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Re-Designing Corporate Governance to Promote Innovation

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Executive Summary

- Technological and scientific innovation is a major driver of long-term value creation. However, until relatively recently, the role played by corporate governance in encouraging innovation has been relatively neglected. Given the importance of innovation to corporate success and competitiveness, it is perhaps surprising (or even shocking) to appreciate how little attention corporate governance scholars and policy makers have paid to innovation.

- This paper argues that mainstream corporate governance recommendations and best practices do not necessarily serve the interest of innovative enterprises. This is hardly surprising given that the main consideration underpinning corporate governance (at least at listed companies) is how to “protect” the interests of minority shareholders rather than determining how to build an innovative company.

- Although innovation can take place in a diverse range of organisations and business environments, there are some common features of innovative activity which are relevant to the design of an appropriate corporate governance framework. Innovation projects are typically more risky than most other kinds of investment. They are also likely to require a long-term investment horizon. An innovative company is likely to benefit from the availability of company specific skills from its directors, management and employees as well as from a corporate culture that encourages creativity and flexible decision-making. The decision-making process in innovative companies needs to be as close as possible to those involved in innovation due to high levels of information and expertise asymmetry between company insiders and outsiders.

- Historically, the focus of corporate governance has been on safeguarding the interests of outside shareholders in listed companies. The main corporate governance mechanisms advocated or demanded by corporate governance codes, listing requirements and shareholder voting policies include a largely independent board and chairman, independent board committees, strong legal rights for minority shareholders, high levels of corporate transparency, executive pay policies aligned to shareholders, etc. These traditional governance recipes focus on monitoring, compliance, risk management and control. A more productive governance framework for innovation would emphasize a more cooperative and flexible business culture which embraced risk-taking and uncertainty as an intrinsic aspect of business activity.

- Mainstream corporate governance mechanisms are often unhelpful in nurturing innovation. They intrinsically start from a perspective of mistrust towards company 'insiders' and, even worse, they focus on promoting value protection, rather than value creation. Moreover they may facilitate a short-termist approach and place key aspects of decision-making in the hands of outsiders less well positioned to accurately assess the scientific and commercial viability of the innovation process.

- In contrast, a concentrated shareholding structure and potentially even the use of shares with multiple voting rights may help shield the company from the destabilising pressures of short-term fluctuations in the share price or hostile approaches from activist investors or hostile bidders with a short-term business agenda.

- The appropriateness of the match between a company and its shareholders is likely to depend on a range of factors, including its size, sector, maturity and complexity as well as its "innovativeness". Hence it is important that the governance of innovative companies is not considered in isolation from other company characteristics. For innovative companies, and particularly early-stage ventures, insider shareholders may have a crucial role to play given their expert business insight and the longer term perspective they may foster. Specialist outside shareholders may also be important as a complementary source of risk capital. Both of these categories of investor can provide a core foundation of stable and informed ownership which other kinds of less engaged outside shareholders can rely upon in the pre and post-IPO period.

- In addition, the presence of a critical mass of company insiders on boards – who benefit from a more direct involvement in the innovation process – will also be positive for innovation. This clearly contrasts with the recommendations in mainstream corporate governance.

- Independent directors have an important role to play on innovative company boards. However, they should see themselves as less of a controller or supervisor, and more as an advisor and source of tangible and intangible resources. They also have a key role to play in ensuring that creativity and experimentation is combined with professional management and a strong focus on the ultimate prize – not innovation for its own sake but the commercial exploitation of innovation.

- Governance and board style may need some additional adaptation. In innovative companies experimentation and creativity is likely to demand a highly flexible approach. Organisational flexibility is crucial. If managers are subject to a rigid or highly formalised governance framework, it is likely to have a detrimental impact on innovation. In contrast to a traditional focus on risk reduction, the boards of innovative companies may have to overcome the problem of managerial risk aversion which may lead to less risk-taking and innovation activity than is optimal. Moreover, directors will probably need to adapt to a board that is much more hands-on in comparison with the more distant role played by boards at many listed companies. In short, the board's role at an innovative company remains an important one. But it is uniquely challenging, and has yet to be properly articulated in a way which differentiates it from that of directors at mainstream companies as defined by traditional governance codes.

- Notwithstanding the recommendations of current best practice, there are strong grounds for allowing non-executives to be compensated by some form of equity-based compensation related to the performance of the company. Smaller innovative companies lack the resources to finance the payment of significant director fees. Persuading potential directors to offer their intellectual and social resources to an innovative enterprise in the face of significant personal legal and reputational risks is a more important challenge to be overcome than any supposed negative effects arising from reduced objectivity or independence.

- Our main conclusion is that the mainstream corporate governance paradigm – which is widely promoted through national and international codes, regulations and other best practices – is not necessarily well suited to the specific needs of innovative enterprises and, more generally, to the ambitions of any company that wishes to undertake innovative activity as part of its overall business strategy. Consequently, it should come as no surprise that various recent research studies have suggested that innovative companies are not necessarily those with the strongest adherence to mainstream corporate governance practices. On the contrary, they suggest that the opposite is the case. Such results are indicative of a basic mismatch between the prevailing corporate governance paradigm and the mechanisms needed to foster an innovative business.

- There remains an important challenge in convincing (educating?) the investment world - including institutional investors, proxy advisors and the business media - of the need for properly assessing deviating governance practices instead of simply opposing any governance outcomes that are not fully aligned with traditional governance recommendations. The current European framework of corporate governance codes – which permits companies to "explain" rather than "comply" – offers a framework in which to achieve some degree of governance flexibility. But whether institutional investors and policy makers will accept the more widespread adoption of governance practices that are tailored to the needs of corporate innovation remains to be seen.

Introduction

Technological and scientific innovation is widely recognised as a major determinant of productivity growth and economic competitiveness. For companies that are capable of harnessing it, **innovation is the magical ingredient that underpins new products and business models**. An enterprise that is able to innovate in a commercially-viable manner is well-placed to outperform its competitors and create value for investors, customers and other stakeholders.

However, **until relatively recently, the role played by corporate governance in the performance of innovative enterprises has not been widely studied**. This is a surprising omission. Corporate governance plays a crucial role in shaping the decision-making and risk-taking behaviour of organisations. Although it is not the only factor underpinning business success, it's impact needs to be better understood alongside other drivers of innovation that have been traditionally emphasized by business schools and policy makers.

The key argument of this report is that, in many instances, **a distinctive model of corporate governance – which deviates significantly from various aspects of current "best practice - would be beneficial for companies that wish to innovate**. Modern corporate governance has not been designed on the basis of "how do we create the most innovative organisation?" or even "how do we create the most competitive or successful organisation?" Rather the more narrow guiding principle has been "how do we protect shareholders?" Inevitably this approach has led to governance recommendations and best practices embodied in corporate governance codes and investor voting policies which are not necessarily optimal for enterprises that place a high priority on innovation.

Although the main focus of this report is on those enterprises that make scientific or technological innovation the central focus of their business model, such as companies in the Life Science and Technology sectors, its relevance and conclusions go beyond far beyond these innovative sectors. Regardless of sector or business activity, few CEOs would nowadays argue that innovation is irrelevant to their organisations. According to a recent study by McKinsey, higher profit margins in all sectors are increasingly generated from intellectual assets such as patents, brands, trademarks and copyrights rather than machinery and physical capital[1]. At the same time, the average lifespan of a company in the S&P 500 has declined from 60 years to 18 years over the past half century[2], and corporate longevity is likely to decline further in the digital business age. This means that innovation is essential if even established market players are to survive for any longer than a brief moment of business success.

[1] Dobbs et al (2015, p. 5).
[2] Barber (2015).

Drivers of corporate innovation

In a business context, innovation may be defined as the process of discovering and developing new knowledge and converting it into commercially-successful products or services[3].

Although the popular image of an innovative company is of one that pioneers an industry-transforming product based on newly developed science or technology (e.g. Viagra or the iPhone), much innovative activity is incremental rather than radical in nature[4]. Companies like Intel, Microsoft and Apple have generated most of their revenues over the last two decades from a series of next-generation products or marginal improvements to existing products and services rather than via a stream of radical innovations.

Companies may also innovate through their business model. Many of the products and services of companies like Netflix, Amazon, Linked-In and Uber are based on the utilisation of nowadays quite mature, established technology. However, these enterprises have identified innovative new ways to capture value from their activities, with significant implications for the industries in which they operate.

Although innovation can take place in a diverse range of organisations and business environments, there are some common features of innovative activity which are relevant to the design of an appropriate corporate governance framework. These features may apply to entire organisations or, at the very least, to those parts of the enterprise that are particularly focused on innovation.

The first is that **innovation projects are typically more risky than most other kinds of investment**. By definition, innovation involves creating something new and unknown, both from a technical and a commercial perspective. "Innovation is inherently uncertain, given the impossibility of predicting accurately the cost and performance of the new artefact, and the reaction of users to it"[5]. There is a particularly high probability of failure[6]. Consequently, an innovative company and its investors need to be able to embrace risk-taking under conditions of significant uncertainty.

> *"Innovation is not something that can be distilled and bottled. Technological progress comes as often by chance as it does through the concentrated efforts of the scientific community. The outcome of a research project may ultimately revolutionise the lives of millions, but equally it may not earn a penny. Only one thing is certain; without innovation, living standards cannot be sustainably improved."*

Financial Times Editorial, 29 October 2015.

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[3] Munari and Sobrero (2003).
[4] See Appendix 1 for a description of Gary Pisano's (2015) taxonomy of different kinds of innovation.
[5] Pavitt (2005, p.88).
[6] Holstrom (1989).

A second feature is **that investments in innovation are likely to require a longer-term time horizon than many other kinds of investment**. In most cases, major innovation projects cannot be expected to pay-off in the short-term. Even technically viable innovations may not achieve commercial success if there is insufficient patience on behalf of the company and its investors to properly develop and exploit them.

It seems likely, therefore, that innovation is most likely to flourish in organisations where there is a tolerance of short-term failure and a rewarding of long-term performance[7]. In contrast, organisations which are under pressure to deliver short-term financial returns may struggle to successfully innovate.

Thirdly, **an innovative company is likely to benefit from the availability of company specific skills from its directors, management and employees.** In many cases, innovative companies are staffed by highly educated knowledge workers who have invested in the highly specialised (and often niche) skills that are needed in order to bring a particular type of innovation to fruition.

Employees are only likely to commit themselves to acquiring these highly specific skillsets if they believe that their employers are genuinely committed to innovation. Hence innovative companies are more likely to be those where innovation is seen as an intrinsic part of the corporate DNA and not easily abandoned in the face of short-term financial turbulence[8].

Fourthly, **innovative companies are likely to thrive if they have an internal culture which encourages creativity and flexible decision-making**. Management and employees must have the discretion to pursue non-routine activities and diverse lines of enquiry. Decision-making needs to be sufficiently dynamic in order to explore new ideas or rapidly bring new products and processes onto the market. An organisational framework which is excessively bureaucratic or conformist is unlikely to be conducive to innovative success[9].

Fifthly**, innovation projects are subject to a high level of information and expertise asymmetry between the people who are directly involved in the process of innovation and those that are not**. It is particularly difficult for project outsiders to be able to accurately judge the risk or success likelihood of any potential innovation.

Consequently, the decision-making process in innovative companies needs to be as close as possible to those involved in the undertaking of innovation. If key decisions are made by outsiders lacking the relevant knowledge and information, the wrong decisions are more likely to be made.

[7] Manso (2011)
[8] Hall and Soskice (2001).
[9] Shadab (2008, p.995).

These features of successful innovative companies are all relevant considerations in the design of a corporate governance framework which aims to encourage innovative activities and behaviour. But **to what extent is modern corporate governance complementary to the achievement of these kinds of objectives?**

Corporate governance – how we got to where we are today

Given the importance of innovation to corporate success and competitiveness, **it is perhaps surprising (or even shocking) to appreciate how little attention corporate governance scholars and policy makers have paid to innovation**. The observation made by William Lazonick and Mary O'Sullivan about the neglect of innovation in debates about corporate governance is still equally valid today:

"A theory of innovative enterprise plays little if any role in the current European policy discussion on corporate governance…"

William Lazonick and Mary O'Sullivan (2004, p.3)

The main historic focus of corporate governance has been on safeguarding the interests of outside shareholders in listed companies. This perspective is reflected in the widely-quoted definition of corporate governance of Harvard and Chicago professors Andrei Shleifer and Robert Vishny, which states that "corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment"[10]. Two broad models have emerged to address governance issues arising from two major categories of shareholder ownership structure[11].

The so-called "insider" model of share ownership arises in companies with share registers that are dominated by a controlling shareholder or a small group of blockholders. In such a concentrated ownership scenario, the major shareholders are in a position to hire or fire the board of directors, and exert a direct influence over company strategy and decision-making. In many cases, they may be directly involved in the company's management. Such an ownership structure is normal in privately-held companies, and is also common amongst listed companies in continental Europe and in most other non-English speaking countries around the world[12].

In contrast, the "outsider" model of company ownership refers to a situation of dispersed shareholdings. Company ownership is spread across large numbers of investors. This is the normal situation in many large UK and US-listed corporations, and often arises because institutional investors and their asset managers – which

[10] Shleifer and Vishny (1997, p. 737).
[11] Barker (2006, p.4).
[12] La Porta et al (1999).

dominate the share registers of Anglo-American listed companies - prefer to diversify their investments across large portfolios of equities and other asset classes.

In the outsider model, individual shareholders are "outsiders" who may lack the incentive - due to their small percentage equity stakes - to actively engage in governance issues. To be fair, it should be recognised that there is a small but notable minority of institutional investors that are willing to play a more engaged governance role, albeit mainly through the public forum of the shareholders' meeting. Moreover, shareholder activism has increased recently due to the pressure of European regulators who have fostered a more active stance from outside shareholders. But in most instances, shareholder influence is primarily felt indirectly - through the impact on the share price of decisions to buy or sell the shares.

Conversely, in the insider model, blockholders have every incentive to play an active governance and/or management role. Such a significant shareholding may represent a significant proportion of their total wealth. If the blockholder is the founder of the company (or the founding family), there may also be a strong emotional commitment to the enterprise which further intensifies the level of active shareholder involvement.

The starting point for mainstream corporate governance is that both the insider and outsider models create potential governance concerns for minority shareholders which need to be mitigated by an appropriate framework of governance.

In the insider model, controlling shareholders can potentially exploit their high level of control and influence over the company in ways that might damage the interests of minority shareholders, e.g. through a range of techniques and activities which collectively are known as 'tunnelling'[13]. In the outsider model, minorities may fear that the CEO and the board may be tempted to exploit their significant (executive) powers in a similarly self-serving manner[14].

Various corporate governance mechanisms have been developed mainly focusing on the prevention of value destruction for minority shareholders. To address these issues, the following kinds of governance best practices have been widely advocated and implemented:

- A largely independent board of directors, led by an independent chairman and mainly composed of independent non-executive directors, which oversees management and ensures that they remain loyal to the interests of the company as a whole (including minority shareholders). Although the specific role of independent directors varies depending on the nature of the organisation, their

[13] Tunnelling refers to the processes whereby majority shareholders or high-level company insiders direct company assets or future business to themselves at the expense of minority shareholders. Examples of tunnelling actions include dilutive share measures, related party transactions, personal loan guarantees and excessive pay arrangements, although there are many other techniques that be used to achieve similar self-dealing objectives.

[14] These concerns have been conceptualised by so-called agency theory which has dominated the Anglo-American corporate governance literature. See Jensen and Meckling (1976), although the issue had been highlighted four decades earlier by Adolf Berle and Gardiner Means (1932).

broad function in both the insider and outsider models of ownership is to reconcile the various interests that may be operating within the firm and potentially provide some balance against the power that may be in the hands of controlling shareholders or top management.
- Strong legal rights for minority shareholders, including for example the right to call shareholder meetings, initiate civil actions against directors, pre-emption rights which prevent dilution when new shares are issued, or shareholder votes on some key corporate actions and appointments.
- High levels of corporate disclosure and transparency, which facilitate the process of external company monitoring by outside shareholders and other stakeholders.
- Executive remuneration policies that align management incentives with the interests of shareholders, e.g. through stock awards or share options.
- An active market for corporate control, which makes a company vulnerable to takeover or activist shareholder interventions if insufficient attention is paid by management to share price performance.
- A significant role for external actors and advisors – such as auditors, proxy advisors, activist investors, investment bankers and stock market analysts – in acting as governance monitors, campaigners and gatekeepers.

The overarching intention of these mechanisms is to persuade, compel and induce managers to operate the company in the interests of all of the shareholders, even if some shareholders - such as minority shareholders - are relatively distant from the company and do not play an engaged role in its governance.

According to conventional wisdom, the effective implementation of such a governance framework should enhance investor trust in the company and reduce the cost of capital. Such measures are also seen as an important means of attracting domestic and foreign investment[15].

Many of these kinds of governance features have been encouraged or made obligatory over the last 30 years by a mixture of developments in corporate and securities law, listing rules and corporate governance codes (implemented on the basis of “comply or explain”). International organisations like the EU Commission (with its mandatory Directives and Regulations as well as its more self-regulatory Recommendations), the OECD (through their influential Principles of Corporate Governance)[16] and proxy advisory firms (which evaluate company-level governance on behalf of their institutional investor clients) have also played an important role in ensuring that such recommendations are recognised as “best practice” by any company that wishes to be viewed favourably in the eyes of the international business community.

[15] Gompers et al (2001).
[16] G20/OECD (2015).

Does mainstream corporate governance encourage innovation?

Academic researchers have only recently started to study the link between corporate governance and innovation. The results that are starting to emerge are concerning: **more innovative companies are not necessarily those with the strongest adherence to the mainstream corporate governance practices described above**.

For example, a group of researchers from Turin University have recently measured the correlation between a composite governance index (or rating) for individual companies compiled by a leading proxy advisory firm (ISS/Riskmetrics) and innovation performance[17]. More than two thousand companies from 21 countries were included in the study[18].

The analysis found that companies with "better" corporate governance had on average a worse innovation performance than those with less highly-rated governance[19]. This effect was particularly marked at younger, less established companies. The study also found a strong negative association between innovation performance and the vulnerability of the company to takeover.

What explains these surprising findings? Although more research needs to be done, **such results may be indicative of basic mismatch between the prevailing corporate governance paradigm and the fostering of an innovative business sector**.

A potential conceptual problem with mainstream corporate governance is its primary focus on "value protection" rather than "value creation"[20]. This protective emphasis derives from the concern which underlies the entire framework: that minority shareholder interests need to be safeguarded from corporate executives, blockholders or other company insiders with control over the day-to-day operation of the enterprise, and that governance should be designed with that objective in mind above all other considerations.

Even in countries with a two-tier board structure and a significant "co-determining" role for employees – as in Germany, the Netherlands and various Nordic and central European economies – the emphasis is still on "protecting" less well-placed stakeholders from the potential abuses of those with their hands on the levers of corporate power. **In essence, the fundamental assumption at the heart of modern corporate governance is a lack of trust between the major company stakeholders**.

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[17] ISS's CGQ index is calculated on the basis of 55 governance factors covering areas relating to the board of directors, audit committees, charters/bylaws, anti-takeover provisions, compensation issues and ownership structures. See Krafft et al (2014) for details.
[18] Bianchini et al (2015).
[19] Innovation performance was measured in two ways: by the R&D to sales intensity of the company and the number of patent applications filed by the company.
[20] Bertoni et al (2013).

Although a “protective” approach to corporate governance may be understandable in the context of certain types of company - such as mature or declining listed companies with limited potential to create value through innovation or additional investment[21] - it is likely to be less suited to the needs of innovative enterprises where the emphasis is on creating something new. And even in larger, well-established companies, there is arguably always a need for the organisation to innovate and re-invent itself if it is to adequately respond to competitors and survive over the longer-term.

The defensive (and somewhat cynical) philosophy underlying mainstream governance - primarily focused on “protecting” one group of company stakeholders from the selfish behaviour of another - is not a particularly promising context for companies that seek to innovate.

Such an approach will inevitably stress governance mechanisms that focus on monitoring, compliance, risk management and control. A more constructive governance framework for innovation would emphasize a bolder and more flexible business culture which embraces team-work, mutual trust, risk-taking and uncertainty as intrinsic features of successful business activity.

A second broad concern with the mainstream model of corporate governance is the implicit emphasis placed on the concerns of minority shareholders. In practice, this prioritises the interests of institutional investors, fund managers and the various other financial intermediaries that nowadays make or influence most investment decisions on behalf of large numbers of savers.

Such an orientation would be beneficial if the investment expectations of such investors were consistent with the time horizon and risk appetite of companies undertaking innovation. However, if the preference of such shareholders is for high dividend payments, regular share buy-backs, financially-motivated restructuring and other corporate behaviour generating short-term share price appreciation, then a governance structure designed in their interests will not necessarily be conducive to innovation which demands high levels of investment and a patient ownership approach if it is to succeed.

Towards more innovative governance

We now explore in more detail how corporate governance currently works in respect of three key areas – shareholders (1), the board of directors (2) and director remuneration (3) – and consider what a more pro-innovation approach to governance might look like.

[21] For example, it could be argued that, in the context of a mature, cash-generative company in the consumer goods sector with limited scope for product or business model innovation, the main governance concern may be in ensuring that shareholders and other stakeholders receive their fair share of the financial returns, and that resources are not wasted on unnecessarily generous executive pay awards or empire building by the CEO. For discussion of this issue, see Saravia (2013).

1. Finding the right shareholders to foster innovation

Although public equity markets offer the tantalising prospect of access to large amounts of risk capital to fund innovation projects, they are not necessarily conducive to the kind of patient and informed ownership context which encourages innovation. For any company - and all the more for an innovative knowledge-based company - it is crucial to find the shareholders that fit with the company's distinctive strategy and business model. Our analysis reveals that for innovative companies, certainly the early-stage ventures, **insider shareholders may have a crucial role to play** given their intrinsic business insight and the longer term perspective they may foster. S**pecialist outside shareholders** may also be important as a complementary source of risk capital. Both of these categories of investor can provide a core foundation of ownership which other kinds of outside shareholder can then rely upon in order to take forward the company in a successful manner.

By definition, innovative companies are working with new technology or new business models. They are enterprises in which **the information asymmetry between company insiders and outsiders is particularly acute**, and therefore needful of engaged and expert attention from shareholders[22].

However, many 'traditional' institutional shareholders (or their fund managers) in public markets manage highly diversified portfolios with equity stakes in hundreds of individual listed companies. As a result, they typically lack the time, expertise and proximity to deeply understand the commercial and scientific risks and opportunities facing a company that is seeking to innovate.

Furthermore, although transparency and timely disclosure are important features of modern corporate governance, **most existing company reporting provides a rather limited insight into the innovation process**. Accounting for intangible assets is a particularly subjective and inexact area of accounting practice[23]. And yet intangible assets are invariably of much greater importance to the success of an innovative enterprise than its tangible investments in bricks, machinery and physical capital. Investors, unless they are from specialist funds, are therefore unlikely to uncover from published accounts and disclosures the crucial insights and information that will assist them in making a genuinely informed investment decision about the company's innovation prospects.

The **growing burden of financial disclosure** placed on listed companies may actually exert a negative effect on innovation by **causing investors to focus on the wrong information**. Because financial information is quantifiable and widely accessible, investors may place an unwarranted emphasis on short-term financial performance when assessing an innovative company.

[22] Stein (1988).
[23] Lev (2003)

The information that would really help outside investors to make informed investment decisions is not (fully) available to them and only really accessible to company insiders and specialists, immersed in the innovation process – such as the managers or employees working in research and development or product development activity, or to specialist funds that are willing to invest significant time and energy in getting close to the company's activities.

Consequently, there are serious doubts about whether externally-located, non-specialist investors can sufficiently assess the full range of scientific, technological and commercial risks and opportunities involved in investing in innovative companies from a vantage point outside of a listed company[24].

On top of that, **various studies have suggested that public equity markets are relatively myopic and volatile in terms of their valuation time horizon**[25]. The business models of most fund managers in these markets are predicated on achieving strong financial returns in the short-term relative to defined index benchmarks. As a result, many capital market players look unfavourably on high risk activities which may not generate meaningful financial returns within the foreseeable future. Public markets are also much less tolerant of failure or rumours of setbacks – bad news will immediately be punished with a fall in the share price. As a result, innovative companies may find themselves subject to frequent episodes of share price volatility or activist demands for changes in strategy[26].

As a result, **innovative companies may benefit from remaining privately held (i.e. unlisted) in a first phase. When and if they decide to go public, they may also benefit by retaining a concentrated ownership structure**[27] **while looking for additional specialist shareholders**. **The presence of a strategic shareholder that is committed to a long-term investment strategy - and who has the motivation and expertise to actively engage in the detail of the innovation process - can shield the board, management and employees from many of the external market pressures and market inefficiencies that may arise from the ebb and flow of sentiment in the public equity markets.**

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[24] The limitations of focusing on financial disclosure in the context of innovation pose extra challenges for the stock market as a supplier of capital to early-stage innovative companies. During the 1990s, the development of the New Economy was associated with the view that equity markets were an excellent way to finance and promote radical innovation. The rise of technology-oriented exchanges – such as Nasdaq in the United States and the Neue Markt in Germany –reflected this trend. However, the collapse of the dot-com bubble emphasized the difficulties that many external shareholders face when attempting to assess the future value of innovation. In most cases, the real value of innovation only becomes apparent after the event. For further discussion of this point, see Lazonick and O'Sullivan (2004, p.6).

[25] Stein (1988); Asker, Farre-Mensa, and Ljungqvist (2014); Davies et al (2014).

[26] For example, in recent years there have been unprecedented demands for listed companies to return cash to shareholders through share buy-backs or higher dividends. The typical justification for these demands is that the management should be prevented from "wasting" company resources on investments or activities that are unlikely to be value-creating for shareholders.

[27] Hill and Snell (1989); Francis and Smith (1995), Bushee (1998),Brossard et al (2013), although some more recent studies have also suggested that the relationship between ownership concentration and innovation is U-shaped - above a certain level, the extent of blockholder power becomes so excessive that smaller investors are unwilling to invest in the company, with negative implications for the cost of capital (see Battaggion and Tajoli (2001); Li et al (2010)).

The need to buffer innovative companies to some extent from the noise and volatility of equity markets is also reflected in the restrictive shareholder voting mechanisms utilised by many high profile US technology companies. According to a survey by Fenwick and West[28], around 7% of the largest Silicon Valley technology and life science companies – including Google, Facebook, Zynga, Workday and VMware – use **dual class stock**, which assign additional voting rights to founders or other long-term shareholders.

These mechanisms allow founders to retain control of the company even if they no longer own a majority of its stock. As with concentrated ownership, the effect is that they are able to shield the company from the potentially destabilising pressures of short-term fluctuations in the share price or hostile approaches or demands from activist investors or hostile bidders[29].

However, deviation from the principle of "one share, one vote" through the use of different classes of stock often draws **significant criticism** from institutional investors, fund managers and proxy advisors. For example, a recent survey by ISS found that only 15% of global investor respondents supported the use of multiple voting rights for long-term shareholders. In contrast, 95% of investor respondents agreed with the statement that "long-term shareholder value is best enhanced by treating all shareholders equally"[30].

Institutional investors dislike the way in which their influence is diminished by such mechanisms and claim that, by shielding the decision-making power of insiders (either management or controlling shareholders) from external market pressures, there will be a negative rather than a positive impact on the company's prospects. A comment from one ISS survey respondent - that multiple voting rights simply serve to "entrench stale boards" - is probably reflective of the view of many global equity fund managers[31].

Our view is that investors should reflect on their unconditional opposition to dual class voting schemes in favour of a more nuanced approach, and companies should also consider their potential contribution when searching for ways to promote long-term active shareholders in innovative companies.

Investor dislike of multiple voting rights was highlighted in February 2015 when a large coalition of institutional investors persuaded the Italian government to stage

[28] Fenwick and West (2014).

[29] A comprehensive study of US companies by Chemmanur and Tian (2013) also found that companies with some kind of anti-takeover provision in their corporate charter are more successful in generating innovation than those lacking such a provision.

[30] ISS (2015, p. 21-22).

[31] Respondents to the ISS survey also made the technical observation that overseas investors and those who hold shares through omnibus custodian accounts may not currently be able to take advantage of the enhanced voting benefits of loyalty shares and similar mechanisms even if they are long-term shareholders.

a U-turn in respect of a proposed new law that would have permitted the use of loyalty shares offering enhanced voting rights to longer term investors[32].

In France, the Loi Florange – which makes loyalty shares with double voting rights the default option for listed companies - has been heavily criticised by institutional investors. In April 2015 a group of leading fund managers mounted a campaign ahead of the Vivendi AGM aimed at forcing the company to opt-out of the measure. However, investors failed to attain the necessary two-thirds majority of shareholder votes, with the result that Vivendi was still able to allow double voting rights for long-term shareholders[33].

An interesting situation arose at Toyota's AGM in June 2015. The company announced plans to raise $4.1 bn by issuing a new class of stock ("Model AA" shares) for the purpose of developing new technologies. The shares will not trade on the stock market for five years and are only available to Japanese retail investors (who are seen as more long-term oriented investors than institutional investors). A five year "lock-up" period was chosen to match the timeframe for the research projects that will be financed with the proceeds.

The proposal was heavily criticised by institutional investors and proxy advisors. But once again, opponents failed to secure sufficient shareholder votes to block the measure[34].

Interestingly, in the United States, institutional investors have widely accepted the need for a minimum holding period of three years before they are able to access the proxy circulated at AGMs, and thereby gain the practical ability to nominate directors to boards. This kind of material restriction to proxy access has been widely demanded by US companies - like Apple, Chevron and Blackrock – in order to minimise the influence of excessively short-term shareholders. However, in that context, most investors appear to have accepted the concerns underpinning such restrictions.

As well as ownership concentration, **the specific type of shareholder may also be relevant in determining the degree to which capital is willing to be patient and informed**. Although it is important not to generalise about the kind of actor or organisation that makes the "best" shareholder of an innovative company, some general trends have been identified by academic investigations.

For example, several studies have suggested that **management ownership is positive for innovation**. Managers may be better placed than other kinds of external

[32] Financial Times article. "Italy makes U-turn on loyalty shares", Rachel Sanderson, 5 February 2015. One of the catalysts for the new law was the decision by Fiat Chrysler to leave Italy and reincorporate in the Netherlands in 2014. This decision was at least partly influenced by the availability of multiple voting shares in the Netherlands but not in Italy.
[33] Financial Times article, "French companies fight back against Florange double-vote law", Michael Stothard, 16 April 2015.
[34] Financial Times article, "Toyota's latest model should be copied", Peter Tasker, 23 June 2015.

shareholders to assess the risks and information asymmetries that are inherent in innovation activity, and therefore more willing to adopt the optimal investment time horizon. Similarly, **ownership by other industrial companies** is positive for innovation. Such a category of investor may also be more likely to take a strategic rather than a short-term financial approach[35]. In contrast, **bank ownership** has been found by some studies to be **less positive for innovation**[36]. A possible explanation may be that banks are excessively risk averse due to their normal role as creditors rather than shareholders.

The term "institutional investor" covers a wide range of organisations with a diverse range of investment strategies and time horizons. Some types of short-term oriented institutional investor – such as **hedge funds or high frequency-traders** – are unlikely to have the long-term perspective that would be beneficial to innovative companies, and this conclusion has been confirmed in several studies[37].

Pension funds are typically viewed as more appropriate suppliers of patient capital given the long-term nature of their own liabilities. However, two factors may hamper this potential role. First, tougher solvency regulations and capital requirements when investing in shares may seriously limit their appetite for investing in risky business ventures. On top of that, the growing tendency of pension funds to outsource their investment activities to fund managers based on short-term index benchmarking criteria may potentially be less supportive of a long-term approach[38].

Venture capital firms are typically seen as playing a positive role as owners of early stage innovative companies[39]. As well as supplying relatively patient equity funding, they can also offer other value-enhancing expertise to innovative companies, such as advice on how to develop high quality management teams, contacts and credibility with suppliers and customers, and greater professionalism over activities such as patenting[40].

Private equity funds can also provide innovative companies with a relatively patient and informed ownership structure. PE investors tend to adopt a medium term investment horizon. In most instances, they will seek to exit their equity investments in 5-10 years, either via an IPO or a trade sale.

Although some PE investors (particularly of the Anglo-American variety) may load the balance sheets of investee companies with high levels of debt, there is nothing inherent in the PE model which requires a highly leveraged approach. According to one recent study of large European deals undertaken by 12 leading PE houses, around 20-30% of average deal returns arose due to the active involvement of the PE investor

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[35] Dushnitsky and Lennox (2005).
[36] Tribo et al (2007).
[37] Brossard et al (2013).
[38] One recent UK study by Spence Johnson (2014) found that pension fund trustees are likely to change their fund manager if they underperform a designated benchmark index over a 12-18 month time period.
[39] Lerner, Sorensen and Stromberg (2011).
[40] Casamatta (2003), Hsu (2004); Chemmanur and Fulghieri (2013).

in the governance and operational management of their investee companies (over and above any return arising from additional financial leverage and other factors)[41]. Another found that companies pursued more innovation activity (as measured by patent citations) in the years following acquisition by a PE investor compared to the previous period[42].

An important consideration when evaluating the merits of potential owners is the lifecycle stage of the innovative company[43]. For example, start-up enterprises based in business accelerators or incubators may benefit enormously from the experience, networks and personal involvement of a business angel investor[44]. However, at a certain stage of company evolution, other types of shareholder may offer more to the company in terms of financial resources and a more structured management approach.

The appropriateness of the match between a company and its shareholders is therefore likely to depend on a range of factors, including its size, sector, maturity and complexity as well as its "innovativeness". Hence it is important that the governance of innovative companies is not considered in isolation from other company characteristics.

2. Finding the right board structure and behaviour to foster innovation

The board of directors faces very specific challenges at an innovative company. Although directors may not necessarily be directly involved in innovation activities on a day-to-day basis, especially at larger companies, they have a key role to play in creating a favourable environment in which such activities will flourish. Boards must also champion the necessary longer-term perspective and try to ensure that the time horizon of investors is properly adjusted to the needs of the company.

Directors have a crucial role to play in ensuring that the fruits of the innovation process are converted into long-term value for the company and its stakeholders. The board is in effect the "transmission belt" between R&D type activities inside the company and their commercial exploitation in the outside world.

Various studies have suggested that, in order to undertake these tasks effectively, **innovative companies need to define an important role for insiders**, such as company management and major shareholders[45]. **This contrasts with the recent trend in mainstream corporate governance**, which has emphasized the monitoring role of independent (or outside) directors, and which has tended to view management and other company insiders with suspicion.

[41] Acharya et al (2013); Klein et al (2013).
[42] Lerner et al (2011).
[43] Toms (2013); Bianchini et al (2015).
[44] Kerr et al (2014).
[45] Baysinger et al (1991); Boone et al (2007).

In innovative companies, the role of the board should be viewed in a very different light: boards are there primarily to support the shareholders and management in their endeavour to foster innovation and channel it into sustainable corporate success. Boards should focus much more on ways to create value than on mechanisms which are primarily concerned with monitoring that value is not being destroyed or appropriated by those ‘in power’ (the so-called “private benefits” of insider control). Hence the board may need a different kind of composition and behaviour.

Moreover, due to problems of asymmetric information, innovative companies present a major challenge for independent directors. Innovative projects are typically complex and difficult for non-insiders to evaluate. In common with external shareholders, independent directors may face substantial challenges in terms of acquiring the necessary information and expertise which would enable them to conduct efficient monitoring[46].

In a highly innovative company, “proximate” monitoring by a board dominated by insiders closer to the innovation process is likely to be a more effective approach than the “objective” outside monitoring recommended by mainstream corporate governance[47]. Directors that are closer to the innovation process are more likely to understand its risks and opportunities. They can better judge the progress that is being made and the likelihood of any potential commercial return.

It is also likely to be beneficial if management or key innovators are given significant amounts of discretion in the conduct of innovation projects. Innovation will require managers and researchers to undertake non-routine and unusual activities in an unforeseeable manner. **Experimentation and creativity is likely to demand a highly flexible approach**. The greater flexibility of smaller companies in this regard can provide them with a significant advantage when competing with larger entities.

Reid Hoffman, founder of LinkedIn, has recently argued that a key reason why Silicon Valley produces so many world-leading technology companies is its capacity to scale-up existing enterprises at a rapid pace. Organisational flexibility is crucial. “A scale-up grows so fast that conventional management approaches are doomed to fail. For example, the conventional wisdom is to hire senior management with relevant experience. But if you’re Uber or Airbnb, you simply can’t put up a listing that states: “This job requires at least five years of management experience running a sharing economy service”. The only candidates that can meet that requirement already work there”[48].

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[46] According to one study, their knowledge deficit biases them to favouring existing technology or less radical innovation. The researchers found that a higher proportion of independent directors on the board was associated with more decision-making in favour of the acquisition of technology rather than its in-house development (Hoskisson et al (2002)).
[47] Boot and Macey (2003).
[48] Financial Times article. “Expertise in scaling up is the visible secret of Silicon Valley”, by Reid Hoffman, 16 September 2015.

In contrast, **if managers are subject to a rigid or highly formalised governance framework, it is likely to have a detrimental impact on innovation**. For example, several studies found that levels of R&D spending fell significantly at US companies compared to their UK peers in the wake of the Sarbanes-Oxley Act 2002 which introduced a much tighter framework of internal control and risk management into US-listed companies[49].

None of the above should imply that independent directors and independent chairmen are an unimportant component of innovative company boards. However, their role needs to be reformulated relative to that of their peers at more conventional enterprises.

Indeed, key managers and employees within innovative companies may not exhibit much support or sympathy for the idea of the board as a monitoring mechanism. They may see much greater value in utilising the board in a "value creating" role – by providing relevant knowledge, reputation, social capital and networks which could be of value to the company. **Directors should therefore see themselves as less of a controller or supervisor, and more as an advisor and source of tangible and intangible resources**.

Independent directors can bring expert knowledge to the table in many of the domains that are relevant to innovative companies. This input may not only be in the field of the innovation itself but also in a more conventional business areas. In particular, directors will need to ensure that the creativity and experimentation that is characteristic of an innovative company is integrated with a professional management approach and a strong focus on the ultimate prize – the commercial exploitation of the breakthroughs and new ideas which are being developed.

Directors will probably need to adapt to a board that is much more hands-on in comparison with the more distant role played by boards at many listed companies. They are likely to have much more involvement in the business itself (to some extent comparable to SME boards), and there is likely to be more of a need for advice and support - for example, helping the company to gain access to important outside resources and networks. There is likely to be much less of an "us and them" relationship between executive and non-executive board members, and greater emphasis on working as a team.

The advisory focus of the board is also likely to affect the selection potential board members. **Specialist scientific or technical expertise may be especially useful for the board of an innovative company**. There may be significant value for a technology company in appointing a "star scientist" to the board. This would signal the scientific credibility of the company and provide a link to the academic community[50]. This could also play a key role in raising financing.

[49] Bargeron et al (2008).
[50] Higgins et al (2009).

There may also be benefit in bringing “unconventional directors” onto the boards of innovative companies, including younger personalities with specialist knowledge in increasingly important board level issues such as cybersecurity and digital strategy, or with recent experience of start-ups. One recent study found that the inclusion of directors with a venture capital background on the boards of mature public firms resulted in increased in R&D intensity and innovation output even in cases where the company was not originally VC-backed. The conclusion of the study was that experience of venture capital management (as opposed to public company management) led to a greater appreciation of innovation in driving corporate success[51].

However, this **does not preclude that also some generalist business or governance experience may be highly welcomed**, certainly in companies growing more complex and aiming at listing, or being listed after a while.

Another distinctive role for the board of larger or more mature innovative companies is to **ensure that management is committed to innovation and that such commitment is embedded in the corporate culture and strategy**. Of course such commitment starts at board level and inherently presumes that the board itself is sufficiently oriented towards innovation. Persuading the CEO and his/her executive team that innovation should be a top priority for the company may be challenging - much more than is commonly appreciated.

The median tenure of a CEO at the world’s largest 2,500 companies is less than five years[52]. Even if they pay lip service to innovation, CEOs may not see it as a realistic means of making a personal impact on a company’s performance. As John Gapper has written, “If you come into the job knowing you probably have less than five years, there is a severe temptation not to set the best long-term course but to do something showy. Boosting the share price just long enough to make your options pay, and to take a bow before your successor arrives to repair the damage, is a better strategy for you than the company”[53].

Even in a situation of stable, long-term company ownership, there may be an inherent tendency amongst management to focus on activities which are easier to control and which have more predictable implications for company performance.

Management may also have the problem of balancing the need for innovation with the continued success of more established products and production activities. In such circumstances, it may be difficult to differentiate between the managing styles that may be required in these differing contexts, e.g. tolerance of failure and a hands-off

[51] Celikyurt, Sevilir and Shivdasani (2014).
[52] Strategy& (2014). The arithmetic mean tenure is six-and-a-half years. The median figure is significantly lower due to the growing trend of a significant minority of CEOs being fired relatively soon after their appointment.
[53] Financial Times article, 16 April 2014.

approach on the one hand versus financial discipline and highly structured project management on the other.

There may also be an inherent bias in favour of products and activities that have proven their commercial value to the company versus activities whose potential contribution is largely unknowable or even disruptive to existing business models. Consequently, **the boards of innovative companies may have to overcome an intrinsic problem of managerial risk aversion which may lead to less risk-taking and innovation activity than is optimal**. As a result, even firms that have significant innovation potential may systematically under-prioritise innovation[54].

A key issue for the boards of larger companies relates to the governance of innovation within their organisations. In order to protect or nurture an innovative business culture, it may make sense to demarcate radical innovation from more mainstream business activities, or to acquire rather than internally develop innovation capabilities. Alternatively, boards may actually find it beneficial to disseminate innovative attitudes across the wider organisation. Various organisational approaches to governing innovation may be utilised according to the circumstances and objectives, including the following:

- Establishing an internal corporate venture capital arm – for example, BMW's venturing unit has been used to support projects aimed at developing electrically-powered vehicles.
- Building external alliances – such as with universities, technology transfer companies or venture capitalists.
- Acquiring smaller, more innovative companies – high profile examples include Facebook's acquisitions of Instagram and WhatsApp, and Apple's acquisition of Beats Electronics.
- Embracing open innovation and crowdsourcing, which typically involves opening up problems to external experts or volunteers and inviting solutions. Linux's development of open source software is a classic example of this model.
- Collaborating with customers – the so-called "demand push" approach to innovation. This contrasts with the "supply-push" approach of first creating a product and then creating a market - the approach which was famously advocated by Steve Jobs at Apple.
- Establishing either centralised or decentralised R&D organisations. Roche of Switzerland provides an example of an organisation with separate autonomous research organisations. In contrast, Corning (a US manufacturer of speciality electrical components) has a long track record of success based on a centralised R&D model, which it finds easier to integrate with its product development activities.

It can often make sense to retain the founder in a key management role due to their strong personal connection with the innovation activity being undertaken. In contrast to professional managers, they may be more motivated by a desire to create something new and place a lower priority on attaining short-term financial objectives[55]. Although it may be necessary to balance their enthusiasm for innovation with strong conventional management skills, they may be particularly well-placed to sustain innovation at the company, even in circumstances where they no longer own a significant proportion of the equity.

[54] Munari and Sobrero (2003, p.8).
[55] Wasserman (2006).

The board should seek to build trust in the company's commitment to a long-term innovation strategy, both with the company's investors and employees. It should avoid regular changes to strategy and commit to longer-term tenure/job security for senior managers and employees. The board – and in particular the chairman - should also send the right signals to management by ensuring that innovation does not get pushed off the board agenda by excessive focus on issues like short-term risk management, financial control or external market sentiment.

In short, the board's role at an innovative company remains an important one. But it is uniquely challenging, and has yet to be properly articulated in a way which differentiates it from that of directors at mainstream companies as defined by traditional governance codes.

3. Director remuneration and innovation

As a general principle, **innovation is likely to be best served if executive pay policies encourage a long-term perspective and avoid incentivising an excessive focus on short-term financial performance**. In innovative companies, performance criteria should ideally also be chosen which reflect progress in developing and commercialising intellectual capital rather than focusing on purely financial metrics.

The bonus and incentive plans of many large listed companies – typically based on meeting total shareholder return or earnings per share targets over a 1-3 year time horizon – have been **criticised in recent years for failing to encourage this kind of longer-term perspective and for being excessively focused on financial performance indicators**. A recent study by Xavier Baeten at the Vlerick Business School[56] revealed that across a large sample of listed companies in Belgium, France, Germany, the Netherlands and the UK, only 7% stated that the KPIs they use to define variable remuneration also include a KPI on innovation. This is in stark contrast to the fact that 96% of all firms use financial accounting metrics as KPIs. Consequently, the application of this kind of purely financially-motivated pay package at innovative companies should be viewed with some scepticism.

A particularly controversial issue arises with respect to the pay of outside or independent directors. Most codes of corporate governance specifically prohibit or discourage performance-related pay awards for non-executive board members. The UK Corporate Governance Code, for example, states that "remuneration for non-executive directors should not include share options or other performance-related elements. If, exceptionally, options are granted, shareholder approval should be

[56] Baeton (2015).

sought in advance and any shares acquired by exercise of the options should be held until at least one year after the non-executive director leaves the board"[57].

This stance is typically justified by arguing that non-executives must retain their ability to objectively monitor the performance of management. According to this perspective, they should not be exposed to the same kind of financial incentives as senior executives, but should be compensated through fees that simply reflect their time commitment rather than the performance of the enterprise. Also, it is feared that the greater use of performance-related pay for non-executives could enhance their ability to define their own remuneration, which would give rise to increased conflicts of interest[58].

However, surprisingly little empirical work has been undertaken to examine the effect of differing kinds of remuneration on the behaviour of non-executives. In the absence of such studies, it is not necessarily self-evident that some form of equity-based compensation will have a detrimental impact on their effectiveness or objectivity.

Guidelines on non-executive pay published by the **International Corporate Governance Network – a leading membership organisation for institutional investors - actually advocate equity-based remuneration as "an important component of non-executive remuneration"**[59]. The ICGN further argues that all non-executives should be granted shares as part of their compensation along with incentives to build meaningful ownership positions over time.

According to the ICGN, non-executive shareholdings held on the basis of **long-term holding periods** (e.g. until after the director has left the board) are compatible with director independence and the interests of long-term shareholders. **The listing rules of NASDAQ share this perspective**: as long as the director's shareholding does not exceed 10% of the total equity capital, their independence is not seen as compromised.

Share options are more controversial. They are effectively outlawed by most corporate governance codes for large listed companies. Furthermore, in a recent survey by ISS, only 31% of global investor respondents agreed that stock options or stock appreciation rights were an appropriate form of compensation for non-executive directors. This contrasted with the view of non-investor respondents to the survey (mainly from corporate issuers), a majority (51%) of which believed that they were appropriate[60].

Nonetheless, options are widely used in smaller innovative companies in the UK, the US and Australia on the grounds that cash flow or profitability may be insufficient

[57] UK Corporate Governance Code, 2014. Provision D.1.3. Financial Reporting Council.
[58] See comments to ISS survey (ISS 2015, p.6).
[59] ICGN Guidelines for Non-Executive Director Remuneration. International Corporate Governance Network, 2010, p.11.
[60] ISS (2015, p.17).

to finance the payment of significant director fees. Moreover, companies can if necessary be prevented from making straightforward equity awards by prohibitions (inserted in the articles of association or shareholder agreements) from buying shares for remuneration purposes as long as the company remains in the red, i.e. until it delivers profits.

If the board of an innovative company primarily exists to advise and support the company in the interests of value creation in a relatively hands-on manner – as argued above - there are strong conceptual grounds for allowing non-executives to themselves benefit from the wealth creation process by holding some kind of equity-based compensation.

In addition, the directors of smaller innovative companies are typically exposed to more personal financial liability than would be the case for a board member of an established listed company (where the risk is, in practice, mainly reputational). Equity-linked incentives may be essential in order to persuade potential directors to offer their intellectual and social resources to such an enterprise[61].

As with executives, it is reasonable to expect that any performance-related remuneration which is granted to non-executives should to some degree be conditional on the achievement of targets specifically related to innovation (e.g. R&D activity, number of patents awarded, number of new products, external awards for innovation, etc) as well as financial or share price performance.

However, there is still some way to go before proxy advisors and many institutional investors recognise the valid role that might be played by options or other equity-based awards in the compensation of non-executive directors of smaller innovative companies. Such awards may often result in a shareholder vote against the re-election of directors on the grounds that the director is no longer independent even if the options only provide the director with the opportunity to purchase a tiny percentage of the firm's overall equity capital[62]. **In our view, this is another issue which requires a more nuanced and tailored approach from the investor community.**

Conclusion

This paper has attempted to describe some of the key features of innovative companies and their relevance for corporate governance. **Our main conclusion is that the mainstream corporate governance paradigm – which is widely promoted through national and international codes, regulations and other best practices – is not necessarily well suited to the specific needs of innovative enterprises** and,

[61] Dalton et al (1998).
[62] Nicholas Jackson and Denis Godfrey. "Share Ownership for Non-Executive Directors". GRG Remuneration Insight, February 2013.

more generally, to the ambitions of any company that wishes to undertake innovative activity as part of its overall business strategy.

Specifically, the importance placed by modern corporate governance on safeguarding minority shareholders and promoting the monitoring role of independent directors is at odds with the need for stimulating value creation, and taking advantage of unique insider knowledge and closeness to the innovation process when making key decisions at innovative companies. This is not surprising in view of the fact that modern corporate governance has not been designed with innovation in mind. **It is a paradigm that is fundamentally about “protecting” rather than “creating”. Such a philosophy leads in turn to governance structures that are mainly oriented to managing risks and conflicts of interest rather than grasping innovative business opportunities.**

The paper does not suggest that one kind of governance framework is appropriate for all innovative companies. The landscape of innovation is diverse, and there is likely to be a variety of ways to foster the creative corporate culture in which innovation will flourish. Furthermore, innovation processes are likely to exhibit significant differences between sectors and sizes of companies – what works in the Life Sciences may not work in the Technology sector, for instance. The stage of a company in the corporate governance life cycle is also likely to be an important consideration when crafting the details of a governance framework[63].

However, what seems certain is that **innovative companies would be well advised to look beyond mainstream corporate governance** – with its underlying emphasis on value protection rather than value creation - when thinking about governance[64].

There remains an important challenge in convincing (educating?) the investment world – including institutional investors, proxy advisors and the business media[65]- of the need for properly assessing deviating governance practices instead of simply disapproving of any governance outcomes that are not fully aligned with traditional governance recommendations.

The current European framework of corporate governance codes – which permits companies to “explain” rather than “comply” – offers a framework in which to achieve some degree of governance flexibility. But whether institutional investors and policy makers will accept the more widespread adoption of governance practices that are tailored to the needs of corporate innovation remains to be seen.

[63] Toms (2013).
[64] Vermeulen (2012).
[65] For a European discussion on the monitoring of compliance with governance recommendations see ecoDa (2015).

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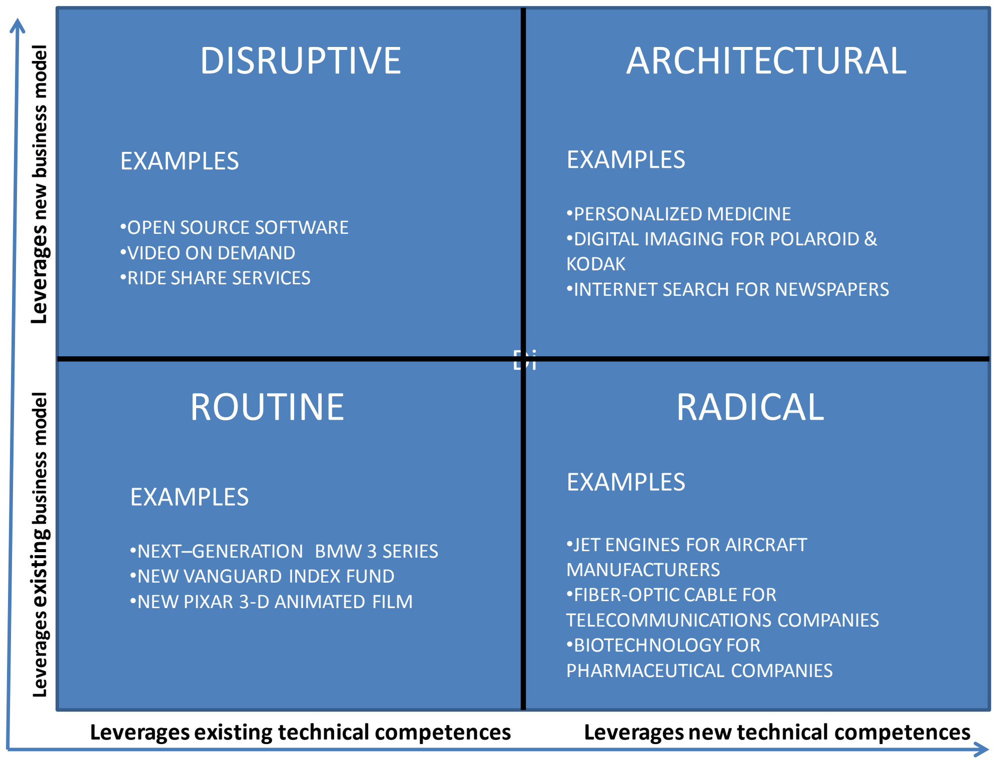
Appendix 1

Different kinds of innovation

In a recent article[66], Gary Pisano from Harvard Business School presents a useful taxonomy of different kinds of innovation (see figure 1). Four broad categories of innovation are identified – routine, disruptive, radical and architectural. Each is defined according to whether it involves leveraging existing or new technical competences and whether it is based on a new or existing business model.

Figure 1: Four kinds of innovation



Source: Pisano (2015, page 51)

[66] Pisano (2015).

The most far-reaching form of innovation – architectural innovation – involves developing both technologically-innovative products and an innovative business model. For example, the automaker Tesla Motors is currently pursuing a strategy based solely on innovative products (electric cars/motors) while at the same time being the only major automaker in the US to sell its cars entirely via the internet (rather than through dealerships).

Pisano argues that different kinds of innovation make sense in differing business contexts. For example, the pace of technological change in the sector, the intensity of competition, and the internal strengths of the company will all determine if the optimal business strategy is to focus on routine or more radical forms of innovation.

In many cases, companies will seek to combine different categories of innovation within the same organisation. For example, Google is currently pursuing a range of innovation projects ranging from the more "routine" innovations associated with the mainstream search engine business to industry-changing innovations such as the development of a driverless car[67]. In 2015, Facebook spent around 30% of its revenues on a wide variety of research and development activities, including a significant amount on the commercial application of artificial intelligence.

Different kinds of innovation can be complementary, with radical or disruptive innovation creating the initial business opportunity but routine innovation building on that opportunity to generate the bulk of the commercial returns. For example, Intel and Microsoft have generated most of their revenues from a series of next-generation products rather than a stream of radical innovations. Apple's last major technical breakthrough was the iPad in 2010. Since then, it has sustained its performance by upgrades to its existing suite of products.

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[67] Google have recently re-structured under a holding company, Alphabet, as a means of providing external stakeholders with more transparency concerning the various types of innovation being explored within their organisation.