The Impacts of Innovation on Strategy Management: Strategy in Turbulent Environment

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Abstract

A rapid scan of the organizational process of innovation as it is practiced today, gives the impression that it seems a rather messy process and consequently a risky one. Theses characteristics scare most organizations today where the imperative is to deliver the quarterly numbers as promised by management and most importantly as expected by industry analysts. The dismally high failure rate of innovation initiatives calls for a closer examination of this strategic process that could prove to be the most important life line that some organizations could develop. The goal of this paper is to shed some light on the strategy formation process in turbulent environments mainly caused by innovation.

Sommaire

Le caractère désordonné et non systématique des processus d’innovation tel que pratiqué aujourd’hui dans les organisations effrayent la plupart des gestionnaires où l’impératif est de livrer des résultats trimestriels tel que planifié et requis par le marché et les analystes. Dans cet article on examine le concept d’innovation tel que décrit dans la littérature et nous proposons une intégration des différents concepts dans une nomenclature de types d’innovations. Le but de cet article est de jeter une certaine lumière sur le processus de formation de stratégie dans des environnements turbulents causés par l’innovation.
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Introduction

In the mid 90s, the American economy experienced an incredible revival despite the fact that it was largely written off by most pundits (Mitroff, 1995) a few years earlier. Under the constant threat of Japan Inc. American firms were largely considered to be inefficient and unable to compete with their better disciplined and focused rivals. The incredible turnaround experienced in the mid 90s - although discounted, rightly or wrongly, today as nothing more than a financial bubble – was largely due to the rapid pace of technological changes introduced in the market. In other words: innovation.

Innovation has been cited since as early as the initial days of the establishment of Economics as a scientific discipline as one of the key engines of the evolution of markets and a factor that affects competition. However, never was the radical adoration of innovation so fervent than it was in the last few years. A “technology rush” attracted prospectors from all around the globe to a small patch of land in California, dreaming to revolutionize the world and to build undreamt of fortunes. Yet, despite this widespread devotion and agreement about the incredible capacity and benefits of innovation, it is still rather poorly understood. Not only what constitutes the essence of innovation eludes the practitioners but most importantly how is innovation created, how it is amplified and how is it harvested. Not only are definitions confused and confusing but the critical causal link between resources invested in innovation and enhanced business performance in the form of increased outputs remains to be proven.

A rapid scan of the organizational process of innovation as it is practiced today, gives the impression that it seems a rather messy process and consequently a risky one. Theses characteristics scare most organizations today where the imperative is to deliver the quarterly numbers as promised by management and most importantly as expected by industry analysts. The dismally high failure rate of innovation initiatives calls for a closer examination of this strategic process that could prove to be the most important life line that some organizations could develop. The goal of this paper is to shed some light on corporate governance mechanisms that could impacts the innovation process in enterprises. We start with a brief review of the theory of the firm, which leads us to discuss agency theory and corporate governance. In the second section, we define innovation and examine the causal effects between innovation and uncertainty. In the third section we, first, examine classic corporate governance mechanisms impact on innovation and move to an alternate view of corporate governance that better capture the reality and complexity of an organization as a system. In the last section we conclude and propose some further questions.

Corporate Governance

Following the definition of the firm by Coase (1937), several authors extended the view of the firm and its different actors in several directions. Today, several views of the firm differ in the role they ascribe to different actors (owner, manager, creditor, board,
etc.). In some the role of actors is taken into consideration as well as their influence on the shape, size and nature of the firm, while in others they are simple automaton. However, at least one thing is in common, the separation of ownership and management in the modern corporate organization. It is in such settings that the agency problem rapidly arises and efficient corporate mechanisms are needed.

**The concept of the firm**

Coase (1937), in his seminal article, attempts to propose a definition of the firm in a way that fits real life. His proposed definition of the firm, a system of resources and agents interacting with managerial oversight rather than markets, has as its core motivation a desire to optimize transaction costs. Compared to previous attempts (using Smith’s invisible hand), Coase’s definition keeps the individual clearly in the overall picture of things by giving her, the capability of foresight and the capacity to choose between alternatives.

Coase (1937) insight was realizing that there is a cost for using the markets, such as the costs of discovering relevant prices (that could be reduced but not eliminated), the costs of negotiating and concluding contracts (which a firm can reduce) and negotiating longer term contracts (especially for employment). Moreover, transactions on the market and transactions within a firm are treated differently by governments. Since there is a cost for using the market, in certain contexts costs are lower within a firm. Coase (1937) was conscious that such a model (of positive feedback loops) could lead to an ever increasing firm size, then monopoly and the elimination of the market. The author introduces factors (negative feedback loops) that will restrain the size of firms and account for the existence of markets such as the larger a firm gets, the higher the costs of organizing additional transaction get (and hence market transactions will be cheaper). These negative feedback loops limit the growth of the firm to a size at which an equilibrium point is attained where the costs of organizing an additional transaction by the entrepreneur will equal the cost in the open market.

In this neoclassical definition of firm, there is no room for innovation and knowledge or their influence on firm formation and size. For Coase, initiative is equated to forecasting which operates through the market by making new contracts while management only reacts to price changes by redistributing the resources under its control. The firm main tool of wealth maximization is the identification of market transaction costs and internal transaction costs, comparing such costs and selecting the cheaper. The firm cannot take into consideration transactions that do no exist on the market (innovative products) or transactions which cost are not tradable on the market (innovative processes).

Alchian and Demsetz (1972) attempt to redefine the firm in a more precise manner and understand what is more efficient: the markets or firms. Their approach is deeply rooted in a democratic philosophy where no individual or entity holds power by fiat. Individuals and entities can attempt to modify others’ behaviors by punishing them
either by withholding future business from them or suing them in court. This democratic principle has serious implications on Coase’s definition which states that long term contracts between employer and employee are the essence of a firm. If no individual has the power to direct others by fiat, then the entrepreneur can not force transactions to take place within the firm.

Alchian and Demsetz (1972) insight is in the realization that in some contexts team production will yield outputs larger that the sum of separable production. Hence two individuals working in a team can produce much more than if each worked alone. Although teamwork can be beneficial for all team members, it also introduce the possibility of shirking where one or more individuals are able to hide their lower input and hence increase their productivity. This is what Alchian and Demsetz (1972) argue is the dominating element in transaction costs: the lack of candor of individuals who will conceal information to maximize their utility function. Since rewards size are tailored to productivity, then organizations should monitor individuals’ productivity and allocate rewards accordingly. The better the organization is at monitoring, the higher its productivity is.

Monitoring can easily be accomplished by the market which has proved to be a fairly fine monitoring tool. To explain the emergence of the firm Alchian and Demsetz (1972) argue that some team production inputs are difficult to monitor and measure by the market. “The costs of metering or ascertaining the marginal products of the team’s members is what calls forth new organizations and procedures” (Alchian and Demsetz, 1972) to reduce or eliminate shirking. Productivity will then decline unless individuals within group can costlessly detect shirking and punish it. In such cases, the introduction of a monitor (manager) to check the input performance of the team members will lower the cost of detecting performance and as such raise productivity. In this perspective, the firm exists to manage resources more efficiently than if they were left alone to control the inputs of production. However, such a solution creates a problem of its own: who monitors the monitor? The authors introduce the concept of the owners versus the managers where one party (principal) transfers his decision authority to the other (agent) which raises the shirking problem to the management level. To resolve this new issue, the authors propose market competition from new managers as well as competition from members within the firm who seek to displace existing managers is an effective tool to police managerial shirking.

Agency Theory

The neo-classical theory of the firm claims that an expert is needed to monitor shirking hence the need for a manager and the emergence of the owner as a residual claimer. Since it is impossible for owners to implement their own profit maximizing objectives through a manager, they have to align management’s objectives using incentives. This highlights a critical component of the theory of the firm, the issue of separation of ownership and control commonly described as the Agency Theory.
Jensen and Meckling (1976), as the fathers of Agency Theory, define the firm as an artificial construct which serve as a nexus of contracts between individuals. For the authors, one of the most important contracts a firm engages in is the residual claim (equity) of the shareholders on the firm’s assets and cash flows. This contract is defined as principal-agent relationship where the management team is the agent and the shareholders are the principal. The authors claim that individuals are, by essence, motivated uniquely by maximizing their own utility functions and as such will act in their own self interest. This is one of the core foundations of the Agency Theory perspective. It is hence important to realize that agents will not always take actions to increase the residual value of the principal but rather will try to enhance their own utility function. Thus principals (shareholders), to discourage agents (managers) from diverging from their interest, should set up appropriate incentives for the managers and monitor their behavior. These types of activities are complicated and costly. Agency costs are specials costs that principals have to incur to resolve the conflict of interests between them and their agents. Hence to reduce or eliminate agency costs, firms are in critical need for efficient corporate governance.

Shleifer and Vishny (1997) define corporate governance as the need to deal with the “ways in which suppliers of finance to corporations assure themselves of getting a return on their investment”. Its mechanisms are essentially made out of economic and legal institutions. The authors conclude what makes a corporate governance system successful is the integration of legal protection of some investors with a significant role for large investors. For Fama and Jensen (1983), the question of corporate governance is how to distribute decision management, decision control and residual risk bearing to different agents in different organizations structures. They argue that different settings require different combinations such as the merger of the three functions (owners, managers and board of directors) into a single agent (owner-manager) for small firms and the separation of these roles between owners, managers and corporate boards for large corporations.

For Eisenhardt (1989), “Agency theory attempts to describe this relationship [one party delegates work to another who performs the work] using the metaphor of a contract”. For the author, the major assumptions underlying Agency theory are a divergence of goals between the principal and agent, an information asymmetry either before or after the contract between the two actors and a different attitude toward risk by the principal and the agent, which may lead to different set of actions. Those assumptions highlight the two problems that the theory is concerned with resolving: the agency problem and risk sharing. The author proposes two hypothesis regarding governance mechanisms. The first is outcome-based contracts that link managers’ performance to compensation and the second is information systems to reduce information asymmetry between principals and agents. Both mechanisms are effective in curbing agent

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1 This is why, according to Shleifer and Vishny (1997), investors provide financing to firms. The legal framework provides them with control rights such as the right to vote on critical matters (mergers and liquidations, elections of board of directors, etc.) and the right to claim any residual value.
opportunism. Hence, principals have two options to reduce agency costs: investing in information systems (such as board of directors) and/or enter the relationship with agents with outcome based contracts.

What is innovation?

Innovation is one of the most difficult and elusive processes to manage today, judging by the failure rate of innovations (between 60% and 90% depending on the market context and product types). Although the failure rate is quite substantive, the pursuit of innovation is still considered as a holy grail in organizations. For Damanpour (1991), organizations continue to invest in innovations with the intention to enhance their efficiency and/or effectiveness. Therefore, innovation is an inherent effect of an organization’s desire to transform (change from one activity to another), to improve (change a single activity by making it better) or to simply put itself in a “league of its own” (change several activities at the same time), which can have uncertainty and risk as a side effect.

This desire to change can either be internal, associated to an individual (the Sony PlayStation is one good example where change was induced by the vision of one person - Ken Kutaragi) or to an organizational system (Ericsson exiting the mobile phone manufacturing), or external as a result of the competitive games in an industry. Therefore, innovation has the capacity to change different “things” at different levels. From a market or industry perspective, innovation could be the ability of any player in the system to disrupt the dynamic equilibrium of the market by introducing, for example, a new product or service that will find a segment of customers willing to pay for it.

At the social structure level, innovation could be the capacity of an organization to change or even more accurately the function of the organization that allows it to “becoming”\(^2\). Organization “becoming” is multidimensional and multifunctional. Hence, innovation from an organization perspective could impact not only the product/service mix offered but also the organization’s processes, its structure/culture, its belief systems or any other organizational aspect. Innovation is like Heraclites’ river, it is a continuous process that has the potential to permeate every aspect of the organization.

Definition of innovation

In the previous section, we could clearly see that innovation can be many things to many actors in many levels. A technical definition of innovation can be as simple as the acquisition (adoption) of a tool, system, process, or product that is new to the adopting entity. Hence, for something to qualify as a “true” innovation, it has to satisfy two basic

\(^2\) Again as with the definition of Von Bertalanffy of human “becomings”, we will use a similar notion and apply it to organizations. The main motivation is Heraclites (circa 540- 480 BC) saying “upon those who step into the same river different and ever different waters flow down”, proclaiming that all things are in constant flux while remaining the same. A few thousand years later, Prigogine rephrased Heraclites idea by insisting that the reality of the universe is not being but becoming.
criteria: it must be distinctive from what exists at the time of creation/adoption, and it must have an impact on the adopter (financial, efficiency, image, etc.).

To better define what innovation is, it is critical to explicit what innovation is not. Innovation is clearly not invention or discovery. In “The Creative Process”, Bronowski (1958) makes the difference between a discovery, an invention and a creation. The difference between a discovery and an invention is their existence before the inventor “knew” of their existence. A discovery existed there waiting for someone to find it – Columbus discovered America. Invention is rather the visualization of structure where there was none before – “The creative mind is a mind that looks for unexpected likenesses”. Innovations can start from inventions or discoveries but must go further. It is possible then that an innovation\(^3\) begins with a new idea or a recombination of existing ones which leads subsequently to formulate that innovations can either be created from “scratch” in a focal organization or could be “acquired” from the environment.

Beyond this initial phase, the process of innovation has to go through a validation phase where the invention/discovery is shown to have enough value for a specific “market” and then through a diffusion phase where the invention is finally brought to the “market”. Hence, the innovation process is a complex process that can involve several (even all) functions in an organization through time and consists of three major phases: invention/discovery, innovation and diffusion. In summary, we can argue that an Invention is the design of a new idea or concept while Innovation is taking these ideas, convert them to practical usage, and taking them to market.

**The need to change: source of innovation**

Innovation, as defined in the above paragraphs, was identified as the effect of the inherent desire of an entity to change. Change is an inherent reality of the world we live in and Georg Christoph Linchtenbergh sheds some light on why this needs to be. “Whether things will be better if they are different I do not know, but that they will have to be different if they will have to be better, that I do know”\(^4\). This change can take several forms - from transformation (Business Models or Products/Services), improvement (processes / technology) or a more ambitious drive for excellence (mix of previous two aspects) - and can be driven by an internal pulse (preemptive to change in the environment) or simply as a response to changes in the environment (reaction to changes introduced by other agents). Change can come from several sources: from unexpected impacts and occurrences of existing solutions (failures), to change of fit between old needs and existing solutions, changes in the markets (increased segmentation), demographic changes (customer base changes through modification of pyramid of ages), changes in perception of existing customers (ecologically conscious) or simply the discovery of new knowledge that could help solve existing problems.

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\(^3\) Schumpeter defined innovation as either: (a) the introduction of a new good, (b) the introduction of a new method of production, (c) the opening of a new market, (d) the conquest of a new source of supply and (e) the carrying out of a new organization of industry.


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Uncertainty is not only a prerequisite for innovation; it also models the pattern of innovation. Innovation stems from a deep need of entities to change driven by a quest for improvement. Although traditional management tools such as Reengineering and Continuous Improvement Process could be sources of innovation, they were most of the time confused for innovation. Change as such is not innovation; it is a source of uncertainty that could motivate an entity to innovate. Though change is a major source of opportunity, it is also a source of uncertainty that can have negative impacts on innovation. Uncertainty can have an impact on the perception of change (Is anything going to change?), on the vision of the future (what kind of change is going to happen?), and on the outcome of the innovation process (What is the best way to solve this problem? Why are the impacts? Will it work?)

**Impact of corporate governance on innovation**

The theory of the firm and the separation of ownership and management can lead to a specific organizational problem defined as agency problems with attached agency costs. Agency problems can take several facets from information asymmetry between owners and managers, to different goals between owners and managers, or even different goals between owners themselves. These problems are potentially harmful to the firm and its owners and may lead to inefficiencies and wealth destruction. It is, then, in the best interests of owners to institute control mechanisms that could limit those inefficiencies. Since agency problems detract firms from efficient operations, then efficient corporate governance, the primary means for shareholders to exercise control on managers, should promote efficient allocation of resources.

In turbulent fields, traditional approaches to strategy are clearly impotent. Planners don’t have the time to gather required data or even access to the right data. The reality of strategy in such a context is that advantage is temporary and hence strategy is likely to shift. The only certain thing is change. The key challenge then, is the ability to manage change and continually innovate. Either to react to it, anticipate it or even better create it by imposing the pace of change (Mintzberg, 1994). As Federico Mayor\(^5\) rightly said, there is nothing as sad as adaptation. When one is forced to adapt, it means that one missed the change and has to scramble to catch up. In turbulent fields, it is then necessary to widen the focus of the firm and tap into many resources to understand the future and create it. It becomes necessary to define corporate performance in a manner that encompasses a broad array of consideration not only traditional economic outcomes such as profitability but also measures of social and environmental performance what Elkington (1998) calls the triple bottom line. This extension of objectives must accept the satisfaction of multiple stakeholder interests beyond the traditional shareholders interest. To be able to execute on such a vision, managers will need to have access to the right tools and practices. In turbulent times, a too narrow focus on the present might end up

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\(^5\) Federico Mayor’s conference about Globalization in HEC on March 4\(^{th}\), 2003.

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sacrificing the future. Seneca (5 BC - 65 AD) said it better “Enjoy present pleasures in such a way as not to injure future ones”.

**Classical view**

Innovation by its very nature results from and spreads uncertainty. Innovation is not a clear sequential process where everything is planned and uncertainties kept to a minimum. Rather it is a messy process that is created by uncertainty and results in much uncertainty. Continuous innovation not only is the main and critical weapon in competitive settings, it has the capacity to reap havoc on its creator as well. Innovation’s reach can blur industry delineators, mix strategic groups and bring incumbents down. The innovation process is usually driven by highly skilled experts that can push the knowledge frontier further. Therefore, management in innovation driven firms should have unique exposure to knowledge driving innovations (market opportunities, internal capabilities, how to combine the latter to exploit the former) which owners do not necessarily have. Underlying the innovation process is a knowledge creation process involving leveraging unavoidable mistakes and failures as learning experiences failures. The more “innovative” a firm is, the larger the gap of knowledge between owners and managers. As such, innovation intensifies uncertainty, creates and spreads ambiguity and continually promotes discontinuities. Innovation in organization, at the core, exacerbates the agency problem by creating considerable information asymmetry between owners and managers. In the following section we examine how different corporate governance mechanisms could affect negatively or positively the innovation process.

**The role of the board and its composition**

The literature provides solid evidence that boards of directors play an important monitoring role in the firm. Different studies have contributed to create a rich and diverse literature on the role of the board: control and monitoring activities, dispensing advice and expertise, linking the firm with its environment or even on-going collaboration with management on decision making. According to Kose (1998) a board of director’s effectiveness is determined by its independence, size and composition.

One key characteristic of boards is their independence - assumed to be closely related to its composition (majority of outsiders). It is assumed that truly independent boards are believed to be more effective in administering firms than ones dependent on management. A lack of independence is seen as promoting board passivity in its responsibility and decision making authority. However, to the question “who monitors the monitor”, Agency theory suggests that board members are motivated to engage in activities to enhance the value of the firm for several reasons such as preserving or enhancing their reputation or by making the compensation of the board sensitive to firm valuation.

Board composition alludes to the difference between internal board members (i.e. members who belong to the present or previous management team of the firm) and external board members (i.e. members with no existing relations to the firm). Outside
board members are traditionally seen as being independent and hence, an effective lever of control while insiders are mainly seen as source for advice on strategic issues. In some articles, outside board members are seen as an important source of valuable information and as facilitating access to resources. The level of independence of outsiders has been recently revisited. Some researchers have suggested that although outsiders might be recognized as independents, there are social and psychological factors (CEO influence on the selection process, reciprocity factors, etc.) that can limit their objectiveness.

In a firm pursuing an innovation, where vast amounts of information are produced and analyzed, outside directors might not be able, or find the necessary time, to cope with these kinds of information volumes. Kose (1998) review of the literature cited several studies that do not confirm that presence of outside directors enhances firm performance and proposes two possible explanations: either management succeeds in recruiting outsiders who are incapable or unwilling to discipline management or other control mechanisms (such as markets for corporate control) effectively motivate and discipline management, leaving little or no room for directors. Furthermore, Agrawal and Knoeber (1996) research highlights the negative effect of outsiders on firm performance. Several explanations are proposed to explain this peculiarity such as the possibility that outsiders are added to boards of poor performing firms or that outside board members appointment can be a political process. Whatever the real explanation, there are valuable lessons to be learned from these results for corporate strategy especially in turbulent environments where changes are so fast that principals have troubles following the flow of information needed to minimize agency problems.

Hoskisson et al (2002) claim that a board dominates by outsiders will tilt a firm to favor acquisition rather than internal innovation. Outsiders, given their time and information constraints, their limited access to information and hence limited knowledge of internal operations, will favor monitoring through sophisticated management information systems and will rely mostly on financial rather than strategic evaluation of managers. The main motivation of such a firm will be rapid return on investments through acquisitions which will lead it to reduce investment in the development of internal innovation and focus more on product diversification helping the firm to identify potential acquisition targets through their extensive corporate networks. This reliance of acquisition rather on innovation allows the firm to reduce the uncertainty that internal innovation will tend to create. Alternatively, Hoskisson et al (2002) hints that inside directors, since they are likely to have better information and hence will be able to have an advantage compared to outsiders, will be better able to deal with uncertainty and risk. Hence firms with boards where inside directors are dominant, tend to focus on internal innovation rather than on acquisition.

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6 Although outsiders are often considered as “independents”, it is important to realize that the CEO of a firm is critical in selecting the board members, retaining them and designing their compensation. All are factors that can seriously limit the members influence and independence.

7 Most board members serve on multiple boards and divide and dilute their time and focus between them. This makes it difficult for board members to adequately understand specific issues facing a firm.
However, since there seems to be a positive relationship between outsiders on monitoring committees (with all the benefits that monitoring can offer) and since insiders have positive impacts on innovation, firms that want to promote innovation should find a fine balance between outsiders and insiders on board. Additionally, firms that rely on innovation can devise ways to extract more value from their outside board members. As Westphal (1999) suggested, by improving social interaction and trust between CEOs and outside board members, a firm could promote cooperative problem solving activities and enhanced communication. CEOs seem to be more willing to seek advice when they can trust the board which leads to enhanced firm performance. Rather that distort innovation, outside board members CEO close relationships can contribute to firm innovation.

**Top management compensation**

Being highly uncertain, the innovation process requires a full hearted support and a vote of confidence from the management if it is to have a chance to deliver on its potential. Managers need to have a deep understanding of their firm’s capabilities, a clear vision of how they can create value with such capabilities, and then decide how and where to best allocate investments (and hence take risks) to deliver new products/services continuously to their existing customers and to new customers. Managers are then the main drivers or blockers of the innovative capacity of the firm. The agency theory literature is explicit about the fact that managers’ ownership of firm shares has a clear link to their willingness to take risks (Miller et al, 2002). Managers’ reluctance to assume the risks and potential failures associated with a typical innovation process can push a firm innovative capability to decline and go counter the wishes of owners.

The core problem in agency theory is possible misalignments between principals (owners) and agents (managers) such as the one described above. Traditionally corporate governance experts have encouraged the use of outcome-based contracts (Eisenhardt, 1989) to effectively curb agent opportunism. The logic behind such contracts is that principals with a diversified portfolio beyond the stock of the firm have the luxury of reducing their risks by spreading their ownership across several firms. This is not the case for managers since they have most of their assets (professional experience) invested in a single firm. Hence, the development of sophisticated compensation packages with fixed (salary) and variable components (bonus, stock options) to increase the alignment of top management’s utility functions with the principals’. Firm ownership by management is believed to align long term personal interest with the firm’s owners interest and hence reduce agency costs and raise performance. Hence, consistent with agency theory, managers with no (or very limited) firm ownership are expected to take actions in order to increase their own utility functions. Hoskisson et al (2002) claim there is a positive relationship between inside ownership and performance, and that insider ownership “emphasize(s) internal innovation and promote(s) higher long term performance”.

Beatty and Zajac (1994) suggest that the ability of firms to use executive compensation as a solution to agency problems is seriously limited by risk-bearing
concerns that stem from the risk aversion of managers. The authors suggest also that this problem is particularly acute in riskier firms (firms that want to promote innovation or face uncertainties). Traditionally, there has been a greater emphasis on the importance of imposing strong pay for performance linkages as a direct solution. However, there is evidence that a close linking of managers’ compensation to performance could lead to unforeseen effects on top managers’ behavior: risk avoidance. The authors study shows that riskier firms (promoting innovation) are less likely to include stock options in their compensation. This higher level of firm risk correlated with lower level of managerial stock ownership can have different explanations. Either firms promoting innovation are cautious about rewarding CEOs for luck or since CEOs de facto set their own pay, in innovation pursuing companies they are avoiding taking risks.

This is consistent with Miller et al (2002) recommendation that firms with high or low uncertainty should design management compensation packages with a reduced performance contingent basis. The reasons for high risk firm (promoting innovation) are pretty obvious, since the actions of top managers cannot be directly related to firm’s outcome, but the low risk firm (promoting adaptation) explanation is less obvious. The authors explain clearly that low risk firms “should place more emphasis on historical precedents, accepted procedures, traditions, and compliance with industry norms” since in such a context outcomes are easily planned and projected. Hence, encouraging manager to take risks when a firm is not pursuing an innovation strategy is not optimal. Miller et al conclude that compensation packages that rely on performance contingent pay for top managers are better suited for firms under conditions of moderate unsystematic risk than under condition of low or high risk.

Wright et al (2002) observe that risk taking behavior (which promotes innovation) is initially emphasized at lower manager stock ownership levels. However, risk reducing strategies are subsequently adopted as managers attain higher levels of stock ownership. These findings consistent with portfolio theory are explained by the fact that as agents’ ownership increases and attains certain levels, the concentration of agents’ personal wealth is a motivation for risk reducing behavior. Additionally, there are different effects on agents’ behavior of stock ownership vs. stock options ownership. This stems from the fact that with stock ownership, agents are exposed to upside as well as downside price movements, while stock options expose them only to the upside. The result of this research indicates that agents’ ownership incentives “may be the most effective deterrent to investments that dissipate market value”.

Hence since innovation is typically an uncertain process that exacerbates interest alignment of owners and managers, a firm that is pursuing a strategy of innovation rather than a strategy of adaptation and with a good control of its environment, compensation packages that include variable components can further motivate managers to innovate. The major error that most firms engage in is to tie executive compensation to short term

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8 This is better expressed by Wright: “Reinforcing corporate risk taking in the absence of genuine growth opportunities would be economically irrational”.

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financial performance. Such a short term perspective, although aligning principals and agents, adds little if any incentives to executives promote internal innovation especially at low levels of ownership. It is essential to use a mix of short term and long term perspectives in designing executive compensations to stimulate managers’ interest in innovation.

**Existence of large block holder(s)**

The success of the innovation process, as most complex and uncertain processes, rests on the co-occurrence of multiple factors. The existence of goof corporate governance mechanisms and the team’s capabilities to work together and coordinate the identification of opportunities, the development of required capabilities and the production of value added products and services and matching them to a market base ready to pay for them are definitely such factors. However, for managers to engage in such activities, it is essential to convince a minimal number of owners of the validity of such an endeavor especially if the ownership of the firm is not too diluted. This limited dilution is identified in the literature by the existence of at least one owner with at least 5% ownership of the firm. Such an owner is typically considered a large block holder. Agency theory experts attach to the existence of such a block holder many virtues. Large block holders can sit on the firm’s board as an outside board member.

Outside representation on the board is one of the most popular mechanisms for reducing agency problems. Although, Agrawal and Knoeber (1996) showed the existence of a negative correlation between outsiders and firm performance, there is a strong belief that active outside shareholders create pressure to rely more on the labor market to evaluate managers, and Woidtke’s (2002) research shows a clear relation between institutional monitoring and valuation effects. Nonetheless, the author cautions that valuation effects vary according to the objectives functions of institutions’ administrators (i.e. public pension funds that publicly target firms should have negative valuation effects if public targeting is a proxy for objective functions that are dominated by political or social pressures). The author even goes as far as to affirm that “other shareholders […] could be hurt when the institutional agents watching firm’s agents have conflicts of interest with other shareholders”. Interestingly enough, Woidtke notes that outsiders should not be regarded as a homogeneous group with unique objectives especially relating to public pension funds where objectives can vary from state to state.

While innovation is a rather laborious, unpredictable, labor intensive and with many possible outcomes effort, acquisition is almost a sure bet on established products with current revenue streams. The innovation effort is rather a long term effort that needs nurturing and patience that leads to long term high benefits, the kind preferred by public pension fund managers (they hold stocks up for a decade). The external innovation process is rather an opportunistic effort to capitalize rapidly on a business opportunity and a quick way to reduce risk by diversifying the product line. This kind of innovation seems to be the preferred mode for private fund managers as described by Hoskisson et
al. The observed differences in preferences are most likely based on each fund manager time horizons and incentives preferences.

**The influence of debt**

The benefits of large block holders are at least theoretically clear: they have both the interest in getting their money back and the power to demand it. On the other hand, there are obvious costs to large investors’ ownership since they represent their own interests. To deal with this seemingly paradox, firms have access to a different financing alternative, debt, which is not without its costs. The agency costs of debt are identified mainly with the incentive effects associated with highly leveraged firms, the monitoring costs these incentive effects engender and bankruptcy costs. And debt, a popular tool for financing firms, has its advantages stemming from the tax subsidy on interest payments. Firms have a clear incentive to mix their financing (debt / equity) and incorporate debt to reduce their weighted average cost of their capital.

Managers’ usual mix of undiversified human and financial capital leads them to have a preference for less leverage to reduce the risk and to increase their powers since it is recognized that leverage reduces management discretion. According to Markman et al (2001), debt not only constrains a firm’s operation but also inherently lead managers away from adopting strategies for innovation. Although debt reduces management effective margins of maneuvers, debt can be a positive tool to exert disciplinary pressure on managers to increase their efficiency of allocating resources to activities that will deliver value to the shareholders. Additionally, entrenched managers tend to increase leverage beyond optimal levels and sometimes such excess are nothing but a “transitory device that signals a commitment to sell assets” (Berger et al, 1997).

Although debt can, by imposing the strict discipline of regular debt repayment, increase a firm’s efficiency, it can also lead to a short term focus where the main motivation is the next payment of the debt. Hoskisson et al (2002) show that a firm’s leverage level has a negative relationship with its investments in R&D, a typical indicator of innovation in an organization. Hence, debt can have a negative effect on the innovativeness of a firm and can motivate managers to adopt short term adaptation strategies rather than have a long term innovation focus.

**The separation of roles: the Chairman and the CEO**

The two main roles in a typical corporation are the chairman of the board as a legal guardian of owners’ interests and the chief executive officer, legally responsible for the good management of the firm. Classical agency theory experts strongly suggest the separation of the functions of CEO and Chairman in two different individuals as a good practice. Separating the two roles is not only seen as diminishing the powers of the CEO by designing solid checks and balances but could also signal to investors that proper monitoring is taking place. Although the separation of roles is seen as positive in classical
agency, it could also create an occasion for communication breakdown and hence further information asymmetry between the CEO and the Chairman.

For firms that want to promote innovation, information asymmetry (Markman et al, 2001; Zahra, 1996), could be a small price for separating the two roles. Separating the CEO from the Chairman role could lead to more fluid authority, decentralization of power, leaner organizational structure. All these are factors that are conducive to support innovative activity within the firm. Additionally, the separation can be a source of increased diversity in experience and backgrounds of the firm’s two top people. According to Markman et al (2001), increasing the diversity of a management team can add value to the firm by bringing “a broader knowledge base that allows innovation projects to draw on more information sources”.

Conventionally, successful top managers (CEOs), especially in innovation pursuing firms, see their contracts extended further. The underlying logic is that success breeds success. The CEO was able to identify, in the past, future opportunities that materialized and was able to build the appropriate capabilities to deliver value to shareholders. The conclusion is that the CEO possesses the required talent and experience to be capable to repeat such a feat again. However, extending contracts increases the managers’ entrenchment and entrenchment usually encourages individuals to rest on their own laurels by trying to create the new future from the past. Innovation, as we have seen, is rarely if never a clear continuity with the past. Zahra (1996) cautioned: “Careerism and short term based reward systems may discourage executives’ pursuits of corporate entrepreneurship”. Hence, a good counterbalance to an entrenching successful CEO might be the existence of a separate and capable chairman that can keep the CEO predisposition to initiate change and propagate innovation in the firm highly alert.

**Institutional ownership**

Large established firm floated on the markets have their stock held by different institutions as an investment vehicle. Traditional agency theory literature has considered this group of owners as a monolithic group pursuing short term objectives. More recently, there have been numerous authors calling for a more nuanced view of this group. These authors stress the difference between institutional owners such as fund managers that might be pursuing short term profits, since their performance is reviewed quarterly, and long term mutual fund managers might be more interested in pursuing innovation strategies since they are usually interesting in long term performance rather the possibility of getting a quick buck.

The presence of a major institutional shareholder will have, hence, an influence of the firm and especially the CEO behavior. Such institutions can either encourage a CEO to promote an innovation strategy within the firm, or at the opposite spectrum, dissuade the CEO from engaging in risky, long-term projects that could enhance innovation. Institutional shareholders, with large ownerships in a firm, will usually tend to have a
long term perspective; hence influence managers to adopt innovation strategies, because of the inherent difficulty of disposing of large stock holding in a firm rapidly without negatively and significantly affecting the stock price and hence increasing the possibilities of incurring a loss.

However, as mentioned above, some institutions are driven by short term, rapid profit maximization strategies and hence will influence managers not to adopt innovation strategies. Institutional owners should be seen as different groups pursuing different goals with different emphasis of objectives and durations. Firms pursuing innovation strategies should “sell” the firm (rather investment in the firm) to the appropriate institutions that will not only encourage such strategies but can add value through domain expertise, network depth and patience.

**Alternative view**

Viewing the organization through the lenses of Agency theory, although interesting, seems to be a bit crude. For agency theorists, agents seem to be very simplistic automata with Stimulation-Response type behavior attached to a single, ultimate interest: self-interest. Agents seem to be risk averse obsessed by shirking at every possible chance while principals are much nobler with a risk neutral stance focus exclusively on economical benefits. In summary, in this world cooperation and coordination are extinct. Even the settings of the relationships could be universal and uniform. In this perspective, agency theory seems a simplistic tool to explain a very complex reality. Individuals, firms, organizations and innovation are not simple entities rather complex systems with multifaceted realities.

Recently, several authors have tried to expand the classical agency theory framework by adding more actors to the principal-agent relationship and some have tried to show multi facets of these actors to make it more robust. For example, Hendry (2002) is not convinced that the typical agent’s behavior is selfish and its goal is to self maximize its utility function because “it is precisely the ability of organizations to solicit unselfish, cooperative behavior that makes them valuable”. The fresh perspective introduced by the author is to point to problems in the principal-agent relationship that go beyond adverse selection and moral hazards. There are also problems associated with the “limited competence of human beings and the specifications of interests or objectives” (Hendry, 2002) which according to the author come together. The author proposes a couple of strategies that principals can use to reduce the costs of agent’s misunderstanding or incompetence (bounded rationality and judgmental fallibility): provide more specific details for the objectives, provide guidance to the agent (improve technical competence) or offer mentoring to improve the agents understanding. Other perspectives have contributed to agency theory, but not to the extent of the two perspectives selected to be discussed below.

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9 "Much of organizational life, whether we like it or not, is based on self-interest.”(Eisenhardt, 64)
Stakeholder Theory

Stakeholder theory is a fairly recent field of study established with the publication of Freeman’s seminal book. The main purpose of Stakeholder theory is to enlarge the definition of the firm from a limited owner-manager relationship to a wider focus. Stakeholder theory can be defined by two key aspects. Stakeholders are persons (or groups) with legitimate interests in the corporation and the interests of all stakeholders are of intrinsic value. This means that a firm’s management is required to give simultaneous attention to the legitimate interests of all appropriate stakeholders, both in the establishments of organizational structures and general policies and in case by case decision making. The importance of stakeholder theory to examining innovation goes without saying. The ever increasing pace of change and Innovation and the increasing turbulence of the environment make it practically impossible for firms to innovate alone. There is a clear need for firms to view themselves as a node in a network of firms that enable it to continually innovate. Stakeholder theory’s contribution to the field of strategy is a richer perspective on the nature of the firm, ways managers think about managing, how board members think about the interests of corporate constituencies.

Stakeholder and Agency theory are two competing views of the firm that differ fundamentally on key aspects such as human behavior, motivation and compliance, and end up offering different prescriptions for practice. Although both theories share a common emphasis (efficiency), agency theory seems to be of limited real use because of several factors such as limited scope and internal inconsistencies compared to stakeholder theory. However, in turbulent fields (Emery and Trist, 1965) where new markets are constantly emerging, where there is no clear cut inter-industries or intra-industries boundaries and little stable business models, agency theory as it is simply won’t work. Managers should acknowledge the interests of different stakeholders and should attempt to respond to them within a mutually supportive framework (management should accept the legitimacy of stakeholders as well as other stakeholders should accept this legitimacy too).

Organizational Control Theory

Organizational Control Theory is a recent perspective with its main proponents being William Lazonick and Mary O’Sullivan from INSEAD. Lazonick and O’Sullivan argues that there has been limited research on how corporate governance affects innovation because the “leading theories of corporate governance do not systematically integrate an analysis of the economics of innovation” (O’Sullivan, 1998). At the core of this absence of integration is the limit of the neoclassical schools of economics lacking an

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11 Assumptions about human behavior and motivation especially the assumption of egoism which states that individuals can and only act according to their own perceived self interest and runs counter to the goal maximizing firm efficiency
explanation of the wealth generating enterprise with profits that are not market
determined (offer and demand) and how those profits are to be distributed.

Learning and knowledge accumulation is a trial and error process, rooted in
experimentation that is individual and collective. Collective learning is the capacity of an
organization to identify new knowledge and to capture it. Collective learning is the
retention and application of knowledge by the interaction of different individuals within
an organization. Organizational design, hence, is one basis for how knowledge is shared
and communicated in the firm. This integration of individual and collective knowledge is
synergistic and renders the process larger that the sum of its parts (Nonaka and Takeushi,
1995). Organizational learning as a process requires investments to be sustained and is
extremely difficult to link such investments directly to any particular innovation the firm
produces. Such an investment is very hard, if not impossible, to support under
neoclassical economy.

What the authors deem important is a theory that could integrate the realities of
the innovation process with its uncertainties, its disruption and its rapid wealth creation
potential. The nature of the innovation process will push firms to either adapt strategies to
establish and develop such a process (innovation strategies) or rather adapt alternative
strategies (adaptation strategies) that ensure a firm’s survival without the uncertainty
attached to the innovation process. For this, the Organizational Control Theory adopts an
evolutionary approach to the analysis of innovative processes. Successful innovation can
build in firms “retained” capabilities that will allow the firm to survive in the future
without innovating. Corporate governance becomes an organizational issue, regarding the
distribution of power to determine allocation of resources and distribution of returns in
the firm. The theory should is able to answer who makes investment decisions, what
types of decisions they make, and how they distribute the returns generated.

In the Organizational Control Theory, the phenomenon of the allocation of
resources and distribution of returns is essentially seen as having two dimensions:
organizational integration (organization of human capital) and financial commitment
(supply of money). Underlying innovation is a learning process mainly driven by the
individuals forming the organization. Organizational integration is a firm characteristic
that measures the willingness of individuals willing to provide their skills, knowledge and
efforts in the pursuit of the firm’s mission. Financial commitment is the capacity of the
firm to sustain a highly uncertain innovation process until maturation when it can reap the
benefits of its efforts. To keep financial resources committed to an uncertain process,
owners must either possess the knowledge to correctly asses such investments or have to
trust the firm’s managers to have this detailed knowledge.

Corporate governance becomes not just a matter of designing ownership packages
that increase agents’ motivations, nor is just a choice of the board structure balance
between insiders and outsiders. Corporate governance is not only a mechanism to reduce
shirking but becomes another real organizational issue, such as strategy or marketing,
focusing on investment strategies and the way individuals in an organization and its
resources interact to create new capabilities that could lead in the future to innovations. As organizational environments, structure/culture and resources constraints are highly contextual to a firm, firms that need to pursue innovation strategies will have to pursue different strategies to increase the involvement of knowledge holders (every individual) in the decision making process.

The Organizational Control Theory grasps the complexity of organizations, their environments and the innovation process as such. For this reason, in such a perspective where uncertainty reigns, it is important to recognize that decision making is not a linear, synchronic process. Far from it, within firms pursuing innovation strategies, decision making is more an art of “muddling through” (Quinn, 1978) where every knowledge holder has to contribute. Corporate governance, in this perspective, is not a process implemented to minimize agency costs but rather “a social process that determines the strategic allocation of resources and returns in business enterprises”.

Conclusion

After this rapid review of the possible interplays between corporate governance and innovation, it is legitimate to question the classical corporate governance perspective, not only from another perspective but from within it. Are there such things as an ideal board structure, an optimal board size or a best board composition? What should the main role of the board of directors be? A control and monitoring tool to reduce agency costs, a strategy counsel to advise managers on how to best conduct business, or both?

Under the different requirements imposed on firms pursuing innovation strategies by the innovation process, it is essential to review corporate governance in a much broader perspective. Corporate governance mechanisms viewed uniquely from the perspective of reducing shirking and hence saving costs to principals might end up costing shareholders many times more what they could have hoped to save. The innovation process with its uncertainties and learning requirements have a tendency to push organizations towards further democratization between “knowledge workers”, the tenants of potential innovation. Firms pursuing innovation might want to consider to further this “democratization” and push it on their boards to bring an equivalent level of knowledge that can add further value to the innovation process. Such practices are becoming further “standard practice” in the biotechnology industry where biotechnology startups often invite external experts to sit on their boards. This corporate need for “professional” board members might require a review of corporate governance policies and even might require, in line with innovating, the development of a corporate governance curriculum where individual experts could be taught the art of governing for innovation.
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