at least at the outset, are not valued by existing customers. Second, the performance attributes that existing customers do value improve at such a rapid rate that the new technology can later invade those established markets (Michael, 2015).

The 2019 World Development Report issued by the World Bank on the Changing Nature of Work examined how technology shapes the relative demand for certain skills in labor markets and expands the reach of firms. Robotics and digital technologies, for example, enable firms to automate, replacing labor with machines to become more efficient, and innovate, expanding the number of tasks and products. The report also explained the process by which disruptive technology, through its requisite support network, dramatically transformed certain industries.

When the technology that has the potential for revolutionizing an industry emerges, established companies typically see it as unattractive: it is not something their mainstream customers want, and its projected profit margins are not sufficient to cover big company cost structure. As a result, the new technology tends to get ignored in favor of what is currently popular with the best customers. But then another company steps in to bring the innovation to a new market. Once the disruptive technology becomes established there, smaller-scale innovations rapidly raise the performance of the technology on attributes that mainstream customers' value (Eric, 2017).

For example, the automobile was high technology with respect to the horse carriage. However, it evolved finally into appropriate technology with a stable, unchanging technology support

network (TSN). The main high-technology advance in the offing is electric car technology. It does not matter whether the energy source is the sun, hydrogen, water, air pressure, or traditional charging outlet, electric cars preceded the gasoline automobile by many decades and are now returning to replace the traditional gasoline automobile. The printing press was a development that changed the way that information was stored, transmitted, and replicated. This technological evolution empowered authors but it also promoted censorship and information overload in writing technology (Geels, 2005).

Implementing high technology is often resisted. This resistance is well understood on the part of active participants in the requisite technology support network. The electric car will be resisted by gas-station operators in the same way automated teller machines (ATMs) were resisted by bank tellers and automobiles by horsewhip makers. In the same vein, middle level management resists business process reengineering (BPR) because BPR represents a direct assault on the support network (coordinative hierarchy) they thrive on. Teamwork and multi-functionality is resisted by those whose technology support network provides the comfort of narrow specialization and command-driven work. Social media could be considered a disruptive innovation within sports more specifically when we consider the way news in sports is circulated and reported nowadays compared with the pre-internet era where sports news was mainly on radio and television and newspapers. Social media has created a new market for sports that was not around before in the sense that players and fans have instant access to information related to sports (Roy R. , 2014).

3.6. World War II Innovations and Disruptive Innovations

Let us advance examples of innovations and disruptive innovations one step further by measuring centuries past and their achievements in innovations and disruptive innovations. The twentieth century stood out as the greatest and most innovative and disruptive century in history. You may ask why? The reason is this: The twentieth century gave us two world wars and raised three great leaders of courage and cruelty who pioneered innovations and disruptive innovations in military weaponry. They were Adolf Hitler of Germany, Benito Mussolini of Italy and Joseph Stalin of Russia. The three gentlemen plundered the globe with military technology

and combat strategies never seen before in the history of warfare. It might be right to say that innovations and disruptive innovations of the 21st century took off from the rubbles of the 20th century achievements.

4. RESEARCH METHODOLOGY

This study is solely conceptual and therefore used secondary data and observation to carry out diagnostic review of innovations and disruptive innovations. The paper provided good examples of disruptive phenomena in some sectors. The study was consummated through detailed literature review with particular focus on how a disruptive innovation can create new phenomena in the marketplace that can deliver increased profitability to organizations and give more satisfaction to customers. The study identified high-technology as a veritable agent of disruptive markets.

5. CONCLUSION

Disruptive innovation has been recognized as one primary means by which businesses can adapt or adjust to the demands of today's complex and ever-changing business environment.

A disruptive process takes longer to develop than sustaining innovation and the risk associated with disruptive innovation is higher. The rapid changes in technology taking place today is changing the way we work, the way we live and the way businesses are operated. Disruptive innovations improve products and services in ways that the market neither demands, nor expects, but which become recognised as the optimum consumer choice when the dust of disruption settles. The problem many organisations face today is that they are reluctant to invest in new technologies that could disrupt the present organisational operations but has the potential to pay off tremendously in future. For organizations to achieve sustainability today, they need to think ahead, innovate and find new ways of executing organizational tasks. Opportunities for the future will present themselves only when a company opens its door to the possibility of something strategically new while creating a platform for growth. Disruptive innovations are usually suppressed by the current market leaders when they start up since they yield little profits to leading firms at the beginning. A disruptive process usually takes an extensive period of time to develop and improve unlike sustainable process. However, it is true that disruptive

innovations carry risks which are higher than the risks in sustainable innovations, it should be noted that the benefits derivable from disruptive innovations at the end are far greater than what can be gained from sustainable innovations.

6. RECOMMENDATIONS

More and more organizations are appreciating the importance of disruptive innovations for penetrating new markets and achieving higher profitability. Generally speaking, disruptive innovations produce revolutionary outcomes while sustaining innovations produce incremental gains. Leading companies are usually reluctant to create disruptive innovations due to the risks and uncertainties involved. For this reason, top management of an organization is advised to key into the following strategies for the creation of rewarding disruptive phenomena:

- (a) Set up a separate division small enough to get excited by small initial gains from disruptive innovation to provide spur for the whole organization to follow.
- (b) Think of your initial efforts at commercializing a disruptive technology as learning opportunities.
- (c) Do not count on breakthroughs. Move ahead early and find the market for the new products and services brought about by disruptive innovations.

7. MANAGERIAL IMPLICATIONS

The CEOs of corporate organizations operating in today's digital dispensation must stand up to the challenges of the moment. They must put on their military uniform for a disruptive battle. Agreed that disruptive innovations usually involve great risks which are higher than they are in other forms of innovations, it must be stressed that the advantages and benefits derivable from disruptive innovations in the long run are far-reaching in terms of business growth, profitability and salutary effect on society (Rogers, 2003).

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