INSEAD
The Business School for the World®

Working Paper Series
2017/45/STR

Corporate Governance 4.0: Facing Interdependency and Speed in a Complex World

Yves Doz
INSEAD, yves.doz@insead.edu
*Corresponding author

Andrea Cuomo
STMicroelectronics, andrea@cuomofamiliy.com

Preliminary Draft, July 5th 2017
Please do not quote, circulate or reproduce.

Corporate governance faces growing criticism and calls for reform and regulation. Of course there are deep differences between governance models and the pressures for change they face. These differences have to be taken into consideration. Reforms and regulatory changes do provide frameworks to improve the standards of corporate governance but they fail to address major new challenges: put simply, speed and interdependency call for new rules of the game between boards and CEOs. Many of the crises we observe between boards and managers result from ignoring these challenges. When change was slow and linear the board's main role could be that of financial and fiduciary control, ex-post. Today the board's role must shift to fostering entrepreneurial development, guiding long-term resource allocation under great uncertainty, setting strategic direction and exercising strategic control under shifting circumstances, a set of demanding responsibilities for which many boards are poorly prepared. This calls for new relationships with management, new priorities in both the choice of CEOs and the composition of the board, and new roles. In this paper we explore these. This paper briefly reviews the challenges of speed and complexity, analyzes their impact on the roles of boards, develops a contingency framework for specifying these roles, and draws some conclusions for governance, management and leadership for the next decade, and how these need to change.

Keywords: Corporate Governance; Board Role in Strategy Making; CEO Selection; Management and Complexity; Board Composition

This paper is being prepared for a managerial publication that does not accept references, but references are available from the authors upon request.

The authors gratefully acknowledge the contribution of Ludo van der Heyden, Mikko Kosonen, Muriel Larvaron and Jose Santos who made valuable comments on an earlier draft.

Corporate Governance 4.0: Facing Interdependency and Speed in a Complex World

Corporate governance faces growing criticism and calls for reform and regulation. Of course there are deep differences between governance models and the pressures for change they face. These differences have to be taken into consideration. In very broad terms they can be captured in the contrast between an increasingly dominant US-inspired model, rooted in agency theory and boards representing shareholders' interests, and a European model, sometimes called Rhineland capitalism, focused on reconciling multiple stakeholders' interests and a "stewardship" perspective on governance and management. Although their premises and historical origins are quite different, both models are ill equipped to face new looming challenges.

Reforms and regulatory changes do provide frameworks to improve the standards of corporate governance but they fail to address major new challenges: put simply, speed and interdependency --and increasingly both together driving growing complexity in the environment corporations are confronted with-- call for new rules of the game between boards and CEOs. Many of the crises we observe between boards and managers result from ignoring these challenges. In short, it used to be that if you understood the past you could grasp the present and could anticipate the future; not so anymore in a world of growing strategic surprises. When change was slow and linear the board's main role could be that of financial and fiduciary control, ex-post. Today the board's role must shift to fostering entrepreneurial development, guiding long-term resource allocation under great uncertainty, setting strategic direction and exercising strategic control under shifting circumstances, a set of demanding responsibilities for which many boards are poorly prepared. The task of directors becomes more multifarious and more strategic. This calls for new relationships with management, new priorities in both the choice of CEOs and the composition of the board, and new roles. In this paper we explore these. The objective of this paper is to briefly review the challenges of speed and complexity, analyze their impact on corporations and on business ecosystems, and draw some tentative conclusions for governance, management and leadership for the next decade.

The new Realities: Speed and Interdependency

Two fundamental forces shape the new reality executives are now facing: speed and interdependency. Short of being able to extrapolate and plan ahead in complex contexts, one can still learn about unknown systemic interactions and their consequences through purposeful experiments: learning from probing, observing, analyzing and interpreting the context's systemic reactions, and adjusting one's actions accordingly, keeping purpose in mind but being agile and flexible in action. So effective strategic actions can be based on the discovery and the understanding of system properties. This has been variously known as planning as learning, hypothesis-driven strategizing, abduction in sense making, and most importantly following real option logics in strategy development and implementation. But when the speed of change in the systemic context of a firm becomes faster than its managers' ability to learn about it, relying on purposive experiments becomes difficult, as the value and future applicability of their results are too uncertain. And yet, corporate and public policy leaders are now facing that uncomfortable situation: The pace of external change affecting the organizations they lead is faster than their learning's speed, and external change is often of a complex unpredictable nature.

Speed. Beyond the trite and often questioned management saying that "things now go faster than they used to be" lies a technological reality: Since the advent of semiconductors, technology development in the electronics industry has been paced by "Moore's law", a prediction Gordon Moore (one of the founders of Intel) made in the 1970s, stating that the processing power of an integrated circuit would double every eighteen months at constant cost, or in other words by an order of magnitude every four years. Such exponential performance increase has had a huge impact on our whole life well beyond the electronic industry: to mention just a few areas, logistics and transportation, entertainment, advertising, social networks, banking, now health care, and soon the internet of (all) things. And cognitive computing and adaptive machine learning will soon bring huge changes through the whole economy and society. Even extremely small economic entities (such as single-lawyer law firms, corner shops and farmers, restaurants and country inns), or traditionally slow ones (such as public administrations now transformed by e-government) have come to rely on digital technologies to exponentially increase the pace of their activities. In industry the smartest competitor (but also potentially each newcomer) now has the opportunity to take advantage of the global communication highways to exploit the most recent technology evolution and open a competitive gap to its advantage. Moreover, given the speed of change, this gap can seldom be closed. Put simply, one cannot hope to "climb back on the train" at the next station, it is moving too fast! So, in other words, once opened the competitive gap keeps widening.

Communication technology, computing power, and innovation drive this acceleration and they reinforce each other in a vortex of increasing speed. Continuously accelerating innovation in services, in product evolution, and in market adoption has changed the speed of many industries (e.g., the VCR took a few years to sell its first million units and less than two decades later it took only a few months for smartphones to reach the same volume). Today, we are facing not only faster product cycles but also shorter life cycles for whole businesses (e.g., Nokia in mobile phones: barely more than fifteen years for the rise and fall of a global giant![1]). Corporate leaders now need to continuously transcend conflicts and paradoxes between efficiency and renewal to rethink and to redefine the business models they adopt.

The ease of communications changed our life. The "always-on generation", with 24x7 connectivity, access to social media, e-mails, etc., has dramatically cut any dead time between activities. Transactions, decisions and all types of initiatives take place instantly in real time around the globe. As information now reaches every human on the Earth in real time and everyone has the opportunity to tweet his comments, powerful real-time software informs politicians about hot topics and people inclinations, and even politics becomes the art of accessing data, be the first to react and spin public opinion through another well planned series of tweets, witness the recent US presidential election. Not only the economy but also the pace of politics is transformed, for better or worse.

[1] For a detailed analysis see Doz and Wilson, *Ringtone: the rise and fall of Nokia in mobile phones* (Oxford University Press, 2017).

Speed also means there is less time for deliberation, and judgment, and a greater pressure to reach fast commitment, with speed in decision now seen as a key leadership quality, often at the expense of more thoughtful framing and option development. However, moving from rigid strategic planning to knee-jerk reactions is not the best answer to greater speed. So the issue is to accelerate and frame the strategic thought process, make it better at identifying and seizing opportunities fast, revising commitments in light of new developments and also to use the strategy process to quickly build commitment for action, not to skip it! Strategy making too becomes real-time and always on! A key challenge here is to foster an inclusive decision process but to recognize that one may need to make a commitment without everyone's agreement, or as Jeff Bezos puts it talking of how he leads Amazon "to disagree and commit!"

Interdependency is the second major force. Business ecosystems have become highly complex and the sheer number of interdependent variables a CEO must face is unprecedented. Most obviously markets are no longer local and developing successful products means understanding and addressing the evolving behaviors, tastes and preferences of billions of potential customers around the globe. Segmentation requires exploring thousands of potential categories; and distilling their common denominator, or better discovering new ones, to offer global solutions, and further adapting them in real time as more consumer data become available. On the suppliers' side, beyond value chains whole ecosystems of providers of complementary products and services often involve tens or hundreds of suppliers and partners. All of them need to take complementary and timely actions, in particular for innovation, and this brings uncertainties and risks. Success hinges on handling interdependencies between them effectively. Supply chains also bring their share of uncertainty with many specialized subcontractors around the globe, who in turn rely on their own subcontractors, making understanding the detailed manufacturing flow chart of a product a huge challenge for the core contractor. No one may actually know the full business system anymore. And a hiccup at a small (and often unknown) supplier's supplier on the other side of the world may mean missing Christmas season's sales (over 50% of the yearly turnover for some industries!). Of course on the positive side, less vertically integrated supply systems provide efficient cross-industry investment, capacity utilization and more flexibility, but not only do they create supply disruption risks, they also spread out technology, weaken a company's technical skills and reduce entry barriers, thus easily becoming a double-edged sword.

So competition may now come from anywhere, and often smaller, innovative, remote, lean players find room to challenge even the strongest incumbents; so watching the moves of a few established competitors for competitive intelligence is no longer sufficient. Anticipating the intensity and nature of global competition in the internet era becomes another whole new challenge. Complemented with the likes of UPS, Apple Pay and Amazon for logistics, transaction processing and web hosting services, the internet enables new companies, and not just digital ones, to be global competitors overnight, like was pioneered by a small winter clothing store in Andorra turned global e-commerce competitor a few years ago.

How to best exploit digital innovations is not always clear. The relationship between new internet-enabled digital innovations and existing businesses is usually far from clear ex-ante, and becomes an extra source of uncertainty. For years, for instance, how digital photography would play against traditional argentic photography was unclear, or so was how digital printing would run against traditional “big iron” printing presses for books, catalogs, newspapers, directories and the like, or complement them. In both cases, smartest and most agile incumbents found ways to combine the old and the new, others suffered. With 3D printing and “4.0” manufacturing we are now witnessing similarly ambiguous changes on many fronts. Artificial intelligence and cognitive computing add an order of magnitude to these challenges.

In wider innovation ecosystems ambiguity is the rule, collaborators are also competitors, complementers are both co-dependent allies in value creation and rivals in value capture. And when markets and technologies converge some industries invade and substitute for others, like happened with smartphones and tablets against conventional feature phones and then personal computers. Large-screen smart phones fast became the leading category. Convergence is often the dissolution of one industry into another and seldom a “merger of equals”. In such situations, competitive success results more from envelopment and substitution than from frontal rivalry. Peripheral vision becomes increasingly important, so does imagination, of both threats and opportunities. Open innovation, as a new creative process creates new possibilities but also challenges usual approaches to corporate innovation.

And even more fundamentally, in complex contexts key strategic decisions have more and more parties and stakeholders, shareholders and fund managers, banks and lenders of course, regulators, labor unions, strategic partners and suppliers, and also sometimes unexpected and unpredictable ones who may invite themselves to the decision-making meetings, for instance “active” investors, government agencies, media and social network activists and environmentalists whose positions may also shift, sometimes unpredictably, as a function of evolving public opinion and political agendas. Reconciling all these on a global scale, or at least navigating between their differences is another tough challenge for corporate leaders.

Finally, last but in no way least, managing the company, organizing it, keeping it agile, dynamic, fast, creative, and at the same time solid, purposive and consistent, is yet another huge challenge CEOs face. Choosing, motivating and organizing people and nurturing action and success-oriented cultures to make sure that people pour all their energy into their daily job is perhaps for most CEOs and boards the most demanding challenge once the need for adaptive responses to complex conditions and strategic quandaries rules out hierarchical control and compliance with pre-set policies and procedures. The risks of action fragmentation or passivity and paralysis in front of complexity always loom large.

Skills also need to evolve quickly, and there too the speed of learning becomes a barrier. All these challenges are arising faster and faster, and are more and more deeply interconnected. They call for new skills, both technically and managerially. To take a visible example, when the market changed in mobile phones and priorities became mobile data rather than voice, incumbents needed to replace radio frequency or voice processing engineers with software, image processing and internet protocol experts, and convince the various developers' community to invest on their platforms: in sum, they needed to change skills, competences, partners and even the geographical locations and ways of working of R&D

teams, all this in a few months, before the application developers' community decided to invest on some platforms and not others. None of the incumbents achieved such transformation, and all sooner or later exited the mobile phone business.

Managerial skills too need renewal. Ten years ago Doz and Kosonen already analyzed the implications of the speed and complexity challenge in their book titled *Fast Strategy* (published in 2008) and called for strategic agility in addressing it. A decade later, after major consulting firms from Accenture to McKinsey embraced these ideas, the strategic agility they advocated becomes a necessary but no longer sufficient condition for success. The main structuring tool of reductionism managers and consultants used (decomposing a system into subsystems until they are brought down to a manageable size, and are largely separate, modular and hierarchically related and then improving the most critical ones first to force overall adaptation) is no longer practical. System decomposition *cannot* work in complex, fast changing systems, where too many developments are interdependent and their linkages not fully understood, so changing any element in the system means inducing unpredictable change in most of the others. Their structure becomes apparent only ex-post and is only temporary: by the time it becomes visible it has already changed. So we simply do not know how to decompose and where to set stable boundaries between subsystems. Causal uncertainty and ambiguity prevail. And the combination of speed and interdependencies creates a positive amplification loop, where it becomes impossible to distinguish induced (endogenous, where our very actions trigger more complexity) from externally generated (exogenous) change and system boundaries are blurred. Furthermore, the interplay between speed and interdependencies may take a life of its own: even when advancing technology is not the source of speed and globalization that of interdependence, the non linear dynamics of complex systems may lead to sudden, unexpected and unexplainable, accelerations in interactions and fast systemic change. Speed of change is then intrinsic to the system's dynamics. Paradoxically, in those contexts, well-meaning purposive management action may well do more harm than good: it amplifies difficulties and accelerates demise.

So confronted with the complexity brought by deepening interdependencies, management is often lost, especially when highly skilled operational CEOs have to face fast changing highly complex strategic decision contexts. Typical reactions range from denial and paralysis (business as usual or "let's be practical" and focus on operational excellence) to neurotic action (jumping on every opportunity without understanding what is really happening), hoping that "more of the same" or "everything new" will provide the magical solution. Neither does...

Of course, one could still see Schumpeterian creative destruction even at a higher and higher pace as fine. This would be true but for a high cost to making major corporations too easily expandable: building a global leader with the necessary knowledge base, customer relations, organizational links, etc. takes years or decades and the efforts of thousands of people and creates societal benefits beyond the performance of the company (just imagine, as a thought experiment, the consequences of IBM being dismantled in 1993, as it very nearly was! And witness the negative consequences of decisions its management took in the early 2000s in favor of maintaining short term performance to the expense of key strategic commitments, such as investing in cloud computing). Killing a major company and impacting key stakeholders (suppliers, local communities, employees, etc.) only takes a five minute decision by a handful of C-level executives who meet in panic mode on the other side of the Earth, often without any precise knowledge of the full impact of their decisions.

Or perhaps even worse, a CEO will dismiss some of the company's employees just to “make the quarter”, only to rush back a few months later to try to rebuild the now lost knowledge these fired employees took with them. Companies such as Boeing, for instance, have learned the hard way the true cost of such policies. Boeing managed to rehire many laid-off workers and recovered from these policies, but many others would have been crippled for good and driven into decline, their skill base too deeply eroded.

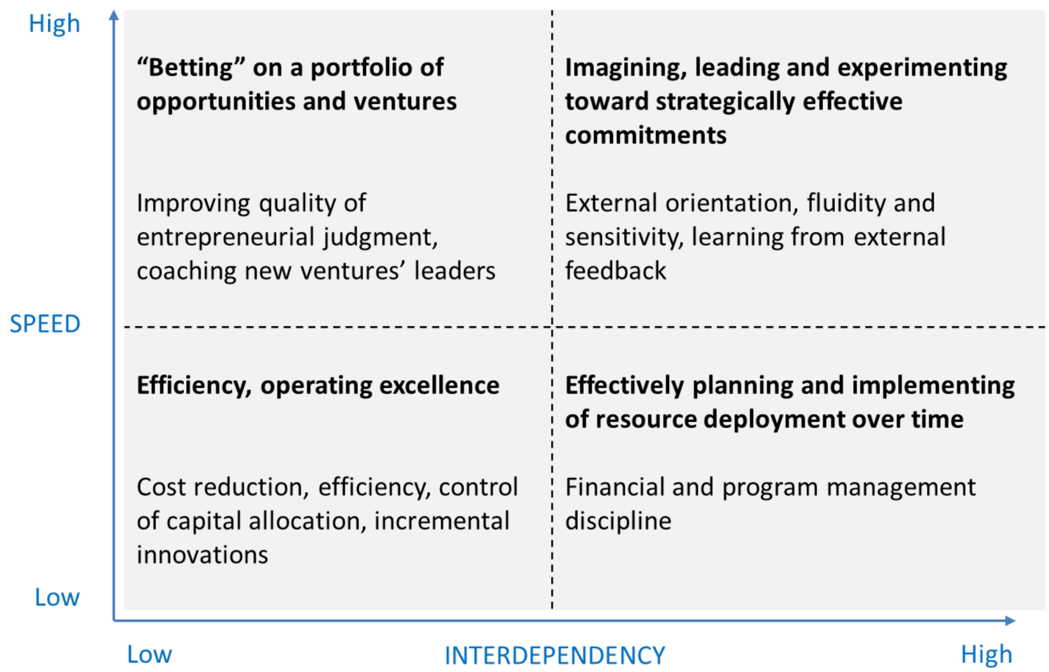
Even more pernicious is the adoption of current performance indicators that drive companies away from longer-term benefits. Even iconic companies and their leaders may fall prey to short-termism. Academics and managers alike admired Jack Welsh’s courageous application, when he was heading General Electric, of a “being number one or number two in every business” principle, but seldom raised questions about how this focus might affect longer term R&D investment, competence renewal, and performance and might also bias choices against new technology businesses in favor of protected and less R&D-intensive ones, such as media entertainment and financial services. Rather than focus on short term results, investors should invest in companies whose leaders see their duty as to create sustained value first, and also ensure the shareholders’ highest returns (and not vice-versa as often practiced and perniciously encouraged by activist investors). Warren Buffet, one of the most successful investors and richest persons in the world through his holding company, Berkshire Hathaway, does not distribute dividends, he argues that corporate leaders should think long term, and “allocation of capital is crucial to business and investment management”. Investors in his company get value from the long-term appreciation of their shares. Leaders of major fund management firms that control an ever larger share of publicly traded equities such as BlackRock or Fidelity have now joined his argument. Amazon provides perhaps the most extreme example: its profits remain puny but its value keeps increasing to record levels. When a corporation operating in a growing market gives money back (through dividends, stock repurchase, etc.) to investors, or does not exploit leverage, it shows its management team has run out of ideas and does not know how to reward capital: in other words, it has run its course and should have the humility to resign and pass the baton. The same applies for a board of directors who supports and accepts this widespread practice. The penalty of such short-term priorities is not the same in all businesses, however. We now turn to exploring the contingencies that differentiate businesses.

Horses for courses; differentiating governance logics and board roles:

Not all businesses are equally affected by growing speed and interdependency, at least not yet, and not all are equally vulnerable to resource misallocation. Indeed, a first basic observation is that despite their growing strength the forces of speed and interdependency do not yet affect all businesses equally. In simple terms, one can see that businesses need different core governance priorities according to how exposed to these forces they are, as sketched on Fig.1, below.

Figure 1

Horses for Courses: Differentiating Board Priorities



According to how strongly they are confronted by speed and interdependency businesses also draw different types of investors and call for specific approaches to risk, differentiated organizational models and also develop diverse management cultures. This also calls for different priorities in board oversight. Our central argument is that when both speed and interdependency are high the board needs to oversee strategy making, both in substance and even more in process terms, making sure management follows an effective disciplined process, as complexity comes to challenge and render anticipatory strategy making ineffective. When both are low overseeing results suffices. Slow changing and simple environments call for supervising operations, and being on top of details in cost reductions, efficient resource allocation, and incremental innovation. In this situation excellence in COO functions is more important than a strong and strategic CEO perspective: a short-term results oriented individual perspective is most critical to success.

In high interdependency but slow moving contexts (lower right quadrant in Figure 1), careful oversight of financial commitments, strategic planning and implementation should be the priority. There, directors can prove most useful in helping the CEO and top team make wise thoughtful strategic choices (the main risk being in adopting the wrong strategy) in the presence of high uncertainty –making choices more difficult-- and strong path-dependency --making them irreversible. A substantive engagement in strategic reflections and dialogue around key choices can help the top management set and shape some strategic courses of action. A secondary but important contribution is controlling the discipline of management in implementing these courses of actions, from both on efficiency and effectiveness standpoints.

When speed is key, typically in high volatility contexts, but interdependency is not (upper left quadrant in Figure 1), playing a more advisory and coaching role for several entrepreneurial initiatives and the managers leading them is where the board can add most value. So, in a fast but relatively simple environment an emphasis on individual entrepreneurs in business units and a venture portfolio management approach (akin to venture capital investments) on the part of the CEO and the board, may be most effective. Directors' key contributions, like in new ventures and venture capital firms, may be to provide a wider and further reaching perspective on markets, technologies and social developments and stronger customer relations than the individual unit managers or the CEO. They may also be to act as a "venture coach" toward individual units (upper left quadrant on Figure 1).

The dual effects of speed and interdependency are particularly challenging because each pulls executives as well as the board supervising them into a different direction, and the two are hardly compatible, making strategic agility particularly hard to achieve. Speed calls for fast decisions and leaves little time for the careful maturation and deliberation of strategic choices. Decisions are forced into being intuitive. But intuition comes only to the trained eye! Interdependency, on the other hand, calls for well-designed learning experiments, logical hypothesis-based discipline and a great analytical rigor in making long-term major strategic commitments. The combination of speed and complexity is where the duality of creative intuition and logical discipline needs to be achieved. Strategic agility is most needed here.

Table 1

A contingency framework for governance logics

	Q1 (Low speed, Low interdependency)	Q2 (High speed, Low interdependency)	Q3 (Low speed, High interdependency)	Q4 (High speed, High interdependency)
Main governance approach	Operational excellence and efficiency	A portfolio of entrepreneurial units	Wise long-term strategic choices Effective resource deployment	Imagining, leading and experimenting toward effective strategic commitments
Major risks	Losing attention to details, self-satisfaction, inertia	Inability to grow ideas into ventures and businesses	Making wrong path-dependent long-term strategic choices, and having poor control of execution	Being overwhelmed by complexity, failing to understand key variables in key choices
Board's key contributions	Monitoring quality of operation's management	Mentoring, guiding, coaching and controlling entrepreneurs	Help CEO and top team make wise strategic decision: analyzing critiquing, auditing	Improving quality of strategic reflection and adaptive strategic development

CEO selection criteria	Operational discipline, COO experience	Entrepreneurial mindset and skills, venture capital experience	Strategic planning skills and program management capabilities	Willingness and ability to be on "impresario" Team orientation.

These differences call for developing a contingent framework for the priorities of the board, and acting on these priorities through emphasizing one governance approach or another[2], focusing on the major risks of management (and directors too!) losing the ball, directing the board's contribution to stemming these, and considering the key contingencies in CEO selection, as suggested in Table 1. This may however run the risk of leading to an excessively static configuration, searching for the best fit configuration today but not looking forward, the very form of short-termism we criticize. And indeed, companies decline and fail by holding on to a no longer applicable configuration when conditions change. So boards need to take a future- oriented stance and act accordingly. Such future orientation needs to be based on an understanding of the dynamics of decline companies face as they and their leadership team mature.

The dynamics of decline:

The type of governance priority called for is far from static: with growing speed and interdependency, more and more businesses abruptly have to face more demanding needs for strategic agility. Think about electrical utilities, where sourcing renewable energy produced in small units (all the way down to a few solar panels on a house roof!) and exchanged in a flexible "reversible" grid where suppliers and customers may be the same, is totally different, as a business model, from that of the traditional electricity generation and distribution business, or insurance and banking for instance where new focused "fintech" companies as well as all kinds of retailers are fast dis-intermediating traditional banks, or traditional department stores ravaged by e-commerce, or also national telecom service providers faced with "over the top" new global service provision entrants creaming-off their markets. In other words, more and more companies face the twin challenges of speed and complexity. Achieving a faster pace and transforming their organizations and management processes to address them becomes top management's fundamental duty.

A second basic observation is that corporate life cycles become shorter and shorter as companies face these new challenges. When they thrive and grow companies are externally oriented, their operational focus is about products and customers and all available resources are mobilized to improve the firm's offerings and strengthen its competitive position. But once growth stalls (and sooner or later this happens to every company!) value can only be extracted from higher operational efficiency. Companies

---

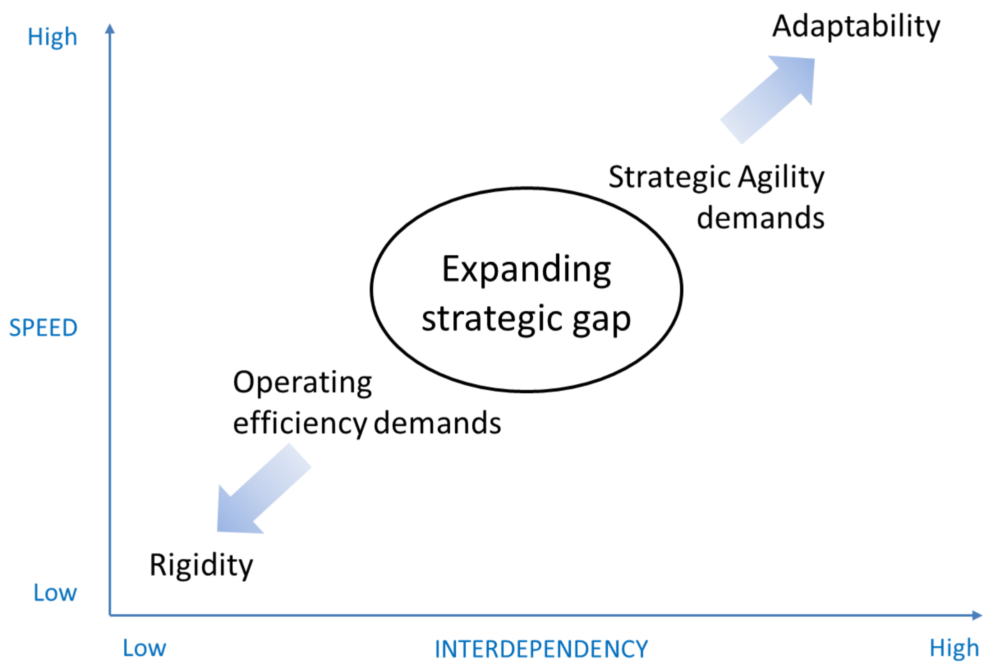
2 Boards and corporate executives of diversified companies, with businesses in all four quadrants have of course the most difficult challenge: to master wider skills and tailor their approach to different businesses and their managers in the corporate portfolio.

thus shift their operational focus to improving efficiency through restructuring and cost cutting, with an internal focus. Their energies are now turned inwards away from the market. As long as the company faces slow moving business environments the change makes sense but when operating in fast changing complex contexts, management no longer makes the dynamics of the external world its center of attention and progressively isolates itself from customers and markets. This generates an extremely dangerous gap. And efficiency takes out the needed slack for resilience, making these companies' position increasingly fragile. At the very moment they would need agility to face complexity they become rigid and myopic. In our Figure 1 representation corporations (still operating in same business ecosystem!) are quickly driven from the top right to the bottom left quadrant: as the energies devoted to developing products and customers are turned to extract efficiency from the system, staff functions take priority over line managers and the whole decision making and power structure of the company shifts toward central control.

Thus opens a strategic gap that progressively leads to a loss of competitiveness and a decline that becomes irreversible (Figure 2 below). The evolution is straightforward: as the distance from the market increases and more internally focused energy is needed to keep bottom line growth, resources are drained from activities essential to sustained success (R&D, sales and marketing, investments). It locks the company into a "more of the same" path. This further widens the gap. And investors and management are no longer aligned: alignment was maximal during growth, as both focused on long term value, and becomes minimal during decline, when management tries to protect (and prolong!) its tenure at the expense of shareholders and stakeholders. Management is interested in maintaining its power and position, stakeholders and shareholders in sustaining value creation.

As growth stalls and market share drops, after a few restructuring cycles meant to keep the bottom line flat (earnings' growth is now but a sheer hope), the issue becomes how to keep the company in the black: financial gimmicks and window dressing, suppliers' and customers' dissatisfaction, employees' demotivation, loss of the best among them, fall in competitiveness and finally scapegoating and the loss of trust at all levels are the most visible symptoms before a change of management, and perhaps divestment in a fire sale, inevitably takes place. If this is badly managed, collapse follows.

Figure 2
A Widening Strategic Gap



The doomsday entrapment process outlined above suggests the importance of three basic questions for corporate leaders and board members to consider: (i) can shifts to an excessive internal focus be detected early enough to be prevented and (ii) when detected late, can they be reversed, and (iii) eventually how, when and at what price?

Stemming decline:

Addressing the three basic questions raised above calls for renewal in leadership and governance, internal management and organization, and for engagement practices rekindling a culture of commitment.

Leadership and governance: A set of simple but revealing indicators have been developed to identify symptoms, even when management (hopefully in good faith) carefully tries to hide or minimize relevant information (see Table 2, below). They are not difficult to collect nor complex to understand but need to be used and action implications drawn.

Table 2

Detecting Decline: Early Signals of Management Attention Turning Inward

Indicator	from Externally projected →	to Internally focused
Strategic indicators:		
• Priority objectives	• Growth, market share	• Efficiency profits
• Management	• By outputs	• By inputs
• Measures	• ROI	• ROE
• Funds allocation	• Investments	• Dividends, buy-backs
Organizational indicators:		
• Leading managers	• Line	• Staff
• Power structure	• Networked, decentralized	• Centralized, pyramidal
• Resource allocation priorities	• Projects	• Budgets
• Top team participants	• High-profile differentiated contributors	• Mediocre sycophants
• Communication	• Open, participative	• Siloed, secretive
Behavioral indicators:		
• Top team process	• Open dialogue	• One-on-one
• Listening	• Intense, active	• None, closed in
• Personal priority	• Good citizenship	• Personal interest

The real point of discussion is not the indicators themselves but who should monitor them: management, who is responsible for the problem, likely being too biased (with too optimistic a view) or too obsessed with its own continuity, cannot be trusted for this role. In fact, in a process of renewal top management usually needs to be replaced, and obviously cannot be counted upon to exit gracefully and willfully at their own initiative.

Financial analysts seldom understand the business complexity and being anyhow increasingly concerned with creating stock volatility rather than considering actual longer-term stock performance they lack the independence of judgment for the role. Directors as the shareholders' representatives are thus the only candidates left. But they need to act while the company still performs well, not once the risk of collapse becomes evident. And this is not easy; it takes vision and courage and a desire to see the company prosper over the longer term. Both introducing change when things still seemingly go well and intervening to stem decline once the company starts to slip provides a tall agenda for boards. Many would fall short.

Speed and interdependency make the problem even more difficult, as the relevant question shifts even more toward process: How resilient or even “anti-fragile” are the organization and the choices made by management? The sharpness of their perception of the new context, the key processes they build to allocate resources, the knowledge they have created during their tenure, and the ability to turn the know-how into products are critical enablers. An active and involved board, whose members know and support the company and seek its success not the directors’ power and do not conflict among them or with management, but can disagree honestly and be heard (whilst some board processes quell dissent, even in good faith) can contribute greatly.

Addressing the second challenge --deciding what action to take to reverse excessive internal focus-- is more delicate than detecting impending decline. Absent credible management and a viable clear strategy, but building on "the internal opposition" to previous management to find the seeds of change and identify paths of renewal, boards should start from assessing what needs to be done. Their members may have to involve themselves much more in strategic reflection and deliberation than they normally would. And the board’s composition may need to evolve too, with directors too closely aligned with and subservient to a previous CEO being replaced since in the end they are co-responsible with the CEO for compromising longer-term success.

First, and most obviously, directors should really represent shareholders’ and other stakeholders’ interests (rather than be hostage to management’s) and provide a long-term concern with the company’s sustained success we can no longer expect from shareholders. They may also provide the compelling narrative often essential both to maintaining the commitment of employees and the confidence of shareholders. Second, boards should gather the necessary variety of competent, knowledgeable individuals, some but not all intimately familiar with the business and the industry. A danger here is that retired senior executives or former CEOs become directors and provide in-depth relevant experience but are tempted to keep acting as if they were still corporate leaders, not overseers. Third, boards should have some senior experienced members fully devoted to continuously understand the business, including trends and potential disruptions and other discontinuities, and the drivers of company performance and how well it is run to harness those drivers. This assumes some or all directors devote enough time and focused attention to their directorship. Sometimes being a director of an incumbent company threatened with disruption may feel like running a start-up, and require the same energy! Fourth, directors should be able to directly and indirectly contact all the main stakeholders to collect the necessary level of detail (customers, suppliers, employees, competitors, etc. and have the diplomacy not to compromise the company’s reputation through these contacts nor to undermine its management). Finally, they should have the power to act and reverse the course of events before the point of no return, or the point when the cost of turning around the company becomes higher that the expected financial returns.

In other words, partly renewed boards should deeply understand what the strategic direction should be, what capability, attitude and behavior gaps have to be filled for the company to move in that direction and what the characteristics required of the new management team to turn around the company and lead the renewal journey are. This, however, should not be confused with the role of management proper, as for the board choosing the right CEO for the journey implies to *first* identify in what direction and on what kind of likely terrain the journey should be (and not vice-versa, as normally practiced!). But leading the company in that direction is the purview of the newly appointed CEO. Too many failures in picking CEOs have been made trying to choose the "right person" based on a very wide and often vague definition of the role and expectations for its performance, rather than defining strategic direction first, and later searching for the right person for leading the journey. In other words, instead of asking: "where does the new CEO come from?" boards should ask: "in what direction do we want the new CEO to lead the company?" and select a CEO accordingly.

The board however needs to refrain itself from attempting to articulate a detailed strategy and infringe on CEO's prerogatives and it needs to remain in its CEO selection role. For example, in a slow moving ecosystem where the quality of execution has been the main problem, a world-class operational manager is the obvious choice. On the contrary, for a company operating in a fast changing complex ecosystem, where an inability to keep pace with the market and an excessive internal focus and tight controls have deprived the organization from its necessary energy, the new CEO should be chosen among people with strong entrepreneurial characteristics and business building skills, having in mind that poor execution sometimes results from a wrong strategic approach, but more often from inconsistent choices of organization, processes and people, undermining strategic agility.

Last but not least, although in principle a source of renewal energy, a young CEO weighing future career evolution and the opportunity for a "portfolio career" versus the risk of engaging into many, and at times unconventional, changes may well tilt the balance towards more conservative and shorter-term behaviors whereas a seasoned executive with little to prove and little to risk may be more courageous in taking bold longer-term action and showing determination to lead in the sustained interest of the company's future. Driving renewal and staying in one's comfort zone is essentially impossible. However, once the new CEO has been chosen and appointed, the board should revert to a more usual monitoring role, and not prevent the new CEO from defining more sharply and implementing needed strategic actions. The board's role is strategic control, not operational control.

Boards should thus only temporarily change their relation with management (and vice-versa): from audit and control to support, and participation in strategy definition but, of course, still audit of execution. Cooperation and openness should be the modus operandi. The rationale is obvious: in a slow moving world, past performance is a reasonable indicator of future expectations; therefore, in that context, boards can work on simple and known operational data to assess management performance and predict the future of the company. In fast moving complex ecosystems boards must be concerned with options, learning and resilience against unanticipated developments and stimulate ongoing reflection: it is a highly complex task, requiring very different and more demanding capabilities from the board.

Also the length of the directors' mandate, to ensure continuity while providing the necessary turnover, as well as compensation and incentive schemes, should be deeply reviewed to match the new function. In other words, while keeping their role strictly separated from management, and never entering the operational field (or even worse, playing internal politics), in fast changing complex businesses the board has to become the main strategic, rather than financial, control body but not let itself be tempted to meddle into operational control.

Facing the third and most daunting challenge – knowing when it became too late to take action and action would be in vain or would even accelerate demise – is even more delicate. Identifying the point of no return, where decline and downfall become inevitable is critical and depends on several variables. In the end, it is a tradeoff between the speed of the market's evolution, the actual deterioration in the current situation, and the residual knowledge and energy still available in the company that a management renewal could engage and mobilize. In our study we have identified only two successful large corporate turnarounds back from the brink: IBM in the 90's (with Lou Gerstner as CEO), mainly a combination of corporate redesign on a knowledge trove, and Apple when Steve Jobs came back to head it and led a turnaround extremely linked to his personality and own experience in Silicon Valley (the early Apple) and Los Angeles (Pixar). While the IBM turnaround shows a methodology and an institutional rebuilding approach that might be replicated, Apple's largely results from a single entrepreneur's personal history.

Organization and management: Once the "right" CEO put in place, the core management issue becomes to identify the gap between the possible market evolutions and the present situation of the company and to build a strategically flexible plan to fill that gap along many dimensions (products, customers, people, processes, knowledge, assets, etc.). Most important is to build a comprehensive and cohesive management team that can adapt purposefully and thoughtfully to fast changing and emerging circumstances. Speed and complexity make it impossible, more than ever, for any single human being to understand all of what's happening and to master the response challenges. Many leading companies have been successful thanks to unique diverse but integrated management teams with complementary skills and cognitive processes (e.g., Olilla, Ala-Pietilä, Alahuhta and Baldauf early on at Nokia; Noyce, Moore and Grove at Intel; Hewlett and Packard at HP; or to take a distant historical analog, the Roman Empire when Agrippa was the operational leader, Mecenate the administrator and Augustus the visionary and visible authority figure). Even when the leader is the only visible executive, a closer look shows that only a team achieved results. For instance, Pasquale Pistorio at ST was the only visible leader, but supported by a strong management team. Skills in innovation, strategy development and execution, and operations are all needed in all departments of an agile company. If manufacturing is undoubtedly execution and operations centric, innovation and a sense for strategic direction are fundamental to retain performance in fast changing complex environments, especially at the top... So are integrative negotiation and collaboration skills, and process skills to reach fair decisions, as well as the ability to contain our natural instinct to plan, something not so essential in more traditional hierarchies. The top team must include executives able to understand all these dimensions and to excel *at least* in one. They also need to accept the uncertainty and ambiguity intrinsic to complex environments.

Confronted with growing speed and interdependency executives tend to put too much faith in a “vision” even when speed and complexity make it necessarily unrealistic. The challenge is to keep framing challenges and results from learning experiments strategically as they happen, in a constant ongoing strategic dialogue in which values, principles and fair process elicit imagination, stretch and commitment. Open, active and frank participation on the board and among executives is essential.

In a highly interdependent and fast changing complex world strategy making becomes difficult. In principle strategy is important because it provides resource allocation guidance to reach the objectives and this classically is clearly seen as the most important task of a successful CEO. But, in a fast changing complex environment, anticipating evolutions, understanding threats and opportunities ahead of time, evaluating the potential of the organization at each change of scenario in an option thinking mode, developing flexible plans and people, as well as closely overseeing execution are fundamental. And strategic thinking has to become permanent, constantly challenged, updated, revised and refined around more and more precise hypotheses as new information or results from experiments become available, not a mere periodic “black room” reflective retreat. Such ongoing permanent keen strategic awareness, attention, and thinking can hardly be that of one person only: it becomes that of a whole management team, supported by sensing and sense-making intelligence distributed in the whole organization.

The classic simplifying principle of separating strategy formulation and execution may have worked in slow-moving environments, where plans did not need to change for a long period of time (think of nuclear power plants in the 1970s, but not today after Fukushima!), but businesses exposed to continuous emergent change need to manage strategy and execution as one. Management needs to move from designing structure to implement a long-term strategy to maintaining a flexible structure where creative real time adaptation allows strategy and processes to continuously redefine themselves to anticipate and drive market evolutions and react fast to unanticipated changes and surprises.

In this fast and highly interdependent context, the role of the CEO is very different from the past, as he/she has to lead a team of diverse, high profile executives (“prima donnas”) to whom he/she has to entrust wide power. He/she must be able to lead execution, innovation and strategy to keep the company in pace with the evolution of the external system. In earlier writing[3] we called this role that of an "Impresario", who has to oversee all the different activities of a theatre over time to run the show, from managing “prima donnas” to understanding whether to change the third violin, or to being the added person at the ticket booth at the very last minute. Even more, since it is a team activity, we should consider a "collective impresario" (the office of the CEO) and also the top team. Establishing this cabinet is the top challenge of a CEO and the Board. That includes choosing people, assigning

2 Doz, Cuomo and Wrazel (2006)

responsibilities, managing personalities, keeping everyone in sync and removing attrition while keeping the highest ambition and drive.

In a fast changing complex environment, companies are a flexible combination of practical action knowledge (people), norms of behavior and interaction (culture) bound together by purpose and fast (organizational) processes to bring knowledge to create and seize opportunities, rather than the combination of assets and procedures. But processes cannot be centrally “engineered” in a flexible adaptive organization they too need to keep a balance between stability and emergence.

So speed and adaptiveness require to push decisions to the *lowest possible* level and let many processes emerge to implement them, while complexity implies to give everyone all the possible visibility to evaluate the implications of individual decisions on other parts of the organization, so local decisions are made in the context of the whole system, a paradox of interdependent autonomy. In the past, problem decomposition, modularity and bureaucracy have been the way to deal with interdependency, and entrepreneurship the way to address speed. Today neither works anymore, as bureaucracy kills speed while undisciplined entrepreneurship cannot cope with interdependencies. Culture, flexible processes and accountable empowerment, or beyond empowerment radical decentralization in an agile “holographic” organization, are the way to address the fast and complex world. Independent responsible and purposive action needs to be taken to lower levels. One should not create complicated processes where no one feels responsible, but identify roles and responsibilities and measure results. Escalation needs to remain as a rare exception as it slows the entire commitment process and generates useless friction among co-workers.

In sum, it is important to recognize that the value of companies lies in their know-how (embedded in people) and in their ability to bring valuable products and services to markets (an ability embedded in processes that guide the way people interact in the company and with the outside world).

Re-igniting commitment: Finally, to re-energize all members of the company toward a new pace of work, and a more interdependent collaborative way of working, is key: only strong collective commitment, often emotional, leads to fast and real action. The risk is to have a small elite running at full speed, while the rest of the corporation, after a short period of excitement, goes back to "business as usual" and apathy. This has to be prevented by careful deployment and timing of different change initiatives. Again, it is important to select the right person for the job at all levels, to ensure the diffusion of a strong corporate culture (purpose, ambition, mission, values, and, most important, behaviors), to preserve strategic agility (early awareness, leadership unity, resource fluidity) and continuously stimulate people's energy and passion. Soft dimensions become key for success!

In fast changing environments micromanagement simply does not work as it slows decisions: there is simply no time to climb the whole chain of command to get decisions when the field situation requires fast reactions of a non-routine nature. Yet decentralized lateral peer control, or checks and balances, also slows down any process, with its need for continuous reconciliation between different stances. Reconciliation rather than poor compromise in a matrix organization is a slow process if one does not accept dumbing decisions down. The only effective process is empowerment within a strategy framework that defines objectives and provides resources. Then execution teams are accountable for results, but operate in freedom. (The military have long recognized the need to tell local field commanders what to do and why --the mission-- but not how.) Last but not least, empowerment works only with accountability and with fair performance evaluation at all levels, and one, if not the key element to judge potential for future career advancements.

Of People and Power:

More starkly than in a traditional hierarchy in an empowered organization the relation between people, power, control and freedom becomes central. But it is sadly obvious to all observers that agility, or the ability to dynamically reallocate resources to anticipate changes in the market, is a continuous challenge for the existing corporate power structure. We would argue that true effective empowerment has three main components: knowledge of expectations and norms, process, and discipline.

For each employee, such knowledge means to know what is expected from him/her. Or in other words: what are the values to be applied, the priorities to be pursued, and the results to be achieved. Simple issues like taking a low price order, or delaying a product by one week to introduce a new feature can be solved at the right level only if the decision maker has a clear view of what is at stake, as well as a comprehensive understanding of the corporate priorities for the whole corporation as well as for him or her.

Process is also fundamental, as each employee should be in the position to take a decision on most matters within a precise enough context, knowing who are the main interfaces and supporting colleagues and goals and values, rather than attempt to follow bureaucratic procedures, by definition inoperative in unpredictable situations. In other words, employees should be in a position to know where to look for all the elements and inputs they need about the decisions they have to take, including their impact on other parts of the organization, and a networked organization should make aware each related node in the interaction system.

Finally, discipline is needed for self-control. In complex environments the only way to achieve effective control is to ensure each single employee controls his own behaviors. For instance, in a sound environment there is no better way to control expenses than asking each person to freely exercise judgment to optimize cost/performance in the superior interest of the company.

This approach despite its simple logic is not easy to introduce, it requires leadership unity and people's commitment. In the end, ethics, social responsibility (good corporate citizenship) and common sense cannot be introduced by management edicts and procedures, but need to deeply permeate the corporate culture and guide everybody's behaviors, starting from the very top. This takes us to consider employees as falling in two basic categories, those who use results to achieve power and those who use power to achieve results. The difference is not trivial and requires some consideration about the kind of leadership needed in a company. This calls for the CEO to rein in his/her own ego, find intrinsic rewards in leading a company, not just perks and incentives, and operate in the spirit of servant leadership, earning respect and trust, no small feat! It also means there is no room for narcissistic leaders!

Speed demands flexibility, while complexity demands collective decision-making and collaboration. Clearly, power centric structures slow down any process through daily renegotiations and fights, or worse passive aggressive inaction, as the real stake in negotiation is not its result, but rather how it affects the power position of each single executive. At the same time individualistic behaviors cannot cope with complexity. An obvious conclusion is that power seeking executives should be quickly eradicated from strategically agile corporations, where influence in collaboration, rather than power, is the driving logic and one single power hungry rotten apple can pollute the whole basket.

Not being power hungry is not quite enough; a successful impresario also brings generativity. Only with the desire to grow people and to be motivated by their results can he/she lead a team of senior executives in a strategically agile company. If we go back to the original impresario role, an impresario cannot believe to be a better singer than his tenor, nor a better conductor that the one on the podium, his/her skills being the ability to turn a bunch of high profile professionals into a high class, high quality unique and profitable collective show. Too often in corporations the CEO forgets this simple rule and pretends to be the best at everything, quickly hitting Peter's Incompetence principle and in the end being surrounded with second or third tier performers and weak sycophants.

Ready for the Future?

Even should everything work "perfectly" in their governance and management companies still need to keep up to speed with markets' evolutions. This is a joint board and management team responsibility. In this collaboration one point is fundamental: a realistic, objective assessment of the real status of the corporation versus future needs in all the relevant dimensions. The challenge is to be at the same time realistic in the analysis and visionary about the future, and refusing any intellectual compromise or embellishment of the reality.

Once again, in a complex fast changing world, pre-cooked recipes and set strategies seldom work. Rather, implementing sound processes to identify, anticipate and address problems and opportunities in a flexible way is the only avenue for progress. And once more time is essential: you need to act before the problem is evident or costs will escalate and options will dramatically shrink.

As a conclusion, a corporation is itself a complex system; adapting to a fast changing complex environment means to match one's own complexity to the ever increasing complexity of the external world at all levels. In this perspective we should keep in mind Einstein's words: "Any system should be reduced to its minimum complexity, but not more". At the same time we might say that every activity has to be made to happen at the maximum possible speed, but not tried to make even faster.