Creating a culture of innovation.

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Abstract

This paper is based on a single, simple assumption: that for companies seeking to survive in the longer-term in the free market capitalist system, innovation and entrepreneurship are critical. From that assumption, we then want to suggest that the need to create what we have called “a culture of innovation” within the enterprise is an inevitable corollary.
Introduction

There is nothing new in asserting the importance of innovation, as innovation has always been the lifeblood of successful enterprises. For some commentators, a historical perspective suggests that there are periods when innovation takes a sudden ‘quantum leap’ forward. For many, the Industrial Revolution was one such critical point of change in relation to the behaviour of societies and the nature of work.

However, despite the popularity of this view - which is accompanied by the expectation that we are now going through another ‘knowledge’ or ‘information’ revolution - we do not support the model of punctuated evolution, but rather that there has been a slow but steady change in the rate of innovation over the centuries. Up until the 15th Century, the rate of innovation in the more advanced Western societies over the preceding two thousand years was relatively slow. Life remained essentially focussed on subsistence, and the rhythms of life were essentially cyclic and seasonal. The dominant processes were around agriculture and its derivatives, with a slow process of developing trade bringing new goods and possibilities into the market.

The next three centuries saw a rapid increase in the rate of innovation, stimulated through access to knowledge (especially through the development of printing, and hence of education), and the re-introduction of the scientific approach, with the Enlightenment. To begin with at least, the consequences of all this were more to do with changing perspectives than with the development of business (the commencement of the decline of the dominance of religion, the establishment of linear progressive time, and the establishment of major trading organisations).

However, the pace of innovation shot up dramatically at the beginning of the 18th Century as the industrial revolution got under way. A dramatic series of innovations were commercialised, innovations that derived from the core development of power and the
capacity to harness power (while animal and water power had existed for some time, it was steam power and its utilisation in machinery that made a number of steps possible). Thus the Industrial Revolution was not so much a break with the past as evidence of an increasing rate of innovation that had been growing for some time.

Innovations have consequences beyond the new processes or products themselves. Just as the invention of printing, and of moveable type, eventually changed the nature of society through overthrowing the control of knowledge and the traditional structures of class and authority, so the harnessing of power led to the development of the shareholder public company, and the free market capitalist system. The processes of change unleashed by that series of innovations are still being realised today, and it is only in last decade or so (since the collapse of the 'Iron Curtain', symbolised by the fall of the Berlin wall in 1989) that we have seen the free market system developing to its full potential.

Equally important is the recognition that the capitalist market system requires innovation - it demands innovation - as has been pointed out so eloquently by Schumpeter. However, Schumpeter also made it clear that innovation is "creative destruction". The term 'creative destruction' implies that nothing is sacred, and anything can be superseded in the drive to innovate, including previous innovations, traditions, customs and values. The challenge for enterprises is clear: they have to innovate to succeed, but to innovate is to change, and even to destroy. How can this be done?

Finally, while we have used the term ‘innovation’ in the title of this paper, our focus is on ‘innovation and entrepreneurship’. We consider that entrepreneurship sits alongside innovation: it addresses the critical importance of turning innovative ideas into practice. A culture of innovation is of limited value if it is not accompanied by an equally significant emphasis on entrepreneurship – innovative opportunities remain ideas unless they are converted into successful businesses or organisational activities.
**Sustaining innovation within the enterprise**

In many ways, innovation is contrary to our nature. From cradle to grave, we work very hard to ensure conformity. It is scarcely surprising. Societies depend for their effective functioning on rules, procedures and conventions, and they cannot tolerate too broad an element of dissension. Nowhere is this more evident than in our corporations, where the culture is pervasive and powerful. In 1956 William H Whyte wrote *The organisation man*, an anthropological study of people in organisations. In looking at the processes of socialisation in American corporations, he depicted the values, the bureaucratisation and the dulling mediocrity of white-collar workers. Then it seemed he was describing a nightmare. Today, that analysis remains as insightful and relevant as it was then. Recent critiques by a range of commentators such as Richard Sennett (1998) and John Ralston Saul (1997) have simply added to Whyte’s telling account.

The culture of organisations, “the way we do things around here”, is so enveloping it is often hard to see it from the inside. It influences the choices that are made about who gets to work in the organisation. It influences the ways in which people relate during the day, and even the dress they wear (the overwhelming uniformity of ‘casual dress’ in a number of companies at present is a curious indicator of this). Most important, it influences the ways in which work is done, how developments take place, and what is seen to ‘fit’.

In a recent book, Gary Hamel, visiting professor at the London Business School, and founder of the Strategos Consulting group, has thrown the issue of conformity back into the limelight. His book, *Leading the revolution* (2000), is all about how companies have to keep on innovating and changing - inventing themselves - if they are to avoid being overtaken by more aggressive competitors. He puts the emphasis on people, on creating revolutionaries, and he makes it clear that companies either nurture revolutionaries or perish. His warnings are clear and pressing: “First the revolutionaries will take your markets and your customers. Next they will take your best employees. Finally, they will take your assets”. Today, many companies are coming to acknowledge that continuous improvement
and constant attention to enhancing efficiency are not enough to fend off their competitors. You need innovation and entrepreneurs to create new businesses, and to keep ahead of those who would seek to destroy yours.

The puzzle, of course, is how to sustain the revolutionary approach. Revolutionaries are likely to live in an environment where conformity is almost toxic to their behaviour. They stand out against the conformity of the corporate culture, and often decide to leave and create their own businesses. However, internal revolutionaries are the very ones who are critical to ensuring the innovative culture of an organisation. The problem remains, of course, of identifying these ‘grey haired revolutionaries’, and ensuring their efforts are supported and sustained. They may dress the same way as everyone else, but, to draw on Hamel again, they are the ‘loyal opposition’. Their goal is to create a movement within their company and a revolution outside it.

There are some well-established ways of keeping the revolutionary lifeblood flowing within an organisation. Some companies create a culture of innovation and entrepreneurship. 3M is legendary in this respect, having developed the ethos and the support systems and procedures that demand and reward constant innovation. Others create internal innovation and entrepreneurship schemes, like Shell’s GameChanger, or Orica’s Live Wire. Yet others create protected areas (“skunk works”) where the revolutionaries can go and work in hiding, only revealing themselves when a radical new idea has been brought to the point it can be taken to the market.

An alternative approach, however, is one directed more to managers as individuals - it is part of how you manage your people. This approach is concerned with “keeping the square pegs” - keeping the people who are not a natural fit, but have a great deal to offer - keeping them in the organisation, and, oddly enough, keeping them in their round holes. They do have to create an environment where ‘risk’ is seen as ‘experimentation’. 
The square peg in the round hole is a person who does two very important things. The first is to reveal, by their ‘bad fit’, the real nature of the organisation. They are the people who help you see the effects of the culture, and the limitations and restrictions that a culture can invoke (as well as the benefits, of course). The discomfort tells you that there may be practices and procedures that are in need of review, renewal, or even rejection. If you leave the culture as it is, you will keep losing the very people you can ill afford to pass on to a competitor - the people who know your culture, but who can see how to do things differently, and help point the way to the next new business.

At the same time, the square peg breaks and changes things - all those sharp edges keep on getting in the way. As the famous retelling of the old saying has it “if it ain’t broke, break it”! They are the people who see no reason to keep on doing something because it has been done that way in the past. They are the people who do see challenges as opportunities, and are always trying to see how to do something (as opposed to those who work hard to show why we should not be doing something!).

To keep a square peg, a revolutionary, makes many demands on managers and organisations. You have to listen to what is being said, and hear past the natural reaction to say ‘no’ or ‘that’s not the way we do things’ or (most awful of all) ‘we tried that a couple of years ago’! You have to ensure that your square pegs are linked to others they need to know, to sources of expertise and to networks: introducing them to others who will support their revolutionary ideas and approaches. You have to support your square pegs - and they often create tensions and damage in the organisation, so that is a challenging task in itself. Above all, you have to protect them, for, without protection, revolutionaries run away before they are killed or expelled. In the pervasive and powerful cultures of conformity that characterise most organisations, these are four critical skills.

However, innovation is not just a function of the immediate organisational culture, it is also affected by the broader environment. While the preceding discussion has emphasised the
importance of innovation and the systems within the enterprise to encourage and sustain innovation, there are broader systems that are important. In particular, what role should governments play? Can they play a role? This is the theme of the next section of this paper.

**Markets and role of government**

To create innovation culture within enterprises, it is said that the most important external condition is to create a perfect market environment. A free and open market system provides the major incentive to innovation and a self-adjusting mechanism to achieve an economically rational selection among innovations. The market mechanism is the basic driving force behind the encouragement of innovation behaviour. The threat of competition and the desire to make profits encourages innovative behaviour through such activities as research and development, adopting world best practices, building new core competencies or just becoming more efficient. In other words, the market and open competition are direct external incentives to create an innovation culture in enterprises.

Nevertheless, compared with traditional production and operation in enterprises, innovation entails high degrees of risk-taking. For example, R&D activity in enterprises assumes the uncertainty both in technological research and commercialisation. In any kind of activity engaged in trying to create new idea, the risk is high by nature. Even though the technology can be developed successfully, the commercialisation may still be uncertain. Advanced technologies do not guarantee a high commercial value.

Although there are a number of ways to ameliorate risk in the market, such as insurance and arbitrage, these are not suitable for the activities like innovation. This is why venture capital, not the traditional capital market, can give full play to the development of new and emerging industries built around developing technologies. Generally, the threat of high risk-taking in innovation process discourages innovation, impedes the creation of an innovation culture in
enterprises and results in the misallocation of innovation resources, which in turns restrict the potential of innovation to contribute to economic growth. It is in relation to these broader environmental restrictions that the role of government is critical.

The aim of government intervention is to enhance the motivation of innovation in enterprises through proper polices and even compensate the insufficient input of resources for innovation. In fact, the policies concerning innovation in nearly all countries after the World War Two are based on this target. However, the broader environment is particularly important in the creation of an innovation culture in organisations.

At present, countries differ greatly in innovation and market performance. However, even if United States, a developed country that is thought to have close to a perfect market mechanism, is still using federal government procurement policy, reform of the financial markets and other policies to stimulate technology innovation and hence the creation of an innovation culture in enterprises. Such reforms have allowed the venture capital firm to open up immense sources of funds that have become available for investment in high tech, high-risk industries.

The core of USA’s enterprises’ competitiveness is their unique ability to utilise innovation breakthroughs, converting them into commercial ideas, and which are then driven to create opportunities. Clearly, the creation of an innovation culture in the USA’s enterprises has become a key driver of the USA’s economic competitiveness for the future.

With open market mechanisms and proper incentive policies, some developed countries have had good performance in creating an innovation culture in enterprises. In confirming this, the proportion of enterprises’ investment in innovation and the contribution of enterprises’ innovation to economic growth have been increasing proportionately (see figure 2.1).
### Fig. 2.1 International Comparison with the Structure of R&D Sources of Funds

<table>
<thead>
<tr>
<th>Nation</th>
<th>Year</th>
<th>R&amp;D Sources Of Funds(%)</th>
<th>Government</th>
<th>Firm</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1994</td>
<td>38.9 59.0 2.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>1993</td>
<td>21.4 68.2 10.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>German</td>
<td>1993</td>
<td>37.1 60.0 2.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1993</td>
<td>44.3 46.2 9.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Britain</td>
<td>1993</td>
<td>32.3 52.1 15.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>1993</td>
<td>42.4 42.3 15.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>1992</td>
<td>52.6 43.8 3.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holland</td>
<td>1992</td>
<td>44.9 51.2 3.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>1993</td>
<td>39.8 56.6 3.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>1993</td>
<td>16.3 76.2 7.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>1990</td>
<td>73.6 26.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>1993</td>
<td>54.9 23.4 21.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: National Science and Technology Committee: Indicators of Science and Technology of China (1998)

In fact, the investment for R&D from enterprises exceeded the investment from government in United States in 1978: the same is true for Germany in middle of the 70’s. For the newly industrialised countries such as South Korea, enterprises contributed more than government towards R&D investment from early of 80’s.

However, when we turn to look at China, it is clear that the proportion of enterprises’ investment in R&D is far less than that of the Chinese government. Thus the most urgent
task for the country in relation to innovation is to improve the motivation and capability of
people towards being innovative and in creating an innovation culture in Chinese enterprises.

As a developing country, China is in a transition period from a centralised planning system to
a market-oriented system; at present, despite WTO entry, the market mechanism is far from
mature. While the government and industries have agreed that it must be through the
cultivation of enterprises that the greatest gains in innovation can be achieved, it is not easy
to realise the target in short time. Given this, with regard to environmental factors, the first
role of Chinese government should be to create a competitive market environment and
further reform the system of state-owned enterprises so that the enterprises’ competition and
innovation can flourish. At the same time, government, through policies, legislation and
market reforms, such as capital and labour market reforms, etc, should provide direct
external incentives.

To create innovation culture in Chinese enterprises, the policy and legislative environment
must be a priority area for study. Since innovation, especially technological innovation, is an
investment with high risk and long periods of return, general policies are not sufficient to
promote the innovations of enterprises, (and this point has been discussed earlier). Another
critical reason is that Chinese market system is far from sufficiently open now, and therefore
it is particularly important to use policies and legislation as a form of guidance to introduce
innovation to enterprises.

The research and implementation of these policies are similarly important for the Australian
government. Various research studies benchmarking Australia's innovation performance
against international standards tell the tale of a country that is lagging behind in many areas.
Results of recent worldwide study on innovation management reveal that Australia's
innovation performance is not at best practice levels, and she is well behind the United
States and the Asia-Pacific region in terms of vision, attitude and strategic approach to
innovation. In recent years, the business sector shows the growth in performance of R&D,
as expected from the increase in business funding of R&D, but funding of R&D is still more dependant on government comparing with US and other developed countries (See chart 1).

Another study on international competitiveness, concludes that the entrepreneurial expertise of Australian managers lags behind five other countries—including Japan, the United Kingdom and the United States—in areas including entrepreneurial skills, willingness to take advantage of new business, willingness to take financial risks, and creativity in generating new business advantages.

This has been realized by Australians and the Australian experience in recent years is indicative of broader shifts that have taken place in recent years – in part in relation to the overall philosophy or approach that has been adopted, moving from an interventionist approach to one which is more indicative and supportive. Following the National Innovation Summit in February 2000, the final report of the Innovation Summit Implementation Group gave priority to ‘Creating an Ideas Culture’ as the first in a number of key recommendations. A significant culture change must occur in business enterprises and research institutions if Australia is to be a player in global knowledge sharing activities. Incentives for change need to be introduced for whole country, especially for business enterprises.
Chart 1: Comparison of Australia's GOVERD, HERD and BERD as a percentage of GDP in 1996 with the US and OECD (OECD, 1998)

Notes: GOVERD  Government expenditure on research and development
HERD  Higher education expenditure on research and development
BERD  Business expenditure on research and development

In summarizing the comments made above, there appear to be three major ways in which government policy can impact on and influence the behaviour of business enterprises:

through legislative changes, which require changed behaviour, and thereby ultimately change the culture of enterprises;

through incentives, which act as an inducement to behave in a particular fashion; and /or

through encouragement and exhortation, seeking to influence the agenda of companies by putting forward arguments as to why it would be in their interest to change behaviour and introduce new practices.
Conclusion

In January 2001, the Australian Government announced a major set of initiatives to promote innovation over the next five years. These measures included increased funding for R&D, tax incentives for business R&D, and increase government funded places for students in science, engineering and technology. While these measures are indicative of the policy settings that can be used by government to ensure a more innovative approach develops over time, they also betray a limited appreciation of the importance of innovation in practice. There is a clear need to increase the entrepreneurial skills of managers in Australia, both within larger companies, and in the SME sector. However, this is yet to be addressed.

This can be contrasted with the situation in Finland. Some ten years ago the Finnish Government and businesses embarked on a focussed R&D program, seeking to develop innovation in a number of targeted areas – especially information and communications technology. This resulted in enormous growth in this area, especially in mobile telephony. However, the initiative was not merely R&D driven. At the same time, a major emphasis on entrepreneurial education was also developed, starting at the school level, and gradually impacting on the educational system as a whole. By 2000, 10% of Finnish teachers had undertaken training in developing an entrepreneurial or innovative culture.

The policy implications are clear. For both Australia and China, there is a need to ensure a focussed development of innovation in the next decade. Such an approach must address both support for R&D through the government and business sectors, and at the same time support the development of entrepreneurship and enterprise through the educational sector. In China, the emerging impact of WTO admission will make these needs become even more pressing. Both must be addressed, and the long term need to change culture requires action now to bear fruit over the course of the next decade.
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