A leader's guide to creating an innovation culture

Brian Leavy

Brian Leavy is AIB Professor of Strategic Management at Dublin City University Business School, Dublin, Ireland and a contributing editor of *Strategy & Leadership* (brian.leavy@dcu.ie).

Today, CEOs are under constant pressure to find new sources of growth in an increasingly demanding and competitive business environment. To meet this challenge, CEOs must learn to inspire their organizations to new levels of inventiveness in everything that they do, not just in marketing or new product development.

Much can be done by most organizations to boost their overall innovation. It starts with learning to tap into the creative potential of all the employees and their knowledge about customers, competitors, and processes, and the key is to establish the right organizational climate. Beyond this, many organizations also need to learn how to make themselves more attractive to more diverse and unconventional talent. Traditionally business organizations have not been the most hospitable to the unusual person with a different view of the world. In seeking to make their organizations become more driven by new ideas and new approaches, however, CEOs should not be tempted to regard innovation and creativity effort as a free-for-all. Turning ideas into commercial reality requires persistence and discipline, and overall effectiveness ultimately depends on top management being able to find the right balance between corporate creativity and efficiency.

Generating the right organization climate

Few organizations today come near to mining the full innovative potential already at their disposal. They can learn a lot from an example like Wal-Mart. Wal-Mart is particularly good at harnessing the ingenuity of its people and leveraging it to drive growth and competitiveness. Every store is treated as a mini-laboratory, where every day countless small experiments are taking place with pricing, product selection and merchandising displays, as employees are encouraged to look for new ideas to increase throughput. The most promising are quickly taken up and replicated across the Wal-Mart network using the company's state-of-the-art satellite communications system so that their impact is fully amplified throughout the operation. Even in an industry like mass-retailing, not known particularly known for innovation, the power of ideas can be used to drive significant growth by companies that know how leverage it.

Today, as the lure of mergers and acquisitions is fading, many companies like P&G and Glaxo, are returning to innovation as the primary strategy for driving new growth and doing it

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with impressive effect. At Glaxo, for example, they have begun to re-structure their R&D activity into multi-disciplinary units on a more ''human'' scale, and seeing a sharp increase in new candidate compounds emerging from ''the same site, staff, people, journals, competitors and largely the same chemical libraries as before.'' At P&G, the major influence spurring its latest wave of innovation-led growth is the transformation of the work environment and R&D mindset, through its broad ''connect and develop'' program, to one that encourages a much freer flow of ideas within and beyond company boundaries (the P&G and Glaxo examples are drawn from Buckley (2005) and Jack (2005)).

What many such ''born again'' innovators are rediscovering are some of the more enduring insights into the link between organizational climate and innovation effectiveness that have long been evident in the practices of some classic exemplars. Few companies have been as effective over the years in tapping into the creative potential of their employees as 3M. Though the company had its problems in the late 1990s, by 2003 it was back to again firing on nearly all cylinders, generating $18 billion in revenues from over 60,000 products based on 34 technological platforms. It is the quintessential ideas-driven company and is still widely recognized as the benchmark for other large corporations seeking to keep the flame of innovation alive at scale. Like 3M, many companies include a commitment to innovation in their mission statements. However, few hold themselves to that aspiration in such concrete and measurable ways. The bedrock value shaping the culture at 3M is an unshakeable belief in the power of ideas and individual initiative. The company also recognizes that entrepreneurial behavior will continue to flourish only if management is willing to accept and even applaud ''well-intentioned failure.'' At 3M the tendency is to ask not why did you fail, but what did you learn? Innovators are continually exhorted to put their knowledge at the service of everyone in the company. At 3M, little is wasted, little forgotten. In the management and leverage of its organizational learning, the company still has few peers.

However, the mistake that many companies have tended to make in looking at 3M is to focus too much on specific innovation practices and policies, and not enough on the philosophy and values underpinning them. At 3M, they have long recognized that ''maintaining a climate in which innovation flourishes may be the single biggest factor overall.'' What 3M and other well known innovative companies, the likes of design firm IDEO (P&G's new ''world class strategic partner'' in helping regenerate its innovative culture) and Nokia, all share are at least four climate-setting factors that are fundamental to their success:

1. Placing of people and ideas at the heart of the management philosophy.
2. Giving people room to grow, to try things and learn from their mistakes.
3. Building a strong sense of openness, trust and community across the organization.
4. Facilitating the internal mobility of talent.

All four are key to the development of an internal climate where individual creativity and initiative can flourish, and talent and ideas circulate freely, so that intellectual capital can be leveraged to the maximum.

At 3M, the message that ''individual inspiration and effort are the heart and soul'' of the company's innovation is real and pervasive, as is the view at Nokia that ''this is a meritocracy'' and ''a place where you are allowed to have a bit of fun, to think unlike the norm, where you are allowed to make a mistake.'' The emphasis on community, and on the internal mobility of talent as well as ideas, in all three companies helps to foster organizational learning and serendipitous innovation. The sense of community at Nokia means that you can trust your colleagues, peers and people around you, which ''makes it possible to take pretty big risks,'' while at 3M it means that ''ten out of ten'' colleagues will respond to calls for help or ideas, promoting the fortuitous collisions of ''problems looking for solutions'' and ''solutions looking for problems'' which is a regular feature of innovation at the company. The sense of community, trust and openness also fosters organizational learning at IDEO, where they believe they are successful at innovation less because ''of our flawless intellects'' than ''because we've done thousands of products and we've been mindful''. The main considerations in allocating people to projects across IDEO are ''who's available, who's

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the best fit and who needs this kind of experience?'', while at Nokia the internal mobility of talent is supported by an intranet-based ''flexible open staffing system'' (most of the quotes on 3M, Nokia and IDEO come from the following sources: Gundling, 2000; Bartlett and Mohammed, 1995; Steinbock, 2001; Fox, 2000; Doornik and Roberts, 2001; Crawford *et al.*, 2003; Thomke and Nimgade, 2000; Nussbaum, 2004; de Geus, 1997).

Attracting and retaining more creative talent

One of the most controversial issues among the experts is whether the innovation advantage is primarily rooted in talent or organization. According to Peter Drucker, innovation is ''organized, systematic, rational work'' in which ''everyone who can face up to decision making'' can learn to be entrepreneurial, and Andrew Hargadon and Robert Sutton argue that innovation has ''everything to do with organization and attitude'' and very little to do with nurturing genius. Backing the other argument, Howard Schneiderman, a former vice president of research and development at Monsanto, held the view that ''most seminal discoveries are made by a handful of outstanding researchers.'' Bill Gates echoed this view when he once said: ''Take our 20 best people away, and I will tell you that Microsoft will become an unimportant company'' (the quotes in this section come from Drucker (1985), Hargadon and Sutton (2000), Schneiderman (1991), and Stross (1996)).

Innovation depends on ideas, and the primary source of ideas is talented individuals. Most organizations still have much to learn about how to make themselves more ''hospitable to the unusual person with unusual ideas,'' and the rewards can be considerable. Sony provides a classic illustration. During his time as leader, the legendary Akio Morita remained on the lookout for potential talent in unusual places, and he persuaded many such individuals to switch careers and join his company. The outstanding example is Noria Ohga, later to succeed Morita as CEO and lead Sony into the videogame business against the advice of the board. During Ohga's 13-year tenure at the top, revenues at Sony grew from $15 billion to $45 billion.

As a young undergraduate training to be an opera singer, Ohga first impressed the Sony founders with his ability to critique the pitch and tonal quality of recording equipment the company was trying to sell to Tokyo University. Soon they ordered that no prototypes be put into production before the budding artist had rendered an opinion. Morita quickly came to recognize in the brash young Ohga a rare combination of business savvy and artistic sensibility, and he pursued him relentlessly over the first six years of his career in opera, before finally persuading him to join the company fulltime in a very senior capacity for a young man still in his 20s. As Ogha looked back later on his early contribution to Sony, he recalled:

> When I came on the scene, it wasn't really a modern company at all. And I'd been telling Morita for years that what we needed to do was create products that looked smart, stylish, international, and start advertising stylishly, and that's what I undertook to do, and it's amazing that Morita let me do it all, as young as I was (Nathan, 1999; de Pree, 1989).

In the search for creative talent, leaders need to recognize that creativity and intelligence are not the same. There are many exceptionally intelligent people who are only moderately creative and vice versa. Creative people are marked by a capacity for divergent thinking,

characterized by originality, fluency of ideas, flexibility and the ability to elaborate and refine. They also tend to be ''motivated to the point of obsession,'' according to David Webster of the notably creative design firm IDEO. Most creative production often springs from unresolved emotional undercurrents and the creative drive can often be best understood as the attempt to fashion external symbolic order, whether it be in the form of words, mathematics, music, art, or invention, out of some internal chaos (''One must have chaos in one, to give birth to a dancing star'' – Nietzsche). According to the late psychologist, Anthony Storr, ''some split between the inner world and the outer world is common to all human beings'' and ''the need to bridge that gap is the source of creative endeavor'' (Storr, 1991; Barron *et al.*, 1997). The creative personality is often characterized by deep internal divisions, but also by the emotional strength to channel them to productive purposes.

This notion of the divided self also helps explain how the creative personality works. According to Jungian psychology, we each have two personalities, the one that we show to the world and the one we keep hidden from view, invisible but far from inert. Human development is a process of multiple adaptations to the expectations of parents, teachers, pastors, peers, employers and many others, and a lot of instincts and desires get repressed along the way. Creative people, as they grow and develop, tend to lock less of themselves away in their shadow personalities. According Mihaly Csikszentmihalyi, creative people are typically internally driven, yet relaxed enough to coax and wait on inspiration. They are smart yet naïve, skeptical yet credulous, playful yet disciplined, passionate yet objective. They are a fusion of opposites marked by their ability to draw with ease upon the two polarities of their personalities and to live within ''uncertainties, mysteries, doubts,'' without ''any irritable reaching'' after fact, reason or premature closure (for more on the concept of the shadow and the ability of creative people to draw on the polarities of their personalities see: Bly, 1991; Csikszentmihalyi, 1996). This is the kind of quality that Andy Law used to look out for in recruiting creative talent, during his heyday at St Luke's, the award-winning design company:

> I want to feel that people have really reached something dangerous in themselves . . . we all have places like that inside us, and at St Luke's, you have to be able to access them easily . . . Our employees . . . must peel away all levels of their personalities to become who they really are . . . It's terrifying to have no pretences about yourself, yet that's what gives you the psychological resources to question all the rules (Coutu, 2000).

Much about managing innovation is paradoxical, not least the requirement to find talent with a streak of individualism, that will also function well in organizational settings. However, there are at least three useful guidelines that leaders can draw on when it comes to recruiting and motivating creative talent:

1. Hire individuals with a range of abilities and interests (what they like to call ''bandwidth'' at Microsoft).
2. Hire people with a variety of backgrounds and personalities.
3. Involve peers heavily in the selection process.

A primary characteristic of innovative companies is that they ''love talent and know where to find it'' (Bennis and Biederman, 1997), and they typically put much thought and effort into the recruitment process. Just over a decade ago, recruiters at 3M made a systematic attempt to define the profile of the ''3M innovator'', based on interviews with 25 of their most prolific inventors. Beyond their capacity for divergent thinking as described earlier, the innovators were also characterized by their breadth of interests beyond their disciplines, their eagerness to experiment and tackle the unusual, their passion for what they did, their tenacity and resourcefulness. Recruiters at IDEO also tend to look for individuals with ''exceptional skills in their chosen specialties'' whose interests are ''eclectic and cover a wide range,'' polymaths not readily definable by conventional occupational labels, the likes of Ade Adekola, an MBA graduate and passionate conceptual artist, or Ilya Prokopoff, a graduate of the US Naval Academy with a BA in history, a master's degree in architecture and a passion for designing furniture and tinkering with antique cars.

Innovation thrives on diversity of talent and outlook, and innovative companies like 3M and IDEO typically seek to leverage this insight even further in the composition of their project teams. Nissan Design International (NDI), another such company, developed a policy of recruiting in ''divergent pairs'', which grew out of an inspired early experiment. The first two designers that founding CEO, Jerry Hirschberg, selected to help get his organization up and running were very different. Al Flowers tended to approach design as an inventor/engineer, starting with a focus on the major parts and their functional possibilities, whereas Tom Semple tended to approach it more like an artist, with overall aesthetics as his first concern. As Hirshberg later explained:

> Bringing these two individuals together soon after the birth of NDI created an immediate vitality and crackling intensity. Each approached a project with utterly different priorities and work-styles. They pushed and pulled, inspired and abraded each other . . . As we thought about the rest of our staffing needs, I began to seek out pairs of divergent designers, modelers and engineers who, taken together, would not only meet a wider range of requirements, but also constitute a stimulating and purposefully designed mix (Hirschberg, 1999).

Making sure the fit is right is one of the most important considerations when adding new creative talent to any existing team. At IDEO, prospective hires go through a dozen or more interviews where both their personalities and skills are carefully scrutinized, and peers are deeply involved in the recruiting process. The process is just as intensive at 3M and at Nokia, where they ''marinate'' new talent, not just recruit it. However, ''fit'' at innovative companies is not to be confused with smoothness and affability. People at IDEO are expected to be ''cantankerously assertive in their own disciplines,'' and most such innovative organizations recognize the value in constructive conflict, the clash of ideas and the competitive urge to excel beyond the best to date without or within. In creative organizations, shared obsession and pride of association provide the main cohesion, not amiability. What creative individuals seek most is the opportunity to work with people they regard highly, which is why they need to be involved in the selection process. In organizations like 3M and IDEO, peer recognition tends to be among the most powerful motivators of all.

Striking the right balance between innovation and efficiency

Effective innovation also requires a delicate balancing act between play and discipline, practice and process, creativity and efficiency, where firms need to ''learn how to walk the fine line between rigidity – which smothers creativity – and chaos – where creativity runs amok and nothing ever gets to market''. Business leaders need to establish the right balance on at least three different levels:

1. Within the innovation process itself.
2. Between the primary functions within the organization.
3. In their overall approach to corporate management.

The need to balance creativity and discipline begins with trying to strike the right balance between play and procedure in the innovation process itself. It is widely recognized that innovation is essentially a probabilistic process of ''controlled chaos'' in which the only sure way to arrive at the best ideas, is to ''have a lot of ideas and throw away the bad ones,'' as Linus Pauling, the Nobel Laureate, liked to put it. It is a process that thrives on multiple, diverse, independent and rapid experimentation, in a failure-tolerant environment that values and accommodates constructive conflict. As Bill Gates of Microsoft describes it:

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"One of the key skills in the leadership of innovative group dynamics is to know when to leave hierarchy out of the process and when to bring it back in again."

> You have to listen carefully to all the smart people in the company. That's why a company like ours has to attract a lot of people who think in different ways, it has to allow a lot of dissent and then it has to recognize the right ideas and put some real energy behind them.

One of the most popular metaphors for the creative group is the jazz combo, where leadership often shifts dynamically as different players drive the performance forward at different stages. Different players also tend to excel at different roles, some as highly original thinkers, and others more as idea brokers or promoters. All of these roles need to be recognized and valued. One of the key skills in the leadership of innovative group dynamics is to know when to leave hierarchy out of the process and when to bring it back in again. At Intel they see this as alternating between ''letting chaos reign'' and then ''reining in the chaos.'' Honda uses a designated forum to generate ideas and legitimize dissent, the *waigaya* session, which anyone can convene, where rank is disregarded. Over time, IDEO has evolved a five-phase methodology (an ''IDEO way'') with built-in loose-tight balance that has helped produce a steady stream of highly innovative industrial designs and consumer experience solutions. Examples of such practices as these can point the way to others.

Beyond the innovation process itself, companies often need to strike the right balance among the primary functions that are key to its overall operation. This is what Intel has always tried to do, as former Intel CEO, Andy Grove, once colourfully explained:

> Being a manufacturer of high-technology jelly beans, Intel needed a special blend of two types of people. The wild-eyed, bushy-haired boy geniuses that dominate laboratories could never have taken the technology to the mass-production jelly beans stage. But the straight-laced, crew-cut manufacturing operators of conventional industry would never have generated the technology in the first place.

In a growing company, the balancing act must eventually be extended to the level of the corporation itself, when the limits of relative informality in overall coordination sooner or later become exceeded. Microsoft first came to recognize this reality in 1994, when total headcount had risen rapidly to reach the 15,000 mark. Robert Herbold was hired from the then more process-driven Proctor & Gamble to become Microsoft's first chief operating officer, with a mission to improve overall profitability by ''balancing centralized discipline with individual innovation.'' Similarly, Nokia came to recognize by 1998 a pressing need to rebalance the ideas-driven culture, which it had carefully crafted during its 1992-1996 entrepreneurial revitalization phase, with more fact-based management in order to take full commercial advantage of its rise to market leadership.

3M's recent decision to appoint its first ever outside CEO, James McNerney, is recognition that as an $18 billion company, it can no longer depend on the bottom-up creation of thousands of niche markets alone to keep on driving corporate growth but must consolidate its franchise into larger and more powerful market positions and secure them with efficiencies, not just innovation. In line with this, the company has adopted a new, more balanced, formulation guiding corporate development (global + speed + innovation = growth), and five main integrated corporate initiatives linked to make it happen (Six Sigma, 3M Acceleration, eProductivity, Global Sourcing Effectiveness, and Indirect Cost Control). To date, the new CEO has managed to re-ignite 3M's growth through the introduction of greater discipline, sharper focus and astute business portfolio repositioning. What remains to be seen is how his productivity-driven initiatives will impact on 3M's innovative culture over the longer term. As a recent editorial in *Business Week online* put it, McNerney has yet to show that he also ''has the DNA for innovation''.

Getting the timing right is often the key. Many years ago, Xerox ''screwed down the clamps of process'' too early following the development of the 914 copier, while more recently Netscape was too late in introducing business discipline in its competition with Microsoft in the browser market. During the dot.com crash, many youthful and exuberant companies paid the ultimate price for putting too much faith in creativity and too little value on traditional business discipline and experience.

Finally, maintaining the balance between innovation and efficiency is a dynamic challenge in most organizations as they continue to grow and develop, with most companies tending to oscillate between the two. At General Electric (GE) the pendulum cycled from tight to loose and back again over the Cordiner, Borch, Jones and Welch eras. The GE that Jack Welch inherited was financially strong, but a company in which procedure was dominant and the culture pervaded by control. Welch spent much of his tenure pruning and simplifying the GE corporate management model as he tried to breathe the soul of the small innovative firm back into the large company body. The biggest payoff from his effort was less the $40 million savings in bureaucratic overhead than ''the sudden release of talent and energy that poured out after all the dampers, valves and barriers had been removed'', and the emphasis on innovation and risk-taking at GE has since been elevated to a whole new level, through corporate-wide initiatives such as ''imagination breakthrough'', in the early years of Jeffrey Immelt's tenure (the quotes in this section, taken in order, come from Brown and Duguid (2001), Csikszentmihalyi (1996), Schlender (1998), Bartlett and Ashish (1994), Herbold (2002), *Business Week online* (2004), Brown and Duguid (2001), Lowe (1998). For more on the importance of idea brokering see Hargadon (2003), and Davenport *et al*. (2003)). Impressive as the recent GE experience has been, and continues to be, any such loosening of the corporate management process will always tend to have its limits. ABB, which under the leadership of Percy Barnevik, enjoyed a similar release of talent and energy, has since been forced to retighten corporate discipline in order to bring back more coherence to its overall corporate development process.

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