

## Louvain School of Management

### Board of Director and Disruptive Innovation

Mémoire recherche réalisé par  
**Muller Matthieu**

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Promoteur(s)  
**Gerrit Sarens**

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Place des Doyens, 1 bte L2.01.01, 1348 Louvain-la-Neuve, Belgique [www.uclouvain.be/lsm](http://www.uclouvain.be/lsm)



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## Introduction

According to the Economist, Disruptive Innovation is the most influential business idea of recent years. The Disruptive Innovation theory explains why incumbents fail to create growth and how to avoid to be disrupted. It describes how the disruption process works and highlight the main concerns managers should be aware of. Moreover, it provides some insights for incumbents on how to create disruptive innovations. However, after twenty years the consequences are mitigated. On one hand, successful cases like Intel or Apple demonstrate the effectiveness of the theory as their CEO grounded their strategy on it. On the other hand, many incumbents still struggle to create disruptive innovations, or, more problematically, are still disrupted. As an outcome, we can assume that either the theory is inaccurate, or, for one or another reason, managers are not able to implement and manage the theory to the reality of the field. As the theory was created more than twenty years ago and has been updated and validated through many academics and professionals, we assume that it is robust and trustworthy. This leads us to the following interrogation: why does managers who are aware of the Disruptive Innovation theory cannot implement it or are still disrupted?

Based on this question, we decided to shift the focus of the executive management to the board of directors. Indeed, disruptive innovation is always intended for decisions-maker and executives, but has never been applied specifically to the board. Our aim is to understand if the board could support the executive in the creation and scouting of disruptive innovation. Our research question is to evaluate if disruptive innovation is a concern of the board of director: Currently, does there exist a link between the disruptive innovation theory and the board of directors? If yes, we want to understand how they can have an influence on disruptive innovation. If not, we want to understand the board missions and tasks to assess if yes or not the board should be dealing with disruptive innovation.

This thesis is divided in two parts. The first part is the theoretical part. Indeed, we need to understand the basic concepts that underlie our question before deep diving in the field reality. In Chapter 1 we will present the Disruptive Innovation Theory. We will attempt to follow the creation process of its creator, Clayton Christensen and try to understand why we are in need of such a theory. Next, we will provide some solutions on

how the theory could help decision-makers. To close the chapter, we will propose some critics, limits and substitute for Christensen's theory. Chapter 2 is about the board of directors. We will provide a definition and explanation of the structure, composition and role of the board. Subsequently, we will analyze the different theories about the boards of directors. The second part of the thesis is the practical part. The third chapter will start with a review of our research question. We will move on to the methodology, semi-directive interviews, and a review of our sample of nine interviewed. The fourth and last chapter is the analyze of our practical investigation. We will oversee the main leverages and values a board can bring to disruptive innovation and analyze more in detail the internal and external actions a board can take. To end, we will provide some limitations to this thesis and insights for further research.

## Theoretical Part

### Chapter 1: Disruptive Innovation

#### 1. Why do we need a Disruptive Innovation Theory?

“Unfortunately, disruption theory is in danger of becoming a victim of its own success” (Christensen, Raynor et al. 2015). Over the last decades, the occurrence of the term “disruptive innovation” has grown exponentially in the literature (Factiva analysis, 2014). “Disruption” turned out to be a buzzword that has become meaningless (Gobble 2015). Leading to generalization or misunderstanding of the basic tenets of the theory. Many people invoke the concept without having read a serious book or article on the subject, using the term loosely and for a broad usage. *In fine*, the popularity of the initial formulation goes beyond the essential refinement of the theory, leading to many critics for shortcomings already addressed (Christensen, Raynor et al. 2015).

We realize how important it is to define precisely what a disruptive innovation is. “The disruptive innovation theory points to situations in which new organizations can use relatively simple, convenient, low-cost innovations to create growth and triumph over powerful incumbents. The theory holds that existing companies have a high probability of beating entrant attackers when the contest is about sustaining innovations. But established companies almost always lose to attackers armed with disruptive innovations” (Christensen, Anthony et al. 2005).

A stand-alone definition doesn't seem sufficient to us. To understand the theory in its fullest extent, we must understand the incentives that led to the grounding of this theory. More than twenty years ago, Christensen was faced with a question: why is success so difficult to sustain? How come that some big and highly-performing companies could be at the peak of their power one year and, a few years later, struggling in the middle of the pack or be just plainly gone (Macfarquhar 2012) ? Christensen and Raynor assessed that only 10% of companies could manage to outperform the equity market average for a decade or more<sup>1</sup> (Christensen and Raynor 2003).

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<sup>1</sup> The 10% threshold is based on several researches. In 1988, the Corporate Strategy Board's findings in “Stall points” shows that only 5 percent of the top 50 fortune maintained their growth

In the nineties, people were often blaming bad management as one of the main drivers for the fall of leaders (Macfarquhar 2012). But Christensen couldn't believe that managers who were at the starting point of these brilliant companies, could turn out and become stupid managers. Moreover, these managers were failing while they were applying the same strategy that made their success. Based on this observation, Christensen decided to study the disk drive industry. The choice of this specific industry was not random. The companies from this industry are similar to what fruit flies are for those who study genetics. They are conceived, born, matured and dead in an incredibly short time, allowing researchers to study quickly and precisely their evolution (Christensen 1997). Inside this industry, Christensen noticed that the company who were producing the fourteen-inch drives for mainframe computers had been driven out by companies that made eight-inch drives for mini-computers. Then the eight-inch drives were replaced by the 5.25-inch drives for personal computers. The interesting fact is that the eight-inch drivers were not as good as the fourteen-inch drivers. They had lower capacity and a higher cost per megabyte. The 5.25-inch drivers were even more inferior in quality than the eight-inch drives. So why did not the fourteen-inch drives maker produce eight-inch drives himself ? Christensen studied other industries too, like that of the mainframe computers, the steel mini-mills, and so on. What he discovered was that companies – and technologies that brought these big companies to their knees – were not better or more advanced than the incumbents, on the contrary, they were even worse (Christensen 1997). Most new products were of inferior quality and addressed to low-end markets. The mainstream customers were initially not interested by these products as they already had a better alternative offered by the incumbents. But the new products were generally cheaper and easier to use, allowing poorer or less sophisticated customers to buy them.

## **2. The Theory of Disruptive Innovation**

The first time the term disruptive technologies – the predecessor of disruptive innovation – occurred was in the article *Disruptive technologies: Catching the wave* by Bower and Christensen (1995). The authors provide reasons to explain why big

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successfully. Four other percent were able to reignite some degree of growth. In the 2001 study from Chris Zook and James Allen, only 13 percent of their sample of 1,854 companies managed to consistently grow more than a decade. Richard Foster and Sarah Kaplan published that same year their article “Creative Destruction”, where they analyze 1,008 companies from 1962 to 1998. As a result, only 16 percent of the studied companies were able to survive the time frame.

companies flounder when facing disruptive products or services. First, because the incumbents misread the new technology that would be used to move them out of their leadership position. Second, they also misestimated these technologies because they were paying too much attention to their current customers. Bower and Christensen argued that the mainstream customers of the incumbents were only looking for improvements in the products or services they were used to. They were not interested in disruptive technologies as the value these offered was lower than their expectations. The value, of disruptive technologies, is mistakenly measured for the current use, not the future one. This realization leads us straight into the concept of the innovator's dilemma.

## **2.1. The Innovator's Dilemma**

In his book *the innovator's dilemma*, Clay Christensen shapes out the disruptive theory. This world-class book is a bestseller and is considered one of the most influential books of the last two decades (Bagehot 2017). The dilemma resides in the decisions for managers to stick to their customer's current needs or to pursue new innovations and technologies that may answer their future need. Christensen explains "how, under certain circumstances, the mechanism of profit-maximizing resource allocation causes well-run companies to get killed" (Christensen 1997). The managers who tried to maximize their resource allocation logically ended up with losing everything. "It is because they did nothing wrong that they failed" (Christensen 1997).

## **2.2. The Failure Framework**

Christensen provides a descriptive framework to explain why incumbents fail to sustain performance when faced by disruptive innovation (Christensen 1997, Christensen, McDonald et al. 2018).

### *The difference between Sustaining and Disruptive Innovation*

The first error made by incumbents is to misjudge the kind of innovation they are faced with. There is a strategically important distinction between sustaining innovation and innovation led by disruptive technologies or new business models. A *sustaining innovation* is an innovation that improves the performance of an established product or service. The enhanced performance will be one that mainstream customers care about and that major markets have historically valued. These innovations can be radical or incremental in character (Govindarajan and Kopalle 2006). They enable incumbents to

sell better products to their best customers at a higher margin, which leads to higher profits. A *disruptive innovation* is initially a product that underperforms on expected performance compared to the incumbent's products. This type of innovation brings to the market a new value proposition that can appeal to a few fringe customers, mostly in the low-end market.

### *Technological Progress Outstrips Growth in market's demand*

The pace of technological progress outstrips growth in markets' demand. This means that incumbents can overshoot their market by providing sophisticated products with excessive feature for their mainstream customers. As they offer more than what the customer need, the latter is not willing to pay for this improvement (grey zone in figure 1). Moreover, by leaving a gap between the customers' needs and the product valuation, incumbents leave some free space for disruptive technologies. Which means that the disruptive innovation may underperform today but could end up being fully-competitive in that same market tomorrow.

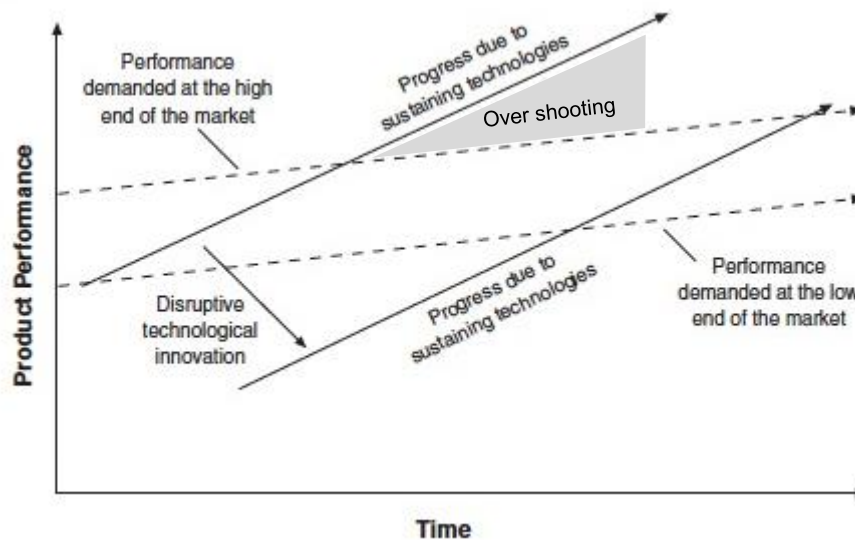


Figure 1- The impact of Sustaining and Disruptive Technological Change (Christensen 1997)

### *Rationale investment*

Customers, by the resource allocation, and financial structures of successful companies shape the sort of investments that appear to be attractive to the companies. For them, investing aggressively in disruptive innovation is not a rational financial decision. One, the disruptive products are simpler and cheaper, meaning generally lower margins instead of the higher profits desired. Moreover, disruptive products are typically

commercialized in emerging or small markets. Which implies generally a low and slow return on investment. Lastly, mainstream customers of leading companies are not interested in disruptive innovations as the proposed quality is lower than their expectations. These three points exemplify why companies that are listening to their customer and are looking for growth are struggling to build an environment conducive to disruptive innovations.

### 2.3. Different Types of Disruptive Innovation

In the Innovator's Dilemma of 1997, Christensen presented a disruptive innovation diagram in only two dimensions (figure 1). A third axis should be added: Non-consumers or non-consuming occasions. This represents a new value network, representing new contexts of consumption and competition. With the introduction of this new axis, we can observe on figure 2 two different types of disruption: New-market disruption and low-end disruption (Christensen and Raynor 2003).

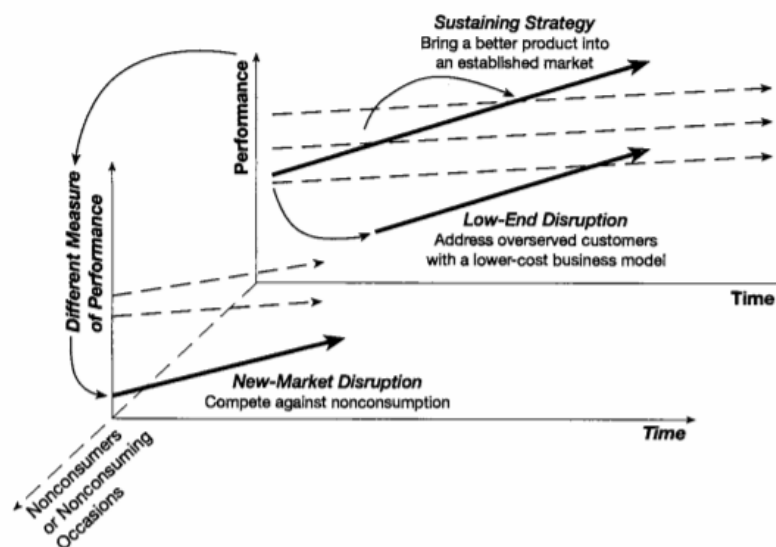


Figure 2- The third dimension of the Disruptive Innovation Model (Christensen, Raynor 2003)

A *low-end disruption* is an innovation that takes root in the low-end segment of the original value network. It can be assimilated to low-cost business models, proposing low-priced products of poor quality compared to the incumbent's mainstream products. The steel minimills, Hyundai or Amazon are examples of low-end disruptions.

A *new-market disruption* is an innovation that competes with "non-consumption". Because the new product is much more affordable and/or easy to use, a whole segment

of previous non-consumers can now buy and use the product. The personal computers or the router of Cisco are good example of new-market disruptions. Figure 3 provides a wide range of example for the last decades.

Even if they are different, these two disruptions cause the same dilemma for the incumbents. For a new-market disruption, incumbents will ignore the threat as their customers are, in the first place, not concerned by this innovation. In the case of a low-end disruption, incumbents have more incentive to leave the low margins market to the entrants than to attack them.

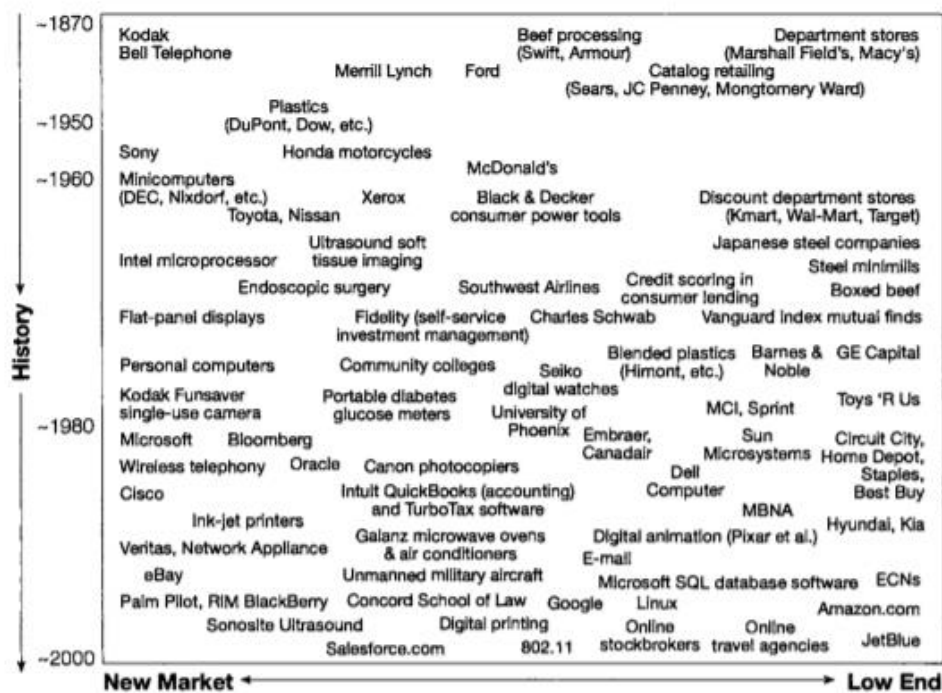


Figure 3- Examples of Companies and Products Whose Roots Were in Disruption(Christensen and Raynor 2003)

### 3. Managing disruption

But how can managers use the theory to manage disruptive innovation? In the book *Seeing what's next*, Christensen, Anthony and Roth develop a three-part framework (figure 4) to predict industry changes, meaning predicting potential growth opportunities and how to manage them (*Christensen, Anthony et al. 2005*).

Part one of the framework focuses on the signals of change. Given disruptive innovation can emerge with products, services or business models that are very different from the existing ones, it can be very difficult to spot them in time even for assiduous industry watchers.

The second part is about how to evaluate competitive battles. The theory provides insights to anticipate which player is likely to emerge as the winner.

The last part of the framework analyzes which strategic choices an incumbent or entrant should take to maximize its winning odds. As part of this paper, we will only focus on the two first part of this framework.

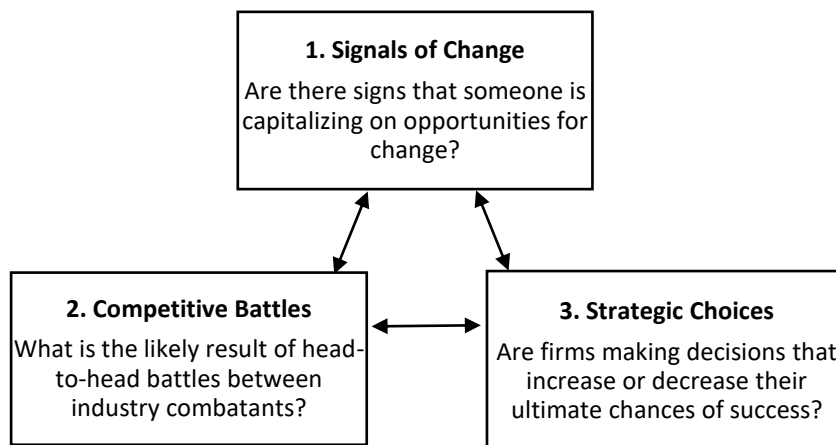


Figure 4- Process to predict Industry Change (*Christensen, Anthony et al. 2005*)

#### 3.1. Signals of change

Before applying the theory, we need to know where and what to look for to spot potential disruptions. As we have seen before, disruptive innovation happens in the

presence of low-end customers and/or non-consumers in the marketplace. As shown on figure 5, three groups of customers drive our attention:

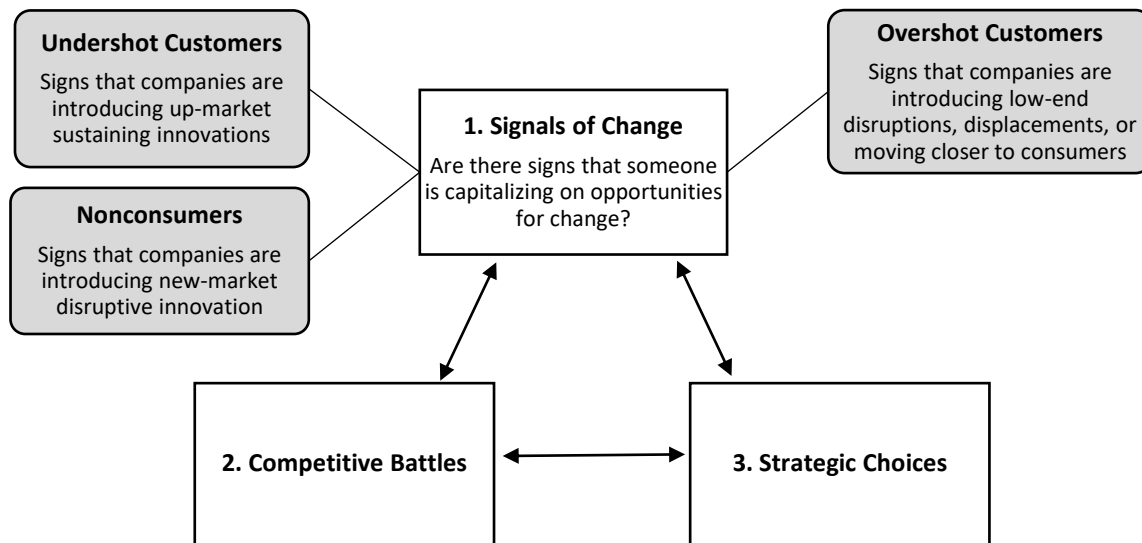


Figure 5- Signals of change (Christensen, Anthony et al. 2005)

### 3.1.1. Non-consumers

There are two root causes for non-consumption. People can simply not be interested in a product or service, or a part of the population proves to be unable to consume a good or service because it is either too expensive, too complicated or both. This type of non-consumption is a growth opportunity. Christensen and Raynor (2003) defined a methodology to extract growth from non-consumption:

1. The target customers are trying to get a job done. But as they are lacking money or skills, a simple, inexpensive solution has been beyond reach.
2. The customers will compare the fact they possess the disruptive product to the fact they had nothing before. Which implies that they will always be better off with the disruptive product, no matter his quality, than before when the mainstream product was out of reach. The performance hurdle for these new markets are quite modest.
3. No matter how complicated the disruptive technology is, the disruptor should work to make the purchase and the use of the product very simple, convenient and foolproof.
4. A disruptive innovation creates a new value network. The purchasing channels and use of the products will also be new.

This methodology can be used to search for customers or market application of non-consumers disruptive innovation.

The authors determined two different signals of new-market disruption. A clear signal is a high and increasing rate of growth in an emergent market<sup>2</sup>. The second signal is actions in targeted customer segments like teenagers, students, old people, etc.

### 3.1.2. Undershot Customers

They are a group of high-end customers looking for sophisticated products to solve their complex issues. For them, the existing products are not good enough. There are several signals to discover undershot customers. It can be consumers expressing their frustrations or limitations who are highlighted by poor products reviews. The most telling sign is when customers are consistently paying premium prices for higher-performance products.

### 3.1.3. Overshot consumers

On the opposite, the group of low-end customers are less demanding in term of problem resolution and find that products are exceeding their requirements. Overshot consumers are low-end consumers of a current mainstream product who are not interested in an improved-performance product. They are not against these improved products, but their willingness to pay is lower than the premium price asked for it<sup>3</sup>. A signal that a low-end disruption company is emerging is the creation of a business model that makes money in a different way than the established companies. A different sales mix, lower prices but higher asset turnover, etc.

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<sup>2</sup> "One way to analyze the rate at which an innovation is growing is to plot a substitution curve. On the Y-axis, plot the market share of the new innovation divided by the market share of existing solutions. A figure of 1.0 means the new innovation has 50 percent of the market. A figure of 0.1 means the new innovation has about 9 percent of the market. The Y-axis should be on a logarithmic scale. The X-axis should plot increments of time, usually in years, on an arithmetic scale. Typically, a straight line will connect the data points. This allows you to assess the rate at which a new technology will take a market with very limited data". Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*, 2nd ed. (New York: Harper Business, 2000), 184-186.

<sup>3</sup> The intuition behind it rely in the fact that the customers utility experience is marginally downward sloping with each increment in product performance. His willingness to pay for an improvement comes to equal his marginal utility from using the improvement. When the marginal increase in price for an improved product approaches zero, it suggests that the marginal utility that the customer gets out of it is also equal to zero. Implying that the customer has no more incentives to buy the improved products.

### 3.2. Competitive battles

Now that we know who and what to look at, we will try to determine what the possible outcome of a competitive battle between an incumbent and an entrant could be (figure 6). In the Innovator's Solution, Christensen and Raynor showed that after establishing a foothold in the market, disruptive firms aim to increase their customer bases and improve their products to migrate to the high-end markets, where the margins are higher (Christensen and Raynor 2003). Professor Michael Porter reported two generic strategies for creating a competitive advantage: differentiation and low-cost offerings (Porter 1985). Low-cost competitors only enjoy a cost advantage when high-cost competitors remain. Once the high-cost competitors are gone, the low-cost company has to move up-market to compete with high-cost companies. Likewise, a company that uses a differentiation strategy must always seek for new markets that value its elements of differentiation. The only way entrants find to maintain their competitive advantage is by moving upmarket and investigating new markets. At the end, a battle between the entrant and the incumbent firms is ineluctable.

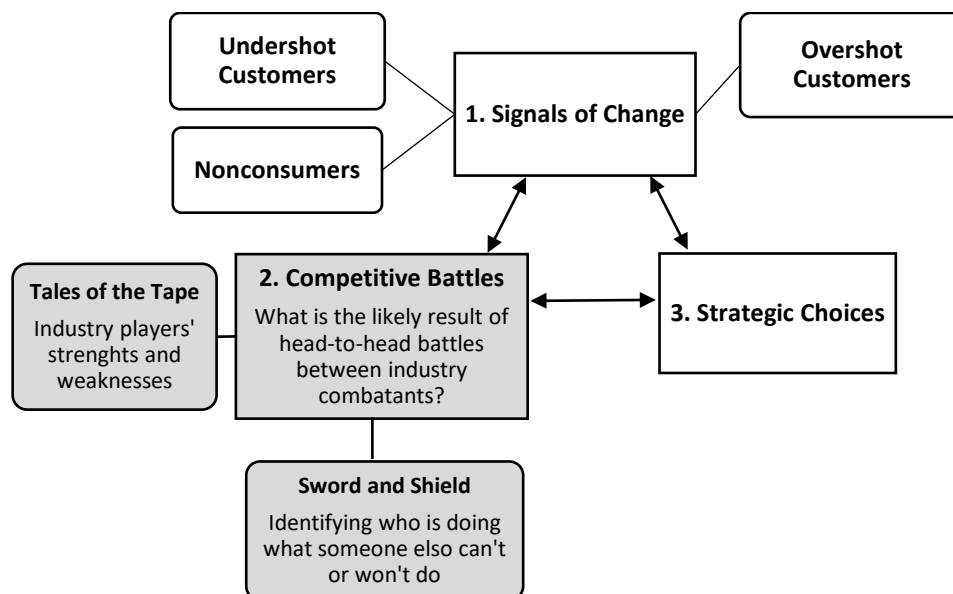


Figure 6- Competitive Battle (Christensen, Anthony et al. 2005)

#### 3.2.1. Tale of the Tape - The RPV framework

The first point to predict who will win the battle is to assess the strengths and weaknesses of the companies involved in the battle. Christensen and some co-authors have established a framework to identify the critical capabilities of a firm (Christensen

1997, Christensen and Raynor 2003, Christensen, Anthony et al. 2005). With the help of three factors; Resource, Processes and Values (RPV), one can establish what a firm can and cannot do, which also represents its strengths and weaknesses. Some examples of factors are shown in figure 7.

Resources	Processes	Values
<p>Things or assets that organizations can buy or sell, build or destroy. Examples:</p> <ul style="list-style-type: none"> <li>• People</li> <li>• Technology</li> <li>• Products</li> <li>• Equipment</li> <li>• Information</li> <li>• Cash</li> <li>• Brand</li> <li>• Distribution channels</li> </ul>	<p>Established ways companies turn resources into products or services. Examples:</p> <ul style="list-style-type: none"> <li>• Hiring and training</li> <li>• Product development</li> <li>• Manufacturing</li> <li>• Planning and budgeting</li> <li>• Market research</li> <li>• Resource allocation</li> </ul>	<p>The criteria by which prioritization decisions are made. Examples:</p> <ul style="list-style-type: none"> <li>• Cost structure</li> <li>• Income statement</li> <li>• Customer demands</li> <li>• Size of opportunity</li> <li>• Ethics</li> </ul>

Figure 7- Resources, Processes, Values (Christensen, Anthony et al. 2005)

*Resources* are the most tangible assets of the three. They can be hired or fired, bought or sold, build or destroyed. Resources are often the first factors managers identify when assessing their ability to manage a changing environment. But a resource analysis is not sufficient to analyze the organization's abilities. Two companies owning the same resources will produce two different outputs because the capabilities to transform inputs into goods and services with added value rely in the organization's processes and values.

*Processes* are the patterns of interactions, coordination, communications, and decision-making through which resources are carried to accomplish the required transformations. Processes are determined to address specific outputs. When a task is performed in the way the process was build, it should work efficiently. But when a process is used for a different task it was designed for, it is likely to be slow and inefficient. "A process that defines a capability in executing a certain task concurrently defines disabilities in executing other tasks" (Christensen 1997). By their nature, processes are established to routinize the work to ensure efficiency and consistency. This means that the way companies create value are intrinsically inimical to change.

The *values* of an organization are the standards that lead to prioritizing decisions. Employees prioritize decisions at every level of the organization. At the executive level it

can be an investment decision. For salespeople their day-to-day decisions about which product to push and which not. The larger the company, the more complicated it is for management to have its employees making independent decisions aligned with the company's strategy and its business model. "A company's value, by necessity, must reflect its cost structure or its business model, because they define the rules its employees must follow in order for the company to make money" (Christensen 1997).

The RPV framework helps the decision-makers to screen the different strengths and weaknesses of a company. Furthermore, it helps them to assess which kind of innovation the company can handle or not. Incumbent firms master sustaining innovation because their cost structure and business model prioritize them. Their resources and processes are made to tackle sustaining innovation. For these reasons the incumbent should spin out his disruptive ideas. In this way he can create a new RPV framework suitable for disruptive innovations (Christensen, Overdorf 2000). Figure 8 provides some insights on what to look at to evaluate the RPV of a company.

<b>Term</b>	<b>Definition</b>	<b>What to Look For</b>
Resources	Things company has or has access to	<ul style="list-style-type: none"> <li>• Tangible assets: Technology, products, balance sheet, equipment, distribution network</li> <li>• Intangible assets: Human capital (employees' backgrounds, accumulated skills), brands, accumulated knowledge</li> </ul>
Processes	Ways of doing business (skills)	<ul style="list-style-type: none"> <li>• Difficult problems we know the company has repeatedly solved over time</li> <li>• Typical processes: Hiring and training, product development, manufacturing, planning and budgeting, market research, resource allocation</li> </ul>
Values	Prioritization determinant (motivation)	<ul style="list-style-type: none"> <li>• Business model:               <ul style="list-style-type: none"> <li>– Way a company makes money (e.g., mix of sales revenue to postsales service revenue)</li> <li>– Cost structure/income statement</li> <li>– Size and growth expectations</li> </ul> </li> <li>• History of investment decisions—what has been prioritized in the past</li> </ul>

*Figure 8- How to evaluate a firm's RPV (Christensen, Anthony et al. 2005)*

### 3.2.2. Sword and Shield

Now that we can assess with the RPV framework the strengths and weaknesses of a company, we need to analyze what this company cannot or will not do. When two companies have the same motivations and capabilities, the skills in execution will make

the difference. This is a classic competition scenario and many scholars have already been working on it (Christensen, Anthony et al. 2005). When a disruptive innovation enters the market, the entrant and the incumbent are generally in an asymmetrical situation. Asymmetries of motivation occur when a company wants to do something that the other company does not want to do. Asymmetries of capabilities occur when one firm's strength is the weakness of the other firm.

Disruption is the strategy that creates and capitalizes on asymmetries. It follows a three-step process:

*Step 1:* Entrants enter behind a shield of asymmetric motivation; early incumbent response leads to cramming.

As the attacker enters the market, its customers appear to the incumbent as undesirable or inexistent. Moreover, the initial market looks too small for the incumbent. This provides an asymmetric motivation shield to the entrant, as the incumbent is just not interested in fighting. By using the RPV framework, entrants and incumbents should be able to spot disruptive opportunities. But the difference is what a company does with this information. Because of their processes and values, we can predict that an incumbent will "cram" its disruptive idea. Managers want to adopt the innovation in a way that makes sense to their business, forcing a product or service into a market that doesn't want it. Two signs will alert you that cramming is occurring. If the firm is spending a lot of money to fix product deficiencies or when the firm is trying to convince its customers to change their behaviors.

*Step 2:* Entrants grow and improve; incumbents choose to flight

After entering the market with their disruptive idea, the entrant will start to improve it by sustaining innovations. When the entrant starts to pull some of the mainstream customers, the incumbent must make a choice: fight or flight. The asymmetric motivation will lead the incumbent to fly away. Its "lost customers", who seem highly attractive to the entrant, are still not attractive for the incumbent. Signs that flight is in progress are a change in customer or product mix for the incumbent. Stopping its low-end product line or ending producing old versions of products can also be perceived as signs. Firms can also try to diversify its products to flee from a disruptive attacker.

*Step 3:* Entrants utilize the sword of asymmetric skills

As the entrant becomes bigger and bigger, the incumbent will end up getting stuck in the high-end market. But even this market will be one day under pressure of the disruptive product or service. The incumbent must fight, but it is already too late. As the disruptive product is now preferred on the market, the entrant has advantage now over the incumbent. The former had time to master his processes while the latter will have to adapt his business model and learn new skills. There is now an asymmetry of competencies. The entrant can do something the incumbent can't.

#### 4. Critics and Limitations of Disruptive Theory

The disruptive innovation theory has known a fast and wide success. Nevertheless, the theory has also some critics and limits. For example, Danneels questioned the theory on “whether a technology is inherently disruptive or if “disruptiveness” is a function of the perspective of the companies’ subject to it” (Danneels 2004). Christensen will provide an answer to this question by explaining the principle of relativity (Christensen, Anthony et al. 2005). The way a firm looks at innovation depends of its RPV model. Meaning that two firms with different RPV will see different opportunities for the same innovation. In the case of the internet, some companies saw in it a way to lower their cost while others saw it as an opportunity for growth.

Cohan accused Christensen of cherry-picking examples of succeeding disruptive technologies to support his framework. (Cohan 2000). The exclusive selection of successful companies can present analytical issues.

Denning and Danneels consider that the innovator dilemma isn’t solved as the solution of independent unit could not always work (Danneels 2004, Denning 2005). Denning put forth that the independent unit would not receive the needed resources for its success because the parent organization doesn’t really want the innovation to succeed. Second, it is not because the innovation is successful that the parent organization will adopt the modus operandi of its subsidiary. It would then be only “deferring the innovators solution” because someone still has to persuade the parent organization to change (Denning 2005).

Markides calls for the refinement of disruptive categories. He claim that a disruptive technological innovation is fundamentally different than a disruptive business model innovation or a disruptive product innovation. These three categories pose radically different challenges for incumbents and different implications for managers. The author proposes to divide disruptive innovations into technological, business-model and new-to-the world product innovations (Markides 2006).

Govindarajan and Kopalle exposed their idea of high-end disruption. The iPod in comparison to the Walkman, digital cameras versus analog cameras,etc. These examples show that disruptive innovation can occur when innovation is technologically more radical. Christensen acknowledged several examples of high-end disruptions:”No slide rule

maker made the transition to electronic calculators- even though the innovation have brought better products that could be sold for more attractive profit margins to the best customers of the incumbent leaders” (Govindarajan and Kopalle 2006).

Christensen answered some of these critics or limits of his model. Others are still on today’s agenda. However, the key learning of these limits is not to show that the theory is wobbly. On the contrary, many companies have already used this theory successfully, like Intel or Apple (Euchner 2011). The goal is to remind us that we have to stay critique towards the theory. Even if many scholars support Christensens theory and if many companies successfully used it, the theory remains what it is, an imperfect simplification of reality.

## **5. Alternatives to disruptive innovation**

What can an incumbent do if they realize it is unable to leverage the processes and values needed to create disruptive products, services or business models? Here are two alternatives to disruptive innovation.

### **5.1.Consolidate an idea from outside the firm**

The idea of Markides and Geroski is that “a firm can pioneer a market or scale it- but not both” (Markides and Geroski 2003). On-line bookselling wasn’t invented by Amazon, nor did E-trade invent on-line brokerage. The authors argued that in each case a pioneer invented an idea, but to succeed another company had to scale it up. Xerox is known for having invented brilliant products and technologies. The fact is that they were failing to commercialize them while other firms succeeded by copying their ideas. But Xerox is not an exception, it should be considered as the norm. Given the disruptive theory puts forth that big companies are badly suited to lead disruptive innovation, instead of risking investments by creating autonomous cells or changing its core business, big companies should accept the reality of their own incapacity to innovate and let someone else lead the disruptive challenge. After someone has successfully selected and launched a good new product, the big companies should bring this good idea into their organization and scale it up. This way of working is particularly effective when the new idea is supplementing the existing business model. Microsoft, IBM and GE did very well at integrating many innovations developed by others. Nevertheless, there exists many examples of companies who brought disruptive innovation internally without success. In

the eighties, Japanese car manufacturers had improved their productivity by implementing robotics. General Motors tried to import the same robotics technique into their plants but with little success. "GM couldn't recreate the management culture needed to make it work" (Finkelstein 2003).

## **5.2. License the innovation to someone else**

In their paper *innovating for cash*, Andrew and Sirkin suggest that companies should license their own good ideas to other companies and let them do the hard work: developing and bringing the innovation into the market (Andrew and Sirkin 2003). In 2002, IBM earned \$351 million from royalties of products and technologies they licensed to other companies. In 2003 GlaxoSmithKline gave the patent and marketing rights for a new antibiotic to Affinium Pharmaceuticals. In return, they received an equity stake and a board seat. However, these strategic moves can be risky. Some companies licensed technologies that have proved to be the future of the organization. Motorola for example licensed its patent on digital telephone technology to its competitor. They realized later that this technology would be their core business a few years later (Finkelstein 2003).



## Chapter 2: Board of Directors

### 1. Definition

From the dictionary, “A company's board of directors is the group of people elected by its shareholders to manage the company” (Collins, 2018).

If we refer to the Belgium company code (appendix 1), a board of directors (BoD) is defined as a collegiate body of minimum three members named by the general assembly by the constitution of the company. The term of their mandate cannot exceed six years and they are always revocable by the general assembly. The BoD has the power to achieve all the acts necessary or useful for the realization of the business purpose of the company, apart from those whom the law reserves to the general assembly (Belgium Company code 2017). In other words, the BoD has the residual powers to those of the general assembly (nomination of the directors, approval of the accounts, increases and reduction of capital, etc.) or to those of the statutory auditors, who are defined by the Company Code or by the status of the anonymous society (Paulus de Châtelet 2017). Anything that is not attributed by the Company Code or by the status to other bodies of the anonymous society falls within the competence of the Board of Directors. However, the BoD must act in the social interest. The concept of social interest was for a long time controversial. Some claimed that it was only the interest of the shareholders. Others tended to include the stakeholders (supplier, clients, employees, etc.). In 2013 the Belgium court of cassation decided that “the interest of the company is determined by the collective profit-making interest of present and future shareholders” (Court of cassation 2013). In his annual report, the court of cassation specifies that the social interest should also include the continuity of the company and receive a dynamic and future-oriented interpretation (Paulus de Châtelet 2017). On top of that, the board of directors can create within it and under its responsibility one or several consultative committees. The board defines its composition and its mission (Belgium Company code 2017).

McNamara define a board of directors as “a group of people legally charged with the responsibility to govern a corporation. In a for-profit corporation, the board of directors is responsible to the stockholders- a more progressive perspective is that the board is responsible to the stakeholders, that is, to everyone who is interested and/or can be affected by the corporation” (McNamara 2008).

## 2. Board Composition

A board of directors is composed by a chairman, a vice-chair, a committee chair, board members, a secretary and a treasurer (McNamara 2008). On average, a board contains 12 members (Fich and Shivdasani 2006). However it doesn't seem to be an ideal board composition. Dalton, Daily et al. (1998) didn't find any link between the board composition, leadership structure and financial performance. An analysis of CEO-chairman dualities and insider/outsider composition did not bring better insights (Heracleous and Jacobs 2008).

### *Inside and outside directors*

"Observers typically divide directors in two groups: inside and outside directors" (Adams, Hermalin et al. 2010). Generally, inside directors are full-time employees of the company while outside directors are not primarily working in that company. Being an outside director does not induce that they are independent. "The independence of some directors who meet the definition of an outsider is questionable" (Adams, Hermalin et al. 2010). Some researchers created a third category for outsider of dubious independence: "affiliated" or "gray" directors (Hermalin and Weisbach 1988). Recently, due to public pressure and regulatory requirement the number of outside directors has increased<sup>4</sup>.

Inside directors are valuable for their experience in the industry and the company. They are well aware of the situations the management is facing and can report it to the board. Calzacorta (2015) report the following advantages for the outside directors:

- Outside directors can bring different expertise's and new points of view. New perspective can enhance the strategic and operational decision taking. They can share their experience and ideas from other business that can bring new solutions.
- Outside directors have different networks and personal contacts.
- Outside directors often constructively challenge management in an effort to improve decision taking processes.
- Outside directors can take management out of operational aspects to focus on key strategic direction.

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<sup>4</sup> After the fraud scandals of Enron and Worldcom, the US created the Sarbanes-Oxley law in 2002. Many companies covered by the Act have hired internal auditors to ensure they adhere to the required standards of internal control. The internal auditors are required by law to report directly to an audit board, consisting of directors more than half of whom are outside directors.

- An outside director can be a mentor for the management or other board members.

### *Independence of the board*

As seen in the definition, the BoD has to represent the shareholders' interest and act in the best interest of the company. Legally the board is a more powerful entity than the CEO. However, there are several factors that operate to reduce the board's power compared to the CEO, leading to a situation who can be at loggerheads to the initial mission of the BoD. For example, executive directors may not be willing to challenge or question the CEO to not compromise their career path (Patton and Baker 1987). Non-executive directors may have personal relationships with the CEO or the top management, lacking of independency towards their mission (Daily and Dalton 1994). Directors who are appointed during the CEO's current term may feel beholden to him and be more reluctant to challenge him (Wade, O'Reilly et al. 1990, Monks and Minow 1991). To prevent the board from becoming captive of executive, some actions are put in place to create a board independent of management influence. Proposals of board structural changes can be set up such as the separation of the CEO and the chair board position (Cadbury 1992) or the creation of an independent nominating committee (Lorsch and MacIver 1989). However, there is no guarantee that these actions will increase board independence. When companies adopt structural changes designed to promote board independence, the CEO can still resort to behavioral tactics to influence board decisions and to offset the effect of the increased structural board independence on corporate strategy (Westphal 1998).

How can we assume a board independence? Inside directors cannot be independent as they can be influenced by the management and are not free of incentives that influence decisions. The way of assessing the independence of outside directors is an ongoing debate. For Mallin (2004), there are six reasons that prevent an outside director to be independent:

- The director is a former employee of the company in the five years preceding his mandate;
- He receives additional remuneration to his fees by the company;
- He has close family in a managerial or consultant position active in the business;
- He had commercial and material relations with the firm in the last three years;

- He has been a member of the Board of Directors for over ten years;
- He represents a major shareholder.

On the contrary, Roberts, McNulty and Stiles (2005) stipulate that independence of non-executive directors do not relates to a personal or business relationship with executives but to an “independence of mind”. “As long as they can make independent judgements about executive decisions without being influenced by their personal relationships with the executives, they are qualified as independent directors and will be effective in performing corporate governance” (Shen 2005).

Having independent directors on your board can provides some advantages. Calzacorta (2015) describes them as:

- Independent directors often siege on other boards and are well aware of corporate governance. As the main obligation for the BoD is oversight, they can improve the board’s ability to deliver proper accountability of management and enterprise risk.
- Having independent director on your board protects you for violation or conflict of interest claims.
- In family or closely held business, independent directors help when the management has lost his objectivity. They can help clarifying goals and roles. It is even more crucial when a family manager needs disciplinary action.

### 3. Theory of Boards of Directors

As the main function of the BoD is defined by the law, the role it has to play in the organization can vary. Many theories try to explain the purpose and the role the board should hold. We will present below four of the most widespread theories. However consider that none of the theories can independently fully explain reality (Hung, 1998).

#### 3.1. Agency Theory

The earliest board theory is agency theory. At the heart of the theory relies questions such as the ownership of property and the distribution of power. "Boards of commercial corporations were developed as a result of the industrial revolution, the growing commercial complexity of business and the gradual separation of ownership, and risk, from control" (Chambers, Harvey et al. 2013). Berle and Means, in 1932, wrote in their preface of their book how the silent corporate revolution emerged (appendix 2). In 1929, a total of 44% of the largest 200 US corporations were under management control (Berle and Means 2017). This figure rose to 84% in 1963 (Chambers, Harvey et al. 2013). When the ownership is held by many individuals and bodies who do not possess a large proportion of the company, then the control is effectively handed over from owners to managers. But as the owners and managers are both utility maximisers, the managers would not always act in the best interest of the owner (Chambers, Harvey et al. 2013).

The issue that the agency theory tries to answer is to reduce problem of management pursuing their own interest or performing poorly. To fight this, the board of director has a monitoring role over the management. This role is supported by processes as external auditing or reporting requirement. Chambers and al. (2013) define the implications of the agency theory as follow:

- BoD have a responsibility to mitigate the inherent risk from the separation of the ownership and the management
- The major role of the board is to obtain the necessary information to monitor the performance of the company and to hold the managers to account

#### 3.2. Stewardship theory

According to the theory, the goals of the BoD and the managers are aligned. The managers would be highly motivated to act in the best interest of the company and would focus on intangible rewards such as personal growth and achievements (Donaldson

1990). Internal and external directors are concerned by the effectiveness of the strategy of the firm because they recognize that the firm's performance directly impact their individual performance (Daily, Dalton et al. 2003). By running effectively the company, executives and directors are also managing effectively their own careers (Fama 1980). In consequence, managers and owners are working "side by side". The BoD function relies more in developing strategy rather than monitoring performance and preponderance of internal directors with high levels of access to information is favored (Cornforth 2003). Chambers and al. (2013) define the implications of the stewardship theory as follow:

- Owner representatives (board members) and managers work in the same direction to develop strategy and monitor performance
- The value of directors relies in their knowledge to advise their executives colleagues on the board

### 3.3. Resource dependency theory

Resource dependency theory was particularly developed by Zahra and Pearce (1989) and Pfeffer and Salancik (2003). It stipulates that the board "help the firm interface with its general and competitive environments" (Zahra and Pearce 1989). According to the resource-based theory, an organization is a mix of tangible assets and capabilities (Barney 1991). Considering that a strategic resource is a resource that is valuable, rare, inimitable and non-substitutable (Black and Boal 1994), the board can be viewed as a strategic resource. Given that organizations depend on other to survive and prosper, resource dependency theory suggests that managing external relationships to leverage influence and resources is the prime purpose of the board (Pfeffer and Salancik 2003). The theory focus on how to minimize the uncertainty caused by external environment and dependence on outside organization. This role can be assumed by outside directors who can provide access to resources needed by the company (Daily, Dalton et al. 2003). The BoD can bring four benefits including advice, access to information, preferential access to resources and legitimacy (Pfeffer and Salancik 2003).

Chambers and al. (2013) define the implications of the resource dependency theory as follow:

- The value of board members comes from their background, skills and contact
- The major role of the BoD is leveraging and managing external relationships

### 3.4. Stakeholder theory

The exclusive focus on shareholders' interests may not lead to good corporate performance and effective accountability (Clarke 1998). The stakeholder theory shift the focus from the shareholders, who own the company, to all the stakeholders. Primarily, Freeman (1984) defined the stakeholders as the groups without which the company would cease to exist. This definition was later expanded to all people who affect or are affected by the company's activities (Freeman 2010).

Chambers and al. (2013) define the implications of the stakeholder theory as follow:

- The role of the BoD is to understand and represent all those who have a stake in the organization
- The major role of the board is to ensure the long-term survival and value creation for the organization.

#### 4. The role of the Board of Directors

Conceptualizing the role of the BoD is very complex as the evolution of a board's legal duties and societal expectations is an ongoing process (Baxt 2002). Many searchers conceptualized it in many ways. Mintzberg (1983) documented seven different roles, Hung (1998) provided 6 roles, Zahra & Pearce (1989) saw 3 of them and Hillman and Daniel (2004) assess two roles. In the scope of this thesis, we made the choice of using Garratt's framework to summarize the main roles of a board (figure 9). This choice was made on one hand because this framework combines different theories, on the other hand because the book was published for the third time in 2010. Assuming the framework was updated since his creation in 1997.

Focus	Short-term focus on 'conformance'	Long-term focus on 'performance'
External focus	<p><i>Accountability:</i></p> <ul style="list-style-type: none"> <li>• Ensuring external accountabilities are met, e.g. to stakeholders, funders, regulators</li> <li>• Meeting audit, inspection and reporting requirements</li> </ul>	<p><i>Policy formulation:</i></p> <ul style="list-style-type: none"> <li>• Setting and safeguarding the organisation's mission and values</li> <li>• Deciding long-term goals</li> <li>• Ensuring appropriate policies and systems are in place</li> </ul>
Internal focus	<p><i>Supervision:</i></p> <ul style="list-style-type: none"> <li>• Appointing and rewarding senior management</li> <li>• Overseeing management performance</li> <li>• Monitoring key performance indicators</li> <li>• Monitoring key financial and budgetary controls</li> <li>• Managing risks</li> </ul>	<p><i>Strategic thinking:</i></p> <ul style="list-style-type: none"> <li>• Agreeing strategic direction</li> <li>• Shaping and agreeing long-term plans</li> <li>• Reviewing and deciding major resource decisions and investments</li> </ul>

Figure 9- The Main Functions of the Board (Garratt 2010)

The role of a board has two dimensions: conformance and performance. Conformance involve two main functions: Accountability & Supervision. The conformance part of the board's role is close to the agency theory. On the other side, the performance dimension can be related to the stewardship theory. Performance is based on two main functions: policy formulation and strategic thinking. It is about bringing the company forward to better achieve its long-term goals and missions (Garratt 2010).

## 5. Corporate structure

The corporate structure is made of three actors (Business roundtable 2011). It is crucial to understand the role of interactions between external actors, internal actors and board members (Huse, Minichilli et al. 2005). The figure 10 shows the interaction, tasks and leverage each actor has on the others.

The first actor is the shareholder. Shareholders invest in a corporation by buying his stock and receives an economic benefit in return. They approve propositions of merging and acquisition and give their approval for the annual accounts. They elect directors to represent their interest in the company.

The second actor, the board of director, is responsible for decisions based on the best outcome for the shareholders. His role is to oversee the management on behalf of the shareholders. “Effective corporate directors are diligent monitors, but not managers, of business operations” (Business Roundtable 2010). The board delegate to the CEO the authority and responsibility for managing the day to day operations. They elect, oversee and eventually revoke the CEO of the company.

The third actor is the management. Executives are responsible for running the day to day operations of the company, including strategic planning, risk management and financial reporting. They have to inform properly the BoD of the status of all the operations.

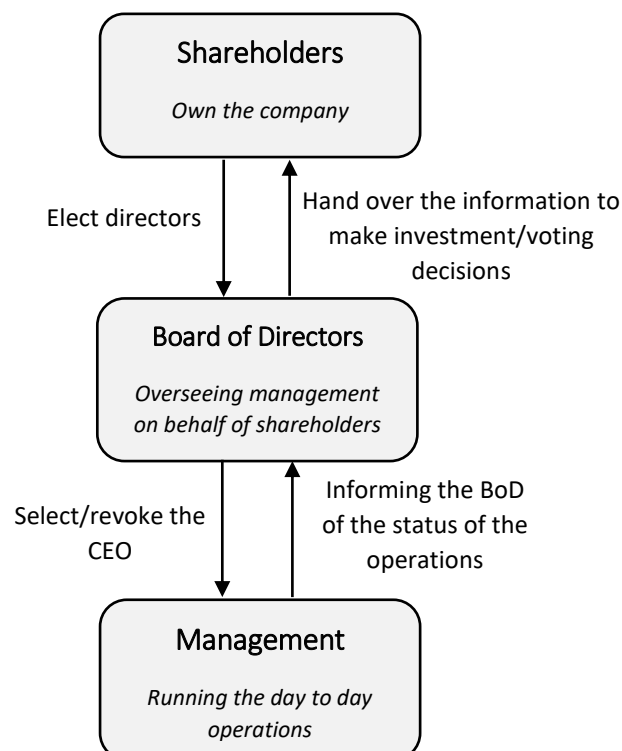


Figure 10-Board structure



## Practical part

### Chapter 3: Methodology

#### 1. Research Question

This thesis is composed of two parts. First, the question is if there exists a link between the board of directors and disruptive innovation? Indeed, we saw that both terms are growing and gaining notoriety. However the disruption theory is always addressed to managers and it has not, to our knowledge, being addressed to the board of directors. We will address this question as well to boards of large companies, the incumbent, as start-ups, the entrant.

Once we will have answered the first question, we will make an exploratory research to understand (figure 11) :

- If a link can be made between the two concepts: how can the board of director have an impact on the disruptive innovation process in a company.
- If no link can be found between the two concepts: How a board of director could be a valuable asset in the disruptive innovation process?

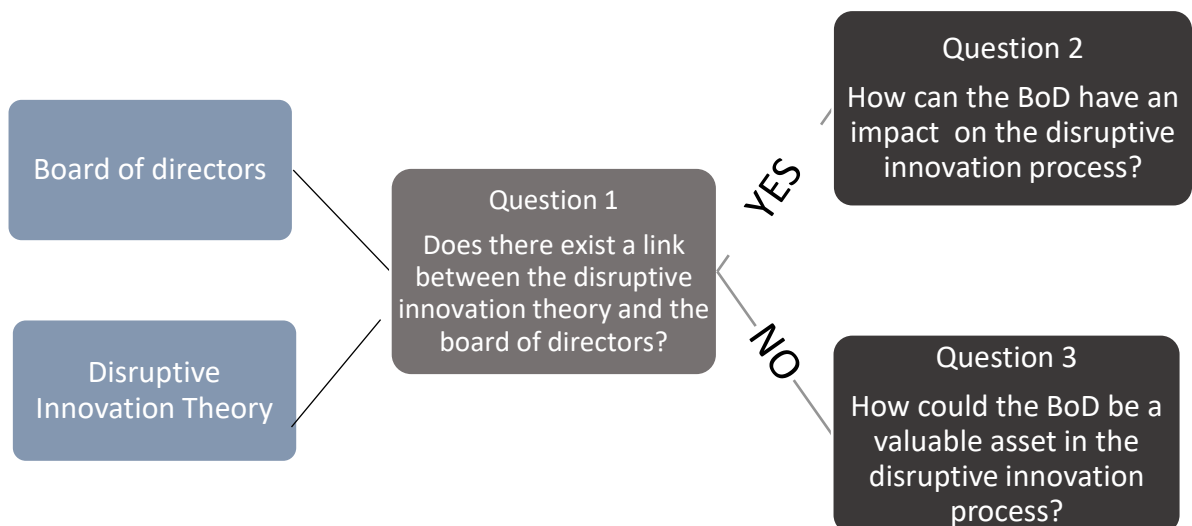


Figure 11- Research questions

## **2. Choice of the methodology**

We decided to execute a qualitative analysis. This type of analysis is recommended for the realization of theoretical construction of exploratory type in a particular context and allows a deep understanding of the matter (Lejeune 2013). For Quivy et al. (1995), a qualitative analysis allows you to study a precise matter, examining the different point of views, the stakes, relations and functioning of an organization.

The data collection was executed by semi-directive interviews. This seems to be the most efficient methodology to collect the needed information to cover our subject. On one hand, semi-directive interviews allows the interviewee to speak freely, which can lead to new learnings. On the other hand the structure of the interview allows you to compare the interview between them. The format of the interview with the grid of question can be found in appendix 3. Six interviews were face to face while three of them were skype interviews.

## **3. Choice of the sample**

Our sample is divided in three groups. The candidates were selected for their professional experience related to potentially disruptive innovation and their participation in boards of director. The selection process was performed with the help of LinkedIn Recruiter, allowing us to target very specific profiles.

The different groups are :

- 1) Directors of large companies
- 2) Directors of start-up companies
- 3) Non-directors with experience in disruptive innovation

For the first group, we focused on large company directors because the disruptive innovation is a theory who try to explain why incumbents fail to sustain growth. These large companies are playing the role of incumbent, having large resources and deep rooted process and values. We differentiate large from small companies on the Belgian legal base. A company is considered as large if it is listed on the stock market or if it exceed two of the three following constraints: more than 50 effective employees, a higher turnover of 9,000,000 euro or a bigger total assets of 4,500,000 euro (banque nationale

de Belgique 2017, company code 2017). We managed to have a good variety of directors: external non-independent directors, independent and internal directors.

For the second group, we interviewed directors of start-up. To clarify, when we speak of start-up or small companies, the targeted companies are the one who plays the role of entrant. Meaning a small structure with a new idea that potentially could disrupt the incumbent. The aim is to analyze similarities and differences between the boards of incumbents and entrants regarding the disruptive innovation theory. Because even if the theory is built for incumbents, we would like to see if the reverse would be useful. Does, the board of director of start-up takes into account the disruptive theory to take advantage of the situation?

The third and last group is composed of members who are not active on the boards. However, their work is highly related to innovation and more specifically disruptive innovation. We were interested in interviewing non-board members because we wanted to have an external view on boards decisions.

### **3.1. Description of the sample**

To respect the candidates' privacy, no personal information will be disclosed. The transcription of the interviews will only be available for our supervisor Gerrit Sarens.

#### Group 1: Directors of large companies

##### Interview 1

The first candidate has worked for 40 years for a global chemical group. The company is listed on the stock market. He spends 14 of the 40 in the executive committee. He was part of the new business board, a committee of the BoD. He is still active in many boards as chairman, board member or as advisor. He is in particular board member of Guberna, the Belgium institutes of administrator who has as objective the promotion of good practices and good governance of corporations. He shared with us his experience from a point of view of an internal board member.

##### Interview 2

The second candidate is an entrepreneur who founded three companies in the internet industry. On besides of this he is chairman of a lightning company running for nearly 120 years. The company employs more than 2,400 people and has an annual turnover of 370

million. They are leading innovation throughout the market with an R&D team of more than 125 experts. He shared with us his experience from a point of view of an external non-independent board member.

#### Interview 3

The third candidate comes from Luxemburg. He worked for the ministry of the economy and foreign trade, developing and designing innovation policies. He was a member of more than 12 different boards in many industries. A majority of them are considered as large companies. He shared with us his experience from the point of view of an external non-independent and external independent board member.

#### Interview 4

The fourth candidate is balanced between being a director on star-up boards and large companies' boards. He is active as an independent director in the large companies and works as an external and sometime investor in the start-ups. His range of boards is very wide for the large one, from investment companies to pharmaceuticals or broadcast equipment. In the start-ups, he focus his effort on the digital industry. He shared with us his experience from the point of view of an independent director and an investor.

### **Group 2 : Directors of start-ups**

#### Interview 5

The fifth candidate is the CEO and founder of his start-up. This young company offer a digital service to improve the companies' customers' perceptions. This company is particularly interesting for our topic. On one hand, their service, customer perception improvement, could strengthen the customer focus approach that the disruptive innovation tries to avoid. Meaning that using this service would increase a company's ability to develop incremental innovation while lessening his disruptive potential. On the other hand, the purpose of the start-up is to make this service cheap and easy enough to use for small companies. Meaning that the start-up, which has a disruptive business model, propose a service to enhance incremental innovation. The duality of the two concepts is interesting. He shared with us his experience from the point of view of an internal director.

#### Interview 6

The sixth candidate is an entrepreneur. He is the owner of two small companies and sits on their boards. He is also a member of three boards of small companies as an independent board member. As an active entrepreneur, he spends his time building new businesses. Besides this he worked as COO in a small innovative company. He shared with us his experience from the point of view of an internal and an independent director.

### **Group 3: Non-directors with experience in disruptive innovation**

#### Interview 7

The seventh candidate worked as Chief Innovation Officer in a well-known bank. Nowadays he is head of marketing and innovation in the same company. Their ambition is to create an end-to-end ecosystem that allows the bank to disrupt itself. This includes building and nurturing an innovative company culture, feeding the innovation funnel on a continuous basis and pushing forth from idea to prototype and potential new service, product or business model.

#### Interview 8

The eighth candidate is very active in the IoT and cloud industry. He is an advisory board member in two different companies. Especially, he helps one of them to deliver advanced analytics and data-driven solutions to help customers exploit their data, whether internal, external or cross-sources. Helping them to disrupt the market before being themselves disrupted. In Marketing & Media, Banking & Insurance, Telecom, Utilities, Manufacturing, Government.

#### Interview 9

The last candidate is an innovation consultant. They help companies in developing new markets, products, services, and business models, and enhancing organizations' innovation capabilities with transformation and training programs. Their goal is to make corporate innovate like start-ups.



## Chapter 4: Interview analysis

### 1. Disruptive innovation definition

In the first part of this thesis, we stressed the importance of clearly defining disruptive innovation. We highlighted that the term “disruptive innovation” was a buzzword who became meaningless as people used it for all disruptive context.

A former chief innovation officer (interview 7) stated that “We all speak of disruption, but personally I never could put a precise definition on what is a disruptive and incremental innovation. So it all depends on the definition you give, and I saw as many definitions as I saw people”. Candidate nr. 8 defines a disruptive innovation as “an innovation that mix several aspects of innovation. Mixing a product aspect, a process aspect, etc.”. For candidate nr.4, a disruptive innovation can be located in a new market, a low-end market but also a high-end market. Which brings us back to the discussion of the limitations of Christensen’s theory. Actually, for 8 of the 9 interviews we spent the first ten minutes to discuss what is and what is not a disruptive innovation.

The point here is not to establish who’s right or who’s wrong, but only to show that disruptive innovation has been widely popularized and might have been misunderstood. The consequence is that many candidates couldn’t perceive the real impacts and leverages disruptive innovation can provide, mainly because they misunderstood or did not know the concept . For them, it seems to be only a word, a way to qualify a specific kind of innovation. It appears that only very few got the theory and insights disruptive innovation theory could offer.

To clarify the situation, the theory used in this thesis is the one developed by Clayton Christensen and his co-authors. To avoid this misunderstanding of definition, a solution would be to rename the theory from “disruptive innovation” to “Christensen’s effect”. However, this issue was already addressed by professor Christensen himself:

“If I had it to do over again, I would not call the phenomenon "disruptive," because there are so many prior connotations in the English language. In fact, at Intel, Andy called it the "Christensen effect" because he could see the ambiguity in that word. All of us have a propensity, whenever we're introduced to a new concept, to twist the concept to reinforce the way we already think about the world. It takes a bit to unwind things”(Euchner 2011).

## 2. Is there a link between the board of directors and disruptive innovation ?

Some candidates believe the role of the board should evolve to fulfill his mission. Candidate Nr. 1, who is board member at Guberna, thinks that “the board of directors should move from a compliance role, which is their minimum role [...] to a role of initiatives, responsibility and orientation to strategic choices”. For nr. 6, “the board as it exists today must rethink himself. It has to move from this paternalistic way of acting to a more agile, flexible way of doing which would eventually lead to see disruptive opportunities”.

When considering these ideas, the primary role of the board would be 44,5% supervision, 44,5% strategy and 11% advice (see figure 12). However, every respondent agrees that one of the task of the board is designing the company’s strategy.

### MAJOR ROLE OF THE BOARD

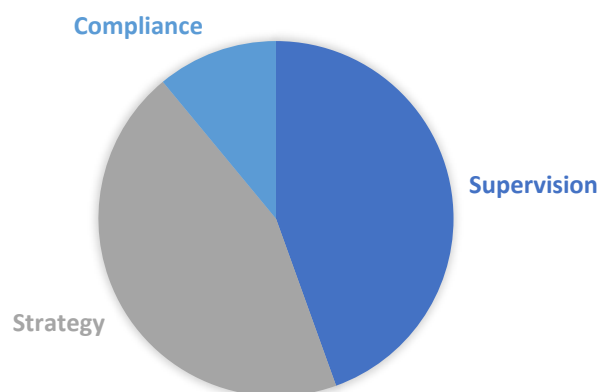


Figure 12- Expected primary role of the board

However this doesn’t induce that the board of directors has a role to play in the management of disruptive innovation. Actually, only six out of our nine interviewed believe that the board has some responsibility in the management of disruptive innovation. Nr.8, who is advisor to the board, didn’t wanted to answer the question as his knowledge of the board is quite limited. Interestingly, the two people who think the board of director shouldn’t deal, or at least should have only very few capacities for dealing with disruptive innovation, are the candidates nr. 5 and 6. These two candidates are board members of small companies. If we segment our interviews between large and small companies, we can analyze different links.

- For large companies

For the four directors of large companies and the two non-directors working closely with disruptive innovation in large companies, the answer is yes, there is a clear link between boards and disruptive innovation. For candidate nr.9, “lots of organizations are assigning board level positions that focus only on disruptive innovation . It doesn't happen a lot, but it is something that is more and more happening”. Candidate nr. 1 was member of the new business board of his company: “We were charged to develop new businesses, so we had to deal with disruptive innovation”. In the second interview, nr.2 tells us that they have created a strategic committee of 5 directors. Their mission is to generate new technologies, including disruptive one.

- For small companies

The two directors of small companies do not think there is a strong link between disruptive innovation and the board of directors. Of course, as the board takes decision linked to strategy or supervise the management, they can always be dealing with disruptive innovation. However, the two interviewed are formal that the role of the board regarding disruptive innovation is minimal or nearly nonexistent. For candidate nr. 5, the board of a start-up is composed by the investors and the founders, who are also the executives. For him, investors have a lack of knowledge of the industry and this leave them unarmed to deal with disruptive innovation. Only the CEO or the founders, who knows the industry and the product very well, would be able to deal with it. Candidate nr. 6 thinks that spotting and generating disruptive innovation are the tasks of the executives. They would bring all the ideas and solution to the board and the latter would have a consultative advice, but they wouldn't have a real impact.

According to the interviews, we can advance some reasons why start-up boards wouldn't deal with disruptive innovation. For candidate nr. 5, as their new product is disruptive, he is not afraid of being disrupted. For him, disruptive innovation theory is not useful for early stage product. In the interview nr. 4, the interviewed states that the board is needed only at a certain stage of the product. Disruptive innovations are created by entrepreneurs, but after the company has grown, those entrepreneurs need skills and competences to sustain their growth capacity. This would be the time were the board enters the game.

To sum up, the link between disruptive innovation and boards of directors in start-ups is weak. The reasons advanced are that :

- Start-ups are developing disruptive products and are therefore not afraid to be disrupted.
- Early stage businesses are not concerned by this theory.
- Start-ups do not need the skills of a board of directors in his early life.

On the contrary, there is a strong evidence of connection between disruptive innovation and boards of director of large companies.

### 3. Exploratory research on how a board can affect disruptive innovation

For the second part of the practical analysis, we will reduce the scope research to board of directors from large companies. First, we will analyze through the interviews the main leverages and values a board of directors can bring to disruptive innovation. Second, we will see how the board can help his company to generate disruptive innovation internally. Third, we will execute the same analysis but for the external environment. Figure 13 provide an overview of the interrogations.

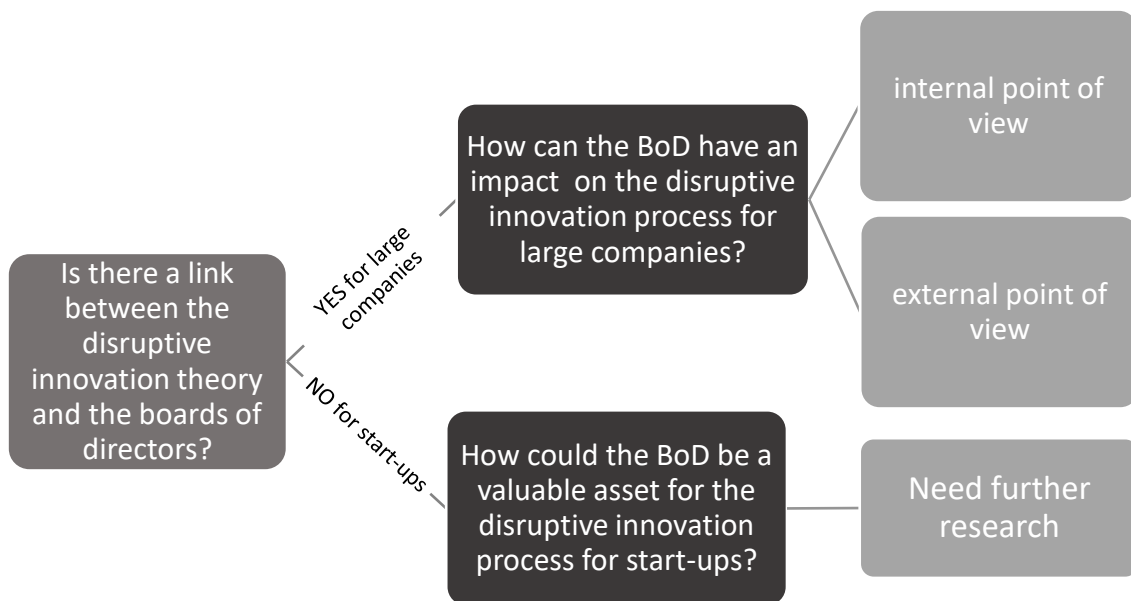


Figure 13- Structure of the interview analyze

#### 3.1. The board of director main leverage and value to manage disruptive innovation

##### 3.1.1. Portfolio management

For the interviewed nr.1,3,9, the board is responsible to manage the budget of the company including the innovation portfolio. Indeed, the board establishes how the cash-flow is distributed between core businesses and disruptive innovation. For the interviewed nr.1, the best executives are the one that focus on their own core business and simultaneously have a responsibility in developing incremental innovation within a three-year time frame. The disruptive projects on a long term period should be delegated to a specific team. For the interviewed, it is the board responsibility to make this portfolio distinction, to give the impulse to set up the team and to make the follow-up on the disruptive projects.

The disruptive budget allocation should go to a specific team, not only because the management is not suited to deal with it (because of the incumbent RPV, the resource allocation, etc.) but also because the expected returns are different. As interviewed nr.3 shared, “you only know if an innovation is disruptive after it is developed. So, you may dream of disruption”. This means that the cash-flow you invest can yield back enormous returns as it can bring you back nothing. Interviewed nr. 1 stated that “you have to accept risking a part of your cash-flow and you have to accept it cannot work. [...] If you are not ready to accept such risks, you have to buy expensive external businesses”. The inherent risk of disruptive project must be understood and managed by the board members. Interviewed nr.1 and 9 explain that to minimize the risk of failure you must act step by step. “At each step, if you note that the milestone is not achieved at all you must be able to abandon. If the milestone is more or less accomplished, you can adapt, continuing or stopping. At this moment, it is very important that the board of directors shows its support” (interviewed nr.1).

- ➔ The first task of the board is to assign a budget to disruptive innovation. Boards acting in this way must understand the inherent risk of failure. However, working step by step and being pragmatic can decrease the possible loss in cash flow.

### 3.1.2. Director experience

For candidate nr.1,2,3,4,8, the main value of the board is the experience of the board members. For the interviewed nr.1,2 and 8, external directors are valuable because they have different backgrounds and therefore bring new experiences and new points of views to the board. For the candidate nr.4, the director’s experience is essential to spare time and avoid traps. Moreover, external directors can be a real asset as they can share best practices from other boards.

Having an independent director do not seems to be very valuable for disruptive projects. The main contribution from external directors is their knowledge. The board needs them as they are windows opening on the world and they are great to spot disruptive opportunities and threats thanks to their wide and diverse experience. The fact that external directors are independent or not is not a real advantage in this situation. On the contrary, candidate nr.4, who is both independent and non-independent director, acknowledge spending more time for companies where he has some stake than where he is independent.

Practically, for a specific issue, the board experience is very valuable in creating disruptive innovation: when and how to sell disruptive innovations. Indeed, candidates nr. 2,3,8 explain that creating a disruptive innovation is only the first step. Thereafter, the company must bring the product or service to the market. Candidate nr.8 explains how Orange, the mobile company, created disruptive products as the tablet, but was unable to commercialize it. "They have a cutting-edge engineering service with very skilled people but are unable to seize the opportunities created by their technologies and to put them on the market". Candidate nr. 2 developed an internet service star-up in the nineties. The potential consumers were interested but the network effects were too low and the service struggled to reach efficiency. They had to sell the company while two years later the boom of internet changed everything. The experience of the board member can help to solve these issues by slowing down or fasten processes and seizing market opportunities.

- ➔ The main value of the board is their experience. They can help to solve the timing and seizing of market opportunities. This includes having external directors since those are very valuable with their different backgrounds. On the opposite, being independent is not valuable.

### **3.2.How a board of director of a large company can have an impact on internal disruptive innovation**

We will now analyze through the interviews how the directors can impact the disruptive innovation processes within the company. Only five interviewed believes that disruptive innovation can be generated internally. Meaning that the two remaining think that large corporates do not have the capacity or ability to create disruptive innovation. The CIO (candidate nr.7) said “honestly, I do not believe in disruption within large companies.[...] First, disruption and short term objectives are difficult to put together. Second, there are no entrepreneurs in large companies. Third, when you want to lead disruption it has to be the CEO or the chairman to take the lead of it, for a large company the change is too complex to be handed by a single person”. For the candidate nr. 4, disruption always come from entrepreneurs who found their own start-up.

However, we still have a majority who believes an incumbent has the ability to generate disruptive innovation within its own structure. The main leverage the board of directors can use to influence disruptive innovation internally is to review his organizational structure. The candidates nr.9, who is an innovation consultant for large companies, summarize the problem as follow:

“Most company look at disruptive innovation and think that they should pursue disruptive innovation, but they do not understand what that means fundamentally. And that means disrupting the existing, meaning new markets, new products, new services. The implications about that are huge and has repercussion on the organizational structure. [...] It requires different rewards mechanisms, different ways of motivating people, different career tracks. It need to operate outside the world of large cooperates and need different types of knowledges, different commissions. It is constantly in tension with the reason why an organization exists. The extend to that problem can be reflected in the fact that I have a full-time job to do to solve this issue”.

By which mean can the board change the organizational structure to enhance disruptive innovation creation?

#### **3.2.1. Reward mechanism**

For the candidates nr.1 and 9, a first mean is to rework the reward mechanism. These mechanisms can be used to stress the importance of innovation in a company, say nr. 1. It

can be a promotion, a remuneration or a career boost. Another way to encourage your employees is by organizing innovation prizes. In the company of nr.1, the BoD had established a worldwide innovation competition across the company. Each year the company collected dozens of projects in different categories: new business, sustainable development, new technology, etc. This allowed the company to generate incremental and various disruptive ideas.

The added value of competition is that it enables employees to avoid their rational thinking and resource allocation issues. The purpose of the price reward is to collect the best potential ideas outside the classic idea generation path. Employees are not tight by personal interest as their career, etc. Moreover, as the ideas goes straightforward from the employees to the top management and the board, the resource allocation bias is diminished.

### 3.2.2. Tone at the top

In the interview nr. 1,4,7,9 we learned that the tone at the top must be strong and shared within the company. For candidate nr.1, the message from the top management and the board of directors must be well aligned. It is an important responsibility for the board of directors to make sure that the tone at the top, concerning innovation, is correctly communicated throughout the company. Having publications in the company's newspaper, creating innovation competition, career bonuses, etc. For nr.9, sharing top-down the willingness to innovate disruptively is essential to avoid that middle managers block the process.

“The problem by doing disruptive innovation is that, if you don't have a coming down from the very top, the middle managers and the executives, because they have as tasks to sustain the existing way of working, become the blockers of pursuing disruptive innovation. [...] When you come in and ask them to radically disrupt that, well first there is not enough time to do it, second they don't want the boat to be robbed because their task is to sustain and keep everything stable and optimized”.

### 3.2.3. Changing his RPV framework

The Resource, process and value framework presented in the theoretical part, is one explanation of why incumbents struggle to disrupt their market. The idea is that their process and values are too deeply rooted, allowing the incumbent to create only

sustaining innovation inhouse. However, candidate nr. 2 explains that his company could radically transform his resources and processes to adapt his product to the emergent disruptive one. His urban lightning company is competing in the high end segment of the market and proposes high quality lights, especially due to their high technical level. For more than a hundred years, the company developed well, but ten years ago, the LED started to emerge slowly. At the beginning, the LED did not offer many advantages: very white light, bad lighting, expensive, , etc. As this new technology was working differently from classic lights (LED are based on electronical principles), there was a probability of breaking down and above all, the company didn't master electronic stuff. The board of directors had a meeting to discuss about this new technology. They invited a university teacher and external people to discuss this specific case. Should they switch their business model to the LED, even if their values are at the opposite right now? The university teacher told them that he believed the LED would disrupt the market in the coming years. The new functionality of low consumption was too attractive. He also predicted that the price would fall down as the quality would sharply increase. The board had to take a decision: keep going with the old technology, selling the company or radically change. They did the last choice. A few month later they stopped all their R&D on classic lamps to switch to the LED. They put all their resources to learn new processes. Finally, they managed to create new processes with the new resource while keeping their initial values. High quality standards and high technical skills. This example shows that with high commitment and a need to evolve, an incumbent can change his RPV framework to adapt.

### **3.3.How a board of director of a large company can have an impact on external disruptive innovation**

If a company cannot generate disruptive innovation internally, it can always look to his external environment. All the interviewed agreed on this point, an incumbent can have access to disruptive innovation by looking outside his corporation. Furthermore, companies would be able to generate disruptive projects in internal start-ups operating outside the scope of the existing organization. Lastly, the board must also protect the company against disruptive entrants. We will analyze the duties and leverages the board can promote and also how they can protect the company for and from disruptive innovation externally.

#### **3.3.1. Internal start-ups operating outside the organization**

According to the theory, operating a project outside the scope of the organization is a way to escape the incumbent RPV issue. Two interviewed, nr.1 and 9 exposed this solution. For interviewed nr.1, the goal is to create structures where you give a capital to a highly motivated team. The board must follow their actions but the real assessment and account settling will be done after several years, when the capital is used. The important point is that the board must protect this small external team from the deep rooted processes existing the large structures. Moreover, the people choice is fundamental because you need them to work in the delegation and confidence. For candidate nr.9, the purpose is to let the external team working as fully independent start up. They should have their own space, their own budget, own accountability, etc. After some months, there would be a kill or pivot meeting, assessing how much value and learning they got on different critical assumptions as customers desirability ,business model viability and technical feasibility on later stages.

The rest of the interviewed did not mention this way of working. Consequently, we can assume that this practice is not widespread across the companies.

- ➔ A board of directors can take the decision to create internal start-ups outside the scope of the company having for purpose to escape the incumbent RPV problematic. However, this practice is not widespread.

### 3.3.2. How to identify external disruptive threats and opportunities

The first step for the board is understanding how other companies can do better things than what they are currently doing internally, say candidate nr.7. For candidate nr.1 “Being open to the world is one of the main responsibilities of the board towards disruptive innovation”. This has to be well understood and shared among all the board members before they can effectively do their duties. Three main leverages were found to identify the opportunities and threats from the external environment.

#### 1) Experience

As already discussed, the main assets of the board are the multiple experiences and backgrounds provided by each member. Indeed, this allows them to rely on a wide network and unique perspectives that will help to identify opportunities and threats.

#### 2) Internal scouting team

Interviewed nr.1,2,3,4 all agree that it is the management role to set up a team internally to assess external opportunities and threats. The management is also accountable to report the information to the board. Nevertheless, it is the board responsibility to ensure this task is accomplished and controlling that the scouting process is done properly. For candidates nr.2 and 4, the way to control the outcome of the internal scouting team is by asking the good question to the executives. The board members must be aware of the background trends and question the executive to make sure the company is not missing any opportunity or threat. In this situation, the board composition with director from different background can help.

#### 3) Consultant company

For candidates nr.1,7,8,9, an alternative to the internal scouting teams are the consultancy agencies. Candidate nr.1 believes that consultants are a very powerful tool to analyze the external environment. Moreover, candidates nr. 7,8,9 express the high quality and ease of execution. However, the downside is that there can be an appropriation and engagement issue because, when you ask consultants to join, the executives and the board member can hide behind the consultant’s conclusions. As an alternative to an internal scouting team, the board can hire consultants. Although, the appropriation and engagement are different.

### 3.3.3. What can the board do once an external disruptive opportunity or threat is identified?

No matter how the disruptive threats or opportunities were identified, the board will be involved in the decision making process. Candidate nr.3 says that “the management makes the proposal, but the board takes the final decision”. In term of decision, we report three possibilities from the interviews.

#### 1) Acquisition to kill

Candidate nr.2 explained how his digital start-up was bought by the incumbent, the Minitel, who decided to dismantle the start-up. Indeed, the digitalization of the Minitel service was drastically lowering down the margins of the Minitel business model. The incumbent preferred to make the acquisition to kill his competitor while he was small<sup>5</sup>. Although this strategy allowed the Minitel to stay the incumbent on the market, this practice is very expensive as you make acquisitions that brings no value. Moreover this is not an effective long term strategy as new entrants will continue to enter the market. Nonetheless it can be done to win time or to enjoy high margin in the short term.

A board of director can choose to buy and dismantle his competitors while they are small. This solution will likely not be very effective on the long term, but allows the incumbent to gain time and keep high margins in the short term.

#### 2) Acquisition to integrate

A board of director can choose to buy and integrate the entrant, enjoying his disruptive experience. There are three important points to highlight:

- The timing of the acquisition depend on the risk appetite of the board of director

For the candidates nr.1,2,3,4,9, the risk appetite of the board is a key element of the acquisition strategy. If you buy an entrant early on, the price is cheap but the risk is high as the product has not proven itself. On the contrary, the longer you wait, lesser is the risk

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<sup>5</sup> However we could argue that the digital start-up wasn't really disruptive as it was stealing the customers of the incumbent instead of attracting non consumers or overshoot one. If the start-up had been able to use more effectively his shield, the motivation asymmetry, maybe the Minitel company would not have bought them as they would have been caught in the innovator dilemma.

but higher is the price. For the interviewed, the risk appetite is defined by the board composition.

- Leave freedom to the acquired company

As explained in the theory, a way to prevent the inefficiency of the RPV framework of an incumbent is to make acquisitions or creating disruptive innovation outside the company. Only three candidates, nr. 1,7,9 highlighted the difficulty and need to leave freedom to the acquired company. For the remaining, the board should make the acquisition and the executives should fully integrate the company. The discussion on the freedom of an acquired company would need further research as our answers are mitigated.

- Controlling the acquisition

The board of director must control the acquisition decision and the integrating follow-up. For candidate nr.4, “the board is the guardian of the temple in acquisition. The board has to ask for report and make sure everything is fine”. The management must deal with all operational aspect of an acquisition. But it is the board responsibility to ensure its proper functioning.

### 3) Cooperation

For the interviewed nr.1 and 3, entering shared structures can be a solution to develop disruptive products. “You should not only accept to share the power but you have to want it”, said candidate nr.1. Making joint venture, sharing your knowledge, etc. can lead to the emergence of disruptive product, service or business model. For the interviewed, the willingness to share the control and the power is rooted in the board composition.

### **3.4.Board composition**

Many board's decision concerning disruptive innovation are influenced by the board composition. As the interviewed nr.4 stated, the director's choice is the crucial element from which everything will flow from. Related to the elements of the interview we would advise the shareholders to appoint the directors based on the stewardship theory. Indeed the stewardship theory fits best with disruptive innovation from a board perspective.

First, as we analyzed, the experience is the main value directors bring to the company. Their purpose is to guide and challenge the executives.

Second, as explained in the portfolio management, the boards has to decide the investment split between incremental and disruptive innovation. The interviewed added that the executives were the best in place to manage the core business, meaning the incremental innovation. The control of the board on this side of the innovation and the core business should be limited. There is a trust relationship between the board and the executive concerning the core business. For the disruptive side, the board knows that the executives are not suited for this job. Even more, many interviewed believes this is not their primary task. From the stewardship perspective we can analyze that the board and the executives are working side by side to run effectively the company. Although, we have to take into account that executive are reliable for the core business but not for disruptive innovation.

The main divergence between stewardship theory and disruptive innovation board composition is the presence of outside directors. Conforth (2003) stated that, as the board function relies more in developing strategy rather than monitoring performance, internal directors were more valuable thanks to their high level of access to information. According to the interviews, the more valuable directors are external ones. Their different points of views of the industry, their past experiences and their varied knowledge are assets that the boards enjoy while speaking of disruptive innovation.

Following the interviewed nr.1,2 and 9, creating disruptive innovation should be the purpose of a few people in the company. As stated by the candidate nr.9 "you don't want to have the whole company working on disruptive innovation. That would not function either. It's about having a balanced complementary portfolio. So that you disrupt yourselves systematically". Based on this portfolio approach, the board should be

constituted in the same pattern. In the company of the candidate nr. 1 and 2 the board has created a specific committee to lead disruption. These 4-5 director's committees are usually composed of external directors who have some affinity with new technologies (interviewed nr.2).

- ➔ The board composition is crucial to manage disruptive innovation. Shareholders should appoint directors who fits the stewardship theory because the desired director profile are directors who work side by side with executives and who are able to develop strategy more than monitoring performance. Moreover the focus is set on external directors who possess a wide and distinctive knowledge. However, the shareholders should keep a balance between a disruptive board and a core business centered board.

## **Limitations and further research**

The disruptive innovation theory is widely defined by many academics. Between all these points of views and opinions, we decided to ground our thesis on Christensen's theory. The main reason is that his theory is the most extensively spread and accepted in the academic and professional world. His book "the innovator dilemma" is known as a reference in innovation. However, some researcher and practitioners are more doubtful and highlight some weaknesses. Even if we provided some critics of Christensen's theory, we decided to stick to the basic as these critics are mainly assumptions. This insufficient hindsight can be a limitation to the thesis.

Conducting semi-directive interviews for an exploratory thesis can lead to very disparate answers. Each respondent has different opinions and it is very difficult to maintain them in the scope of the thesis without bounding the respondent. The balance between guiding or not the respondent is very precarious. For the first interviews we stuck to much to our questionnaire and we may have missed valuable information. On the contrary, for the last interviews we let the interviewee speaking freely, resulting in many out of the scope discussion. As a consequence, it is complicated to match the interviews between them as they are very different.

We tried to tight the scope to large incumbents, putting away the small and start-ups companies. However, we have the feeling the scope is still too broad or badly defined. The diversity of boards, industries, background, etc. gave us a huge variety of answers. Furthermore, we also faced an issue of theory definition. Even if we explained the Christensen's definition at each of the interviewees, trying to reduce the bias at his minimum, we noted that in practice the interviewee had all their own definition. It is complicated to align the words and thought of all the interviewed as they do not define the major concept in the same way. Further research should focus on a specific industry, board composition and same definition sharing to detect more in detail the similarities and differences between boards.

As we started we analyzed large incumbents and start-ups. Surprisingly the directors of start-up were not taking disruptive innovation into account. Unfortunately, our insights are very weak and based on very poor data's. It would be interesting to have

a closer look at this subject. Analyzing if the reasons advanced in this thesis are valid or not. Furthermore, it would be interesting to interview directors of failed start-ups to analyze if the disruptive innovation theory could have helped them or not.

During the interviews, we spotted the time constraint issue. As disruptive innovation can take a large amount of time, from month to decades, it is not unusual to have a change of CEO or from board members between the launching of a disruptive innovation and its final outcome. The problem resides in the fact that many disruptive innovations fail because there is a strategic turnaround caused by these changes. Candidates nr.1,3 and 9 have raised the issue, but no one had a solution to counteract this effect from the board perspective. Further investigation would be interesting as the issue is not addressed nowadays.

## Conclusion

Through our practical and theoretical analysis, we were able to answer our first question: “Is there a link between the disruptive innovation theory and boards of directors?” The answer is “yes” for large companies, assimilated as incumbent, and “no” for start-up which are the entrants. The evidence for large companies is strong as 100% of the answers are positive. However the reliability for start-up is much more controversial as we interviewed only two directors of start-ups. Further research in this area should be undertaken.

We focused on large companies and answered our second question: “How can the board of directors have an impact on the disruptive innovation process?”. We analyzed from the interviews two specific points. First, the main value of directors concerning disruptive innovation is their experience. Their background and previous successes and failures are very valuable to drive disruptive innovation. Second, the board must manage the innovation portfolio, making investment decisions for incremental and disruptive innovation. During these decision makings, the capacity of the directors to understand the consequences, negatives as positives, of disruptive innovation are essential. More specifically, accepting failure and working step by step is crucial to determine your innovation strategy. This last point is in adequacy with the theory.

After having analyzed the main leverages and values directors could use to contribute to disruptive management, we had a closer look at which tools the board of directors could set up or which decisions they could take to allow disruptive projects to emerge and evolve within the company. From an internal point of view, we identified three mechanisms. First, the board can establish a specific rewards mechanism to promote disruptive innovation. Moreover, by setting up competitions, the board has the possibility to avoid both the resource dependence and the rationale thinking issues. The second tool is to use the appropriate tone at the top. Directors have to be on the same page and to communicate very clearly about the strategy. The strategy has to be understood and supported by everyone, within the board and with the executives, otherwise projects will never see daylight. Third, boards of director can change the RPV framework of the company. We explained this with the LED example, however more data would be preferred to assess the trustworthiness. This example is very useful as it goes

against the disruptive theory that states that incumbents die because they cannot adapt their RPV framework to disruptive entrants.

To continue our analysis, we decided to observe which tools the board of directors could set up or which decisions they could take to allow disruptive projects to emerge and evolve outside the company. From an external point of view, the board has many responsibilities in decision making and monitoring towards disruptive innovation. First, the board can decide to develop internal start-ups outside the external scope of the company. The point is to avoid the RPV framework issue explained in the theory, by having a different framework between your core business RPV and the start-up RPV. However, only two interviewed shared this point of view with us. The rest did not mention it and we can assume that this practice is not widespread. Second, the board of directors has responsibilities towards the identification of disruptive opportunities and threats. The board can set up an internal scouting team or identify themselves opportunities and threats thanks to their experience and relations. Another solution is to hire consultants to do the job. Whatever the means, the board is responsible for taking the decisions related to scouting. Concretely, the executive management will be dealing with the day to day operations, but the board must give the impetus and monitor the outcomes. Third, the board of director is highly involved in the acquisition and cooperation processes. These elements will be influenced by the risk appetite of the board, depending on its structure and composition. The strategy issue concerning the freedom of the acquired company was also discussed, to know if an incumbent should fully or partially integrate an entrant. However data is controversial and no clear answer can emerge.

To sum up, the board of directors can take many decisions to foster disruptive innovation or not. These decision-makings are influenced by a main factor: the board composition. Taking into account the risk appetite, the tone at the top, the experience, the cooperation willingness, the acquisition independency, etc. An important part results from the choice of your board member. On disruptive innovation, the main board theory that emerged from the interviews was the stewardship theory. Indeed, executive management and directors are working side by side to develop the strategy of the company and directors are knowledge sources that guide the executives through the evolution of the company. However two points are important to highlight. First, the attended experience is the external one, the purpose is to cross the knowledge from

different industries and to share the best practices from other boards to generate and protect your company from disruptive innovation. Contrary to the stewardship theory, external directors are sought, instead of internal one. Second, it is important to maintain the right balance between incremental and disruptive innovation. Meaning that your board should be able to take this balance into account when taking decisions. A solution is to create a specific innovation committee. This allows you to keep the balance while tackling the subject seriously.

Finally, through the semi-directive interviews, we can assess that the board has a responsibility in disruptive innovation management. Although, as this is an exploratory thesis, we have only insights and advices about the nature of this link. A follow-up thesis is needed to transform our assumptions into assessments or refutations through an in depth data analysis.

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## Appendix

### Appendix 1: Extract of the Belgium Company Code

Art. 518 § 1	The directors must be among <b>three</b> at least.
Art. 518 § 2	The directors are named by the <b>general shareholders'</b> meeting; they can however, for the first time, be named by the constitution of the company.
Art. 518 § 3	The term of their <b>mandate</b> cannot exceed <b>six years</b> , they are always revocable by the general assembly.
Art. 521	The administrators form a quorum.
Art. 522 §1ter	The board of directors has <b>the power to achieve all the acts necessary or useful for the realization of the business purpose of the company</b> , except for those whom the law reserves to the general assembly.
Art. 531	The general shareholders' meeting has broadest powers to make or ratify the acts which interest the company.

Appendix 1- Extract Company Code 2017

### Appendix 2: Extract of the preface of Berle and Means (agency theory)

*“It is of the essence of revolutions of the more silent sort that they are unrecognized until they are far advanced. This was the case with the so-called ‘industrial revolution’ and is the case with the corporate revolution through which we are at present passing.*

*The translation of perhaps two-thirds of the industrial wealth of the country [USA] from individual ownership to ownership by the large, publicly financed corporations vitally changes the lives of property owners, the lives of workers, and the methods of property tenure. The divorce of ownership from control consequent on that process almost necessarily involves a new form of economic organization of society....*

*When these subjects are thought through there will still remain the problem of the relation which the corporation will ultimately bear the state – whether it will dominate the state or be regulated by the state or whether the two will coexist with relatively little connection. In other words, as between a political organization of society and an economic organization of society which will be the dominant form? This is a question which must remain unanswered for a long time to come.”*

## Appendix 3: Interview Grid

### **Interview Grid : Board of Directors and Disruptive Innovation**

#### 1. Introduction

- Name
- Master thesis explanation
- objective of the interview
- Recording and confidentiality

#### 2. Presentation of the interviewed :

- Can you introduce yourself ? Diploma, professional career.

### **Board of Directors**

#### 3. Introduction

- In which Board of directors are you sieging ? Have you sieged in other Board of directors before ?
- What is your position in the Board of directors? Are you part of a committee?

#### 4. Board of directors composition :

- How many members are composing the Board of directors ?
- Do you have subcommittees ? If yes, which one ?
- What is the repartition between internal and external board members ? Do you have independent board members ?

#### 5. Role of the Board of directors

- What is the major role of the Board of directors?
- How can the Board of directors impact the innovation strategy ?
- Does the Board of directors has power on the executive management ?

### **Disruptive innovation**

6. Do you know what is a disruptive innovation?

➔ Key element : Innovator dilemma, sustaining innovation & disruptive innovation (Low-end disruption, New-market disruption).

***Spotting a competitor's disruptive innovation :***

- Can the board be helpful to analyze the competitive environment of the company?
- Do you have set up processes to spot disruptive innovation ?
- If you spot a potential dangerous disruptive innovation, how do you assess his potential danger?
- Once the potential danger assessed, what are the actions you can take?

***Creating disruptive innovation***

- Do you have specific processes to create Disruptive Innovation?
- Do you have set up processes to avoid the innovator's dilemma?
- Do you have set up processes to avoid the resource allocation issue ? (Rational thinking+ resource allocation + middle managers)

7. Finally, how the Board of directors can, with the help of the Disruptive Innovation theory, sustain the growth of the company?

**Conclusion**

- Summary of the ideas + conclude
- Something to add ?
- Thank you