The Innovation Imperative: Charting the Territory for HR

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1. Introduction

HR has to tackle what is a multi-layered problem. If it is to respond to the challenge of innovation, it will need to move beyond some current (one could say outdated) accepted doctrine about innovative cultures, and develop a more sophisticated understanding of the challenges associated with managing innovative performance under a number of different organisational models.

This White Paper argues that HR has a lead role in facilitating innovative organisations and people. This is a growing area for focus and involvement of HR. This paper:

1. Spells out the need for organisations to improve their management of innovation.
2. Defines and explores a range of perspectives on innovation (at the macro and micro level).
3. Explains what is required in terms of organisation, leadership and people management.
4. Lays out the key role that HR plays in orienting the organisation and its people to an innovation mindset.
5. Queries whether the HR function is actually doing any of this.

The work of the Centre for Performance-led HR focuses on the nature of effective organisational performance, and the role of HR in enabling this performance and the impact on HR of it. In our work we have been arguing for several years that HR strategies need to be embedded in the performance outcomes that the business models are intended to reproduce. Survival through innovation is one of these outcomes.

Evolutionary change and mass extinctions

Are we facing a “mass extinction” event in the lives of organisations? Using an evolutionary metaphor, every now and again a perfect storm of climate changes (read this for the credit crunch, the current and forthcoming battle between economic markets and nation states, the realisation that the destiny of the public and private sectors are more closely intertwined than many would believe, and the potential for deep-seated and radical shifts in consumer behaviour) break upon the shore, wave after wave, wiping out the ill-prepared. The waves may only be short-lived, or may roll in for a longer period of time (aka the risks of double dip recessions) but regardless of duration, the forces are strong enough to create a major system shock. Not all species die at once. Many hang on for several years after, but from the moment the first waves hit they were already mortally damaged. Honed to perfection by the previous climate, their DNA did not have the adaptability to cope with the new one. But at the same time, a host of species, evolving quite nicely in the pre-shock world (read this for learning to adapt to the pre-credit crunch but equally powerful forces of deregulation, changing industry dynamics, demographics and business model change that were already having deep impact) suddenly find that their DNA is now even more ably fitted
to the new world, or is capable of making a rapid adaptation, and they flourish rapidly (innovate and adapt). Nothing new has happened. No new big ideas are needed to explain their destiny. Their DNA was known and they were always going to survive the impending climate change. But the new competitive space and slow dying off of many competitors future-proofed their survival.

Only history will tell whether we are witnessing a climatic change that will radically accelerate organisational death rates. But the analogy of evolutionary change, of complex DNA patterns, of the ability to move into and exploit a new climate, serves to illustrate the task facing HR. Can you analyse the many and complex components that represent your organisation’s DNA – the components that will lead it to innovate? Can you buy the organisation enough time to allow its existing DNA to make the necessary adaptations?

This White Paper is the first of two from the Centre that addresses primary drivers of sustainable performance. The first driver, covered here, is that of Innovation. The second driver, covered in the sister White Paper, is that of Customer Centricity.

In both instances, to continue the evolutionary analogy, the successful components of DNA are complex. We need to look outside the traditional expertise and training of the HR profession to find ideas, frameworks and research that HR can adopt and adapt to its own specific people and organisation agenda. In examining the issues that HR Directors must be aware of, the paper draws upon some key writing and ideas that look at innovation at two broad levels of analysis:

1. Macro-level perspectives on innovation: the challenge of business model innovation, the organisational and structural alternatives necessary to develop it, and the challenges of institutionalising an innovation culture.

2. Micro-level perspectives on innovation: the messages for leadership, creating a culture or climate for innovation at team level, and shaping the people through the management and selection of individual talent.

It also draws upon related expertise within Lancaster University Management School1. These different insights are then summarised into six key component HR strategies that must be pursued, and the implications for the role of HR functions discussed.
Creativity, invention and ideas generation is just the first part of the process. It has to be followed by innovation – a much deeper and more organisationally embedded capability... the commercialisation of invention.

For more than twenty years now, the increased demand for organisations to innovate has seen more attention being given to creativity and innovation, and the factors that shape them². Despite such sustained attention, Gary Hamel, one of the early protagonists, is still of the view that decades of experimentation in the ways that we combine and transfer knowledge across talent, create the right incentives, and eliminate other strategic distractions represent necessary but insufficient interventions. Both the natural condition of organisations and the nature of management, he argues, are such that no organisation has innovation or adaptability built into their DNA³.

Management has been designed to solve problems and do things with perfect replicability, at ever increasing scale and steadily increasing efficiency. The new challenges of innovation require no less than a totally new management model, and very different assumptions about how we organise, lead, allocate resources, plan, recruit and motivate.

Clearly a challenge for HR then, but a challenge that necessitates both a macro and a micro HR strategy. There is no one theory of innovation. Despite numerous studies carried out in economics, organisational theory, strategic management, marketing and examinations of the role played by structure, climate and culture, group and organisational behaviour, and individual psychology, it seems there is no one set of antecedent variables that has emerged that differentiates between successful innovators and those that struggle. There are no simple maxims about the role of centralisation, diversification, resource level, and organisational size. But there are many who evangelise about innovation.

The problem with innovation is that it is what academics call a multi-layered problem. The solution requires HR strategies that touch upon, and tie together, a whole network of factors. Why? One of the earliest meta-analyses of the possible determinants and moderators of innovation showed that there are several different types of innovation in terms of scale and scope, each bringing a different set of challenges to manage⁴:

![Figure 1: What type of innovation is being managed?](image-url)
In practice organisations may need to:

- Merely exploit and make better use of what they have got (for example by opportunistic development of new marketing channels or offering additional services that exploit new technical capabilities)
- Look for new (additional and standalone) revenue streams and business opportunities – broaden the portfolio of businesses that are run, or
- Re-engineer and innovate the whole business model – replace the bulk of existing businesses and processes with a new value proposition

**Examples of the role of innovation in strategy**

Nestlé’s internal R&D capability has driven most of the company’s innovations. It has an internal network of 27 research, technology and development centres. In 2006 it introduced an open innovation model drawing upon an external network of universities, venture capital, small start-ups, biotech companies, large industrial suppliers and government bodies to co-create innovation. Much innovation is now driven by understanding the molecular and supramolecular (nanoscale) properties of food ingredients and nutrients. In the past, the main emphasis in the food industry was on product development from the perspective of raw materials. The emphasis is shifting to defined product properties and benefits, which essentially reverses the way that food companies look at product development. They use both centralised models of R&D (to handle science driven innovations that address the needs of all markets) and decentralised models (e.g. where innovations address localised food and consumer tastes). This means modifying the culture so that it understands and accepts the different types of innovation, and having leaders who can flex their leadership style to manage in both situations.

Vodafone has established a Joint Innovation Laboratory as a joint venture between with Verizon Wireless, China Mobile and Softbank Mobile as a platform to develop mobile services and drive innovation and synergy in the industry, providing innovators with access to all four customer bases. Shared innovation is necessary now because of the importance of projects based on emerging technologies and market demand, such as in rapidly growing areas of mobile internet services. The intention is that the global developer community and operators benefit by providing great content to their customers.

Shell spent $1.2 billion on R&D in 2009. Around 10% of Shell’s technical staff carry out research and development at technology centres located in 11 countries. These centres bring together engineers, geologists, physicists, chemists, mathematicians, biologists, anthropologists, environmental, financial and commercial experts. Three centres in Houston, USA and Amsterdam and Rijswijk in the Netherlands focus on innovation.
Both upstream and downstream technology groups now operate on a single site to create synergies in the search for technologies to meet future energy demands. Shell is also famous for its GameChanger initiative - a cross-business innovation program (an open or distributed innovation group and centre of innovation expertise) set up to identify, foster and sponsor the development of new breakthrough technologies in the context of the various technology futures for the oil industry. The 10% of the R&D budget that goes to GameChanger initiatives incubates 30% of Shell’s R&D projects.

BAE Systems draws upon R&D activities in a wide range of programmes and include performance innovations, improvements to manufacturing techniques and technology to improve through-life support of products. Strategic R&D is particularly important in the Electronics, Intelligence & Support operating group, and the four global initiatives of Land, Security, Readiness & Sustainment and Unmanned Aircraft Systems. It has launched an investment partnership aimed at small and medium sized enterprises and academia to identify new technologies, and help bring them to market.

The structural and HR challenge associated with each challenge is very different. Being clear about the charter that those people or units tasked with bringing about innovation must follow is therefore crucially important – in the Centre’s research we have seen several initiatives where these underlying charters are never really voiced.

Making creativity and innovation at work, then, is highly dependent on and requires the:

- investment of substantial resources from the organisation,
- interplay between years of experience but also rapid insight amongst individuals,
- intrinsic motivation of employees,
- marshalled time effort of multiple people and groups,
- management of uncertainty and risk, and
- politics of persuasion.

Not surprisingly:

“…The punishing thing about innovation… is that the contest never ends. Create a new market, and other companies come flooding in …Success requires being able to go beyond isolated wins to develop deep capabilities that allow companies to disarm disruptive threats and seize new growth opportunities repeatedly”.5

Yet never has responding to this challenge been so important. Most innovations are sourced from within an organisation’s relevant business cluster - the industry, competitors and customers:

“…through concentric growth or by moving to a new cluster altogether. Therefore, employees need to understand the dynamics of their cluster and be prepared to engage it”.6
So, for an innovation strategy, component HR strategies need to be linked to the underlying business model and the competing drivers for innovation, customer service, productivity, efficiency and effectiveness. Each must be woven into the fabric. For economists, however, the dominant weave now needs to be innovation. Innovative business models lie at the heart of things, because they act as a dynamic force that disturbs the economic equilibrium.

**The challenge of Business Model Innovation**

Business Model Innovation (BMI) refers to the creation, or reinvention, of a business itself – it results in an entirely different type of organisation and way of competing. It has now become an area of separate strategic attention and a new field of study appears to be developing, applying theories of innovation to the creation of business models. Clayton Christensen and colleagues have drawn attention to the nature of disruptive innovation – where instead of technology being used to sustain and improve existing products and services (for example improving the quality of CDs), disruptive technologies are marshalled to create a new customer paradigm that enables new entrants to capture market share and create new markets (for example coming up with the iPod and creating services around the digital downloading of sound).

The solutions argued by BMI researchers are to create teams of innovators across a balanced portfolio of businesses, be clear about the strategic boundaries – rather than removing boundaries, articulate what are the “desirable,” “discussable” and “unthinkable” strategic dimensions, introduce screening processes that reduce the level of uncertainty associated with innovative ventures, introduce structural support for innovative operations, and train employees to identify disruptive ideas.

Drawing upon such ideas, IBM’s financial analysts argue that organisations that put more emphasis on business model innovation experience significantly better operating margin growth (over a five-year period) than do their peers. Their survey of CEOs found that they were focusing 30 per cent of their innovative efforts on business model innovation. 40 per cent feared that changes in a competitor’s business model would radically change the landscape of their whole industry.
Each competing model for innovation brings unique organisation development challenges, and the subsequent HR solutions (in terms of leadership, team climate, and individual resourcing) flow from this preceding design choice.

Gary Hamel argues that in reality the quest to shift organisations towards a more innovative culture will be more evolutionary than revolutionary. Whilst realising the need for a radical shift in emphasis, they will wish to minimise risk by looking to alternative but already existing management models from outside the world of major corporate and to the world of how experimentation is managed in the sciences. He believes “… Companies must become as purposefully and creatively experimental in thinking about their management systems and processes as they already are in thinking about R&D or new product development.” Management systems for innovation will be designed around principles that: set clear boundaries around different kinds of risk; test new ideas within boundaries; apply scarce resources through discretionary spending, management of talent and the ability to focus, and placing the voice of the user at the front of management processes. He sees this as a task for the HR Director, the CFO and the Director of Planning.

Lowall Bryan expresses the challenge this way. Organisational models for innovation have to enable people to collaborate with each other at much lower cost, which means dramatically reducing both unproductive search and co-ordination costs. This can be done, he argues, by deploying such devices as talent marketplaces, knowledge marketplaces, and formal networks, all of which make intangible assets flow more rapidly throughout the organisation.

The literature on the management of innovation shows that innovation tends to be managed under either a corporate or an entrepreneurship model. Both models stress the following challenge:

- resources and their deployment need to be mobile, and
- incentives have to be aligned so that those engaged in risky innovation have a chance of success.

This challenge is seen in the extreme in artistic organisations in sectors such as industrial design, entertainment, writing and advertising. The drive for creativity needs organisational models that:

1. help to advance incomplete ideas that are difficult to codify,
2. lower the risks associated with incorrectness, and increase the rewards associated with novelty.

A number of political resource investments also have to be made. The organisation development solutions have to be able to help manage four political risks or challenges:

3. Understanding the Structural and Organisational Models
The Four Political Risks to be Managed by OD Solutions

1. The speed of innovation needs to be faster today than previously. This makes learning how to reconcile the tension between creativity and control more difficult.

2. The more radical the innovation – sometimes the whole business model may need to be innovated – the more difficult is the route to commercialisation, the higher the risk of failure, and the more complex the challenges of managing appropriate organisational behaviour.

3. Heightened risk of conflict with interests in the current business model or other ongoing strategic initiatives – sales and market positions may be cannibalised by the new operations, historical competence destroyed.

4. The riskier the resource allocations (in game theory this is called a constant sum game) then the more uncertain are the claimed future revenue earning escalators.

Not surprisingly, the Centre’s research has often shown that HR Directors must have a strong organisation design and development capability and that the design aspect of this capability has now become pre-eminent.

This is especially true in relation to the different organisational models that may be chosen to manage innovation (see Table 1). Each design choice (competing model for innovation) brings unique organisation development challenges, and the subsequent HR solutions (in terms of leadership, team climate, and individual resourcing) flow from the preceding design choice.

<table>
<thead>
<tr>
<th>Generic Model</th>
<th>Key organisation development issues</th>
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<tbody>
<tr>
<td>1. Building units that are specialised to the creative portion of the innovation problem (traditional skunk works etc).</td>
<td>Buffering these units from the dysfunctions of standard structures, processes and measurement systems.</td>
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<td>2. Using fluid, lateral modes of co-ordination (teams) with joint decision making rights at the front end (in time) of the innovation process.</td>
<td>Segment the innovation process in time from the rest of the organisation by ensuring high personal and organisational flexibility before the subsequent emphasis on more codified and replicable business processes.</td>
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<tr>
<td>3. External venture capital model: acquiring and then internalising the running of entrepreneurial start-up operations.</td>
<td>Segment the innovation process in time from the rest of the organisation by setting up proto-governance structures with “incomplete” contracts i.e. inbuilt flexibility to accommodate the development path. Melding the incentive arrangements for newly internalised lead employees (agents) that can be overseen by governance arrangements that also protect the interests of the corporate owners (principals).</td>
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<td>4. Internal venture capital/ entrepreneurial model (professional entrepreneur model). Building businesses that are born to be sold. Place investment bets in the units in return for offering a brokerage service to resources.</td>
<td>Alignment of the incentives between the entrepreneurs/ innovators, the investors and the employees. Managing a rapid growth model and building a market leading capability that may soon be overtaken by competitors/ alternative innovations. Creation of “liquid” equity value i.e. contractual arrangements that ensure that the venture capitalists are prepared to invest in the necessary capability building activities, flexibility in organisational roles, and loss of control over the innovation, but all in return for control over the timing of the sale.</td>
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<tr>
<td>5. Internal Professional Services Model.</td>
<td>Skill sets associated with the management of innovation (such as project management, business analysis, corporate performance management setting) made available and delivered to line businesses via a central centre of excellence and business consulting unit. Central powers of control over the introduction of innovations exercised from the innovation business support service unit but services also offered on a buy-in basis.</td>
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The topic of innovation management through strategic networks of small and medium sized enterprises began to receive attention in the mid-1990s with the advent of biotechnology organisations, and has since been applied to a wider range of industrial settings. These type of networks have been found to perform best when they rely on bottom-up innovation processes, the larger the number of network members, and the greater the role of administrative and co-ordination function to manage the configuration, formation and governance of the network.

Common to all the options shown in Table 1 is the need to manage the following challenges:

**Four Core HR Strategies**

- **Structural and incentive system development**: All the examples involve subtle use of incentive and contractual systems to engineer appropriate behaviour between investors, innovators and employees.

- **The expansion of management skills in the unit**: For example, inventors/innovators tend to have a strong attachment to the technology or concept itself, which is not always viewed as means to an end. Most processes of innovation end before the phase of market entry is reached. Commercialisation processes generally require organisation designs that shift resources to production and marketing, which has implications for those in other functions who invested resources in the innovation.
• The need for competence destruction and reconfiguration of career systems:
  Most new innovations threaten old power structures, expertise is made obsolete, new career trajectories are initiated, and problems of cultural fit are created as management skills and business models become redundant.

• Understanding and putting in place the skill formation strategies that in turn build long-term organisational capability: HR can work with line managers to build a deep understanding of the crucial skill ingredients for the new business models. These might be:
  - advanced technological skills that may be resident in a handful of high-talent on which the organisation places bets or takes an “option” on to ensure the success of its business model,
  - hybrid skill or insight created by bringing together different component skills. HR captures these new insights by decoding the business dialogues that first helped to articulate the capability,
  - transformation or evolution of an existing skill or knowledge base into new mindsets that help “glue” together the business model.

In managing these developments, the role of “organisational slack” – defined as excess resources that cushion the organisation from environmental impacts and allow for discretionary allocations to innovative activity – has long been debated.

The evidence seems quite clear – but this is not a message that the cost cutting and productivity-seeking CFO might want to hear in these tough times:

“…financial resources are probably the most necessary, if not sufficient, element in ensuring the translation of creative ideas into new processes, products or services”.

This is because slack can also be seen as inefficiency. It has a curvilinear relationship with innovation performance; too little slack inhibits innovation, whilst too much shows diminishing returns.
4. Institutionalising a Culture and a System of Innovation

Examples are all very interesting, but whilst showing the ways in which certain organisations have been able to institutionalise innovation into their culture and their systems, only the foolish would believe that the answer is to copy these particular practices and to emulate them inside their own organisation. It is not. But you can find the equivalent sorts of rules and principles that would work in your system.

In discussing how organisations can institutionalise a culture of innovation, Rosabeth Moss Kanter long ago talked about the paradox of creativity (invention, conceptual freedom) versus control (discipline, execution). The question is this. How do you manage the tension between these two legitimate forces? Research into how you institutionalise innovation so that it becomes just part of the culture is invariably case study based. These accounts relate the practical mechanisms inside iconic organisations that have helped build a reputation for innovation. 3M famously introduced a 15% rule whereby scientists were encouraged to spend 15% of their time on projects they liked. General Electric has also been lauded as an engine of innovation.

Creating order through adaptive rules at General Electric

General Electric has often been cited as being very adept at managing this need for paradox - successfully implementing simple rules that in practice generate effective levels of adaptive tension aimed at meeting key corporate goals. GE's strategy has been described as pursuing two targets: the development of a corporate brain to manage innovation and the creation of a ‘boundaryless’ organisation where information is shared. This was achieved through the articulation and implementation of two clearly-stated simple rules.

1. Organisational boundaries usually inhibit information being shared. One of Jack Welch's main devices for stopping this was an ‘anti-hoarding’ rule: anyone in GE who discovered a valuable idea or practice had to spread it through the rest of the company as quickly as possible — or they faced being fired.

2. Business units had to be No. 1 or 2 in their industry — or else they would be divested. These rules were backed by strong incentives that made employees rich if they applied the rules effectively, but would get them fired if they broke the rules.

More recently, Google has also come to be seen as a benchmark for an innovative culture. How does its model operate?
**Institutionalising Innovation at Google**

Google has become famous for developing an “innovation ecosystem” and for exercising “architectural control” over this system. Bala Lyre and Thomas Davenport have drawn attention to key elements of the organisational and cultural strategy that they argue are generalisable. The key for HR is to identify how certain aspects of people management – and symbolic practices – can reinforce an innovative business model:

“... what truly sets Google apart from most businesses is its culture... only some aspects are emulated by other internet-based businesses”.

The culture is one in which technocratic individuals prosper on the basis of their ideas and technological acumen – high value is based on ideas, technological acumen, intellect and opinions of employees.

The model hinges around owning the infrastructure for the product technology ecosystem and exercising architectural control over this system. This is based on a massive and scalable IT infrastructure, database management tools, an operating system enabling plug and play expansion of computer networks, and competitive product technology that enables “mashup innovation” (features capable of being added by third parties such as independent software developers, open source community, Google engineers).

This in turn enables a “cloud” of flexible development resources that can be switched on or off; and a business model that enables them to earn revenue whilst adding value to the core product. The product development life cycle is accelerated because customers beta test enabling parallel development and marketing.

Innovation is built into job design and soft and hard features of the HRM system are combined to support this:

- At a micro-level there is a budget for innovation built into allocation of employee time.
- Technical employees are allowed to spend 20% of time on technical projects of their own choosing.
- The performance management system exerts pressure to ensure choices are made wisely.
- Management time is split 70% on core business, 20% on related but different projects and 10% on new business and products.
- Allocations are tightly managed but tradable over the year.
The culture supports both failure and chaos. A high level of risk tolerance and innovation go hand in hand. The CEO is quoted as saying

“let a thousand flowers bloom but please fail very quickly so you can try again”.

The Head of personnel notes: “we like chaos. Creativity comes out of people bumping into each other and not knowing where to go”.

Innovation is also supported by data and detail.

“[There is] …extensive, aggressive use of data and testing to support ideas”.

The culture is one in which the organisation performs randomised and controlled experiments with multiple versions of product offerings (parallels exist in many retail and food organisations).

### Giving Knowledge Market Value

To make the culture work, Google has found ways of giving knowledge an internal market value. It becomes possible to artificially monetarise innovative bets.

**Predictive markets:** There are 300 panels of employees to predict and assess things like customer demand for new products, product and competitor performance, and fun questions. These panels act as decision support tools. Executives have to be prepared to surface what might to some of those already in power look like negative data.

**An analytic and democratic approach to innovation:** Ideas and predictions are voted upon – hence the creation of market value. The old concept of suggestion schemes has evolved into an idea management system. Employees email ideas for new products, processes and improvements. Every employee can comment on and rate the ideas of others.

**External injections of ideas:** This market is supported by regular “tech talks” in which distinguished researchers from around the world present ideas – a commitment to continued learning and education.

All aspects of this culture are paternalistic and highly analytic. They also suggest:

“… an unusually high level of recognition for the human dimensions of innovation”.

In exchange for privileged treatment Google expects hard, almost excessive work. Employees are scored on 25 performance metrics; from how frequently they host tech talks to the variability (i.e. differentiated assessment) of their assessments of potential recruits.

Google’s innovation culture is also characterised by a capability strategy that ensures:

- Mastery of its core “nucleus businesses”.
- Patience in acquiring and learning how to run “electron projects or businesses”.
According to the CEO back in 2007, the key to this strategy is:

“ubiquity first, revenues later… if you can build a sustainable eyeball business, you can always find clever ways to monetarise them. The future business model will take care of itself”.

The future business model will take care of itself. There are parallels with models at Apple and Amazon.

Only the foolish would believe that the answer is to copy these particular practices and to emulate them inside their own organisation. It is not. But you can find the equivalent sorts of rules and principles that would work in your system.

Some people have tried to put some theory behind the case examples such as 3M, General Electric and Google in order to explain what is really going on, and how to think about the rules that would work for your organisation. It can be useful for HR Directors to know the way that the strategists try and move the anecdotes in such case study examples into some more generalisable principles.

The most effective HR strategies help organisations get to the root sources of innovation. Otto Scharmer of MIT postulates the Theory U of creativity. He argues that expert systems software or scenario planning methodologies are of help to organisations in understanding the near future, but are found wanting in the fast-emerging, often unpredictable scenarios typical of technology markets. The challenge is to devise creative solutions that also connect with a clear understanding of emerging future possibilities. He interviewed leaders considered to be adept at future-looking decision-making that also involved great complexity. These included the traditional leadership skills of being able to absorb and correlate large amounts of diverse information and then to act quickly once a good idea was developed. Yet in between these stages, their methods were often highly unconventional. These leaders practiced the art of what Scharmer calls “presencing” - creating the proper mental environment conducive to creativity and profound insight while sensing the hidden sources of idea generation.

Strategists are using (amongst a range of models) complexity theory to understand innovation – a theory that examines both the processes by which complex, irregular phenomena can achieve an appearance of order, and the processes through which simple phenomena can become apparently driven by chance:

“… the issue is not the search for simple causes to complex outcomes but to understand how simplicity emerges from complex interactions”.21
Supervisors and subordinates engage in a mutual role development process. They arrive at mutual understandings about decision latitude, the level of influence, and the level of autonomy allowed. These have all been linked to innovative behaviour.

We know that leadership behaviour and management style are critical to the innovation process. Employees have to be empowered, which means two things:

- being given sufficient autonomy and control over their work;
- but also being made comfortable with exercising more innovation – not feeling alone in the pursuit of innovation.

In a recent review Michael Mumford and colleagues summarised the literature on leading creative efforts and explored the main models and approaches. They concluded there is an:

…”increasing amount of evidence suggesting that leadership [has] a profound influence on creativity and innovation”.

They identified the behaviours and modelled the core leader functions involved - note the particular brand of leadership entailed. This is not your generalist or charismatic change leader. Horses for courses, as they say.

Leaders of innovation must provide:

1. **Substantial knowledge of the area in which they work**: Technical expertise and creative problem solving skills are highly predictive of follower creative performance. The technical knowledge also provides leaders with the power base to influence people, to represent the group, communicate clearly and identify the development needs of members.

2. **Mission definition perspective**: Enables project selection and the concretisation of visions, provision of structure and goal orientation.

3. **Support for followers, seen in three ways**: Support for ideas, for the work, and social support. An avoidance of negative feedback in the early stages of work.

4. **Skills of resource acquisition and resource distribution**: These have been shown to be more important than either structure or climate in predicting innovation.

5. **Structure**: The ability to induce structure where it was undefined. This is done in two ways: judgements about specialisation, functional differentiation and professionalisation of technical knowledge resources; and through internal and external communication.

6. **Evaluative feedback**: Used to direct effort, timeliness in interventions, and setting of output expectations.

7. **Organisational outreach**: A broad understanding of the organisation, its strategy, long-term goals and tactics, sources of social support and product champions.
Studies that examine what leaders of creative effort think about show how they impact the culture for innovation. They are driven by environmental scanning, strategy formation and mission definition, influence how problems are structured, provide guidance for ideas generation and evaluative feedback, shape planning and process management, provide support and resources. In short, leaders provide the parameters for idea creation and the context for information.

**Two dimensions of leadership most related to innovative behaviour:**

1. the quality of the relationship between subordinates and their leaders (this is called leader-member exchange or LMX). Low quality LMX is based on formal, impersonal exchanges whereas more mature interactions are characterised by trust, mutual liking, and respect.
2. the expectations placed on the role of leaders.

The quality of the relationship between subordinate and their leaders (Leader-member exchange) indirectly influences the climate - subordinates tend to generalise what they see in their supervisor behaviour to the organisation at large. Research into innovation leadership shows that supervisors and subordinates engage in a mutual role development process. They arrive at mutual understandings about

- decision latitude,
- the level of influence, and
- the level of autonomy allowed.

All three of these things have been linked to innovative behaviour.

The culture also places expectations on leadership roles. Research shows that the degree to which a supervisor expects a subordinate to be innovative is linked to the subordinates actual innovative behaviour. Experience also shows that:

- Some leadership roles are prescribed by the organisation or its technology (they are machine-driven by the culture).
- In some cultures managers lack the imagination to negotiate their subordinates’ roles.
- The expectations that supervisors have for their subordinates shape subordinates’ expectations and motivations.
- Performance expectations are communicated through the managers’ behaviours/ attitudes.

So there is a Pygmalion effect.
6. Creating the Right Team Climate

Research on team climate and innovation affirms two basic laws:

1. individuals respond more to how they perceive the environment (climate), rather than to the environment per se!
2. individuals regulate their own behaviour in relation to these perceptions.

Manage perceptions, then, and you are well on the way to creating an innovative culture.

Do teams generally perceive that there is a climate for innovation? The record is not good.

Where are we actually at our most creative? Mike West summed this up very nicely ten years ago:


A lot of attention, then, has been given to how we can make the work experience, and organisational life, more conducive to innovation.

Gary Hamel’s Acid Test Questions for Whether There is an Innovation Culture

Ask frontline employees:

1. How have you been trained as a business innovator? What investments has the organisation made in teaching you how to innovate?
2. If you have a new idea, how much bureaucracy do you have to get through to get a small increment of experimental capital?
3. Are you actually being measured on your innovation performance or your team’s innovation? Does it influence your compensation?

If you substitute the idea of career reward and employability for compensation, then these questions apply to a wide range of organisations and not just the large corporates. In any event, he notes that:

“…when you ask these questions of first line employees, you quickly discover that in most companies there is still a big gap between the rhetoric of innovation and the reality”. 24

What can be done? The relevant research is captured under the umbrella topic of “climates for innovation”. A central role of the organisational climate is to manage the team’s attention to innovation, rather than only letting only the realisation of crisis stimulate the necessary attention. In general terms, creativity and innovation is encouraged by climates that are:

• playful about ideas,
• supportive of risk taking,
• challenging, and
• tolerant of vigorous debate.
The values and beliefs of the organisation impact key behaviours - such as collaboration, communication and risk. Innovation is then impeded by climates that emphasise formal rules, respect for traditional ways and clearly demarcated roles.

What sits beneath these prescriptions?

The word “climate”, when applied to organisations, reflects the organisation’s expectations (as perceived by individuals) of behaviour, the anticipated outcomes, and the feelings, attitudes and behaviours that characterise such an organisational life. Climate is defined as the shared perceptions of how things are done around here.

What are these shared perceptions based on?

Research shows that it is the climate at team level that is most powerful. At this level the most important antecedents to creativity and innovation include:

• the quality of team leadership,
• problem-solving style,
• work group relations, and
• the type of jobs allocated (job design is important because discretion is positively associated with creativity).

<table>
<thead>
<tr>
<th>Employees make judgements based on the following elements</th>
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<tbody>
<tr>
<td>discussion content,</td>
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<tr>
<td>group objectives,</td>
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<tr>
<td>communications,</td>
</tr>
<tr>
<td>handling conflict,</td>
</tr>
<tr>
<td>decision making,</td>
</tr>
<tr>
<td>criticism,</td>
</tr>
<tr>
<td>expression of personal feelings,</td>
</tr>
<tr>
<td>task achievement/ feedback,</td>
</tr>
<tr>
<td>leadership,</td>
</tr>
<tr>
<td>group sensitivity and review processes.</td>
</tr>
</tbody>
</table>

So, perceptions about the team climate are pretty important. At the organisational level climates for innovation are also based on perceptions about the policies, practices and procedures.
Research by Mike West has asked three questions:

- What factors help or hinder innovation?
- What distinguishes highly innovative and less innovative teams?
- What practical measures can be recommended to facilitate innovation?

### Four Key Climate Factors

1. Climate for excellence: reflects each team members’ commitment to high quality standards, quality of decision making, critical appraisals, monitoring and clear task performance standards.

2. Participative safety: reflecting support for innovation through co-operation among team members, mutual assistance during the development of ideas, and interpersonal interactions that result in group members feeling safe to propose and develop radical and risky new ideas.

3. Vision: how clearly defined, shared, attainable and valued, are the team’s objectives and vision.

4. Task orientation: commitment of team to achieve highest possible standards of task performance.

Of these factors, team climate researchers continue to find that climate for excellence drives the quality of innovation, whilst participative safety (also called support for innovation) drives the quantity of innovation.
7. Shaping the People

The idea that entrepreneurs – and creative and innovative people – can be seen as isolated economic actors, undersocialised and immersed in processes quite different from other social phenomena has been replaced by a new understanding.

HR Directors are often naturally drawn to their familiar home territory. Many of the basic ingredients for an HR innovation strategy operate at the micro-level, and draw upon resourcing, training and organisation development approaches:

The Traditional Ingredients of an HR Innovation Strategy

- Using selection and assessment processes to recruit creative and innovative individuals and allocating people to units and positions appropriately.
- Introducing procedures to encourage the generation of new ideas e.g. Brainstorming.
- Training leaders in the skills required for the successful management of the creative performance of their subordinates i.e. holding leaders responsible for the management of the decision thinking environment of their teams.
- Changing the organisation’s own characteristics (structure, climate and culture) in ways that facilitate creativity and innovation.

The shaping of a few people can be a valuable tool in the armoury. The final component HR strategy moves us into the talent debate, and raises questions about selecting and then developing individuals who are more entrepreneurial, innovative or creative.

We must be clear what we are talking about when we use the word innovation.

Innovation at the Micro Level

Creativity and Innovation are overlapping constructs. Different individual, social and organisation level factors play a part in each.

The process of creativity is more concerned with invention and the generation of new and original ideas. This is based on subjective judgements being made that ideas that are generated can be deemed to possess some kind of novelty and are worthy of development. These judgements are typically made – and therefore need to be managed - at the individual and team level. For psychologists such as Kerrie Unsworth and Chris Clegg, creativity is then “the deliberate (required or voluntary) undertaking of behaviours designed to generate new ideas, processes, products and/or services in response to open or closed problems”. Models of creativity show that there are two separate HR strategies:
1. Generating creativity-relevant skills: Once a creative idea has been generated, it needs to be protected, developed and sustained. Individuals therefore have to have both expert knowledge and creativity-relevant skills. The latter are used so that people are tasked and led appropriately, operate in a motivational environment that has reinforcing norms and cohesiveness, and in the context of an organisational strategy that shapes the access to resources and culture accordingly. The former (expertise), of course, represents the lifeblood of any creativity. The range of technological and business model skills now necessary to create powerful new ideas is growing in depth and breadth. HR needs to have strategies that facilitate the development of such expertise.

2. Engaging individuals to so that they contribute their ideas: often understated, but more important in post-recessionary time, is the need to engage individuals so that they give of their creative ideas in the first place. Employees will understandably ask:

- Is creative action worth my while?
- What do I expect to happen (what is the level of effort needed to effect a change in this organisation and will it lead to a useful effect?)
- Are there any positive benefits to me (employees make an instrumental judgement)?

Addressing these questions requires an HR strategy that is more concerned with managing general levels of motivation, making creative effort more explicit and central in job design, task and performance management systems, providing time resources and autonomy for resources, and removing or neutralising the obvious counter-cultural blocks to this.

For Nigel King, creativity, invention and ideas generation is just the first part of the process. It has to be followed by innovation – a much deeper and more organisationally embedded capability – that encompasses the application of novelty to produce things that are new and useful. Innovation is a process that intentionally attempts to bring about benefits from change – taking what might have been a novel idea – but successfully managing it to a market introduction. Innovation is the commercialisation of invention, defined by experts in technical innovation such as Joe Tidd, John Bessant and Keith Pavitt as: “...a process of turning opportunity into new ideas and of putting these into widely used practice.”

As such it requires a very different range of HR strategies than those that just help lead to general levels of creativity.
Robert Sternberg, famous for his work on multiple intelligences, drew attention to a number of “roadblocks” that make it difficult to assess innovation at the individual level. There is often a confusing terminology as to what it involves, or indeed where it comes from. Is it a single attribute or a constellation of other factors that we have come to label as “being innovative”? Is it part of personality, a form of intelligence, more to do with knowledge, or driven by motivation? If it is part of intelligence, then in what way? Is it just a subset of general intelligence, an aspect of genius, a particular set of cognitive abilities and way of thinking, or a label of intelligence we give to the people once we see they have done something really innovative! Is it more to do with knowledge? We know that there is an inverted-U relationship between knowledge and innovation – too much expertise or too little does not lead to innovation:

“Knowledge may provide the basic elements, the building blocks out of which are constructed new ideas, but in order for these blocks to be available, the mortar holding the old ideas together must not be too strong.”

These are not silly questions. If you want to assess innovation amongst individuals, you need to know the answers.

The idea that entrepreneurs – and creative and innovative people – can be seen as isolated economic actors, undersocialised and immersed in processes quite different from other social phenomena has been replaced by a new understanding. Social relations and the social context that surrounds those capable of innovation strongly influence levels of entrepreneurship, creativity and innovation. It is the social networks surrounding talented people that affect and influence actual economic performance and consequently the shape and form of subsequent innovation outcomes.

“Research on entrepreneurs has been moving away from dealing with the entrepreneur in isolation and instead looking to the consequences of embeddedness and the impact, implications and relevance of networks for entrepreneurship.”

As the Centre makes clear in its own research on talent management, it is not just having the appropriate human capital (skills, competencies, behaviours) but also the appropriate social capital (networks, sets of ties and connections and the information, collaborative) relationships formed by individuals within firms, with other firms and with other organisations, and resources that can be gathered through these networks. So, any attempts to shape and select key individuals through talent management processes has to be put into this context, and a broad view of innovative talent taken.

Still, ask the question, is innovation a necessary condition to get into your talent pools? Is it possible to assess this capability in a useful way?

We need to look to research on individual differences to get an idea of how organisations might make assessments of innovation amongst talent. These researchers have been on a journey, initially focusing on creative thinking as a subset of general intelligence, then giving more attention to creative achievement, which meant giving attention to personality and motivation, and then thinking about the organisation context which was more concerned with the final outcome of beneficial innovations.
Where Does Creative Work Take Place?\textsuperscript{34}

Only when

- the task presents complex, ill-defined problems,
- successful performance depends on the generation of novel and useful solutions,
- work revolves around skills of problem definition and construction, information gathering, concept formation and concept combination, idea evaluation and refinement, and plan formation.

“… Creative work is naturally person centric… and collaborative”.\textsuperscript{35}

For a resourcing strategy to be a viable option, we need to understand whether there might even be such a thing as the innovative and creative personality? The sub-text to this question is can HR help weight the odds by selecting more innovative people and placing them in the right parts of the organisation, before building the right infrastructure around those parts of the organisation to help them prosper? The answer it seems is yes.

The selection question was actually first addressed by researchers into entrepreneurialism (so substitute the idea of an entrepreneurial personality for an innovative one for a moment). Entrepreneurship researchers see innovation being about the creation and pursuit of opportunities with a view to future capital accumulation. They share the perspective of many psychologists - that it is difficult to distinguish entrepreneurship and entrepreneurial climates from the role of entrepreneurial people.

Entrepreneurship researchers also have long asked if there is such a thing as the entrepreneurial personality. Where innovation runs into a need for significant entrepreneurship, then the profiles of talent can start to look quite similar.

Entrepreneurs are people who:

- perceive the potential of situations and gamble on their imagination,
- are alert to profit opportunities, and the exploitation of these opportunities,
- need to demonstrate creative imagination in the face of uncertainty,
- have different horizons and envisioning space than others (a collapsed sense of time leading to a sense of urgency),
- can spot opportunities that might otherwise be overlooked based on judgement skills,
- can combine intuitive holistic thinking (envisioning) with rational analytic skills,
- are aware of risks but have attention tuned to economic value.
Richard Sternberg uses the investment analogy of “buy low and sell high” to describe innovative individuals:

• They pursue ideas that are unknown or out of favour, but which have growth potential (buy low).
• They persist in the face of resistance until the idea is implemented (sell high).

But for psychologists, although innovation needs to be managed across all levels of the organisation (individual, team, strategic leadership, and business processes) an entrepreneurial streak is an important part of the makeup of people who have innovation hard-wired into their personality and mindset, the necessary condition for innovation has to come first from the spark or life force that resides within individuals and their ideas. Then, depending on the type of industry and organisation, a choice is made as to whether the strategy is one of – or must be a blend of – four streams of HR activity:

### Blended HR Strategies

- managing a large bunch of creative individuals, or
- making the most of a few amongst many, or
- bringing the best out of what you already have i.e. giving more attention to the leadership of others who are less well blessed but still have potential, and finally
- the development of climates that bring all of these good things to the fore.

As an individual difference, innovation lies at the cross roads of personality and intelligence. Fiona Patterson developed a personality instrument to do just this. The original research identified 102 constructs to do with an innovative personality, fortunately reduced to four personality factors, some positively associated with innovation, some negatively. There are two positive associations:

• Motivation to change (known to psychologists as TIE i.e. typical intellectual engagement!); and
• Challenging behaviour (people driven by the motto that it is better to ask for forgiveness than to seek permission).

The negative factors are:

• Consistency of work style (tackling work methodically) and
• Adaptation (an incremental problem solving style).

For those who like to explore the ins and outs of psychological intrigue, Patterson also explored the link between intelligence and what are called the ‘Big Five’ personality factors and an innovative personality. The key findings were:
• Innovation has little to do with intelligence (a small positive but insignificant correlation of 0.17). It is more clearly linked to personality.

• It is positively associated with Openness to Experience, and Extraversion, and negatively associated with Agreeableness and Conscientiousness.

Now think about it. Conscientiousness is the one dimension of personality linked to work performance, and so is built into most selection systems whether by default or design. It is negatively related to innovation. So we deselect the innovative!

There are important lessons in this work on selection for innovation, most writers on innovation continue to caution that it is not just about shaping talent in this way.

Lowall Bryan cautions:

“… You can hire all the intrinsically talented people you want. There is a market for talent… [but] the real challenge is making profits off those talented people… combining talent and technology and organisational design to generate much higher profits per employee than was possible before”.

Similarly, for Gary Hamel:

“… Talent is largely a commodity and can be bought anywhere. The challenge is to raise the return on human capital… in terms of managing creative-thinking people”.
The field of HRM has had to redefine itself in the past - it will need to redefine itself now. The parallels are strong. Andrew Pettigrew, Chris Hendry and Paul Sparrow argued back in 1988 that the strategic challenge facing HR was:

“…an issue of… needing to link together business, technical and HRM skills…
[a] problem… of deciding the degree, or density, of business sophistication needed in the lower and specialised parts of the function, and the point at which a key individual or group of people should have a more composite HRM understanding. Moreover, such skills also need to be distributed throughout the organisation and not just reside with the HRM professionals”.

Sound familiar? Much of the current thinking about HR delivery models in practice has a long history. That history can be used to help guide us through these not so-unparalleled times. The same authors analysed the strategic responses being made to the last major competitive-restructuring driven recession.

**The three post-recession paths for HR**

Post recession, the issues that drive HRM are those that characterise the industry dynamics of the surviving sectors. They reflect a “life cycle pattern” that falls into one of three paths:

- managing (but through restrained resources) a return to rapid growth, or
- transitioning through a process of strategic retrenchment,
- to one of strategic renewal (through radical innovation),

As we come out from this recession, HRM will once more be driven by one of three priorities that drove it the last time around.

If HR is to respond to the challenge of innovation, it will need to move beyond some current (one could say outdated) accepted doctrine about innovative cultures, and develop a more sophisticated understanding of the challenges associated with managing innovative performance under a number of different organisational models.

From an HRM perspective, there needs to be a component strategy, six key factors involved in the management of innovation.
<table>
<thead>
<tr>
<th>Key Factor In Managing Innovation</th>
<th>Component HR Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organisation models and structure</td>
<td>How will parts of the organisation best be configured to generate innovation? How will the new and necessary interactions and appropriate flows of information be generated? How will the appropriate interpretive frames be put on that information?</td>
</tr>
<tr>
<td>2. Operational processes</td>
<td>How will operational processes impact upon the ideas selection and evaluation capability of the organisation i.e. the generation, development and implementation of ideas?</td>
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<tr>
<td>3. Organisational alignment</td>
<td>How will the dissemination of strategy impact decision making quality with regard to innovations? How will the vision and goals of the organisation to foster innovation be enacted (and not stymied) through appropriate control systems? How will the necessary level of organisational slack be afforded to the human, physical and financial assets?</td>
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<tr>
<td>4. Knowledge management</td>
<td>How will the utilisation of knowledge in general and previous project insight be converted into organisational learning? How will HRM assist in the following knowledge requirements for innovation: the willingness to learn, the design and behavioural conduct of networks, the maintenance and development of professional logics?</td>
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<tr>
<td><strong>Table 2: Six component HR strategies for innovation</strong></td>
<td></td>
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<tr>
<td>5. Management style and leadership</td>
<td>How will interactions with customers and other value chain members within the competitive cluster be facilitated? How will key knowledge areas e.g. market sensing (customer product and service preferences) and competitive awareness (industry trends and competitors’ positioning efforts) be reflected in the talent system?</td>
</tr>
<tr>
<td>6. Individual Employees</td>
<td>What are the responsibilities to be afforded to leadership that will impact employee motivations for innovation? How will leadership qualities be used to enable people to negotiate more autonomous roles (a pre-requisite for creativity and innovation)? What attitudes must be held by leaders towards innovative behaviours (versus also important operational requirements) and how will they be used to generate appropriate employee behaviours?</td>
</tr>
<tr>
<td></td>
<td>How will the personal characteristics (individual differences) associated with innovative behaviour be handled in the resourcing systems? How will the motivational behaviour of employees be directed to impact innovative behaviour?</td>
</tr>
</tbody>
</table>

*Table 2: Six component HR strategies for innovation*
9. Conclusion

The paper began by asking if we might be about to witness a mass extinction event amongst organisations? Looking across the range of macro and micro HR strategies that have been laid out, and asking honestly how many organisations deliver these strategies authentically, the prognosis is not good. The saving grace is that organisations can be very resilient, and they are capable of surprisingly rapid change when facing crisis.

This White Paper has charted out the HR Director’s contribution to the innovation journey by summarising the ideas discussed in strategy, structure, organisational behaviour and organisational psychology research. It has laid out six component HR strategies.

As a general rule these strategies result in decision-making becoming more peer based, and reliant on widely disseminated tools of creativity. Ideas are given market value and compete on an equal footing. Strategies are more bottom-up than top-down. Power is based on competence. However, in doing this, Gary Hamel notes the risk of “creative apartheid” where a few people in the organisation may be granted power as being clever and creative but most are not – he argues the key is to mobilise the intelligence of ordinary workers.

There is a darkside, then, to the rhetoric of innovation. The rhetoric paints a picture of a “nice space” to be in – a space that therefore justifies all moves towards it. However, history tells us that many organisations only partially implement many strategies – the bits that suit the most, rather than suit most.

Much of the rhetoric from the gurus involves big changes in metrics – moving from measuring return on capital to measuring things like profit per employee. It takes the principles of private equity, venture capital and research and development and brings them into the culture of the organisation.

This whole shift is dependent on there being “mental revolutions” inside organisations, “major traumas” and “risk” as we try to reinvent a more innovative form of management. Indeed, for some, there is a major battle ahead in which the forces of the organisation will be pitched against the forces of creativity and one model will eventually have to surrender to the other. In the long-run, employees will not mind being measured on the profit return per one of them, as long as they are persuaded that this is not just another way to squeeze more from less, and a metric really cloaked in the performance logics of efficiency and cost cutting. They will share the pain of moving to a new culture of management, if they can see true evidence of a more democratic style of innovation. They will share the risks of failure as long as everyone pays for those risks. HR Directors sit in between the management rhetoric and the social forces that are shaping employee behaviour. They have to square the circle wisely, but square the whole circle, not just the easy parts of it.
I am grateful for the views of: Mary Rose, Professor of Entrepreneurship; Sarah Jack, Professor of Entrepreneurship, Dr. Frank Cave, Senior Teaching Fellow; and Gerry Johnson, Emeritus Professor, on the issues raised in this White Paper.


Freeman and Engel (2007) Ibid.


30 Patterson F. (2002). Great minds don’t think alike? Person-level predictors of innovation at work. *International Review of Industrial and Organisational Psychology*, 17, 115-144


36 Sternberg (1999) Ibid.


Notes
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