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# 4 *Managing expert talent*

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## 4.1 Introduction

The previous chapter focused on using the resource-based view (RBV) of strategy to think about talent. One of the key critiques that it made of the talent management perspective was that it overplays the importance of general management and underplays the value of expert knowledge and is antithetical to the RBV that has come to dominate the field of strategy. The RBV is one of the foundational pillars of dynamic capabilities. This chapter builds on the previous arguments, and discusses the management of talent in terms of the dynamic capabilities framework.

In recent decades, expert talent has become more important than ever for the creation and management of technology in the global economy (Albert and Bradley, 1997; Reich, 2002). Many job categories are becoming so complex and interdependent that managing them in a traditional structured hierarchical format is no longer a realistic option. Some decomposition of processes into specialized functional tasks is still necessary, but deep hierarchies are too cumbersome and inflexible.

For some time now, it has been argued that managing expert talent, especially in the creative industries and in professional services, requires firms to implement a bundle of HR practices such as “rigorous recruitment and selection procedures, performance-contingent incentive compensation systems, management development and training activities linked to the needs of the business, and significant commitment to employee involvement” (Becker and Huselid, 1998: 55). While these processes are important, they must be enacted within a broader understanding of the firm’s strategy, capabilities, and potential, which an understanding of the dynamic capabilities framework can provide.

The management of experts is also fundamentally different from the management style applicable to regular line employees, principally because it requires a much lighter touch. Top talent generally does not need to be told what to do, at least not by a manager with little

familiarity with the expert's area of knowledge. In today's global business context, the business enterprise must accomplish the difficult but essential tasks of delivering intellectual stimulation to its experts, keeping them financially satisfied, fostering collegiality and collaboration among them, and allowing them the guided professional autonomy they seek (and that their work demands) while holding them accountable to the enterprise.

This is not to say that experts and highly credentialed professionals per se are what make a company great. In fact, if a company becomes too dependent on one or a handful of individuals, and especially if they are remunerated inappropriately, the morale of all employees can be undermined. And hiring more experts generally can't save a dysfunctional organization (Pfeffer, 2001). Likewise, experts won't salvage a flawed strategy (Huselid, Beatty, and Becker, 2005), although they may be able to help replace it with a better one.

In this chapter we argue that the competitive advantage of the enterprise in high-talent industries is more than ever rooted not only in the stock of experts it can access but also the organizational capabilities it can harness. Hence, competitive advantage by no means depends on experts alone. Their management must be part of the broader orchestration of the firm's resources as it exercises its dynamic capabilities in the service of a good strategy.

"Expert," as used here, refers to someone with a high level of specialized knowledge (human capital) derived from some mix of education and experience. Experts are also assumed to be strong on the complementary dimensions defined by Sparrow, Hird, and Balain (2011): business model capital (insight into the organization's value proposition for customers), social capital (the ability to tap into networks within and beyond the organization), and political capital (influence and prestige where needed). In other words, the experts here represent the successful product of the talent-management process discussed in the other chapters of this book.

Two categories of experts are introduced in this chapter:

- the literati and numerati
- entrepreneurial managers.

In this chapter, after briefly analyzing these two categories of top talent, we introduce the dynamic capabilities framework, which specifically addresses the responsiveness of organizations to changes

in their environment. We argue that the quality of the management of a firm's experts (i.e., the quality of its management of talent) can make the difference between inertia and action for business enterprises facing particularly challenging competitive environments. The second half of the chapter addresses the key issues of managing a firm's experts in a way that maximizes their contribution to the firm's dynamic capabilities. Compared to the management methods used for most employees, experts must be allowed more autonomy, expert teams must be allowed more latitude, and expert incentives must allow for more differentiation among individuals.

## 4.2 Top talent

Society has always had a non-uniform distribution of productive talents, with some individuals being far more skilled and committed than others. The rise of "the expert" in the corporate world occurred in tandem with improvements in the US educational infrastructure in the early decades of the twentieth century (Galambos, 2010). Continual increases in the organizational and technical complexity of problems facing the business enterprise have heightened the need for experts.

Individual productivity in many fields is quite skewed. This was first observed by Alfred Lotka (1926) in a study of the authorship of articles in nineteenth-century physics journals. Lotka found that approximately 6% of publishing scientists produced half of all papers. Lotka's results are reasonably robust – they have been shown to hold for many disciplines in many different time periods.

Studies have found that the most productive and eminent scientists are strongly motivated. Almost all have good stamina in the sense that they work hard in the pursuit of long-run goals (Fox, 1983: 287).

### 4.2.1 *Where experts come from*

A firm's stock of experts will typically be a combination of those who came to the organization fully formed, so to speak, and those who have come up from within the organization. Their background may be theoretical/academic or practical/empirical.

Some avenues for securing the services of experts may be a better fit with the firm's capabilities than others (Chambers *et al.*, 1998). For example, hiring new graduates makes the most sense for a firm with an

adequate training program. Gaining expert talent through the acquisition of small start-ups or other companies makes the most sense for a company that has integration routines in place. In medium- to large-sized organizations, good training and talent-management programs can help to ensure that high-potential employees are steered onto a management track and high-performing literati/numerati are appropriately tasked and rewarded.

External recruitment of top talent is challenging because of the need to compete for experts at market prices. External searches must be performed by experienced professionals and by a management team that is able to make accurate talent assessments, and who are in turn made accountable for their decisions. Individual hires must be assessed for compatibility with the prevailing corporate culture. If executed poorly, attempts to compete for “star” talent from external sources may produce a bad case of “winner’s curse.”

Every organization has a good chance of attracting/developing a percentage of top talent. Expert talent is highly mobile in most Western economies. The relative decline of corporate pension plans, the weakening of strong corporate cultures, and the erosion of loyalty toward employers have increased the opportunity for head-hunting highly skilled employees. However, these same factors also make it harder to retain experts, making it all the more critical that management addresses their needs while protecting the firm’s profit margins. Research shows that those with the most training, education, and ability are the most likely to quit if dissatisfied (Sturman and Trevor, 2001).

Competition for high-end talent is also increasingly global. In the United States, immigrants have always been significant in the scientific and engineering workforce. In recent years, the foreign-born have also played a significant role in entrepreneurship. A survey by Duke University and the University of California (Duke Today, 2007) shows that one quarter of newly founded engineering technology firms in the United States in the decade 1995 to 2005 had at least one foreign-born founder. In Silicon Valley, the percentage was over 50%.

Needless to say, the recruitment of top talent can be fraught with hazards, as performance on one platform need not be a good indicator of performance on another (Groysberg, Nanda, and Nohria, 2004). The issue of “contextual talent” is analyzed below, under “4.4.4 Incentives and motivation.”

### 4.2.2 *Literati, numerati, and entrepreneurs*

The two categories of expert considered in this chapter are the *literati*/*numerati* and entrepreneurial managers. Entrepreneurial managers can be “members” of the *numerati* or *literati*, but it is by no means the case that they must be.

The *literati* and *numerati* are marked by high levels of education and/or experience (Teece, 2011). The *literati* tend to have both undergraduate and, usually, graduate degrees in arts and letters, economics, business, or law. The *numerati* are likewise highly educated, but in mathematics or statistics; the sciences, including computer science; information systems; engineering; or accounting and finance. In some fields, such as computer science, experience can substitute for an advanced degree. In other fields, such as medicine, both academic and practical (clinical) training are necessary for deep proficiency.

Both groups have significant analytical skills, but the *literati* tend to be more specialized at synthesis and the communication of ideas. The *numerati* excel at analysis, especially of large data sets.

A third type of expert is the entrepreneurial manager. As Baumol and Strom (2007: 233) note, “A close look at the extraordinary economic growth of the last two centuries, however, suggests that the market mechanism does not do its work without the input of individual actors – the entrepreneurs who bring cutting edge innovation to market.” This holds as true for entrepreneurial managers within large firms as it does for the founders of start-up companies.

In fast-paced, globally competitive environments, consumer needs, technological opportunities, and competitor activity are constantly in flux. Opportunities open up for both newcomers and incumbents, putting the profit streams of incumbent enterprises at risk. As discussed by Teece, Pisano, and Shuen (1997), the path ahead for some emerging marketplace trajectories is easily recognized. In microelectronics this would include miniaturization leading to greater chip density. However, many emerging trajectories are hard to discern. For instance, it is not currently clear when, or even if, a new car battery technology will emerge that can make electric vehicles price- and performance-competitive with internal-combustion cars.

Entrepreneurial managers, like entrepreneurs, excel at the scanning, learning, creative, and interpretive activities needed to sense (and later

seize) new technological and market opportunities. Investment in research is often a complement, but never a replacement, for such activities.

The ability to create and/or sense opportunities is clearly not uniformly distributed among individuals or enterprises. Opportunity discovery (or creation) requires specific knowledge, creative activity, the ability to understand user/customer decision making, and practical wisdom (Nonaka and Toyama, 2007). It involves interpreting information in whatever form it appears – a chart, a picture, a conversation at a trade show, news of scientific and technological breakthrough, or the angst expressed by a frustrated customer. One must accumulate and then filter information from professional and social contacts to create a conjecture or a hypothesis about the likely evolution of technologies, customer needs, and marketplace responses.

Once opportunities are glimpsed, entrepreneurs and managers must also devise a means for capturing value. Neither the identification nor even the creation of opportunities result spontaneously in capturing value. Indeed, many inventions go unexploited for extended periods. The pioneer may not turn out to be the winner (Teece, 1986, 2006).

When opportunities are first glimpsed, entrepreneurs and managers must decide which technologies to pursue and which market segments to target while continuing to interpret ongoing developments. They must also develop a forecast about how technologies will evolve and how – and how quickly – competitors, suppliers, and customers will respond. Competitors may or may not see the opportunity, and even if they do they may calibrate it differently. Their actions, along with those of customers, suppliers, standard-setting bodies, and governments can also change the nature of the opportunity and the manner in which competition will unfold.

On the basis of these conjectures, the entrepreneur/manager must move to seize the opportunity by designing and implementing a business model, preferably one that cannot readily be imitated. Getting the timing and the basic elements of the business model right is a critical part of the innovation process (Teece, 1986, 2010).

These functions of the entrepreneur are quite different from those of the ordinary manager. The managers of ordinary activities must oversee the ongoing efficiency of established processes. They need to ensure that schedules are met and contracts honored, that quality and

productivity improve, and that the business model is constantly tuned. Although there are creative aspects to accomplishing these tasks, managing the operations of an ongoing business, especially in a relatively static environment, is comparatively straightforward. Great entrepreneurs need not be particularly adept at operations – but of course they do need to be supported by a strong operations team.

To summarize, entrepreneurial managers with responsibility for lines of business, departments, or the entire enterprise bear the primary responsibility for identifying and pursuing opportunities. The literati and numerati provide insight and analysis at each stage of the process.

But the ultimate determinants of success or failure are organizational. The best knowledge and leadership cannot transform a company or a marketplace if the company lacks the collective capabilities to carry out the underlying vision, and it is to the consideration of capabilities that we now turn.

### **4.3 Strategy, resources, and capabilities**

In order to be fully effective, the activities and management of experts must be organized within an effective strategic-management framework. The activities of experts, somewhat more than of other employees, must be tightly linked to strategy development and execution. And strategy, as developed by entrepreneurial managers, must correctly take into account the available resources and capabilities of the organization (and of its experts), ensuring that any capability gaps are filled as needed.

One of the leading paradigms in the strategic-management field is the dynamic capabilities framework, which builds on the RBV of the firm. The resources framework has developed in the management literature, building on Penrose (1959), Rubin (1973), and others. In the 1980s, a number of strategic-management scholars, including Teece (1980, 1982, 1984), Rumelt (1984), and Wernerfelt (1984) began theorizing that a firm earns rents from leveraging its unique resources, which are difficult to monetize directly via transactions in intermediate markets.

This section begins by reviewing the concept of organizational resources, including ordinary capabilities. Then the dynamic-capabilities framework, which can inform the management of experts, is presented.



### 4.3.1 *Resources and ordinary capabilities*

Resources are firm-specific, mostly intangible, assets that are difficult, if not impossible, to imitate. Examples include intellectual property, process know-how, customer relationships, and the knowledge possessed by groups of especially skilled employees. They are typically not considered at all in the firm's financial statements, except perhaps in a balance sheet line item for "Goodwill" related to an acquired firm.

Resources – particularly intellectual capital – are idiosyncratic in nature, and are difficult to trade because their property rights are likely to have fuzzy boundaries and their value is context dependent. As a result, there is no well-developed market for most types of resources/intellectual capital; in fact, they are typically not traded at all. They are also often quite difficult to transfer among firms simply from a management (let alone transactions) perspective.

The resource-based view of the firm was an important intellectual leap beyond the prevailing economic view that strategic success is obtained by efficiency and the creation of barriers to entry. Its stress on the fungible nature of assets accorded well with the understanding of many practitioners, especially in high-tech industries. They know that sustainable success comes from the laborious accumulation of technological assets and human resources, not from clever strategic positioning. But the resource-based approach failed to pursue the questions of how firms develop or acquire new competences and adapt when circumstances change. The dynamic capabilities approach deals directly with such questions.

Capabilities are a type of resource. It is perhaps easier to understand what dynamic capabilities are by juxtaposing them against the more familiar ordinary capabilities.

Ordinary capabilities undergird the firm's technical fitness, that is, how effectively the firm carries out its production and distribution functions, regardless of how highly the output is prized in the market (Teece, 2007). Technical fitness supports static efficiencies; it allows an organization to keep "earning its living by producing and selling the same product, on the same scale and to the same customer population over time" (Winter, 2003: 992). But, unless competition is very weak, ordinary capabilities are unlikely to support durable competitive advantage.

Ordinary capabilities derive from the presence of skills, facilities, and equipment; from the firm's processes and routines; and, potentially,

from the networks in which the firm is embedded. There is a temptation to equate operational and ordinary capabilities; but they are not the same concept. Ordinary capabilities include administrative and governance capabilities, not just operational ones. These three elements must be practiced together. Operations need to be planned and coordinated in order for tasks to be performed appropriately.

An ordinary capability enables the firm to perform a definable task that can be measured against a target or an external “best practice” standard. Many best practices, however, diffuse rather quickly because they are often explicit.

As Bob Lutz (2011), the former vice-chairman at General Motors, observed about the auto industry:

The operations portion of the automobile business has been thoroughly optimized over many decades, doesn't vary much from one automobile company to another, and can be managed with a focus on repetitive process. It is the “hard” part of the car business and requires little in the way of creativity, vision or imagination. Almost all car companies do this very well, and there is little or no competitive advantage to be gained by “trying even harder” in procurement, manufacturing or wholesale.

This statement is revealing because it indicates how ordinary capabilities are, to a large extent, imitable and hence likely to be widely distributed, at least in the developed economies. Ordinary capabilities that are less explicit and therefore capable of providing valuable differentiation from rivals (at least when the capabilities are strong) include how decisions are made, how customer needs are assessed, and how quality is maintained.

#### 4.3.2 *Dynamic capabilities*

A firm's ordinary capabilities enable the production and sale of a defined (but static) set of products and services. But the presence of ordinary capabilities says nothing about whether the current production schedule is the right (or even a profitable) thing to do. The nature of such routine-based capabilities, and their underlying processes, is that they are not meant to change – at least not until they have to.

The change process is a key part of higher level competences called dynamic capabilities. Dynamic capabilities determine whether the enterprise is currently making good choices with respect to products

and market segments, and whether its future plans are appropriately matched to changing consumer needs and technological and competitive opportunities (Teece, Pisano, and Shuen, 1997; Teece, 2009).

Dynamic capabilities are the firm's ability to integrate, build, and reconfigure internal – and, often, external – resources to address and shape rapidly changing business environments. Dynamic capabilities may sometimes be rooted in certain change routines (e.g., product development along a known trajectory) and analysis (e.g., of investment choices). However, they are more commonly also rooted in creative managerial and entrepreneurial acts (e.g., pioneering new markets).

Dynamic capabilities require the business enterprise (especially its top management) to develop conjectures, validate them, and realign assets and competences for new requirements. They reflect the speed and degree to which the firm's idiosyncratic resources can be profitably aligned and then, when needed, realigned to match the opportunities and requirements of the business environment.

Dynamic capabilities are also used to assess when and how the enterprise is to ally with other enterprises. The expansion of trade has enabled and required greater global specialization. To make the global system of vertical specialization and co-specialization (bilateral dependence) work, there is a need (indeed an enhanced need) for firms to jointly develop and align assets in order to deliver a joint “solution” that customers value.

Not infrequently, the innovating firm(s) will be required to create a market, such as when an entirely new product is offered to customers, or when new intermediate products must be traded. Dynamic capabilities, particularly the more entrepreneurial competences, are a critical input to these market-creating (and co-creating) processes.

Teece (2007) suggests that the dynamic capabilities necessary for continuous renewal can be divided into three clusters: (1) identification and assessment of an opportunity (*sensing*), (2) mobilization of resources to address an opportunity and to capture value from doing so (*seizing*), and (3) continued renewal (*transforming*).

Sensing is an entrepreneurial activity – whether conducted by a new or an existing firm – that involves the identification and conceptualization of opportunities both within and beyond prevailing technological paradigms. In some cases, as stressed by Kirzner (1973), the firm may have differential access to existing information relative to rivals. More often, though, it is a matter of the firm's managers and

experts scanning, interpreting, and learning across the same technologies and markets that are visible to rival firms in an effort to discern the possibility of a new or better competitive position (March and Simon, 1958; Nelson and Winter, 1982).

The literature on entrepreneurship emphasizes that opportunity discovery and creation can originate from the cognitive and creative capacities of an individual. However, the discovery process can also be grounded in organizational routines, such as continuous research and development activity, external scanning for new technologies, and co-development activities with alliance partners.

As the global sources of invention and innovation become widely dispersed and technologies at the frontier increasingly complex, it is less likely that the enterprise can rely solely on internal R&D, even in very large firms. As a result, intangible assets that formerly needed to be built internally are outsourced, at least partially. Declines in the cost of computing and communications have facilitated collaboration with suppliers and other elements of the innovation ecosystem (Teece, 1989). The expansion of outsourcing and collaboration has increased the viability of an “open innovation” approach (Chesbrough, 2006). With open innovation, a firm identifies and exploits new technologies and creative capacities developed both inside and outside the boundaries of the firm.

In practice, management teams often find it difficult to look beyond a narrow search horizon tied to established competences. Henderson (1994) cites General Motors, Digital Equipment, and IBM as companies that faced major problems from becoming trapped in their deeply ingrained assumptions, information filters, and problem-solving strategies.

Seizing an opportunity requires investments in development via further creative and/or combinatorial activity that addresses the opportunity with new products, processes, or services. It may involve building a necessary new competence or identifying an appropriate external alliance that can secure access to one (Teece, 1986).

Transformation of the firm itself is the third group of capabilities required for creating (and capturing) value. Sensing and seizing delineate a path, but the firm still needs to periodically consider (and reconsider) its own “fit” to the opportunities it plans to exploit. Management must assess the coherence of the firm’s business model, asset structure, and organizational routines with respect to its environment. Yet commitment to existing processes, assets, and problem

definitions makes this extremely hard to do, especially in a firm that is currently performing satisfactorily.

Organizational innovation can allow the firm to escape unfavorable path dependencies. When such innovation is incremental, routines and structures can probably be adapted gradually. However, reconfiguring the firm is often costly in terms of both money and morale. Radical organizational innovation can potentially be accommodated by a “break out” unit where new capabilities are established before being introduced to the firm as a whole (Teece, 2000).

Entrepreneurial managers and key experts play a large role in sensing, seizing, and transforming, but the supporting routines and values must be deeply ingrained in the organization. Apple’s former and now deceased CEO, Steve Jobs, was seen as critical to the company’s success (based on Apple’s declining performance after he was ousted as CEO in 1985, followed by the firm’s stellar performance after his return in 1997).

Apple’s success appears to have stemmed in part from Jobs’ prioritization of possibilities based on his deep understanding of the market and an uncompromising insistence on ease of use and on appealing product designs. This approach can be routinized to some extent (the organization comes to know “what Steve likes”) but Apple and its customers unquestionably benefited from the touch of a creative and brilliant conceiver of new (categories of) electronics products that appeal to consumers around the world.

There are, of course, risks in relying on a particular talented individual, especially if those talents don’t translate into a set of replicable internal routines. Jobs himself was aware of this. In 2008, before his second medical leave, he established an internal business school at Apple in which academics were brought in to prepare cases about how key past decisions, such as the creation of the Apple Store, were reached (Lashinsky, 2011). By having executives teach these cases to the company’s managers, Apple’s high-level routines and top-management processes are propagated among its current and future leaders.

This example is by no means unique. IBM successfully routinized its selection, evaluation, and exploitation of “emerging business opportunities” in a process that has resulted in billions of dollars of additional revenue (O’Reilly, Harreld, and Tushman, 2009). Similarly, Cisco has routinized its selection and integration of acquisition targets (Mayer and Kenney, 2004).

An enterprise will be vulnerable if the sensing, creative, interpretive, and learning functions are left to the cognitive capacities of a few individuals. Many companies do become dependent on a key leader. Over time, however, a gifted individual's (or team's) talents, processes, and values can be embedded in corporate culture and organizational routines either formally, by the creation of systems, or informally, by repeated demonstration and communication.

#### **4.4 Organizing and managing the literati/numerati**

Although experts are required for some of the operational routines that constitute ordinary capabilities, they are especially vital contributors to a firm's dynamic capabilities. Bringing out their best in that regard requires a different management approach than is needed for operational excellence.

Many expert activities, such as developing new product lines, involve project work that requires cooperation/collaboration among the literati, the numerati, and entrepreneurs. An enterprise can hire the brightest, most creative people, but it is only through successfully fostering the sharing of information, collaboration, and the use of networks inside and outside the enterprise that their creative potential will be released (Subramaniam and Youndt, 2005).

To be effective, this collaborative model of knowledge generation must, in turn, be embedded in a knowledge-friendly enterprise. The literati and numerati are unlikely to be productive and satisfied in a traditional hierarchical organization, being compensated in traditional ways, and having compensation put at risk for events beyond their control. Dynamically competitive enterprises must understand the contextual value of talent, and must develop new ways of compensating exceptional talent.

Table 4.1 contrasts this knowledge model (right-hand column) with the characteristics of the archetypal industrial model that still characterize too many large organizations.

It is also important to recognize that not everything is appropriately organized in collaborative teams. Indeed, there is a great deal about traditional teams that involve hidden and unnecessary costs. When team requirements are too heavy, decision cycles lengthen, expenses mount, and the organization adopts an inward focus.

Put differently, one cannot simply assume that more is better when it comes to collaboration. Consensus and participatory leadership aren't

**Table 4.1** *Contrasting management models of the business enterprise*

Organizational characteristics	Industrial model	Knowledge model (for literati and numerati)
Hierarchy	Deep	Shallow
Leadership	Centralized	Distributed
Work	Segmented	Collaborative
People viewed as	Cost	Asset
Basis of control	Authority	Influence and example
Assumptions about individuals	Opportunistic	Honorable
Financial incentives	Base salary + discretionary bonus	Metrics-based compensation; limited discretion

always a good thing, particularly when the issues are complex and there is considerable asymmetry in the distribution of talents in the team. The right voices need to be heard. Forced teaming often leads to excessive consensus building, slow decision making, and the wasting of time and money. While authentic dissent ought to be highly valued, unproductive collaboration can be more dangerous than missed opportunities for quality engagement and collaboration.

Project teams should be kept small, intimate, yet diverse. Project groups that complete their task or run into “blind alleys” should disband so that the mix of talents are ready to be reconfigured as needed to meet future demands. Assigning people to a project “because they’re used to working together” is a path to failure.

This section presents the reasons for, and organizational implications of, light-touch management; the managerial aspects of teams, with an emphasis on the innovation process; and a special focus section on the top management team, where entrepreneurial managers should be well represented. A final section briefly discusses appropriate incentives for motivating and retaining top talent.

#### *4.4.1 Light-touch management*

With respect to the literati and numerati, strongly authoritarian management is likely to be dysfunctional. Rigidly bureaucratic corporate cultures around collaboration are likewise anathema.

Management of experts must have a light touch. Otherwise cooperative efforts will be suppressed, and creativity will be compromised. Management is seldom sufficiently informed to second guess the difficult and granular technical tradeoffs and judgments of the literati and numerati with respect to solving the problem at hand. Evaluations must be based more on results and less on the processes for reaching them.

The commonest purpose for hierarchy – to assign and oversee well-defined tasks – is simply not needed for many types of expert professional work. Experts tend to be substantially self-motivated and self-guided.

Accordingly, management of experts usually needs to be decentralized or “distributed.” Traditional notions of management that rely heavily on hierarchy and decisions driven from the top are unlikely to work well when expert work is a large component of the firm’s activities.

Of course, strong accountability is still required from the literati and the numerati. Autonomy and accountability go hand in hand; the more easily performance can be measured, the greater the autonomy that can safely be permitted.

Self-organized cooperative activity is frequently observed in science projects and in creative engineering projects. Richard Nelson (1962) studied the development of the transistor at Bell Labs and noted:

the type of interaction we have noted in the transistor project requires that individuals be free to help each other as they see fit. If all allocation decisions were made by a centrally situated executive, the changing allocation of research effort called for as perceived alternatives and knowledge change would place an impossible information processing and decision making burden on top management. Clearly the research scientists must be given a great deal of freedom. (Nelson, 1962: 569)

Nelson likewise notes that teamwork in a creative context is likely to differ from traditional contexts. The development of the transistor did involve teamwork. But here is how Nelson describes what teamwork meant:

it meant interaction and mutual stimulation and help. . . . But several people outside the team also interacted in an important way. . . . teamwork. . . . did not mean a closely directed project. . . . The project was marked by flexibility – by the ability to shift directions and by the rather rapid focusing of attention by



several people on problems and phenomena unearthed by others. (Nelson, 1962: 578)

and

the informality of the decision structure played a very important role in permitting speedy cooperative response to changing ideas and knowledge. Thus the transistor was a team invention, but not in the sense of the team which has grown fashionable in recent years. (Nelson, 1962: 579)

Fifty years later, the same lessons – particularly the importance of decentralization and flexibility – were being relearned. John Chambers, CEO of US network equipment company Cisco, remarked: “In 2001, we were like most high-tech companies – all decisions came to the top 10 people in the company, and we drove things back down from there” (Chambers quoted in McGirt, 2008: 93). Cisco instituted a more decentralized and collaborative management system, with a network of councils and boards entrusted and empowered to launch new businesses, and incentives to encourage executives to work together. Chambers claimed that “these boards and councils have been able to innovate with tremendous speed. Fifteen minutes and one week to get a [business] plan that used to take six months” (Chambers quoted in McGirt, 2008: 93). However, over time, the structure became sclerotic and, beginning in 2009, Cisco reduced the number of councils from 12 to 3, while dissolving the associated boards, in a renewed push to speed up decision making (Clark and Tibken, 2011).

The point here is a simple one: in fast-paced complex environments where there is heterogeneity in customer needs and the focus is on technological innovation, it is simply impossible to achieve the necessary flexibility and responsiveness with a command-and-control organizational structure. Moreover, with a highly talented workforce, excessive centralization can shut down local initiative.

The above admonitions are not meant to imply that top management should not guide and coordinate innovative activities. In fact, there are certain types of innovation – particularly “systemic” innovation (Teece, 1984) – where close coordination of different groups is required.

Managers of innovative enterprises must learn to lead without relying on the authority that comes from a position in an organizational chart or the ‘C’ designation in their title. This imposes new challenges for some companies and some individuals, but it is the way of the future in many contexts. The challenge is to connect individual

initiatives to the overall corporate strategy without building an expensive and initiative-sapping hierarchy.

In some settings, it may even be desirable to invert the traditional hierarchy in order to create the organizational structures in which professionals can perform to their potential (Quinn, Anderson, and Finkelstein, 1996). With an inverted hierarchy, the job of the manager is to provide support by creating incentive alignment and ensuring resource availability. The experts may even take responsibility for determining executive wages.

In purely creative environments, it is indeed the highly skilled experts that, in effect, hire “bosses” rather than the other way around. The Hollywood agency model for creative talent was an early manifestation. As explained by Albert and Bradley (1997), the stars themselves, beginning with Newman, Streisand, and Poitier, broke away from the studios to create their own production company, First Artists. A key element of First Artists’ strategy was to create a climate in which leading actors can control their professional environment and lives. The artists put a professional manager in place, but the manager’s mandate was to effectuate the artists’ view of how films should be produced. There have been many talent-based independent production companies founded since, with varying degrees of success.

University faculties have some similar attributes. The faculty arguably hires their Dean since the Dean generally serves at the sufferance of the faculty, at least in some of the major research universities such as the University of California, Berkeley. The university requires the discharge of teaching, research, and service obligations by faculty, but allows faculty members considerable discretion as to whether and when tasks (other than class meetings) are performed. Professional services organizations in the legal, medical, and other fields exhibit similar characteristics.

Implemented properly, the distributed-leadership approach is not an abdication of managerial responsibility. It is just the opposite. The executive leadership team sets strategy and goals and must retain credibility with its experts as well as being answerable to the board of directors and to other stakeholders.

While creative activities need to be organized in a distributed/decentralized way, there are operational activities involving experts that should not be managed in this way. The accounting, finance, and treasury functions are obvious examples. As noted above, when

the goal is to achieve systemic innovation, there may well be activities that require tight integration because the project/technology spans multiple lines of business, or because there are very significant sales benefits to be achieved from a coordinated approach.

#### *4.4.2 Teams and innovation*

Because of increased specialization, interaction among people from diverse disciplines or functional groups is almost always required to solve the complex problems that accompany the exercise of a firm's sensing, seizing, and transforming capabilities. The numerati and literati require considerable professional autonomy, but must nevertheless collaborate when collaboration yields benefits.

In principle, the outcome from a group such as a cross-functional team can exceed the capabilities of its best individual members (Larson, 2007). However, if not managed properly, the bringing together of specialists from different parts of the organization can impede innovation (Ancona and Caldwell, 1992).

At the same time, there are numerous ways that teams go astray, from unproductive conflict that leads to indecision to peer pressure that leads to a flawed conclusion. Team members may be under-committed, too tied to their normal functions or disciplines, or unwilling to collaborate.

Groups that encourage expression of minority opinions make higher quality decisions (Maier, 1970; Nemeth, 2012). Avoiding conflict often results in low-quality decisions (Tjosvold, 1985). Emotional conflict, however, is more likely to have a negative effect than is substantive conflict over solutions to task-related problems (Pelled, Eisenhardt and Xin, 1999). Conflict is most likely to contribute to high-quality decisions when trust is high, i.e., when members don't suspect any one on the team of trying to score points at the others' expense (Dooley and Fryxell, 1999).

Group leaders can avoid suppressing healthy disagreement (based on the issues, not on the people, involved) by not expressing their positions too early in the process (Janis, 1972). Openness should be encouraged by not dismissing any idea too quickly.

Yet it is vital to have leadership, at the team level or higher, that knows which ideas can be rejected out of hand. A key role of entrepreneurial managers is, having enunciated a vision, to permit experimentation and search, then support promising paths and close down foolish ones.

Dougherty (1992) suggests that the interaction and collaboration necessary for innovation in cross-functional teams is best brought out by shared learning activities, such as focus groups and user visits. Shared activities also promote group cohesiveness, which has been shown to contribute to higher performance by R&D project teams (Keller, 1986).

An added wrinkle is that teams are increasingly spread across organizational boundaries and/or large distances. This is truer than ever for innovation, as large and small companies have begun to tap into pools of science and engineering talent in industrializing economies. Fortunately, the autonomy and trust that are appropriate for managing experts translate easily to the “virtual team” context, where continuous direct leadership may not be possible due to time zone differences. To overcome the social remoteness of distance, special measures, such as a project kick-off meeting that brings everyone to a single location for a few days, must be devised to at least partially formalize the process of fostering mutual support with a shared purpose (Siebdrat, Hoegl, and Ernst, 2009).

While physical distance forces the use of virtual teams, virtuality is actually a matter of degree since all teams, even those whose members are co-located, will employ some forms of computer-mediated communication. There is still much work to be done regarding the performance effect of virtual teams, but one consistent finding is that virtual teams require more time to complete tasks than face-to-face teams, so they may not be suitable for the most urgent projects (Martins, Gilson, and Maynard, 2004).

Whether team members are dispersed or co-located, their work must be tied to the overall strategy of the business (Wheelwright and Clark, 1992). Management of the team needs to tread the line between preventing the natural tension and creativity of innovation from descending into chaos and constraining the team by defining the goals and strategy linkage so narrowly that real innovation is impossible. Takeuchi and Nonaka (1986) call this “subtle control,” which involves a monitoring function that leads to intervention (e.g., eliminating a team member) only when absolutely necessary.

In the case of teams engaged in innovation activities, perhaps the best interface between the team and upper management is a “heavyweight” project manager (Clark, Chew, and Fujimoto, 1987). The “heavyweight” has both credibility within the team and power/prestige

in the organization as a whole. The latter is important for ensuring the team the necessary resources and room to maneuver, and is also important for gaining the project manager the respect and cooperation of the literati and/or numerati on the team.

In some special cases, when the stakes are high, the technical challenge great, or the deadlines too close, an organization may assemble a team consisting exclusively of its most able experts. The management requirements in this case are somewhat different from more traditional teams because experts' experts are typically used to being in the leadership position themselves. It may be helpful to provide some extra initial structure to foster collaboration, such as breaking into smaller groups or even pairs that can tackle segments of the overall challenge in parallel.

With these all-expert teams, the identity of the team leader is of even greater importance than in less intense settings. For all to succeed, there must be mutual respect between and among experts and the leader. In practice, this means that the team leader will need to be able to massage large egos without seeming patronizing.

The goal in such project groups, or "virtuoso teams" (Fischer and Boynton, 2005), is not accommodation and harmony; rather, the aim is to achieve excellence by unleashing individual creativity. A higher level of (topic-specific, non-personal) conflict is to be expected and bounded only by the common goal and deadline.

Table 4.2 summarizes some of the differences between traditional and virtuoso teams.

#### *4.4.3 The top management team and leadership*

A particular type of expert team is worthy of special attention. The top management team (TMT), meaning those who report directly to the CEO, tackles highly complex issues and bears responsibility for the future of the organization. Within the dynamic capabilities framework, the TMT bears the ultimate responsibility (individually and collectively) for deciding which opportunities are worth pursuing, for developing and promulgating a coherent vision and strategy, and for orchestrating the firm's resources accordingly. When the TMT performs poorly together, the result is likely to be organizational decline (Hambrick, 1994).

Top management team diversity, in terms of functional background, education, and company tenure, has been found by a study of the

Table 4.2 Key differences between traditional teams and virtuoso teams

Team characteristics	Traditional teams	Virtuoso teams
<b>Membership</b>	Members chosen based on who has available time	Members chosen based on expertise
<b>Culture</b>	Collective	Collective and individual
<b>Focus</b>	Tight project management. “On time and on budget” more important than content	Ideas, understanding, and breakthrough-thinking emphasized
<b>Target</b>	Conventional output	Breakthrough output
<b>Intensity</b>	High/medium	High
<b>Stakes</b>	Low/medium	High

Source: adapted from Fischer and Boynton (2005).

airline industry to lead to novel strategies, although action tended to be slower than for homogenous TMTs (Hambrick, Cho, and Chen, 1996). More importantly, the study found that heterogeneous TMTs were associated with better market share and profit outcomes.

A well-integrated TMT, in which members share openly and truly work together on strategic issues, has been shown to facilitate the pursuit of new concepts while not losing sight of current operations – so-called organizational ambidexterity (Lubatkin *et al.*, 2006). Ambidexterity, in turn, is a vital aspect of dynamic capabilities (O’Reilly and Tushman, 2008). Top management team integration is also associated with proactive strategy formation and agile implementation in fast-moving competitive settings (Chen, Lin, and Michel, 2010).

A well-functioning TMT is a resource that takes time to build. Studies have found that, contrary to conventional wisdom that suggests that lengthy CEO tenure leads to complacency, high CEO tenure is actually associated with better collaboration within the TMT, which in turn is associated with better firm performance (Simsek *et al.*, 2005). This CEO tenure effect appears to be independent of the length of time the TMT itself has been working together.

To manage the TMT, CEOs should be concerned with how the team works as a group, sharing information and solving problems, as much as with individual performance. Carmeli, Tishler, and Edmondson (2009) provide evidence that the extent to which a CEO encourages collaboration and open communication within the TMT contributes to

the ability to learn from failures, which is in turn linked to the quality of strategic decisions. Norms that permit the airing of disagreements about the task at hand are beneficial for the critical evaluation of options (Jehn, 1995).

Carmeli, Schaubroeck, and Tishler (2011) found that participatory leadership, in which the CEO shares decision authority, improves the collaborative nature of the TMT and, more importantly, firm performance. When conflicts of interest arise between TMT members, the CEO must act as a facilitator for airing the differences and resolving them in the way that is best for the organization.

Bass (1985) identified two types of leadership, which have been adopted for numerous subsequent studies. *Transactional* leaders know how to motivate their employees to meet expectations and accomplish set tasks that fall within ordinary capabilities. *Transformational* leaders know how to inspire and challenge employees in ways that cause them to perform beyond expectations. According to Bass, transformational leadership “is more likely to emerge in times of distress and rapid change” (Bass, 1985: 39).

Naturally, these differences in leadership affect the functioning of the TMT and the organization. Ling *et al.* (2008) found that TMTs under transformational CEOs had more decentralized responsibilities, were more collaborative, and were more willing to tackle new growth opportunities. This result ties leadership style directly to the strategic transformation at the heart of dynamic capabilities.

#### *4.4.4 Incentives and motivation*

In today’s global markets, unique skills and knowledge can command high returns. The compensation ranges for experts need to be less compressed than those for other employee categories, reflecting each individual’s contribution. Yet incentives for motivating expert talent can be non-monetary as well as financial. Where experts are concerned, more money will generally not make up for an unsatisfactory work environment.

The salaries that top talent can command have risen because the creative, analytical, and “rainmaking” abilities of leading professionals can increasingly be leveraged across global markets. Skills that can help solve complex problems, help make critical decisions or resolve complex disputes, help save lives, help win business, and help design and

develop new products and services, are vital to business success and are relatively scarce. In short, where the stakes are high and where top talent can make a difference, that talent can earn exceptional rewards.

Reich (2002: p. 107) and many others have observed that talented people can earn more today, relative to the median wage, than could talented and ambitious people in the industrial era. Larger and more open (“contestable”) markets are one reason why dispersion in earnings has increased. For example, the outsourcing of components and low-end services to lower cost locations has disproportionately benefited skilled workers in the advanced economies of the United States, Western Europe, and Japan (Feenstra and Hanson, 1999).

Getting financial incentives right is fundamental. Suffice to note that there is ample evidence that pay for performance is associated with higher performance at both the individual (Jenkins *et al.*, 1998) and organizational levels (Gerhart, 2000). The resulting pay differentials are generally accepted by top talent – so long as they are truly capability/performance based.

Unfortunately, the more discretion that management has to set pay, the more energy and resources are likely to be wasted by people trying to capture more of the available resources (Milgrom and Roberts, 1987). This can best be avoided by setting quantifiable performance metrics as the basis for pay, but this is not always possible (Teece, 2003).

In setting pay levels, it is important to distinguish between intrinsic talent and contextual talent. Intrinsic talent is that talent which provides/commands full value on a stand-alone basis. In a professional services organization, for instance, this might represent the business that professionals can source based on their own wits and capabilities, i.e., independent of the brand or platform on which they stand.

Individual contextual value can exceed intrinsic value when the individual benefits from the other complementary assets (such as infrastructure and brand) that the organization provides. Contextual value may be very large, especially in circumstances where teams must be employed to get the job done, and when the firm’s infrastructure and staffing play important support roles.

A firm may not need to pay as much for an expert whose “star” quality is so firm-specific that it would not transfer very well to other settings. An important exception is when the contextual skills and knowledge of the individual would be difficult and costly to replace if the expert departs.



Getting pay wrong can lead to a loss of competitiveness. In a professional services firm, where human capital is more important than any other inputs, it can lead to the departure of key experts, possibly benefitting rivals and beginning a negative feedback process in which reputation and quality decline (Teece, 2003).

For employee retention, compensation at competitive levels may be necessary but not sufficient. Prominent aspects of the job environment include the organization's culture, the quality of its management, the challenge of the work, and the autonomy afforded workers. Companies that rank higher on these and similar "quality of work life" measures outperform their peers in retention (Chambers *et al.*, 1998: 50).

In the case of employees with potential for management advancement, Martin and Schmidt (2010) recommend sharing future strategies interactively. By whatever means the strategies are communicated – a protected website, closed-door briefings, etc. – feedback from the employees should be welcomed. The collaborative atmosphere that makes for a successful TMT should pervade the avenues that lead there.

## 4.5 Conclusions

We conclude by noting that expert talent has become indispensable for solving problems, delivering service, designing products, and making quality decisions in today's hypercompetitive global economy. The imperatives for managing these valuable employees (and contractors) go beyond tying their actions to the firm's strategy. Their management must seek to maximize their contributions to the firm's dynamic capabilities. It is these dynamic capabilities that inform and shape strategy, ensuring that the chosen strategy incorporates and anticipates changes in the firm's business environment.

Traditional hierarchical approaches to managing the literati, the numerati, or entrepreneurial managers are unlikely to bring out their best, in the dynamic capabilities sense of forward-looking creativity that responds effectively to the business context. Narrow-band compensation systems are also unlikely to attract and retain the most skilled experts. Offering them challenging, creative opportunities can, in some cases, do more than extra money to increase their job satisfaction.

When experts are properly managed, their employment contributions will inform and help to realize the strategic goals identified through the exercise of a firm's dynamic capabilities. The ideal is to

hire and/or train and promote the best people, provide them a transparent pay-for-performance package, find managers with sufficient skill and credibility to guide their work, then step back and let them work.

With respect to the subject of this volume, talent management, our view is that the handling of experts and their careers by HR systems must go beyond alignment with strategy, such as that advocated by Beatty, Huselid, and Schneier (2003). Talent management must also be conceived with a view to strengthening the firm's dynamic capabilities. Strategies may change, but the firm's capabilities for sensing, seizing, and transforming must be maintained.

A growing number of organizations are finding ways to break the shackles of rigid HR systems in order to create a space for experts to feel comfortable and to be productive. To do otherwise risks a downward spiral of lagging knowledge generation, erosion of expertise, and declining competitive advantage.

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