Risk management: the next source of competitive advantage

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Abstract

Purpose – *This paper aims to show how proper risk management capabilities can lead to competitive advantage for a company. There is much evidence that suggests that the current very high level of volatilities in the business world is going to get worse in the years and decades to come. This trend of increasing uncertainties and the resulting risks for businesses, demands a strategic-level attention to risk management. This strategic-level attention is warranted by the fact that proper risk management capabilities can lead to competitive advantage.*

Design/methodology/approach – *The work is conceptual in its approach. The paper also provides many examples from a wide range of industries, as well as the results from other research works to support the finding of the paper.*

Findings – *The paper first shows how firms' perspective of risk management is evolving. It then characterizes the main drivers behind the trend of increasing uncertainties in the business world which results in higher levels of risk exposure for companies. Finally, the paper characterizes four different ways through which proper risk management capabilities can lead to competitive advantage (depending on different risk categories).*

Originality/value – *Although the importance of risk management and its potential strategic role has been widely studied in the literature, the question of how risk management capabilities can turn into a competitive advantage has received less attention. The answer to this question might help firms to better understand the strategic role of risk management and the importance of developing a proper set of risk management capabilities. This paper tries to identify the relationship between risk management capabilities and competitive advantage under different types of risks.*

Keywords *Strategic risk management, Competitive advantage, Increasing level of uncertainties, Supply chain management, Risk management capabilities*

Paper type *Conceptual paper*

1. Risk management: an evolving discipline

> [. . .] we are supposed to be taking risks. So, we do not think of risk management as trying to minimize risk. That's actually the way to prevent creativity. Rather, is to do risky things and then when they go in some unpredictable path, to be able to respond to it.

Says Ed Catmull, the co-founder and president of Pixar and the president of Disney Animation, in an interview[1] when he explains how Pixar fosters collective creativity (Catmull, 2009).

This modern and progressive perspective of risk management, which gives it a strategic role, is in contrast with its traditional perspective which looks at risk as an unavoidable and costly evil. This contrast is analogous to the contrast between the modern and traditional perspectives on supply chain management and how our perspective of this discipline has evolved during the twentieth century.

Originally, manufacturers and retailers looked at inventories and shipments as nothing but sources of cost. This was the dominant mindset when most manufacturers served local

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markets and mass production was not a common practice. As manufacturers found out how they could benefit from the economies of scale by mass production of products, they started serving multiple geographical markets and at the same time sourcing from suppliers in many different regions. Producing in larger volumes and having operations extended to more geographical locations, manufacturers eventually realized that they could minimize handling, inventory, and transportation costs by using techniques from a discipline called logistics, a discipline which eventually evolved to supply chain management.

It was not, however, until around three decades ago when pioneers like Wal-Mart started to view their supply chain management not as a cost minimizing tool but as their core competencies. Nowadays, we can find many major companies (Dell, Amazon.com, UPS, and Zara, just to name a few among many others) whose supply chains play a key role in their competitive position in the market. Their primary goal is not necessarily minimizing the logistical costs. These companies exploit their novel supply chain designs and practices to satisfy their customers' needs better than their competitors, and hence gain competitive advantage and higher profits.

A similar evolutionary change of perspective is happening to risk management. Traditionally, companies used to look at risks in their operations simply as an extra source of cost. This means, you have to incur the unexpected costs when you get unlucky. It should not be difficult to find companies who still have this perspective. Nowadays, we can see a trend which shows that companies look at risk as something that can be managed to reduce the cost of unexpected events. Of course, using insurance policies to mitigate financial or hazard (fire, natural disasters, etc.) risks is not a new trend. However, managing other types of risks like operational or strategic risks has received little attention until recently. See Power (2007) for a more detailed discussion. The author analyzes the abstraction, rationalization, and expansion of risk management since 1995.

Stulz (1996) provides empirical evidence that shows the practice of risk management is limited and does not correspond to the prescriptions of the academic literature. A 2005 research by Conference Board reports, through interviewing 271 executives, that ''more than 90 percent of the executives say they are building or want to build enterprise risk management (ERM)[2] processes into their organization but only 11 percent report they have completed their implementation [. . .] The survey results indicate that more than two-thirds of both boards of directors and senior management staff consider risk management to be an important responsibility'' (Marshall and Heffes, 2005). COSO's[3] recent survey (Beasley *et al*., 2010) also reports a generally unsatisfactory state for the implementation of ERM. Among other results this report states: ''60 percent of respondents say their risk tracking is mostly informal and *ad hoc* or only tracked within individual silos or categories as opposed to enterprise-wide.''

Although ERM promotes a more strategic consideration of risk and its effective implementation can create a long term competitive advantage (Nocco and Stulz, 2006), as Slywotzky and Drzik (2005) suggest, many of the early adaptors treat their enterprise risk management as an extension of their audit or regulatory compliance processes. As we will discuss later, compliance driven risk management can hardly play a strategic role or lead to competitive advantage.

There are very few companies, however, who tend to use their abilities to manage risks as a source of competitive advantage. These companies go beyond compliance or cost-controlling defensive approaches and take a more aggressive stance toward risk. They have realized that their risk management capabilities can be leveraged as a source of competitive advantage. There are different ways through which risk management capabilities can turn into competitive advantage. We will discuss these ways in section 3.

Figure 1 compares the evolutionary trends of supply chain management and risk management disciplines. Risk management has a longer history in the insurance and financial industries (especially at the product level). The recent financial crisis, however, is evidence that risk management has not found its rightful positions even in these industries. Nevertheless, one can find examples of how risk approaches of exceptional companies have served them as a source of competitive advantage.

Figure 1 Evolution in supply chain management and risk management

The View Point	Logistics/ Supply Chain Management	Risk Management
An inevitable cost to pay	Just pay for transportation, inventory, …	Pay the cost when a harmful event happens
A cost that can be minimized	Find innovative ways to minimize the logistics cost	Use risk management to minimize the costs of unexpected events
A potential source of competitive advantage	Use the supply chain design to gain competitive advantage	Use your abilities to deal with risk as a competitive advantage

A good example is the famous case of Nokia vs Ericsson[4], two major cell phone manufacturers at the beginning of the new millennium. When their shared supplier, Royal Philips Electronics, disrupted by a fire on March 17, 2000, the different approaches of these two companies toward the same realized risk resulted in two very different outcomes. After both Nokia and Ericson were notified of the disruption, Ericsson trusted Royal Philips that the supply would be resumed in a matter of a week. After all, the supply disruption, as it was claimed by Royal Philips, did not seem to be a major problem. Nokia, however, took this threat signal much more seriously and jumped into action. The company immediately started to closely monitor the development of the recovery process in Royal Philips. Soon, it realized the supply would not be resumed as it was promised or even close to it. Nokia quickly booked all the available capacities of other potential suppliers. By the time Ericsson found out the real magnitude of the disruption, it was too late. There was not nearly enough available capacity in the market to produce the components for Ericsson. Ericsson reported that the fire and component shortages had caused a second-quarter operating loss of $200 million in its cell phone division. The vows of the company continued and in 2001 Ericsson merged its cell phone division with Sony; hence the Sony-Ericsson brand (Mukherjee, 2008). On the other hand, the proper response of Nokia to this realized risk not only protected the company from any long term damage, but also resulted in an increase in its market share. Nokia's market share increased to 30 percent up from 27 percent a year earlier, while Ericsson's market share dropped to 9 percent down from 12 percent a year earlier (Latour, 2001).

2. Uncertainty, risk, and risk management

There is little consensus regarding how risk should be defined. Risk has been defined differently in different disciplines (economics, insurance, behavioral science, strategic management, etc.). For a literature review on different definitions of risk and uncertainty and how they can be related see Samson *et al.* (2009). The definition that we consider in this paper specifies risk in terms of uncertainty and the magnitude of a potential loss: ''risk is the uncertainty concerning the occurrence of a loss'' (Regda, 2007). See also Kaplan and Garrick (1981) for a similar definition of risk. Uncertainty, on the other hand, comes from the lack of complete information about the future. In other words, uncertainty is a situation in which decision makers have limited knowledge to exactly describe future outcomes (Carbonara and Caiazza, 2010; Krickx, 2000). Luhmann (2005) argues that risk, unlike danger and uncertainty, implies a domain for decision making about the future. Therefore, risk management creates an expectation of decidability and management of uncertainty and opportunity (Power, 2007). Similarly, there are different definitions for risk management. Since risk has been defined differently in different contexts, Regda (2007) defines risk

management in term of loss exposure: ''risk management is a process that identifies loss exposure faced by an organization and selects the most appropriate technique for treating such exposures.'' In this definition, loss exposure is any situation or circumstance in which a loss is possible, regardless of whether a loss occurs. In other words, risk management should include the full range of activities that a company performs in order to deal with potential and realized risks. These activities start with the early steps of risk assessment and stretches all the way to final measures a company takes to recover faster when it is hit by a realized risk. Needless to say, risk management also includes all the organizational efforts to make the company more resilient to risks by reducing the probability or the impact of risks (magnitude of losses). To name some of the risk management capabilities that a company needs to acquire for a proper risk management, we can refer to:

- Cultivating a risk awareness culture.
- Setting proper levels of risk appetite in different parts of the organization.
- Recognizing potential risks.
- Detecting an evolving or happening risk.
- Assessing the likelihood and impact of risks.
- Assessing the potential benefits and opportunities associated with risks.
- Categorizing and prioritizing risks.
- Transferring/sharing risks.
- Preventing/reducing the probabilities of risks.
- Mitigating the impact of risks.
- Reducing the sensitivity of the organization to risks through flexibility and agility.
- The ability to quickly recover from a realized risk.
- . . .

These capabilities are most effective when they are embedded (in a systematic and integrated way) in the structure, culture, and the operational processes of the organization. For continued success, these capabilities should aid a firm to achieve organizational resilience. Resilience is the ability to dynamically reinvent business models and strategies as the business environment changes. It is not about responding to a given disruption. It is about continuously anticipating and adjusting to the changing world (Hamel and Valikangas, 2003).

We can also look at the risk management from a futuristic point-of-view. One can argue that risk management is what we do to shape or be prepared for the uncertain future. While we cannot accurately predict a particular future, by focusing on a range of alternatives, we can better prepare for uncertainty or even embrace it (Inayatullah, 2008). Courtney *et al.* (1997) distinguish four levels of uncertainty that a particular future might hold. (Level 1) a clear-enough future: a future that can be forecasted with enough precision, (level 2) an alternate future: a future that can be described as one of a few alternate outcomes or discrete scenarios, (level 3) a range of futures: a range of potential futures can be identified, and (level 4) true ambiguity: multiple dimensions of uncertainty interact to create an environment that is virtually impossible to predict. In section 3, we will argue that we are moving toward a future that increasingly contains higher levels of uncertainty.

Ratcliffe (2006) argues that since all aspects of society are in a flux of transformation, it is difficult to imagine what the future will look like. He distinguishes five main challenges facing the corporate world in adopting a future oriented approach: fostering a culture of foresight, envisioning change, exploring creativity, communicating futures, and championing prospective.

Although risk management might look straightforward in concept, its implementation is not (Nocco and Stulz, 2006). One of the challenges in implementing a successful risk management strategy is making risk management an organization-wide issue. Dealing with risk is not the responsibility of a limited number of employees or managers. Risk ownership should be spread throughout the company. ''The enterprise risk management must be 'sold

to' and 'bought into' by all levels of the organization. For the whole organization to get behind it, considerable thought must be devoted to the design of the managerial performance evaluation and incentives'' (Nocco and Stulz, 2006).

Another challenge in implementing a successful risk management strategy is managers' mistreatment of risk. It has been long known that, under many circumstances, managers' risk behavior does not follow what theory prescribes. March and Shapira (1987) report empirical results that show these behavioral biases include (but not limited to): managers do not treat uncertainty about positive outcomes as an important aspect of risk, managers downgrade the role of probabilities in risk calculations and focus mostly on the magnitude of potential losses, and managers show little desire to reduce risk to a single quantifiable construct, rather they prefer to treat risk as an intuitive concept.

3. The trend of increasing uncertainty and risk

The need for implementing risk management in a company and the level of its involvement (operational, planning, or strategic) depends on the level of uncertainties the company faces. In a perfectly predictable world with no uncertainty, obviously, there is no need for risk management. However, as the level of uncertainties and their impacts on our business increases, our need for managing them and the level of attention they require rises as well.

Today's business world seems to face a trend of ever increasing uncertainties and risks. We can distinguish five major drivers for this trend:

1. *Faster pace of change*. ''The human world has always been changing, but the pace of change seems to have picked up dramatically in the last decade or two, with no stability visible on even long-range scanners'' (Pearson, 2004). Boosted by the advent of information and communication technologies as well as a fiercer competitive environment, product life-cycles are getting shorter and business models (or even strategies) change much faster than before. ''Companies in most industries are not only undergoing rapid and radical change, but are also experiencing a fundamental shift in the rules of competition and the way the game of competition is played'' (Ilinitch *et al.*, 1996).

   The impact of environmental change (dynamism) on organizational risk has long been studied in the literature. Dynamism can be described as the environmental change which is difficult to predict (Dess and Beard, 1984). Wholey and Brittain (1989) consider the impact of pace of change by distinguishing between the frequency and amplitude of changes.

   The faster pace of change limits our ability to predict the future, which makes our forecasts less accurate. With less accurate forecasts, businesses face higher levels of uncertainties. In addition, increasing pace of change in the business world shortens the time available for companies to plan for possible changes or respond to unforeseen ones, which in turn, can intensify the impact of the risk. So, faster pace of change can increase both elements of risk: uncertainty and impact (loss). In addition to the fast pace of change, the nonlinear rate of change makes the prediction of the future even harder (Inayatullah, 2006; Horton, 2012). Thornil and Amit (2003) use the data from 339 Canadian corporate bankruptcies to show that the failure among older firms can be attributed to their inability to adapt to environmental change. There is also a stream of research that shows the incumbents do not respond properly to technological discontinuities (Madjdi and Husig, 2011; Gilbert, 2005; Koberg *et al.*, 2003; Tripsas, 1997). Charitou and Markides (2003), through a survey of 98 companies, find that one of the managers' main concerns about embracing the disruptive innovations (and the consequent changes) is the risk of cannibalizing their existing businesses.

   In addition, fast pace of change makes it difficult for companies to keep a sustainable competitive advantage. There is a body of research which tries to show that firm-specific advantages are more and more temporary in nature. See D'Aveni *et al.* (2010) for a review of this literature. Lack of sustainable advantages and the decline in their duration could also explain the increasing trend of uncertainty and risk.

2. *Increasing complexity*. Complexity, in general, increases risk. A complex system is a system that cannot be explained by breaking it down into its component parts because the key element is the interaction between parts. As a result of these interactions, complex system exhibit emergence behavior (Horton, 2012). Palmer and Wiseman (1999) consider complexity as one of the three environmental dimensions which characterize the organizational risk[5]. They also argue that complexity describes the extent of competitive heterogeneity within an industry (see section 3 for more discussions on competitive heterogeneity).

   New technologies facilitate more complicated business processes and practices. The higher level of complexity in processes and practices makes it more difficult to see different types of risks that threaten the businesses. One of the root causes of the financial system collapse in 2007 is debated to be the fact that the complexity of financial products outgrew our ability to assess the real risks involved in those products. As another example, the increasing complexity of supply chains – a byproduct of off-shoring and outsourcing trend – has turned the supply chain risk management into a challenging issue during the recent years (Harland *et al*., 2003; Simangunsong *et al*., 2011).

   Bonabeau (2007), in his paper on understanding and managing complexity risk, shows examples of how complexities in business processes, legal contracts, software, networks, etc. have led to business failures or major disruptions in different industries. He argues that the internal flaws in a complex system of a business usually remain hidden until the business is strained by an outside trigger, e.g. a supply disruption or an economic downturn. In other words, complexity risks are interlinked with, and can be amplified by, other types of risks.

3. *Multi-polar global order*. The emergence of new economic powers, are signs of a trend toward a multi-polar world order. When we have a greater number of influential powers around the globe, we can expect more unexpected events to happen due to the interaction and rivalry between these powers. Here is how experts predict the long-run global trend of uncertainties from this point-of-view: ''The International System – as constructed following the second world war – will be almost unrecognizable by 2025 owing to the rise of emerging powers, a globalizing economy, a historic transfer of relative wealth and economic power from West to East, and the growing influence of non-state actors [. . .] Historically, emerging multi-polar systems have been more unstable than bipolar or unipolar ones [. . .] the next 20 years of transition to a new system are fraught with risks.''

   This is an excerpt from the executive summary of ''Global Trends 2025: A Transformed World'', a report by the National Intelligence Council (2008). To see the trend of increasing risks and uncertainties on a closer horizon, one can refer to ''Global Risks 2012'', a report by the World Economic Forum (2012). The Global Risk Landscape in this report lists a higher number of major global risks. Comparing with the similar report for 2011, we can see an increase of around 39 percent in the number of major global risks. In addition to the increasing number of risks, we can also observe a major shift in the type of global risks in different years. Compared to 2011 report, ''Global Risk 2012'' includes 59 percent new risks. Severe income disparity (economic risk), mismanaged urbanization (environmental risk), unilateral resource nationalization (geopolitical risk), backlash against globalization (societal risk), and cyber-attacks (technological risk) are among the newly listed major global risks for 2012. This prospect of increasing and more diverse risks could be due to the trend of fast changing and more complicated products and processes as well as the trend toward a multi-polar world order.

4. *Globalization*. In addition to strengthened risks, the increasingly interconnected business world can turn any local risk into a global one. Although major disruptions are rare in any specific location, the probability of having a major disruption somewhere around the globe is not rare anymore. Globalization means that businesses around the world are more and more interlinked. As a result, a disruption in any place spreads out quickly to many more regions, which means a business is hardly safe from a major disruption that happens elsewhere around the globe.

5. *Increasingly interconnected risks*. In addition to globalization trend which facilitates the quick spread of any local disruption, the increasing interconnection of different types of risks makes the matter even worse. That is, different categories of business risks are not independent of each other. One type of risk might evolve into other risk categories. Here is

how the ''Global Risks 2010'' report emphasizes this intensified aspect of risk: ''We are in a world with unprecedented levels of interconnectedness between all areas of risk . . . the increase in interconnections among risks means a higher level of systematic risk than ever before. Thus, there is a greater need for an integrated and more systematic approach to risk management and response by the public and private sectors alike.''

The ''Global Risk 2012'' provides a map (World Economic Forum, 2012) that shows the entire network of the interconnectedness between different major global risks. On this map, global governance failure is the most interconnected risk in 2012. Other major global risks with high levels of interconnectedness are: rising greenhouse gas emissions, critical systems failure, chronic fiscal imbalances, and unsustainable population growth.

Another factor which intensifies the uncertainty level is the different ways through which people behave under uncertain situations. The heterogeneity in people's responses to uncertainty introduces even more uncertainty into the socio-economic environment (Pearson, 2004).

Of course, the level of influence of each above-mentioned driver differs in different industries. One driver might play a dominant role in an industry while have less importance in another one. However, these drivers, all together, picture the outlook of an increasingly more uncertain business world. In this volatile business world with a prospect of even more uncertainties in the future, the rightful position of risk management, at least for most large companies, is beyond the position of a discipline for controlling the costs of unexpected events. This high level of uncertainty can have a major impact on the competitive position of companies and hence warrants a strategic-level attention. ''Underestimating uncertainty can lead to strategies that neither defend against the threats nor take advantage of the opportunities that higher levels of uncertainty may provide'' (Courtney *et al.*, 1997). This means, in such a volatile world, top executives should set company's strategies to acquire proper risk management capabilities. The company can then exploit these capabilities not only to control risk costs, but also as a means to protect or even gain competitive advantage.

It is worth noting that some of the above-mentioned drivers not only increase uncertainties, but also provide better risk management opportunities. For example, globalization can provide more sourcing alternatives in case our supplier fails to deliver. The information and communication technology has increased the pace of change in the business world, but at the same time these technologies provide better opportunities for monitoring, forecasting, and fast response. There is, however, a difference between the drivers' impacts on increasing uncertainties and their impact on the opportunities they provide for stronger risk management. The emergence of these drivers brings along the increasing uncertainties whether we want them or not. The benefits of their opportunities, however, materialize only when a business takes the trouble to deliberately and consciously pursue them. This pursuit, when it is performed through an integrated strategic approach, can lead to a proper set of risk management capabilities, which in turn can lead to competitive advantage.

In addition to the high and increasing level of uncertainties and risks, which necessitates risk management more than ever, there are also other forces that require companies to adopt risk management practices. These forces include regulators, major suppliers and customers, creditors, rating agencies, institutional investors, etc. Many companies adopt risk management practices just to comply with these requirements. Although compliance driven approaches to risk management could be a good start, and might be used as a cost controlling means, it could hardly be used as a source of competitive advantage. Complying with the minimum risk management requirements is usually common to a company and its competitors. So, it is hardly an edge to compete with the rivals (in the next section we connect firms' heterogeneity to competitive advantage). In addition, when risk management remains at a compliance level, it rarely receives a strategic-level attention. To turn risk management capabilities into competitive advantage, a company should design and support these capabilities at a strategic level and through an integrated approach.

4. Leveraging risk management to gain a competitive edge

Now, the question is how risk management could possibly be used as a source of competitive advantage. The way through which risk management capabilities can lead to

competitive advantage depends on the type of risks an organization is exposed to. Risk management literature provides many different ways through which we can categorize different types of risks. However, we deliberately limit our attention to only two classifications of risk types which can help us to show how strong risk management capabilities can lead to competitive advantage.

The first classification looks at the potential benefits of risks. A company may face two major types of risks: rewarded risks and unrewarded risks. Rewarded risks are those risks associated with an expected benefit. These are risks we take with the hope of creating more value, e.g. when we enter a new market, or develop new products or processes. Therefore, rewarded risks are direct or indirect consequences of our own decisions. When we intentionally seek higher rewards of a risky business, one might arguably say that we intentionally seek the accompanying risks as well. Of course, this does not mean that we should not try to minimize these risks or get ready to deal with their consequences. For more discussion on this topic see the article by Gilbert and Eyring (2010). There is a similarity between this type of risk and managerial risk. The literature defines managerial risk as ''management's proactive strategic choices involving the allocation of resources'' (Palmer and Wiseman, 1999).

On the other hand, unrewarded risks are those risks imposed usually by external forces with no potential value in them. Natural disasters, industrial accidents, theft, pandemics, etc. are all examples of unrewarded risks. We always try to avoid or mitigate these risks.

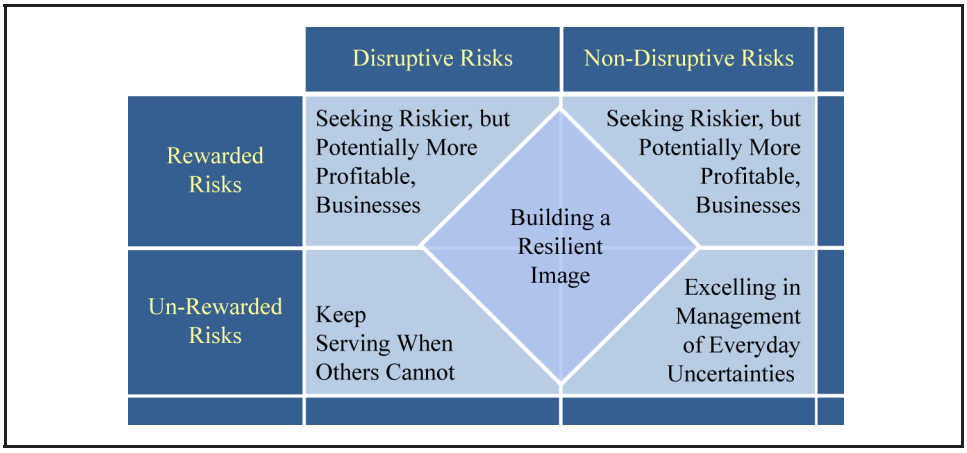
We can also categorize risks according to their magnitudes and impacts on an organization: disruptive risks versus non-disruptive risks. Disruptive risks are those risks which interrupt the main operations and services of the organization and threaten the market position or even continuation of the business. On the other hand, non-disruptive risks are those more frequent risks which businesses deal with on a day-to-day basis. Although each non-disruptive risk does not threaten the market position or existence of an organization, the ability to effectively deal with them as a whole bears an important impact on the performance of the organization, and hence on its competitive position.

To relate risk management capabilities to competitive advantage, we can simply use the old framework first set by Michael Porter (1985). In his seminal book, Porter argues that there are two major ways that a company can gain competitive advantage over its competitors: cost advantage, and differentiation. Risk management capabilities can dramatically affect both a company's costs and the value it creates for its customers (differentiation).

Another way to relate (risk management) capabilities to competitive advantage is through the theory of competitive heterogeneity. Competitive heterogeneity refers to enduring and systematic performance differences among relatively close rivals (Hoopes *et al.*, 2003). Competitive heterogeneity literature enumerates many sources which could cause sustainable differences between firms. Among these sources, differences in firms' resources and capabilities have been considered as major sources of competitive heterogeneity (for a review of this literature see Hoopes and Madsen, 2008). Although we focus mostly on heterogeneity in capabilities, there could be heterogeneity in access to certain (risk management) resources which can serve as a source of competitive heterogeneity. For instance, access to a well-connected network of suppliers, buyers, and partners can provide advance warning about an evolving disruptive risk which might affect the firm and its competitors. Access to such advance warning can create a preparedness which differentiates the firm from its competitors. To connect firms' capabilities to their competitive heterogeneity, we can use a value-cost framework. Heterogeneity is then defined in terms of competitors having different value minus cost profiles (Hoopes and Madsen, 2008). Here, value is the maximum price that the firm's customers are willing to pay for the firm's product. Therefore, to keep a sustainable advantage in the market, a firm should continuously provide higher values or work with lower costs, or both.

Depending on the risk category, we distinguish four different ways that a company can either reduce the costs, or create higher values, or both. In other words, there are four major ways that a company can turn its risk management capabilities into a source of competitive advantage. These are shown in Figure 2.

Figure 2 How risk management capabilities can turn into competitive advantage



4.1 Keep serving when others cannot – dealing with disruptive unrewarded risks

There are disasters that hit everybody. Those who can avoid or manage the crisis better, or recover faster than the others are winners of the market. Natural disasters, pandemics, economic crises, changes in regulations are examples of disruptions that might hit, simultaneously, many companies and organizations in a given region or industry. Those who can handle the disruption better than their rivals can not only survive the disruption but also thrive by gaining market share. In other words, they can differentiate themselves from their competitors by continuously providing value for their customers. Therefore, if a company has stronger capabilities in managing risks, it should be able to grow faster in more uncertain business environments.

This is a defensive approach to disruptive risks. However, if you can do it better than your competitor who is hit by the same disruption, your defense automatically turns into an offense (differentiator) which can let you win the market.

Example 1: the case of Nokia vs Ericson exemplifies how faster response to the realized risk can turn the disruption into an opportunity to gain market share.

Example 2: Bain & Company, in an eight-year study, analyzed the performance of more than 250 companies (Rigby, 2009). They showed that the number of firms which managed to improve their position from the worst-performers quartile to the best-performers quartile during the 2001 recession was 24 percent more than the number of firms that managed to have the same jump during the subsequent (more stable) period of economic growth. They concluded ''[economic] downturns present strategic opportunities as well as risk.'' This result emphasizes when everybody is hit by the downturn, those who can manage the risks better than the others, will be able to leverage this capability to improve their market position, an opportunity which is more difficult to find during stable conditions.

4.2 Seeking riskier businesses – dealing with rewarded risks, disruptive and non-disruptive

It has been long argued that proactive firms in more uncertain environments tend to turn challenges into opportunities (Carbonara and Caiazza, 2010; Paine and Anderson, 1977). There are higher potential profits in riskier venues. When you can handle risks better than your competitors, you can enter riskier ventures with higher potential profits, ventures which your rivals might hesitate to enter. If risk management capabilities justify taking the extra risk, seeking riskier businesses can be a great differentiator. It means that the firm can keep the cost of dealing with high uncertainties under control while providing high values. ''If a company takes on a project that increases the firm's total risk, the project should be sufficiently profitable to provide an adequate return on capital after compensating for the cost associated with the increase in risk'' (Nocco and Stulz, 2006).

Example 1: Ed Catmull[6] explains that the Pixar's ability to take controlled risks and respond properly to unpredictable outcomes is their way of boosting creativity, which is the most crucial element of their business. In other words, to be more creative, they have to have a risk-taking mindset and seek riskier approaches. How much risk can they take? Or, as a filmmaker might put it: How deep can they go down the rabbit hole? It depends on how strong they are in dealing with unexpected outcomes.

Example 2: as another evidence of how taking controlled risks can turn into competitive advantage, one can point to the success story of the movie *Avatar* (2009). Avatar has been the most successful movie ever made in terms of its box-office revenue. By making Avatar, the movie maker James Cameron broke his own record of the largest box-office figure which belonged to *Titanic* (1995) with $1.83 billion world-wide. Cameron's recent Sci-Fi extravaganza generated more than $2.7 billion of box-office revenue worldwide. However, this huge success was not without taking considerable risks.

Initially, the Twentieth Century Fox movie studio was hesitant to make such a risky investment in a movie with an unusually high cost: $237 million. Filmmaking is usually a collaboration between different entities. It is the movie studio, however, who has to take the major risk. Since *Avatar* was too much of a risk for Twentieth Century Fox to bear, to initiate the project, studio managers and Cameron managed to transfer portions of this risk to other entities through risk sharing mechanisms.

To convince the studio, Cameron stepped out of a Hollywood tradition which says: ''Never sink your own money into a movie'' (Grover *et al.*, 2010). He and his partner invested around $10 million to build the revolutionary cameras which Cameron needed to make *Avatar*. He also agreed to cut his usual director's fee into half and lowered his share of profit if the move did not generate good revenue. In this way, Cameron shared a portion of studio's risk.

On the other hand, the studio managed to find partners who were willing to share the investment risk. ''We consider all filmmaking a dangerous game,'' says Rupert Murdoch, chairman and CEO of News Corp., which owns Fox. ''And we always lay off [risk] to the film funds when we can. This time we laid off more than usual'' (Grover *et al.*, 2010).

Example 3: in November 2009, the consortium led by Exxon Mobil Corp. won the right to develop one of the world's largest oil fields in Iraq. The consortium reached an agreement with the Iraqi government while the country was suffering from continued political instability (Chon and Gold, 2009). The ability of Exxon Mobil Corp. and its partner Royal Dutch Shell PLC to set forth a winning offer depended, in part, on their capabilities to manage their operations under the threats of severe sectarian violence and political instability in the region.

4.3 Excelling in everyday performance – dealing with non-disruptive unrewarded risks

In risk management, we mostly focus on risks which can have a major impact on the company (disruptive risks). To excel in managing disruptive risks, however, a company should develop and establish certain qualities which not only serve the company well when a disaster hits, but also help the company compete more effectively and in more sustainable ways during the stable periods. These qualities include (Sheffi, 2007):

- flexibility in operations;
- responsiveness and agility;
- good relationship and partnership with suppliers and customers;
- more decisive managers and more empowered employees; and
- good communication, both internally and externally.

Internalizing these qualities in the structure, operations, and culture of a company makes it more resilient to disruptive risks[7]. When a company is equipped to deal with large scale disruptive risks (through internalizing these qualities), it is naturally less vulnerable to everyday market fluctuations or minor disruptions which happen more frequently. In other words, these qualities can help a company gain competitive advantage by reducing the uncertainty costs (e.g. safety inventory costs) and creating higher values under uncertainty

(e.g. consistent on-time delivery). As a result, such a company has a better chance of outperforming its competitors even in more stable times.

Note that a company might not necessarily acquire the above-mentioned qualities for the sake of better disruptive risk management. Many companies try to achieve these qualities to improve their regular performance, which is another way of saying to improve their performance in dealing with day-to-day uncertainties – something that is not usually referred to as risk management. Nevertheless, when a company acquires these qualities, regardless of its initial intention, it will be stronger in dealing with disruptive risks as well as dealing with non-disruptive risks which leads to stronger regular performance. The following example intends to show this observation.

Example: Toyota is a company famous for being excellent in almost all above-mentioned qualities. It is widely believed that these qualities strongly contributed to its outstanding performance in the auto industry. Even after its recent quality glitch (late 2009 and early 2010), which resulted in a massive recall, the company recovered fairly fast. According to a 2011 report by the American Customer Satisfaction Index (ACSI), Toyota beat almost all US domestic and foreign car manufacturers in customer-satisfaction score, and ranked first along with its Lexus and GM's Cadillac (Welsh, 2011). The following example demonstrates how Toyota's responsiveness and good supplier relationship helped it to keep its market position while facing a major disruption.

In the early hours of Saturday February 1, 1997, a fire disrupted the production of P-valves[8] at Aisin Seiki Co. in Kariya, Japan. Aisin was responsible for supplying 99 percent of the P-valves used in Toyota's entire car production. It took only a couple of days (using the parts on the in-bond trucks) to bring to a halt all Toyota plants which were running on just-in-time systems. This was a very bad time for any Japanese car manufacturer to be disrupted. Since the Japanese sales tax was going to increase on 1 April of that year, car manufacturers expected a hike in demand in the months before the tax increase. Toyota production facilities were already running at 115 percent of their normal production volumes before they were disrupted by the fire at Aisin.

However, Toyota's fast response and good supplier relationship minimized the impact of this disruption. In the afternoon of the same day (only around 12 hours after the incident), Toyota and Aisin managed to gather all the potential P-valve manufacturers in a conference room along with the technical details of the P-valves. Because of Toyota's close relationship with suppliers and the mutual trust between them, suppliers (some of them had not manufactured any p-valve before) quickly responded to Toyota's call and raced to manufacture the P-valves. In only nine days, all Toyota's Japanese plants were back to normal operation and the company was saved from a major market loss. Interestingly, no price negotiation or contract exchange happened during this collaborative race. It all happened simply based on mutual trust (Sheffi, 2007).

4.4 Building a resilient image – all sorts of risks

When a company manages to gain others' trust in having strong risk management capabilities, and hence being resilient in the face of volatilities and disruption, it can play more competitively in the marketplace. This can be the result of one (or more) of the following factors:

1. The company can attract more business compared to its competitors since its potential customers are confident that it can deliver (higher value).
2. The resilient image brings greater negotiation power (higher prices can be charged for the same value).
3. Better risk management capabilities can lower risk transfer costs – lower insurance policy costs (cost advantage).
4. A resilient image reduces the probability of intentional risks. The image of being flexible and agile, as well as having a strong security system, legal system . . . can prevent others from harmful attempts (cost advantage).

5. A resilient image provides the opportunity of offering credible guarantees, which in turn gives the power to ask for premium prices (higher value).
6. A company with strong risk management capabilities might have access to cheaper loans (lower interest rate) because of lower risk for the lending organization (cost advantage).
7. A resilient company performs better in the stock market. Hendricks and Singhal (2005) show how the lack of proper risk management can have a negative impact on the long term shareholders' value. They show how share prices can be affected by supply chain disruption.

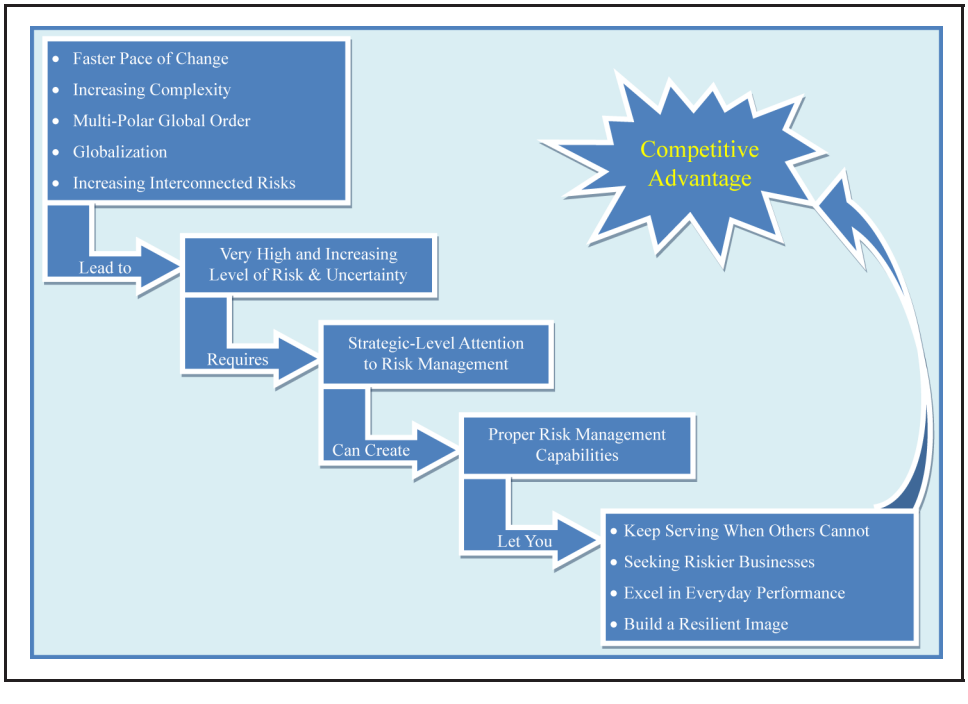
On the other hand a resilient company is usually treated more favorably by the stock analysts, and hence it has a stronger stock performance. This can result in easier access to cash through stock offerings. It also makes the company's stock-options more valuable which can help in attracting and maintaining top talents (cost advantage).

5. Concluding remarks

In today's volatile business world with a prospect of even more uncertainties in the future, risk management deserves executives' attentions at a strategic level. When a company seeks risk management capabilities from a strategic point-of-view, these capabilities can be leveraged to gain competitive advantage. This can be done by either being stronger in dealing with a disruption when it hits everyone, or seeking riskier businesses with higher potential profits, or dealing more effectively with day-to-day fluctuations during more stable times, or creating a resilient image. Figure 3 depicts this argument.

Developing risk management capabilities is a challenging task. It requires enterprise-wide efforts coordinated by an integrated risk strategy and supported by top management. A structured discussion on the increasing level of uncertainties and risks and how risk management capabilities can lead to competitive advantage can encourage and assist the managers to deal with this challenging task. While our argument in section 3 emphasizes on the necessity of acquiring proper risk management capabilities, section 4 shows how firms can use these capabilities under different types of risks to improve their competitive position.

Figure 3 Risk management could be a source of competitive advantage



Notes

1. The interview can be found at http://blogs.harvardbusiness.org/ideacast/2008/08/harvard-business-ideacast-109.html
2. ERM is a systematic, integrated approach to managing all risks facing an organization. It focuses on board supervision aiming to identify, evaluate and manage all major corporate risks in an integrated framework (Olson and Wu, 2007).
3. Committee of Sponsoring Organizations of the Treadway Commission
4. This case has been reported many times in different contexts in the business literature. The reason that it has been introduced here is that it almost perfectly exemplifies how different responses to the same realized risk can change the competitive position of companies.
5. When the complexity is defined only in terms of industry rivalry, the authors find that that there is not a significant positive correlation between complexity and organizational risk.
6. Referring to Catmull's interview which is mentioned at the beginning of this article.
7. This is in contrast with keeping redundant resources (inventories, capacities, and suppliers), which is a more traditional way of hedging against disruptions. Redundant resources are usually external to the main operations, and hence, a possible drag.
8. P-valves (proportional valves) are small parts used in the rear brakes of cars.

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