

Innovation for business success:

Achieving a systematic innovation capability

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1. Executive summary

It is possible to be innovative in both large and small companies in Australia, and to derive significant business success from that innovation. These innovative companies have developed a *systematic innovation capability*, which assures them of a series of innovations that deliver business value. Innovation success starts with strategy and leadership, in which innovation is prioritised, as important to the business. Guided by this strategic direction, these firms resource innovativeness in their operations, including in their workforces' creativity. They measure innovation and recognise it as important in their workforce, and some reward their staff for contributions to innovation. Through strong senior executive leadership of innovation, staff are encouraged to contribute to innovation and the behaviours and culture lead to a deep embedding of the innovation mindset and culture. This innovativeness is attractive in labour markets and allows these firms to attract and retain talented people.

External relationships also reflect the innovation focus. These innovative companies generally match up with customers looking for innovative solutions, and prepared to pay a premium for such innovations. These innovative companies often work with their supply chain partners to extend the domain of their innovation efforts over a broader asset base. They mostly practise various forms of open innovation, meaning that they work collaboratively with a range of partners, with which they can achieve win-win innovation outcomes.

Innovations can be in the form of new products or services, or cost-reducing process improvements, or innovative business models and methods. The benefits of innovation occur in all aspects of the profit/loss statement: innovators drive additional sales volume, achieve price premiums and reduce costs through process improvements. In addition to the financial benefits, innovation goes hand-in-hand with sustainable development initiatives, as both require progressive leadership and an appetite for change, combined with a tolerance of experimentation and some risk. For the companies we examined, the risks and the initiatives that did not work were more than made up for by the wonderful successes, in revenue, growth, price premiums and cost reduction. This report provides detailed case studies, from which we deduced common principles of systematically innovative companies.

2. Introduction: the key challenges and role of innovation in enterprise success

This study has been conducted to closely examine the factors that are associated with successful innovation at the enterprise level. Firstly we wanted to find companies that have consciously adopted a competitive strategy that is at least partly if not significantly based on their innovation capability. Second we wanted to find some 10 companies which have different approaches to innovation; hence we considered and examined firms in a range of industries and of various company types and sizes.

For Australian companies wishing to achieve and sustain positions of success and profitability, there are some important facts to face into, in terms of competitive advantage. First is that we are an expensive country (in global terms) to operate in when it comes to the cost of labour in particular. Everyone from graduates such as accountants and engineers through to senior executives, shop floor workers, tradesmen, and our administrative support people cost much more to employ here than in a number of other countries, such as in most of Asia. So when it comes to considering global competitiveness, we can't compete easily at all on labour cost in most industries (nor do we as a community and nation wish to be a low wage economy). And it's not just labour cost: rent in our capital cities and other costs, such as travel, infrastructure, utilities, local component inputs, raw materials and services etc, and regulatory compliance costs of many types are all more costly in Australia than in countries such as India, China, Malaysia, Thailand etc.

So if cost competitiveness is a tough challenge in Australia, one then wonders if it might be possible to achieve competitive advantage through service and quality. Whereas this used to be a way of getting and staying ahead, and still is up to a point in some market segments, it is reducing in potential. Engineers in India and China for example, who will work for much less than those locally, are able to do good design and are prepared to work extremely hard, including long and flexible hours, such that coupled with the internet for communication effectiveness, high levels of both service and quality can increasingly be obtained from such places, at lower cost. Such is similarly the case for software developers, call centre operations, information processing centres and for manufactured goods from China, Vietnam, Pakistan and Indonesia. Many Australian companies have decided that "If you can't beat it, join it", and have partnerships or offices in low wage countries, in order to ensure they can be cost and service competitive. This tends to reduce the potential for 'value adding' onshore, even if it keeps these businesses surviving for longer than would otherwise be the case.

Even if it is possible for a firm to be competitive in cost and service/ quality, clients will not normally pay any significant premium for this, as it is becoming expected in most industries, and profit margins will not be sustainably superior. This is because these capabilities are relatively easy to replicate, so they are indeed widely replicated (including in low wage

countries), hence clients ultimately become the main beneficiaries of improved service and costs/ productivity improvements as they sweep through the industry, and this includes cost reductions through ‘off-shoring’ to low wage countries. Advantages from these factors, even for first movers, can last only a small number of years.

The good news is that sustainable advantages of another kind, however, are possible. This comes from true differentiation through innovation. And while no single innovation lasts forever, what can last for a long time is advantage through superior *systematic innovation capability*! To achieve this advantage, innovation needs to be the key focus of all the building blocks of your organisation, as is the case in leading innovation-oriented firms. Internationally, well known examples of this phenomenon include Apple, Google, Samsung, Sony and 3M.

This systematic innovation capability means that:

1. Your business strategy must be centred on finding innovative solutions to your clients’/ customers’ problems. From proactively solving these problems, one creates business opportunities. Strategies need to include looking for new and different ways to solve problems for clients and new and different ways to conduct your own business processes. This means developing brand new products and services too. This work and orientation also allows your firm to win the ‘war for talent’, because most talented people have a natural affinity for innovation and will be attracted to firms which are sincerely trying ‘do’, meaning implement, innovation effectively. It also drives internal process innovation and leads to cost reduction.
2. Systematic innovation needs to be properly resourced, and processes must allow for some experimentation, thinking outside the square, and taking carefully judged and calculated risks when needed. This includes stimulating creativity in all staff, which is a training and skilling-up opportunity. Knowledge management is an opportunity here too, requiring systems capabilities and forums for exchanging ideas between staff.
3. If a firm is serious about systematic innovation capability as against just paying a ‘lip service’ approach, then innovation must be measured and be a central part of the business KPI (key performance indicator) system of the organisation. Remember the saying that is indeed a truism: “What gets measured gets done!”
4. The business innovation measures are even more powerful when they are then translated into personal incentives for all staff. This means that staff are recognised, rewarded and promoted at least partly on their contribution to innovation capability and innovations. Without this, staff can get away with not ‘buying in’ which can defeat the purpose, whereas with this factor in place, staff achieve personal gains while doing great innovative things in the business and for

clients. When the business measures are strongly aligned with personal and team success drivers and incentives, a huge amount of energy is unleashed in the workforce!

5. Emphatic leadership of the behaviours and culture works wonders. When we see our senior executives demonstrating some thinking outside the square, trying new initiatives, demonstrating and encouraging some sensible appetite for risk and tolerating the occasional failure as a learning opportunity, then the fear is removed and people get on board with innovation, and it can become a reality.

2.2 Going forward on innovation

One thing is for sure: an innovation capability will not develop on its own; it needs to be consciously formulated, resourced and driven into place. Some key questions are:

- Does your firm want to succeed through innovation?
- Do you have a strategy in place for innovation?
- Do you have the right resources, skills, and systems in place to achieve systematic innovation?
- Does your business measurement system include prioritisation of innovation measures, including inputs, innovation process intensity and innovation outputs?
- Are staff recognised and rewarded for their contribution to innovations?
- Do leaders talk and walk innovation, and lead innovation by example?

We now present an examination of some other studies and publications on innovation, then our own findings, based on case studies of 10 Australian-based companies.

2.3 Systematic Innovation: the ultimate in value adding

This report examines both concepts and practices of ‘systematic innovation capability’ in Australia. We seek to answer important questions including:

- What business strategies do systematically innovative firms formulate and implement, and how do they go about this?
- How do these firms resource their innovation capabilities and activities?
- What measures of innovation and innovativeness are being used by innovation leaders?
- How do these innovation leaders reward, recognise and promote staff?
- How do these companies drive culture and behaviours towards innovation?
- What barriers exist to doing even better in terms of innovation?
- How much and how is sustainable development being applied and used in innovation oriented companies?
- Who in these firms are the critical contributors and catalysts of innovation?

These questions are examined in a series of case studies, from which insights of common principles and practices, as well as some unique insights about these firms, can be drawn.

Innovation means many different things to many different people. We are examining it from a value creation perspective in firms which engage in any of small to large changes to any of their products, services, processes, technologies, or business models, in order to create business value. We consider that innovation can occur as the occasional ‘lucky break’, which we are not interested in. Rather we studied the phenomenon of *systematic innovation capability*, with the view that such capability is likely to lead to a stream of innovations.

It must be acknowledged that no firm is always successful with its innovations, including the global ‘innovation masters’ such as Apple, Samsung and Sony, due to the challenging and uncertain factors in introducing new products, services, processes etc. However, it is reasonably assumed that those with a robust and systematic innovation capability are more likely to have higher probabilities of success on any single new innovation activity, and significantly more such successes overall. Hence in these successfully innovative firms, such as Sony and Apple, Samsung and HP, there is a sustainable capability for the successes to more than fund the failures. Readers will be familiar with Sony’s Walkman, Discman and series of PlayStations more than making up for its product failures and similar is so with Apple’s Macintosh, iPod, iPhone, iTunes and Apple retail stores. Both these companies have had spectacular product flops, even once launched on to global markets, but the successes in their portfolio of innovations have given an overall business advantage which is substantial.

Innovation has been variously defined as:

- “The commercial or industrial application of something new, a new product, process, or method of production; a new market or sources of supply; a new form of commercial business or financial organisation (Schumpeter, 1983)
- “Intersection of invention and insight, leading to the creation of social and economic value (Council of Competitiveness, 2005)
- Innovation covers a wide range of activities to improve firm performance, including the implementation of a new or significantly improved product, service, distribution process, manufacturing process, marketing method, or organizational method (European Commission, 2004)
- Innovation – the blend of invention, insight and entrepreneurship that launches growth industries, generates new value and creates high value jobs (Business Council of New York State, 2006)

It is clearly possible to implement innovation effectively, and to do so systematically, or not. There are firms in Australia doing it systematically well, and herein we examine how they achieve this. The aim is to observe closely the managerial factors that make up systematic innovation in these successful firms (of various ‘shapes and sizes’), then to deduce from these current successes a set of generic elements, which we term as principles, of managerial practice that can be valuable and instructive to other companies which aspire to such success.

Our approach is to examine key building blocks, and these are set out in overview in Figure 1. We examined how these firms drive their activities in each of these areas of activity, and importantly, how they connect them up to achieve a powerful, company-wide innovation focus.

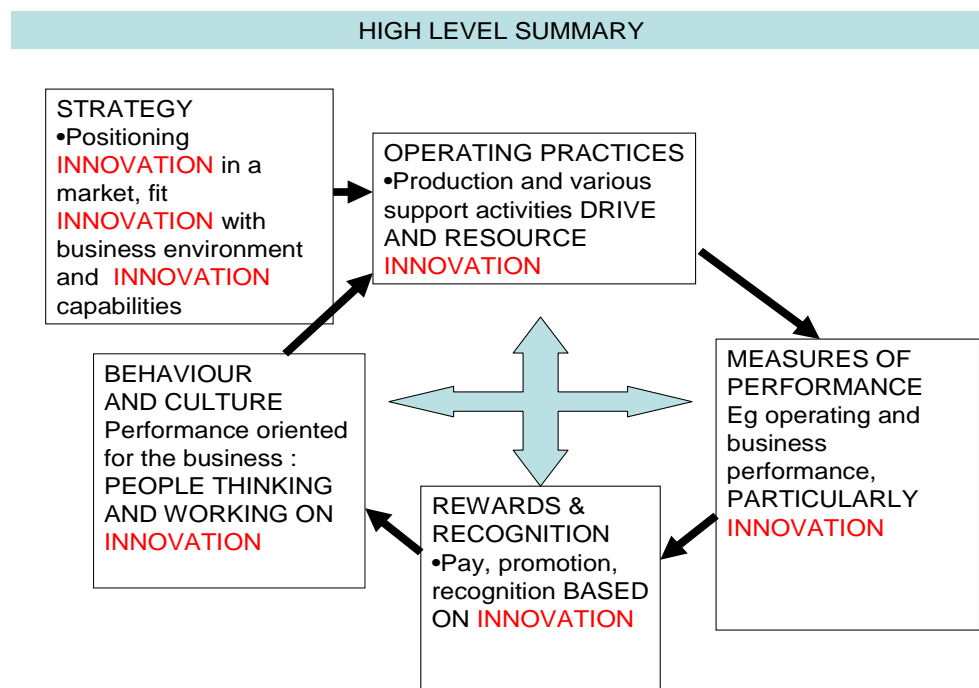


Figure 1: Systematic innovation capability requires a focus on innovation in every one of the key building blocks and the connections between them

First let us define each of the building blocks in Figure 1 and comment on some of the connections in this organisational ‘system’.

2.4 Strategy of innovation

A precursor for a systematic innovation capability is to consciously and purposively engage in such as a strategy. Then and only then, it will achieve enough resources, priorities and company-wide attention. Strategy is usually best made plain and explicit so that staff and indeed all stakeholders can understand and align with it, hence we would expect to see systematically innovative companies ‘talking the talk’ of innovation at all levels of the organisation, on the way to ‘walking the walk’ of innovation. This is certainly the case in 3M in terms of product and service innovation that leads to revenue growth, and similarly in Toyota in terms of process innovation that brings increased productivity and quality. In this aspect of strategy and ‘mindset’, some companies have the dynamism of innovation ‘in their DNA’, and some simply don’t, with all shades of grey existing in between these extremes.

In summary, it is possible to recognise the extent to which innovation is central to a business’ competitive strategy. If it is not a key part of its stated competitive strategy, then that is the first building block to work on, assuming that systematic innovation is a desired outcome.

2.5 Operating practices and resources

Operating practices that are the implementation processes of innovation include research and development, creativity and thinking outside the square, qualified risk-taking (as against pure conservatism and a ‘don’t change’ attitude), and an approach of ‘let’s go for new value’ as against ‘same-old same-old’. Problem solving activities would encourage creativity and new ideas. Ideas for improvement of processes and customer value creation would come bubbling up from the shop-floor of the company, and be accepted and valued as such at the top floor. Similarly, the board and senior executives would lead with careful risk taking and willingness to experiment and think and work ‘outside the square’. And the necessary resources that must be committed in order to convert strategic intent and talk into innovation deeds is evident in firms like Toyota, which even in the recent Global Financial Crisis, continued to commit substantial resources to new product development, process improvement and related elements of progress. These resources can include time for staff to work on innovation ideas and projects, money spent internally on such projects, training, and resources spent on external partnerships related to innovation and progress.

2.6 Measures of performance

Although the details are always different in terms of specific measures, the old adage of: “What gets measured gets done” still applies. A critical measure of performance would be the progress in creating value through innovation. Further, innovation inputs would be monitored and carefully allocated and controlled, as they would be seen as important and scarce assets, to be used wisely. Within the organisation’s processes, innovation intensity would be assessed/measured. In some companies, key measures include number of new ideas, revenue from new market offerings, or process improvement rates and productivity increases or cost reductions through innovation.

2.7 Rewards and recognition

In systematically innovative companies we would expect to see staff recognised and rewarded explicitly for their innovation contributions. Such rewards may be monetary, or be in the form of other tangible benefits, or be psychological. Some firms pay their staff for innovations and continuous improvement ideas, some give additional benefits as monetary or non-monetary bonus elements, and some have powerful recognition systems, which may be formal or informal, depending on their style and culture. Perhaps the adage above “What gets measured gets done” can be extended to “What gets measured and rewarded gets done, hard!”

2.8 Behaviour and culture

Finally to close the loop on innovation (see Figure 1), it is not machines that do innovation, but rather people. Once the business measures of innovation are in place, based on strategies and operating resources focussed on innovation, then the rewards and recognition will lead to a collective mindset and set of behaviours that drive innovation. From this comes the energy to turn strategy and operating resources and priorities into action and success! An innovative culture can be created, where it becomes systematically second-nature for employees to creatively attempt to find innovative solutions to challenges, to constantly strive for continuous improvement, and to know how to evaluate risk and return of new activities. In such firms, innovation becomes embedded as part of daily work, not an addendum on “Friday afternoons”. After some time at this state, innovation becomes a matter of conscious competence, and then when it really becomes maturely and systematically ingrained, it can become an unconscious competence.

We would expect that relatively few firms have achieved company-wide ‘unconscious competence’ in systematic innovation, however, even if it is far away on the horizon from where ‘your’ organisation is currently, then it represents a very worthwhile long term goal, and we propose that the journey towards it, when well led and managed, should be highly value creating and satisfying in itself.

To achieve the company wide innovation behaviours, role modelling by senior managers is a critical symbolic behaviour. When staff see their managers and leaders being innovative, and taking some risks, then they will likely follow. Conversely if staff see ultra conservatism, actions and resources only ‘inside the box’, then they will follow that lead and innovation ideas will be thwarted.

We now examine some of the existing knowledge base of innovation, and then use that knowledge as a lens for studying ten Australian business case studies of innovation.

3. Background review of innovation

In this brief review of ‘what is known’ about systematic innovation, we examine innovation through the lens of the framework shown as Figure 1, examining each component in turn.

3.1 Strategy and Innovation

To achieve successful systematic innovation, there must be small, continuous efforts, as well as large breakthroughs where possible, which run through every aspect of a company’s activity set. There are many elements of innovation, and research shows that these should be considered together, not in isolation, for success in fostering innovation. This is ‘innovation as competitive strategy itself’, including setting and articulating direction, led by senior executives who role model innovation behaviours and resourcing of the creativity, experimentation and risk taking. This applies to large new product or service developments as much as to smaller process or restructuring innovations.

According to McGregor (The Weekend Australian Financial Review, June 9-12 2006, pg 46, “Take Courage, imagination, and mix for innovation”), innovation is about more than just developing new products, “it is about reinventing business processes and building entirely new markets that meet untapped customer needs ... and it’s about selecting and executing the right ideas and bringing them to market in record time”. Companies that have strived for this, and achieved this, include IBM, Proctor and Gamble, Apple, Google, Toyota, and 3M. These companies prioritise developing and creating new value, and it is a key part of their short and long term strategy.

Toyota has an almost obsessive focus on creating and developing innovative products, and the Toyota Prius is a sound example of this. Prior to the launch of the Prius, Toyota had been considered to be a relatively conservative and risk-averse company which focused on processes and productivity improvement rather than new radical products. However, with the introduction of the Prius, the world’s most successful hybrid vehicle offering an alternative to the purely internal combustion engine, Toyota can consider itself one of the world’s great manufacturers and great innovators (Taylor, 2006). Toyota worked feverishly, and against the odds (and it had many critics), to develop a leading car in a new market segment, and was the first to successfully launch a large-scale, hybrid mass market vehicle to the market. Toyota however achieves much more than the occasional breakthrough innovation such as the Hybrid Synergy Drive, however successful it has been. It is also the master of continuous process innovation. These process improvements increase value to its customers and shareholders, both by reducing cost, and simultaneously increasing customer benefits. Toyota is not without its problems as seen in the 2010 product recalls; however these can be put in perspective as part of

what comes with being on the edge of innovation. Apple too has had its quality problems, and in services, Google has had similar service glitches and difficulties. However these companies are very high performers in every way including their long term job creation and wealth creation, including factoring in their problems.

Customer focus practices are important in guiding product and service innovation efforts. Researchers have found that many commercially important products are initially thought of and even prototyped by users rather than manufacturers/ suppliers. Second, they discovered that such products tend to be developed by “lead users” –which can be companies, other organisations, and individuals. 3M is a company that has been at the forefront of innovation, through adopting a “lead user” strategy into some of its divisions, many of which had not had breakthrough products or ideas for some time. One example was in 3M’s Medical / Surgical Markets Division, which was trying to create a breakthrough in the area of surgical drapes, which are the materials/ systems preventing infections from spreading during surgery. The lead user strategy aims to collect information around possible developments and enhancements for a particular product, which can eventually lead to a breakthrough in product offering which leads to a competitive advantage. In this instance, observation of lead users who adapt or make do with non-optimal ways to satisfy an important need (not spreading infections during surgery), led to the development of a specific new product or service which clearly and valuably satisfies that exact need. Such a process is needs driven, and highly likely to ensure that the developed innovation has a market, rather than become a ‘solution looking for a problem’.

There are four key phases to the lead user strategy;

1. Laying the foundation – define the problem and get key stakeholders on board
2. Determining the trends – find out trends from experts in the field
3. Identifying the lead users – a networking process to identify and learn from users at the leading edge of the target market, and related markets. Ideas and problem solving may contribute to development of a breakthrough product.
4. Developing the breakthroughs – move preliminary concepts towards completion.

Members of 3M’s Medical Surgical Markets Division met with what it considered to be the lead users in the market, including surgeons in hospitals and members of the medical profession from all over the world, as well as more unlikely lead users, which included people in Hollywood. Makeup artists are experts in applying materials to skin that do not irritate and are easy to remove – which are characteristics and attributes that were needed in the design of infection control materials that were to be applied to skin during surgical procedures. We note the lateral - outside the square- thinking and creativity that is applied here.

After all of the lead users met and spent many hours brainstorming and sharing their expertise, a final workshop generated six new product lines and a breakthrough new general approach to infection control. Three of these were presented to 3M senior management and as a result, a discovery centre was set up to further develop and implement the breakthrough product lines which the lead users came up with. Further, as a result of this successful process in creating breakthrough products, 3M has now implemented the lead user method in eight of its 55 divisions (Von Hippel, 1999).

The lead user strategy for breakthrough and innovation is an extremely important and useful source of information for companies, because there are usually many more innovative product users compared to innovative product developers. Simply put, it is highly cost efficient to implement lead users as a spark in innovative developments, as well as highly effective in achieving sound outcomes. Sony used this to its advantage when it set up a web site to support hackers who were interested in developing and exploring new types of games that could be played on the Sony PlayStation. This website attracted approximately 10,000 participants, a number far exceeding the number of in-house software developers employed by Sony. Sony's vice president of external R&D, Phil Harrison, said "many of the ideas were expected to be breakthrough ideas that could overcome what was holding Sony back today". (Von Hippel, 1999). This also introduces the idea of 'open innovation', in which innovation is not seen and managed as being completely held in a closed and often secretive environment in the laboratory or in the firm's deeply held bank of secrets, but rather quite the opposite. 3M went to Hollywood to get input for its new surgical products, opening up its ideas and product developments, rather than hiding them until launch. Sony went to the Internet to invite ideas about its PlayStation, and recognised that any price it possibly pays, through making its product development intentions known to competitors, is more than made up for through the almost free creative contributions that come in from the outside world. Open innovation can be very powerful.

While the above examples demonstrate how innovation can be sourced externally, many companies have been able to successfully source innovation ideas internally. One approach certainly does not preclude the other, and a sound balance is best. According to Timmerman (John Timmerman, "A Systematic Approach for Making Innovation a Core Competency", *The Journal for Quality and Participation*, January 2009, pg 4-10), "innovation can be grown internally through strategic research and development or more informal processes that encourage benchmarking and employee ideas". Companies which have successfully developed an internal and well established core competency of innovation include Disney, Corning Incorporated, Cisco Systems Inc, and the Ritz Carlton.

Ritz Carlton have been able to successfully implement a four-step innovation process, which is aimed at fully engaging employees' creativity to craft service experiences that delight customers. The four steps include:

1. Inspire vision
2. Foster the right environment
3. Stimulate ideas
4. Test ideas

For any such new ideas, we have developed and collated in Table 1 the key 'tests' that can and should be applied to filter and screen the best ideas from the many that will not lead to value creation, and hence should be discarded.

Table 1: Tests of a new product or service

Test	Meaning
1. Valuable benefits test	Does the new product, service, technology or process provide benefits in a manner that is clearly superior to existing services or methods? Can you articulate the 'value proposition' of what is new and why it is better in value terms that customers or clients can appreciate?
2. Scale up test	Can the concept be mass-produced in volumes and with the consistent quality to its specification in order to satisfy the market need? There have been many ideas that made it to the prototype stage, but when it came time to scale up, they failed to be 'mass-producible' or production proved to be prohibitive from a cost perspective.
3. Marketing test	Have you determined or assessed demand, and do you have a channel to the client or consumer base? Many inventors end up with a garage or warehouse full of their products, because they did not do their homework on the marketing test. The whole marketing mix must be planned as part of the commercialisation process. This includes design, branding, pricing, distribution, sales, and other factors.
4. Leadership (team) test	Do the key people involved in this initiative have the knowledge, skills, experience and courage to take it through to fruition?
5. Intellectual property control test	You have to make decisions around your IP, and either buy, own or licence-in the core technologies and other elements of IP involved in the innovation.

6. ROI (return on investment) test	This represents the financial bottom line of the innovation. Will it pay? The new concept must generate enough profit to make it worthwhile, including accounting for risk and the time discounted value of money.
7. Corporate social responsibility test	This is also sometimes referred to as the sustainable development or sustainability test, and refers to the environmental sustainability of the initiative and also the social/community outcomes. Products, services and technologies must now at least not harm the environment and community, or do so minimally, and where possible are advantaged by producing positive bottom line outcomes on all these dimensions. Leading companies often find a way to make progress on all three dimensions of value creation outcomes (financial, environmental, and social), with their inventions and innovations.
8. Strategic fit test	Is the new initiative (product, service, process, technology, business model), consistent and aligned with our firm's overall business strategy?

The first two steps in Ritz Carlton's approach are the responsibility of senior management and other leadership team members. These are aimed at ensuring that employees believe their ideas will be considered and valued (even if they are not all implemented) and that an environment that fosters innovation and ideas is created. Once the environment that fosters creativity and ideas is created, management should then take steps to encourage the creation and development of those ideas. This can be done by ensuring there is a well diversified talent pool within the organisation that can be stimulated to study customer behaviour and ask thought provoking questions. Ideas should then be tested and evaluated, which can be done through company developed evaluation matrices, or other decision tools. Table 1 presents a useful way to consider and test a new idea for a product, service, process, or new business model. These various categories of feasibility should be the 'chapters' of a business plan proposal.

According to Timmerman, through the implementation of this 4 step process (which was developed from a research based approach by analysing the current body of knowledge from resources including Harvard Business Review and the American Society for Quality), "The Ritz Carlton was able to successfully implement this 4 step process, and can now leverage employee ideas effectively and efficiently, improving its ability to create exceptional experiences for its customers".

Much research has also been conducted to attempt to discover why some companies can achieve sustained revenue growth, and why some are not successful in achieving this. A study completed by Kim and Mauborgne and presented in an article called "The Strategic Logic of High Growth" in a 1997 Harvard Business Review article, found that companies which discard conventional methods of a product or industry and do not necessarily focus on their

competition or matching or beating their rivals, performed better in terms of revenue and profit growth. This evidence points again to ‘thinking–and doing- outside the square’.

For example, in 1980 the news broadcasting network CNN introduced a new and innovative news service, being the first to introduce 24 hour real time news, for one-fifth of the unit cost of one hour of network news. It chose not to follow the traditional format of news delivery, and broke away from what its competitors had been doing; not letting competitors set the parameters of their strategic thinking. Rather than take the industry conditions as given and set a strategy accordingly, CNN decided not to follow suit and opted out of the race to compete for big-name news anchors. Kim and Mauborgne found that “even though value innovators do not set out to build advantages over the competition, they often end up achieving the greatest competitive advantages”.

Kim and Mauborgne believe that “competition should not be monitored as a benchmark in the strategy of innovation”. Instead, their stated objective of innovation is to “make competition irrelevant by offering fundamentally new and superior value in existing markets and by enabling a quantum leap in buyer value to create new markets” (Schlegelmilch et al., 2003). Many companies have been able to successfully adopt this philosophy by changing and altering existing ‘rules of the game’ in an industry, and being able to break the trap and explore more innovative and more efficient strategic areas of focus. GE, Wal-Mart, and Dell were all able to create a competitive advantage through making strategic changes to their logistics businesses which saved costs, promoted service quality to customers and increased revenues and profits. These were new process and business model innovations, much more than new products or new services.

There is also a theory, developed by academics and known as Enterprise Innovation System (EIS), which is a “set of conditions, rules, processes and techniques in all firm related activities, which innovators rely on in order to implement critical change on factors and conditions of production, usually by a means of technical invention, management discovery, market opportunity and commercial success” (Shen, H. et al., 2009). This theory is specifically aimed at and applied to logistics companies. According to Shen et al, “EIS is constituted of six elements – strategic innovation, organizational innovation, cultural innovation, products innovation, process innovation, and marketing innovation”. Innovation cannot be considered as a single function in that approach, but instead is a network which interacts with all value chain activities. Different parts of the organisation need to interact and provide feedback, in order to support and foster innovation. For example, logistics services and product innovation may depend on other innovation elements to achieve output and benefits, and marketing measures always alter according to the modifications or extensions of the consumers’ needs (Christopher, 1993).

EIS is a framework under which logistics firms can assess their processes according to best practices, and by focussing on the six EIS elements, will avoid more unnecessary failures than if they were focusing on single elements of innovation in isolation. Furthermore, in the process of innovation, managers should aim to achieve a deep insight into the organisation's resources, capabilities, and potentially uncertain environment. "Whether the resources and capabilities within the environmental context can be managed effectively and efficiently will determine the implementation process of innovation system and achievement of organizational goals" (Shen et al, 2009). Shen et al certainly have strongly supported the idea of innovation being a broad strategy, requiring a firm-wide systemic approach. We would argue that their approach is consistent with the building blocks offered in Figure 1 above.

Skarzynski and Gibson (2008) believe that the key to creating and fostering innovation within an organisation has less to do with increasing personal creativity, and "more to do with assembling the right sorts of insights to provoke business breakthrough". They believe that great innovators are able to uncover new opportunities by viewing things from four perspectives; challenging orthodoxies, harnessing discontinuities, leveraging competencies and strategic assets, and understanding unarticulated needs. For example, IKEA challenged orthodoxies when it internally questioned why home furniture needed to be delivered custom-made and already fully assembled. Another way to approach the creativity aspects of innovation, meaning the invention spark, is to consider constraints in existing products, service or processes, or tradeoffs and contradictions acting in the world. For example, the inefficiency of the standard internal combustion engine in vehicles (only about 30% of the energy in petroleum gets to the vehicles wheels to create motion), and the unacceptable greenhouse gas contribution of these, has been a constraint for 100 years, with only quite minor improvements occurring over that time. There are tradeoffs in engine and vehicle design that we can all see, between acceleration rate and power on one hand, and fuel efficiency. To breakthrough this frontier of tradeoffs, and move it significantly forward for users, a radical outside the square solution has occurred, namely the petrol-electric hybrid, essentially doubling fuel efficiency in city traffic, through recapturing and storing as electrical energy, some of the previously wasted energy/ inefficiency. And innovation is never ending, so the next even better generation of engine technology is rapidly developing. Once we can effectively store energy and power vehicles with acceptable performance via electric motors, the contradiction of wanting effective vehicle motion and low greenhouse gas production can be overcome via separating the electricity generation from the vehicle: so we then get the fully battery powered car. The electricity can then be generated anywhere, by any feasible means, coal, wind, nuclear, gas, hydroelectric etc, and transmitted to the car's battery system using existing electricity transmission infrastructure. So the need for using dwindling and expensive liquid petroleum in many millions of inefficient car engines can be eliminated, and the energy can be remotely

created from the point of vehicle motion, in a relatively efficient manner, which can be energy efficient and environmentally less damaging (depending of course on the energy source and the transmission efficiency). The simple petrol engine, a breakthrough of 100 years ago, is rendered essentially redundant through breaking through the constraints and contradictions of efficiency and pollution that it locked in.

From a business perspective, there is a massive opportunity for those who participate in winning new technologies and products/ services existing in and around discontinuities, and a grave threat to those who try to overly persist with the old. Such discontinuities, whether technological (eg the internet), social (consumers caring greatly about the ethics and sustainability practices of businesses they buy from), environmental (consumers caring about the pollution and work conditions in factories) or in markets, or regulatory regimes, cannot be ignored, and in successful business are not just a matter of correctly reacting to them, but rather being out front of the curve of change and profiting from that front position. Innovation requires proactive approaches to customer needs, technical matters and internal business systems and culture.

Skarzynski and Gibson define discontinuity to be “a pattern of trends that has the potential to dramatically change competitive rules or industry structures, opening up substantial new opportunities”. Nokia was able to identify a discontinuity when after the emergence of a global youth culture in the 1990s it sent a team to Venice Beach in California, King’s Road in London, and Tokyo’s Roppongi district to gain insights into developing their mobile phones, allowing it to gain a competitive advantage and huge youth appeal. This was again a way of getting lead user inputs as a stimulant to their innovation processes.

Disney has leveraged competencies and strategic assets as well as any other company in the world. Following the success of its brand in three-dimensional (3D) entertainment, it realized it had exceptional skills in set design, costumes, story-telling and performance arts. It thought about where else these skills could be adapted, and decided to branch out into live theatre production. Beauty and the Beast and The Lion King are now amongst the most successful live musicals in the world, playing Broadway, London’s West End and many other places. This embodies systematic thinking about capabilities and their exploitation, in creating and meeting new market needs and opportunities. As much as for tangible products such as the fully electric car, Disney’s newest entertainment services must pass the eight tests as in Table 1 above.

Radical innovators are also able to understand and feel the unvoiced needs of customers. In the most extreme of positive cases, they can recognize and see customer needs, which the customers themselves don’t even see yet. For example, nobody was asking for a global overnight courier service, or a way to buy a custom-built, made-to-order computer directly over the phone or internet – yet companies such as FedEx and Dell were able to address needs and solve problems through serving customer requirements which people did not yet know they had

(Skarzynski, 2008). The average consumer or even the lead user might not have been able to tell Akio Morita, then president of Sony, about their desire for a portable cassette player, yet when Walkman was launched, we lined up to buy it at premium prices. The spark of radical innovation and associated creativity may well come from a 'creative genius' anywhere, at any level, inside the organization, or outside, or perhaps more often, be a result of intertwined interactions of inside and external influences and inputs. However it does require the organisational conditions in which such ideas will 'get a voice' and be encouraged, nurtured and developed.

In summary, there must be a strong and undying strategic imperative in a firm for innovation for it to have any chance of 'catching on' and becoming wholly or partly systematic. This begs the whole question of leadership of the innovation initiative and capability, which we will address later in this publication: suffice it to say now that leadership is both the motivator and the glue, and the stimulant of that strategy, and the allocator of resources that will embody implementation of the innovation strategy.

3.2 Resourcing for Innovation

Innovation may be sourced from a number of different avenues, and some research indicates that the inventive source of innovation is irrelevant. Many companies have been successful in sourcing innovation from external sources (i.e. through merger and acquisition activity, or buying/ licensing in technologies), and from technology partners through 'open' innovation, and some from internal sources.

Many companies attempt to develop and acquire innovation through acquisition of other companies. In fact, in 2008, there were a record number of mergers and acquisitions, and according to Roger Martin, the Dean of the Rotman School of Management, much of this merger and acquisition activity was in an attempt to source innovation externally (Vella, 2008). Examples of companies which have successfully been able to source innovation through mergers and acquisitions are IBM, SAP, and Cisco. Cisco is a very large company, and its strategy is to wait for venture capitalists to capitalise companies with promising technologies that it can benefit from, then Cisco purchases the companies which succeed. IBM (and Cognos) waited for other companies to innovate and succeed, and then both purchased their key innovations through acquisitions of Cognos and Business Objects respectively.

The key to successful innovation for many large companies has been to "let the little people invent", then these large companies can come in and commercialise inventions, creating valuable innovations with scale of resources and capital (Vella, 2008). A small start-up company which develops a way to make the internet run a little faster, or reliably, or securely, cannot solely scale up the benefits and profit from them, but Cisco certainly can. Hence we see the ordered market and process for inventions and the small start-up companies that own them

to be acquired by mainstream larger companies. Referring to Table 1, it is a case of which of these companies is better placed to pass various of the eight tests (with flying colours!), and in respect particularly of tests 2, 3 and 4, it is the mainstream firm with a significant footprint in the industry concerned, not the start-up, or university, that is best positioned to take inventions forward.

Other companies have implemented “innovation competitions” which encourage and reward innovation. For example, Tata, a large and successful Indian company, has developed several initiatives aimed at encouraging and spurring innovation, including an annual competition known as Innovista, in which teams from all of Tata’s groups and subsidiaries may apply and present innovation projects to a team of judges. Tata was hoping and expecting to achieve around 1,000 entries from teams worldwide, however received over 1,700 entries from Tata’s seventeen companies. Sunil Sinha, who is Tata’s Chief Executive of Total Quality Management Services believes “the more projects there are, the more people are inspired to participate and are encouraging their peers to do so, and that healthy competition drives innovation” (Scanlon, 2009).

Having the “right” people as a critical resource in an organisation is also a key to whether innovation will be successfully created within a company. There has been much debate over the type of people that companies should look to hire in order to develop innovation within organisations. Most problems that companies face may be beyond the scope of one particular individual within an organisation, however a team of cross-disciplined individuals is much more likely to come up with a successful solution. Buxton (2009) believes that companies wanting to foster and encourage innovation should look to hire people “who do not require predictability and stability in order to be effective”.

Microsoft has implemented and believes in a process of hiring “T-Shaped” people. The vertical aspect of the “T” represents depth, and the horizontal bar is breadth. So a T-shaped person has basic literacy in a relatively broad domain of relevant knowledge along with real depth of competence in a much narrower domain (Buxton, 2009). When looking to develop new products or services, Microsoft tries to involve at least three “T’s”, reflecting levels of competence and creativity in three areas: business, experience, and technology.

And finally in respect of resourcing, it appears that “you get what you pay for”, if you are effective in using innovation resources. The most successfully innovative companies commit ongoing and substantial budgetary resources to innovation. Toyota ploughs a large amount of money, meaning a substantial proportion of its profits into Research and Development. Others who are systematically successful do similar. This money is spent in combinations of many different ways, such as:

- Technical developments
- Environmental scanning and lead user interfacing

- Staff training on creativity, problem solving and teamwork
- New product / service testing.
- Process improvements

We should all appreciate the substantial level of effort, determination and resourcing required to ‘break new ground’, whether it’s a smallish continuous improvement process, or the billion dollars that went in to the Hybrid Synergy Drive.

3.3 Innovation Measures

Innovation can be a difficult element to measure within an organization, and if only measured based on short term returns and influence on stock price, could lead to companies not investing enough into innovation and research and development. This is because some believe that “stock markets respond positively to announcements of immediate earnings but negatively to announcements of investment in innovation that have an uncertain long-term pay off” (Stood et al, 2009).

A study completed by Stood and Tellis (2009) used the efficient markets hypothesis as the underlying assumption, and aimed to measure the effect that announcements of innovation projects (and updated announcements throughout the development and commercialisation phases) had on stock prices. Some of the key findings of this study were that markets tended to react more during the developmental phase than to the commercialisation phase, which shows that the stock market is not just short-term focused in its outlook. As a result, Stood and Tellis recommend that because markets reward firms for making announcements of innovation initiatives in the development phase, firms should be open to the market and to keep it informed and up to date of progress of all innovation projects.

More generally, innovation can be measured in at least three categories of ways:

- *Input measures of innovation* measures the resources that are applied, such as the ratio of R&D specialists to total staff numbers. Clearly this also can refer to budgets allocated to innovation activities and staff time. An example is the proportion of sales or profits reinvested into innovation activities such as new product development.
- *Innovation process intensity* is a measure of the quantity and quality of innovation activities, in a sense measuring the breadth and thickness of the pipeline of innovation activities, between the input (resourcing) end and the performance outcomes.
- *Innovation outputs* can be in terms of direct outputs, such as patents, new products and services developed, or the ultimate business outcomes of these, such as the sales and profits from new offerings or the costs reduced by process innovations.

We would argue that if you want to manage it well, and to systematically drive it, that a measurement system, at least of key performance indicators (KPIs) of innovation, is a necessary ingredient. Part of systematic innovation capability builds in systematic measurement

and tracking, and importantly feedback and reporting to all stakeholders of the innovation achievements.

3.4 Rewards and recognition for innovation

Developing and maintaining an effective reward and recognition system is a key aspect of maintaining and encouraging innovation. The basic premise is that people generally behave, at least partially, according to the rewards system and non-monetary incentives imposed upon them.

As a result of the recent global financial crisis, there have been calls to rationalise, review and possibly reduce the pay and rewards for executives in some industries. However, much research has shown that limiting pay for performance schemes may not be the best way to encourage and develop innovation within companies. We would argue that when rewards are partially linked to strategic imperatives and resource priorities, that a powerful additional motivational force can be unleashed, in addition to those that are already in place, comprising ‘normal’ levels of business logic and emotion or passion for a business and for success in the workplace for individuals, teams and companies. In numerous organisations in which powerful direct linkages between rewards and recognition systems motivate staff to provide almost every ounce of ‘discretionary effort’ to achieve challenging goals, the ‘hardwiring’ of individual and team outcomes to strategic goals and business outcomes is an ingredient of this ‘high performance’ workplace. Applying this to a company which strives to be systematically successful through innovation, the signals should basically promote and recognise, and even perhaps pay for great contributions to innovations.

In a recent study, Gustavo Manso, from MIT's Sloan School of Management has conducted considerable research looking at compensation and its relation to innovation outcomes, and reported that the results of his studies show: “that compensation schemes that tolerate early failure and reward long-term success promote innovation”. He argues that "One way to implement such a compensation scheme is with the combination of golden parachutes and long-term stock options. Therefore, policies that restrict the use of some of these instruments may have adverse effects on innovation." In addition to golden parachutes, Manso argued that tenure and debtor-friendly bankruptcy laws are other examples of compensation schemes that promote exploration and innovation by shielding people from potential failure (Manso, 2009).

Quinn and Rivoli (1991) argue that a key contributor to the success of many Japanese firms (particularly in processes innovation and continuous improvement) is due partly to the Japanese-style system of employment and compensation. Analysis completed in a study by Quinn and Rivoli concluded that employment and compensation systems deserve a top spot on the list of attributes that matter for innovation, and that this should always be considered in

studies which examine and attempt to explain innovation. For the rank and file staff throughout an organization, a key question, related to innovation performance and other outcomes also, is: do incentive systems help? Basically, will most people strive harder, when there is something, such as monetary outcomes, benefits, pride through recognition, or something else, in it for themselves? While some people argue that the answer is 'no', we have observed enough high performing companies that persist as such with incentives as an integral part of their high performance model so as to be convinced, that if it is done well, then it generally is well worthwhile.

The Japanese compensation system generally has a low fixed wage, and includes a bonus which is largely dependent on the company's success. Japanese firms also have traditionally and generally offered implicit lifetime employment guarantees, although business volatility has been breaking that down recently. This is in contrast to the typical American system which has a relatively high fixed wage, which is not linked to the company's performance. The American company may also terminate employees almost at will. Does a mutual longer term loyalty lead to higher levels of effort in continuous improvement and innovation by employees, fuelled by larger investments by the company in innovation related skills and capability building? Perhaps a longer term commitment leads to a longer term approach in both directions of the employer-employee relationship. This 'psychological contract' between employer and employees is an important factor in setting and focussing motivation and mindset.

The Quinn et al study concluded that a system that allows gain-sharing by employees and provides employment assurance will foster innovation within a company, whereas a company using a traditionally 'American' compensation system will tend to contain anti-innovative incentives. However, the study also found that the system which is both most beneficial to firms and employees is dependent on market circumstances. For example, the Japanese compensation system tends to be more effective when the company is operating in volatile international markets, compared to the American system which tends to be preferred in a stable domestic market with relatively full employment where companies seek competitive advantage from mass production and scale economies (Quinn et al, 1991). For those interested in innovative industries and in the innovative segments of markets, it would seem that incentive systems are a potentially very effective tool for stimulating innovation.

3.5 Culture and Behaviour

Companies which are too risk averse may not succeed in being sufficiently innovative, so they need to find a way to take sensibly-calculated risks in order to create innovation. For example, Taco Bell had been run by an extremely conservative management team, and as a result there was little about Taco Bell that was innovative. Pepsico acquired Taco Bell in 1978 and a fresh

perspective from outsiders was what was needed in order to get Taco Bell moving forward and being innovative (Nevens, Summe, Uttal, “Commercialising Technology: What the Best Companies Do”, Harvard Business Review May-June 1990).

In order to ingrain a culture which fosters innovation and new ideas, it is important that this process of sustained innovation be communicated throughout an organisation. Communication programs should ensure that all employees know their precise role in the innovation process, and that leaders clearly articulate the link between innovation and business value. In successfully innovative companies, there is clear communication of exactly what the innovation process is and how employees should proceed in terms of leveraging ideas. Further, rewards and recognition for innovation are clearly communicated so as to energise the organisation (Braganza, 2009, see also Figure 1). Employees at all levels know, through their training and practices, of the tests shown in Table 1 that they can informally and formally apply to their ideas.

Hewlett Packard (HP) is an example of an organisation which has been able to successfully communicate the importance of innovation, and create an environment in which employees feel encouraged and empowered to generate ideas and take them forward. HP hosted a series of “Power-Up” events which were a chance for the company to showcase its recently developed cutting edge ideas and projects, across the entire organisation. This demonstrated the importance of ideas and innovation, and management has been trained to foster innovation by not overly interfering with engineers and technical staff, but instead they allow their staff to develop ideas, and the role of the manager is to try to ensure the outputs and ideas generated by the employees can be commercialised (Braganza, 2009).

General Mills, which is a Minneapolis-based food manufacturer, believes that while a relentless commitment to innovation is necessary, flawless execution is mandatory in order to develop and successfully implement and sustain new initiatives. Ten years ago, General Mills began to benchmark leading organisations around the world, both within but also outside the food industry. For example, several employees were sent to North Carolina to observe and learn from the fast changeovers applied in the pits at NASCAR races, which could then be taken away and applied to production lines that had a changeover of over 3 hours. The target was to reduce this production line changeover to 13 minutes, and this was achieved within months, by adopting what had been learnt in the NASCAR pits (Higgins, 2009). This activity drove and deeply ingrained the culture and expected behaviours of further process changes and innovation. This benchmarking and bringing of ideas into the company from elsewhere is as legitimate a form of innovation, from a NASCAR circuit to an adaption in a food manufacturing plant, to a brand new product or technology.

4. Methods used in this study

We selected 10 case study companies, based on ensuring we included the industries covered by the Industry Innovation Councils in existence at the time, plus other firms which are respected as innovative. This is purposely not a random sample, but rather a carefully selected group of companies whose innovation achievements are substantial so that we can learn lessons from them. A range of company sizes were chosen as were various structures and ownership arrangements, to ensure that the generalisability of our findings is strong. We included foreign owned and controlled companies operating in Australia (Toyota, Lonely Planet and Microsoft), through to family owned local companies, Stretchtex, GPC Electronics, Ferguson Plarre, Textor, Specialty Textiles, GRL Mobile and an Australian listed company, Newcrest Mining. The methodology was to conduct structured interviews with key executives in each company, chosen to ensure that they could give a realistic assessment and description of the firm's innovation strategy, resources, measures, rewards, culture, barriers and outcomes. These interviews took over two hours each, and were supplemented by written materials and documents in most cases, or presentation materials and web-based information. The case study documents were checked and approved by those executives. We then conducted a qualitative analysis to verify the model and determine the underlying principles common to these effective innovators.

5. Brief case study synopses

The case study companies were:

- Stretchtex, a privately owned manufacturer based in Sydney, which designs and produces fabrics for special purposes, such as swimsuits for elite athletes. This company keeps ahead of its competition through innovative product designs and unique features.
- GRLmobile, a relatively new company providing mobile phones and related products and services particularly to young females, adding value to mobile phone services through giving clients a tribal/ loyalty experience.
- Specialty Textiles, which produces high performance garments and other highly differentiated materials, using advanced coatings and treatments. An example is a 'glow in the dark' garment for special purposes, such as emergency services work.
- GPC Electronics, with operations in NSW, New Zealand and China, that innovate through supplying differentiated supply chain designs for its clients embodied in its products and services.
- Microsoft Australia, which innovates through customised solutions to its clients and through product developments
- Newcrest Mines, which innovates through technology and improvement methods to reduce costs and improve feasibility in exploration and mine operations

- Textor, a family owned company which makes textile inserts, eg for diapers, and which innovates through technology and methods of product design and manufacturing from its Melbourne base.
- Toyota Australia, which innovates in both radical technologies, and in continuous process improvement in all its functions
- Lonely Planet, a creator of travel support products such as books, which creates a stream of new services through its staff creativity.
- Ferguson Plarre, a bakery company, which manufactures and sells products through its network of stores from an award winning sustainable factory, in which it innovates new products and service methods.
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6. Findings: Principles common to systematically innovative companies

From the companies we studied, we found that although they differed very much in size and structure, industry and product/service offerings, there were, deep down, some common success factors. These were deep principles, not only of innovations, but rather of the capability to successfully implement a series of innovations. They relate to leadership, external relationships, measures, rewards, methods of innovation, staff, and resources. The twenty principles of systematic innovation capability we deduced are as follows:

1. There is no single or simple recipe for innovation. Every firm must chart its own innovation course. It is different in detail, every time. By this we mean that the practices of innovation, the subject of innovation and even who is centrally involved in innovation can vary a lot from firm to firm. Companies all have quite unique circumstances and pressures on them, different opportunities for innovation, different technologies, different resources available and different leaders, each with their own ideas, who ‘do’ innovation uniquely. So therefore innovation strategies are different in their detail across firms. Some focus on new products and services, some on continuously improving internal processes, others on their business models and yet others on technology and process-based cost reduction. However, while there is no recipe that works for all, there are definitely common deep seated principles that most successful innovative companies have in common.

‘Different circumstances’ refers to the history of the company, the external forces of competition, the nature of their product lifecycles and the pace of technological change in their products and process technologies. There are also differences in structure, size and market opportunities for innovation across companies, which mean that the details of innovation practices are different every time.

Different opportunities are a function of how mature the industry is and the extent of growth available, however we would note that there is always, without exception, substantial

opportunity for innovation, whether it is on the cost reduction side, product/ service development side, process improvement side, or even the business model renewal side.

Different technologies bring different innovation practices. Ultimately there are technological limits that one cannot move beyond at a given point in time. However most of the innovators were pushing technology ahead of their competitors, with some exceptions.

Some companies have scale and profit margins which allow them to resource innovation very differently from others. Toyota and Microsoft clearly can allocate resources on an absolute and even a 'relative to scale' basis which is not possible for low margin, smaller businesses.

The leadership style of senior executives varies a great deal. Their ideas about what constitutes innovation, what risks are worth running, and how innovation should and could be done also varies and they influence innovation methods strongly with these ideas.

So in summary, innovation cannot be 'programmed' or driven via a recipe at the detail level. At the 'details level', every firm must chart its own innovation course. However, there are certain principles that underpin these unique details, which are common to the successful companies. The rest of those principles follow below.

2. Strong, determined, energetic, dynamic leadership of the organisation seems a necessary prerequisite. All the firms we studied were strongly driven from the top. Innovation is not an option for these firms: it is required by dynamic leaders who drive it. In some cases, mostly the smaller companies, innovation is driven by these leaders in a very 'hands on' manner. In others, such as Toyota, it has become maturely embedded in the broader culture. In yet others, such as Lonely Planet, it is seeded and catalysed by a senior executive team and small group of central experts who ensure that systematic and rigorous practices are in place, and who leverage the creativity of larger groups of staff, customers and other stakeholders in innovation activities. Similarly, Newcrest (mining) has become a shining example of a company that just a few years ago did not have a very strong innovation focus, and therefore had a limited 'funnel' of opportunities in its forward trajectory. A new board and CEO led a new, innovation-based strategy, including a very systematic approach to improving existing assets' performance, and exploring for new potential sites that will deliver its long term strategy. Newcrest can legitimately claim a quite direct connection between its strong leadership, innovation strategy, resources and business value creation. In a completely different context, GRL Mobile has a similar set of deep seated characteristics to this listed mining company, even though it is a new economy start-up! Founding Managing Director Michelle Hamdorf drove her vision despite significant challenges and created a culture of constant innovation that was likely to overcome all obstacles and succeed. This was within a broader corporate environment in which, at least to an extent, GRLmobile did not well fit the overall strategy. Similarly strong leadership was the

primary driver in the three small companies we studied in the textile industry: Textor, Stretchtex and Specialty Textiles. In Specialty Textiles, CEO Daniel Liepnik led innovation from the front, driving new product development from the boardroom, and leading this small company into new technologies and their direct applications in ‘new to the world’ products. In Stretchtex it was a long serving leadership team, a strongly cohesive and connected team of six long serving executives who grabbed the imperative of ‘survival through innovation’ and turned it into a premium price opportunity through their innovative stretch fabrics and customised solutions to niche product opportunities.

GPC Electronics is in a highly and globally competitive industry of contract electronics, essentially loading electronic boards for demanding clients with standard technologies that exist at higher scale in much lower cost countries. GPC Electronics Managing Director Christopher Janssen and his top executives drive differentiation strategies through offering innovative supply chain solutions to their clients, of which the boards and the electronics on them are a ‘necessary but not sufficient’ component for success. In GPC Electronics’ case, innovation takes the form of the ‘cleverness’ of the supply chain solutions offered to the customer, around the commoditised product. It is a case of managerial innovation at its finest.

In all these companies, while it is a truism that innovation can indeed be a company-wide phenomenon, we must acknowledge that the powerful catalyst, without which these companies would not only not be innovative, but would not exist, is determined, smart, driven senior leaders, who are committed to finding new ways of creating value.

3. These firms have a particularly strong sense of customer focus and value creation.

Innovation is first seen as a way to create new forms of value for customers, in addition to internal cost and efficiency related innovation. These companies and their executives and staff know that the key to innovation is value creation for customers, in the sense that all innovation efforts must be aimed at creating superior customer value. This can be in the form of new or improved products and services, or process innovations that reduce cost and therefore allow for more competitive pricing while achieving solid margins. But, with whatever else is going on, it is always about the customer! And not only is it about the superior outcome for the customer, but also often with the customer as part of the innovation process. In GRL mobile, the high touch service is to ignite the customers’ passion for fashion, gossip, music, movies and the experience of ‘girl talk’ via GRL Mobile phones. In Stretchtex the customer is closely involved in the product specification and the needs analysis for the new products. In Lonely Planet and Microsoft, there is extensive testing of customers’ reactions to new offerings. Lead customers are the Beta Testers, and indeed are a direct source of new product and service features in these companies. Toyota’s focus and spectacular success with waste reduction is geared towards driving for higher value in its offerings, in the sense of ‘more car with more features and more durability and reliability of vehicles’ for a lower cost and price. While this customer obsession

is less evident in a commodity industry such as Newcrest's gold and copper markets, this mining price-taker is cost and productivity focussed and also considers its customers to include stakeholders such as staff, local communities that it serves and the environment.

Ferguson Plarre combs local and overseas markets for new customer trends and opportunities in order to introduce new product designs in its bakery goods in its local markets. In all these companies, risk is a factor that must be managed carefully, for risk cannot normally be completely eliminated. Ferguson Plarre has had its failures, as even have the powerful global corporations, Microsoft and Toyota! However in these innovator firms, the risk is carefully analysed, and in most cases, a range of outcomes from superb to poor are anticipated by these companies, which take 'calculated decisions under uncertainty' in implementing their innovations. In GRL Mobile, Michele Hamdorf took relatively few major risks on behalf of the company once GRL 'lift off' was achieved, using strong relationship-based marketing tactics to ensure take up of products and services. Where possible, the risk of failure is reduced by ensuring that the customer need is locked in before major resources are committed. Newcrest takes substantial technical risks in its novel operating methods and technologies, but has little risk on the demand side for its products, gold and copper. GPC Electronics locks down client contracts before producing and such 'make to order' configurations limit some important aspects of risk. Textor and Stretchtex do similar, making their products to locked-in customer orders in the main, hence reducing the risk of normal market vagaries.

4. Innovation involves implementing change, so change management capability and readiness for regular change are prerequisites. The mindset that staff bring to work in these corporate innovation masters is the opposite of 'same-old same-old'. They anticipate change, expect change and drive change. It is more than mindset, but it does require expectations, acceptance and indeed is an attitudinal phenomenon first. Then it takes hold in practices, and change is welcomed and embraced, rather than feared and resisted. In GRL Mobile, all staff know that there is a constantly changing and opportunistic style throughout every day, and in Toyota, all employees contribute to continuous improvement, which by definition means a dynamic set of changing process standards. Stretchtex moves to new and improved products for new applications on a regular basis. Microsoft would soon wither and die if it didn't renew its products and come up with new and improved versions, so it is a matter of innovation in the DNA there as much as in Lonely Planet. Gus Balbontin, Global Innovation Manager, drives innovation in Lonely Planet to new heights, in that every cycle of innovations is itself a renewal of the innovation process. In Lonely Planet, even the nature of the systematic innovation capability and processes is the subject of continuing renewal and innovation! Innovation is faster, more efficient and better with each and every cycle at Lonely Planet.

5. Sustainable development factors, such as waste reduction, staff wellbeing, and environmental output improvement go hand in hand with innovation. Ferguson Plarre obtained a competitive edge for staff and in the market, as well as reduced operating costs

through moving to environmentally friendly premises and processes. Toyota's Hybrid Synergy Drive, despite the 2010 problems in its international markets, is positioned for long term competitive advantage in its markets. Microsoft's corporate commitment to working and resourcing local community projects and not-for-profit activities and organisations leads its employees to commit to similar, complementary and aligned activities, and strengthens and aligns the motivation and commitment of its staff. These activities involve creativity and stimulate innovation. They lead to and enhance a culture of innovation within and outside these companies' mainstream activities. They deliver direct and indirect paybacks.

The same factors that underpin systematic innovation also lie at the heart of an embedded approach to sustainability. They require change, proactive leadership, and a strong focus on improved outcomes for stakeholders. There is a natural synergy, and indeed these two domains of activity, sustainable development and innovation, 'morph' into each other.

6. Innovation is often done well by involving partners from outside the organisation: open innovation works. Innovative companies used to often think that they needed to be inventive inside in order to achieve the intellectual property to commercialise. While this is not untrue, it is not the whole truth! Networks of partners, 'imported' knowledge, joint ventures in ideas and creativity, and almost every form of learning and 'new-stream' activity now crosses firm boundaries as much as lies within single firms. Specialty Textiles does this activity particularly well. CEO Daniel Liepnik is particularly externally focussed, scanning the business environment constantly for new ideas that are at the cutting edge of both demand for and supply of specialty applications of textile products, where new features of clothing and similar are required and can be premium-priced. Daniel then looks externally, in the market place, for how technological capabilities can find other applications, and as a result has recently moved from textiles and applications in this 'home market' into building products. This company is small, however it achieves significant leverage and can stay at the leading edge almost entirely through its network of relationships with external partners, including a range of universities, and other technology focussed groups. Toyota knew that it was not a specialist in all aspects of the technical knowledge needed to develop the hybrid synergy drive, so it formed a strategic partnership with Panasonic, a battery technology leader, to achieve what it needed for the Prius and beyond. Most of the companies we studied in this case study set reported being active in attending tradeshows, networking actively with suppliers and a variety of technology sources, although some found institutions such as universities difficult to deal with due to their perceived 'bureaucracy and self interest'. Microsoft works openly with a range of partners, in its market places and in its technology sources. Stretchtex works actively in collaborating in innovations up and down its supply chain. Textor is strongly connected to its major customer in a technological sense, almost to the point of being partially dependent on it, which is a risk that needs careful attention and relationship management. GRL Mobile works with retailers on innovative services, developing solutions that lead to win-win outcomes for all. For GRL

Mobile, this innovative edge has helped to transform its retail customer/ resellers as much as it has benefitted GRL through its 'sell through' factors. The collaborations in most of these cases are indeed systematic, but we emphasise that while they are systematic, they are not at all 'robot-like', but are based significantly on human-to-human relationships, involving trust and loyalty at the personal level, as well as the business-to-business partnership and joint value creation that must underpin it.

7. There is a definite payoff to being innovative: first staying in business, then growth and price premiums through differentiation, then profitability. Given that in most industries, global cost competitiveness is hard if not impossible, and quality and service can increasingly be achieved anywhere and everywhere, innovation is becoming more, not less, important. Without innovation in its supply chain offerings, GPC Electronics would not exist, much less be competitive and profitable. Without systematic innovation capabilities that 'keep them keeping on', continually ahead of their competitors, niche textile companies Textor, Specialty Textiles and Stretchtex would likely have moved their operations to low cost countries such as China, where much of the world's mainstream textile industries have located. Without continuing and systematic innovation, even Microsoft would soon be stale and its sales would cease. Without its sustainability efforts and new products stream, Ferguson Plarre would be less profitable and not able to achieve its edge with stakeholders including staff, whose loyalty comes from the belief in what the company is doing in this innovation and sustainability space. And without continuous process improvement and new technologies that translate into product features, Toyota would soon lose its leadership position in both value to customers, and profit margins through waste and cost reduction.

For some of these companies, their innovativeness leads to pricing premiums, such as for the Hybrid Synergy Drive at Toyota, some of Ferguson Plarre's products and most definitely for Specialty Textiles and Stretchtex's premium textiles and garments which both have unique products that are offered to the world. Lonely Planet has achieved stretch of its premium brand from its traditional travel books to new media and achieved significant revenue growth through this expansion of services scope. Similarly for GRL Mobile and Microsoft, there is exclusivity of the offer, and a uniqueness that drives a premium. For others such as Newcrest, the primary innovation benefit is from cost reductions, which have been little short of massive (of the order of 30% in operating costs in gold production) in recent years.

This is not to say that it is one or the other in these companies that have innovation 'in their DNA'. Toyota drives cost reduction hard, Lonely planet reduces cost through sustainable development initiatives (using less paper and energy), and Textor reduces its cost of labour through clever automation in its manufacturing operations in Melbourne. Most of these organisations are working both sides of the profit line hard, meaning the revenue enhancement and the cost reduction element, as much as opportunities and constraints allow them to. Newcrest Mining found significant benefits from innovations not only in its mining operations

but in its support business activities. In one operation, it found that certain support processes could be moved from a remote and therefore expensive location to a much lower cost facility, and that it could be re-engineered to make it much more efficient too. It is fair and reasonable to say that while it has little or no control over price, Newcrest is doing a very great deal about those profit drivers that it can impact, namely cost and volume. Toyota drives cost reduction through technology transfer and common components across models, and so does Ferguson Plarre with its bakery ingredients and components.

8. Innovation helps firms to win in the labour market. Talented people at all levels are attracted to companies doing interesting things, not just ‘same old same old’, hence innovation supports reputational advantages that help in winning the ‘war for talent’. These innovators have low turnover and have achieved a ‘switching on’ of staff to the company’s mission, and quest for progress. Innovation is associated with high staff motivation, low turnover and hence labour market success. GRL Mobile’s staff were literally excited about what they were part of, in a feeling that they were building something worthwhile that fitted their lifestyle and belief system. They became self motivated. Toyota achieves what can only be described as differentiation through its ‘people capability’ meaning that the skills, knowledge of process improvement and motivation of its staff keep Toyota at the edge of cost reduction and product quality that is hard to match for its competitors. This author believes, after many years of observing Toyota, that this company improves the ‘humanity’, as well as the creativity and quality of its staff as people, not just as employees. And with this capability, such companies become highly attractive places to work for prospective employees and they can pick and indeed cherry-pick from the market, the best staff available in all segments of the labour market.

This attractiveness in the labour market can be also seen in globally successful innovator companies such as Google, Microsoft, Apple, Dell, Samsung and 3M. In our case study set, these companies reported low turnover and high levels of staff satisfaction and commitment. Ferguson Plarre reported a large number of long serving highly motivated staff. They are motivated by the ‘innovation journey’. The same was true of Textor, Toyota and Newcrest.

9. Innovation can be leveraged throughout the supply chain. Both up and down the supply chain these innovative companies need and achieve similar (innovation) from their partners. They are changing fast in terms of their products, services, processes etc, so they need suppliers who can match such capability. This extension of the domain of systematic innovation is practised strongly by Toyota, who place engineers, at Toyota’s cost, on secondment into suppliers’ businesses to help them to continuously improve and to embed the ‘Toyota Way’ of innovation and lean methods into these firms, to achieve win-win outcomes. Textor is successful in innovation through its supply chain partnerships both forwards to customers and backwards in its supplier base. Textor works closely with its lead customer, Kimberley Clark to achieve mutual benefits through innovation, and also with its own suppliers to the same end.

GRL Mobile does similar with its customer/ resellers, including large retailer firms such as Target and Australia Post. GRL Mobile worked with these much larger firms to build their web based retailing capabilities, including selling through the GRL Mobile products and services. GPC Electronics has this theme as its major area of competitive advantage, in that it derives little competitive advantage from its electronics operation and its products per se, which can be and are replicated in many other firms, but indeed prospers from the supply chain innovations that it introduces to its customers, which give these customers service and cost advantages. By introducing these ‘management innovations’ into forward supply chains (sometimes called demand chains), GPC Electronics wins orders against competitors who have lower cost electronics operations, but which do not have the capacity to introduce these supply chain innovations. In summary, the ability to develop and achieve advantage from systematic innovation capability need not be limited to one’s own assets, and these outstanding companies prove that just as it is possible to influence others in a supply network about advantages based on quality improvement, so it is with innovation. When one has strong power in such relationships it is of course easier, such as with Toyota. However in dealing with large customers, relatively small companies such as GPC Electronics, GRL Mobile and Textor can indeed be heard once the capability is demonstrated, and when the relationship and mutual respect at executive level is in place. This leverage beyond the borders of one’s own firm builds a multiplier effect and creates economic surplus for all concerned, while also strengthening the relationship itself!

10. Innovation can become fully embedded in a firm’s ‘DNA’. This means that it is central to its market positioning, resource-base, measures and values (whether formal or informal), and rewards system. This brings the development of an innovative culture and set of behaviours, until ultimately, systematic innovation is expected as a part of every activity. This is evident in innovation giants such as 3M, Apple and Google. Our case study companies were at various stages of maturity in this regard, with perhaps the strongest being Toyota, followed by Microsoft, Textor and GPC Electronics. This is judged on the depth of involvement in these company’s staff in terms of innovation involvement. In Toyota it is truly deep, with process innovation being part of everyone’s job. In some of the other companies, the source of the innovations is more limited, being more the province of senior executives or the technical/ research department. Most of the case study companies were ‘in process’ of inculcating innovation work deeper through their workforces. Ferguson Plarre has a deep commitment throughout their work place. Lonely Planet have widespread involvement and commitment through the workforce based ‘hack days’, however in some of the other companies, it is still driven and centrally implemented through the urging and efforts of a small group of executives, with other staff clearly participating, but doing less of the spontaneous initiating of innovations. In some of the companies, there are still some staff doing ‘same-old same-old’ most of the time. In such companies, what would happen if there was a change of owner or senior managers? Newcrest has been systematically innovative at the high level it is now at, for a

relatively short time, and if there was a complete change of leadership team, innovation capability and activities could perhaps reduce to the level they were at a few years ago. Similar is the case in the new company GRL Mobile, and in Textor, Stretchtex and Specialty Textiles where the drive and energy of senior leaders motivates the innovation imperative and capability. Hence it is debatable as to whether these firms have all achieved 'innovation capability in the firm's DNA'. For those which are not yet at a mature point in this regard, that should indeed be a goal, and until it is maturely in place, it constitutes a risk factor.

11. Innovation becomes part of everyone's mindset in the best of firms. It is a way of working. In addition to doing the 'daily work' of production, sales and support functions, these innovative companies involve most or all staff having a second job in mind, which involves finding NEW ways to create value. This is not disconnected to daily work, but indeed is applied to all aspects of daily work. Related to the point above, innovation can be a way of working, a part of and manner of doing the job. Problems are solved creatively, rather than routinely and in a similar manner to the past. Staff look at products and services, even as they produce them, with a constructively critical eye, and with the skills to seek out improvement in them. While doing processes 'by the book' in these firms, there is a continuous desire to improve the book's standards. Ferguson Plarre implements this aspect of innovation well. Being a food producer, it must have stringent process control, yet staff, especially managers, do have the mindset of always looking to improve products and services. Newcrest is rapidly developing this approach towards maturity. It has employed specialists to do this work, and who are engaged in spreading the capability through the company. Toyota has been doing this work for decades and is ahead of most of the world in this regard. It has not only the mindset, but also the systems to take forward improvement and innovation ideas, for processes and products, and to capture, evaluate and implement those with positive business value. Textor is also doing this with its manufacturing automation processes. GRL Mobile is moving so fast in its services developments that this is clearly the case there too. In Lonely Planet, most staff are involved at some point in innovations, new services developments or products. Hence the mindset of openness to change is in place. Staff in these firms are welcoming of change, realising that all stakeholders achieve net benefits from it when it is done well. So they engage and the 'doing it well' becomes a self-fulfilling initiative. This element of systematic innovation capability should not be underestimated. In tradition bound firms, which achieve little in the way of successful innovation, staff resent and even sometimes actively resist change. There is a great deal of managerial work that has gone in to these innovative firms to achieve commitment to change and openness to try new things, take risks and have a positive attitude to change, as against the opposite. Those leaders who have achieved this at Textor, GPC electronics, GRL Mobile, and indeed all our case study firms, new and long established, place a lot of effort on this aspect of innovation capability work.

12. To become systematically innovative, a firm must be at least competent at ‘quality management’. Quality management was a very large movement in the 1980s and 1990s in Australia, with most companies trying it, and most being unsuccessful in getting lasting improvements from it. Quality management requires a strong customer focus, commitment to process control and improvement, and a company-wide skill set on the tools that support that philosophy and set of methods. Companies that have achieved quality maturity have a strong sense of discipline, of doing things ‘right the first time’ and of focussing on customer value creation. What has this got in common with systematic innovation capability? Our case study companies all had this strong sense of discipline and commitment. The commitment to giving great service and products to customers is a common prerequisite to companies which have quality as their focus as it is to innovation. Importantly, so is the process control emphasis. Since innovation involves significant changes, of products services and processes, there is a logic that is inescapable around change, namely how can one effectively manage these processes of change, if the processes are not in control in the first place? In Toyota, all staff have been focussed on quality for decades now. Process definition is strong. ‘Andon’ systems require that no defects are produced or propagated. When problems do occur, they are analysed and solved so they do not happen again. Change in the form of improvement is embraced. On top of this mature base of ‘quality capability’, it is a natural step to introduce and expect innovation throughout the company. If Toyota did not have a quality capability, innovations would not be able to be smoothly introduced, because of the psychology of the workplace, and the lack of underpinning systems that are needed to support innovation. This ‘psychological factor’ is manyfold, including staff’s customer obsession/ focus, embracing change, and the use of tools to solve problems effectively. It also includes teamwork, which helps reinforce both the quality and the innovation activities. In Toyota it is not even really possible to tell where the quality activities end and the innovation activities begin, as they morph into one another. GPC Electronics has a strong quality focus, measuring quality and striving for quality in its operations. Textor and Specialty Textiles are focussed on quality as is Lonely Planet. Newcrest has only relatively recently become systematically strong in its process focus, and is pushing this aspect of quality management and innovation in processes forward together. The disciplines that underpin both these capabilities are common to Newcrest’s approach, and are self reinforcing. Ferguson Plarre has strong quality systems and these provide a stable platform underpinning the effectiveness of new product introductions. The key point is that in all these companies, without the sense of orderliness and discipline that a quality capability brings, innovations of any type (products services processes, business models) would be less effective. Hence it is not a coincidence that we see these innovative firms having become competent at quality systems and in some cases having mastered it. The leadership requirements of these two capabilities are entirely complementary, as is the mindset of customer focus across these companies’ workforces.

13. Once the systematic innovation capability is strong, the sky is the limit: it can overcome other aspects of competitive disadvantage. In most of the case study companies, there are international competitors. This includes Microsoft, Toyota, Stretchtex, Lonely Planet, Specialty Textiles, Textor, GPC Electronics, Newcrest and GRL Mobile which are strongly exposed to international competition. In Ferguson Plarre, competitors are essentially locally within Australia. In all these cases, to some extent or other, there is competition from lower cost producers. The first thing that innovation capability delivers to these firms is a true and sustainable competitive advantage. This can to at least some extent make up for cost disadvantages. In Newcrest, the innovation is mostly process focussed and it has delivered direct cost advantages, and this effect of innovation making up for Australia's high cost structures is therefore strongest. In Toyota, there is not only competition with other automobile producers, but also with other Toyota plants and countries/ regions, as is often the case with multinational companies. For example Toyota's operation in Thailand has the capacity to supply the profitable Middle-Eastern markets that are currently supplied from the Australian plant, and this poses internal pressures on the Altona, Victoria operation in Australia. Labour, energy and material costs are lower in Thailand. Textor exports its products because of its innovativeness, not its cost competitiveness. Specialty Textiles and Stretchtex produce highly differentiated products, not inexpensive products, which are sold into domestic and overseas markets. These companies operate in highly differentiated market segments, and their innovation helps them to overcome cost-related disadvantages. Microsoft clearly is able to price its products at levels well above cost, because of the strong market position that has been created through its decades of innovations. Lonely Planet employs the bulk of its workforce in Australia, a high wage country. While almost no book publishing company including Lonely Planet has its books physically produced in Australia, Lonely Planet does most of its high value adding and creative work in Australia, and it is indeed the high value add of innovation that makes it possible and strategically sensible to have this operation in Australia. In summary, process innovation at Toyota, Newcrest and GPC Electronics contribute directly to cost reduction to overcome the national cost disadvantage, and in all the case study companies, productivity and product/ service attractiveness is driven through innovation.

14. If the innovation is driven by a small group of leaders/ executives, then the risk occurs that once they are gone, the innovation capability and priority will dissipate. In some of the case study companies, particularly those that are smaller, there is a risk that the personal leadership of senior managers in driving innovations is a double-edged sword. By this we mean that the innovation is going well while they are there, but what will happen when they leave, sell the business or retire? Some of them have a strong succession plan and some do not. Phil Butler, CEO of Textor, has brought his son into the business to keep the innovation focus moving forward. Christopher Janssen of GPC Electronics has built a senior leadership team with the drive, enthusiasm and capability to support and continue the innovation work. Ian Smith and Andrew Logan are spreading the culture around Newcrest operations and have

brought in technical and analytical specialists to support the processes and innovation work. In Microsoft and most particularly Toyota, dissipation of the innovation capability is much less of a risk because the ‘spirit’ of innovation is not at risk through being driven by only a small number of executives. In Ferguson Plarre, the Plarre brothers who have taken over from previous generations are in the process of inculcating the mindset company wide, but there is risk if, for example, the company were sold to new owners with a different approach. GRL Mobile is undergoing exactly the transition from its founding managing director to a new leadership team, and such could conceivably bring a different focus to the innovation capability that the company was built on. In summary, while systems are important to innovation, the catalyst and the resourcing of innovation comes from key people, namely leaders and managers. For long term innovation to occur in firms, part of the systematic capability should be a succession of people who have the commitment, knowledge and personal capabilities to drive the innovation work. In Toyota and Microsoft this is a deep element of their capability, whereas in family companies, it is often less robust.

15. Innovation can be any combination of product, service, process, technology or business model

Innovation connotes something that is essentially new, however to create business value, it does not necessarily have to be ‘new to the world’. It can be new to an industry, or new to your customers, or a new advance to your internal processes and hence cost reducing. It can be a new business model. Clearly it can be new products, services technologies, or processes. And there is no value in it being new for the sake of being new. It must be new (meaning different to some extent) and value creating to be a successful innovation. If it is new and not value creating, in that it does not pass the tests (See Table 1) of a new item, then it is an ‘Edsel’, meaning new but not valuable to customers, therefore not a successful innovation. We found that our case study companies are working on a range and combination of new things, from incremental to radical innovations and from tangible products to intangible services on the internet, through to cost reducing innovations. Newcrest Mining has applied well worn techniques of waste reduction, Six Sigma and Lean management to its operations in recent years, to yield excellent cost reductions and hence business value improvements and higher profitability. These have been a combination of process and technology improvements.

On the new products side, Textor, Stretchtex and Specialty Textiles and GRL Mobile introduce products that are ‘new to the world’. Specialty Textiles ‘glow in the dark’ materials and garments are a prime example as are Stretchtex’s high performance fabrics for elite sports performance. GRL Mobile introduced new services by combining a mobile phone and services into a fashion brand, being a ‘new to its market’ brand, positioning and service. Lonely Planet has innovated with new media, for example putting travel services onto mobile phones. It has also branded its ‘edgy’ style into its books and digital products, which is an innovation relative to ‘stodgy’ styled competitors. It has even innovated in its innovation processes themselves.

Toyota innovates in the large and the small, meaning it is in a full court press on new technologies and is also driving to achieve every small step improvement possible through its continuous improvements. And on the business model side, GPC Electronics transforms business models for its customers through innovatively transforming supply to those customers in order to make those customers successful. In Microsoft, it is all about product leadership innovation, with a series of products to make business and home computing more effective for consumers.

16. Innovation can be incremental (small) or radical (large), and when it is large it is usually followed by a series of incremental improvements.

In Toyota, there is the occasional large innovation, such as the hybrid synergy drive, which is in the new Camry model produced in Australia. However there are many hundreds of small innovations, otherwise called small step improvements going on in the company, in every corner and process of it. Some of these are purely cost reducing, such as waste elimination, and some are more revenue enhancing, but all are aimed at creating business value, either large or incremental amounts. And the hundreds and indeed thousands of small innovations add up to creating large amounts of value. In Specialty Textiles and Stretchtex, when a new product line is created and commercialised, it can initially be considered as a significant innovation, and then it is continuously improved. Each new supply chain solution that is customised for a new customer at GPC Electronics is an innovation in supply arrangements and product / service design, and is followed up by a series of fine tuning further improvements. When Ferguson Plarre introduces a new service line, such as customised cakes, the first version is enhanced and 'tweaked' for further improvement and value creation. And most computer users will know that Microsoft uses a methodology of new 'model' releases every 2 or 3 years, depending on the product, with lots of enhancements, patches and updates/ upgrades in between these, on virtually a weekly basis. In systematically innovative companies these product and service lifecycles are formally planned and executed. Toyota has long term plans of when it will introduce new models, make minor upgrades to existing models and make minor enhancements. Lonely planet is not so long term oriented as Toyota, but does plan and execute regular new editions of travel books, and new product introductions. Since Newcrest Mining has been focussed on innovation it has been developing technical capabilities and risk management strategies as part of its strategic planning cycles. Each annual cycle involves the board and managers in setting goals that relate to innovation related achievements. These drive processes of searching for opportunities for improvement, investments of all kinds, and screening and selection of options. These companies realise that innovation must be some combination of more major advances with a large number of smaller improvements occurring at the coal face.

17. Innovation is not free. It requires investment in capability building, training and experimentation.

Moving up the innovation ‘capability maturity curve’ requires energy, persistence, determination, knowledge and resources. It does not happen by itself. It needs to be a strategy. It needs resources, measures, rewards and recognition of staff efforts, and above all else it requires strong determined leadership from the front. The investment needs to be both tangible and intangible. Tangible elements include monetary resources devoted to staff training, for example on problem solving, creativity and teamwork. An innovation leader who is both expert and can catalyse and facilitate the innovation process is needed. In a substantial company such as Lonely Planet, this is a dedicated resource, who is Gus Balbontin, Global Innovation Manager, whereas in smaller and start-up companies such as GRL Mobile and GPC Electronics and Textor, it is not a full time dedicated job, and is done by general managers along with their other duties. One way or another however, the ‘new stream’ of an organisation needs to be resourced and stimulated into idea creation and commercialisation, by active, energetic people. In Newcrest it is Andrew Logan with CEO Ian Smith right behind him and with a team of staff implementing the innovations. In Specialty Textiles it is CEO Daniel Liepnik with a small technical support staff, and leverage via outside research agencies. In Microsoft and Toyota it is a whole division of product developers, from software coders to marketers to scientists and engineers and a host of others.

The financial investment in most of these leading companies is a good few per cent of sales revenue, which depending on market share and margins might well be a quite significant per cent of gross profits, which are forgone by shareholders and their managers today, in order to invest in capability to produce innovations for the future. And there is the additional investment in human resources of time and energy, which when made into ‘new stream’ activities, leaves less for mainstream work efforts.

There is equipment and the cost of experimentation which might mean disrupting mainstream production to conduct trial runs. These can be expensive tangible costs. They are considered by leading firms as strategic investments.

18. innovation means taking risk, technical, market risk etc, so managing risk prudently, along with costs and benefits, is a core capability. This means an understanding and willingness to accept some failures, along with successes.

In these leading companies, little is left to chance that can be controlled. There are some categories of variable that can be controlled and some chance variables that are simply so: beyond any control by managers and staff. Examples are the actions of consumers that can be forecast, estimated and studied via market research, but cannot be fully determined in advance.

There is technical risk, such as expressed in the function test (Table 1), and there is risk in what competitors will do. There might be risk in future government regulations in some circumstances. There are many other types of potential risks. In many of its innovative initiatives, Newcrest Mining bears technical risk, because it is trying new things in its processes. Examples are that in every cave mine, the geology is different and this is a new science with little known for certain about the details of how rock will behave in the many circumstances that are presented in such caves.

When Stretchtex invests in a new textile fabric material or GRL Mobile in a new service or fashion initiative, the market reaction is uncertain. When Ferguson Plarre introduces a new product or service, some succeed and some fail, with little predictability. Customers are fickle and even with sound market research being conducted; innovators are often surprised by the lack of market acceptance or even sometimes the runaway success of their new offerings. Lonely Planet might well have underestimated the demand for some of their new E-services, which have been widely taken up.

Risks are often difficult to anticipate and despite best efforts and world class systems of market intelligence and forecasting, how could Toyota (or anyone else) have seen the 2008/9 global financial crisis coming, well enough in demand so as to plan and adjust resources and production for it? Despite implementing excellent quality control, Toyota fell prey during 2009/2010 to quality problems in some of their vehicles. Some things cannot be anticipated, it would seem, even for excellent companies. Others can be anticipated as a range, such as the richness and size and unit cost of a gold seam in a Newcrest Mining operation, or the extent of success of a new mining technology, or the sales volume of a new version of Microsoft Office. Hence companies that aspire to be innovative must be prepared to take risks, and hence have an appetite for some risk, and a tolerance of efforts that result in failure. This means putting some capital at risk, and having a culture that understands risk-taking, and tolerates but does not blame individuals when things do not always succeed. Fundamentally, if a company only is prepared to do things that succeed predictably, then only well-known technologies, products and processes will be undertaken and innovation must be banished. One could well argue that for start-ups such as GRL Mobile, the whole venture was one large risk, taken by both founding Managing Director Michele Hamdorf, and the parent company Crazy Johns. When Lonely Planet invests in a new service, there can be no certainty of market take up, and failure is possible and must be internalised, hopefully without too much 'trauma'. Ferguson Plarre has had some new product flops, but takes a portfolio approach, and when the innovation capability is strong, knows that the successes will more than pay for the flops. This reflects the approach of so called 'world class' innovators, such as Apple, Google, Samsung and 3M, which have all had their share of flop products, whose costs are covered by their successes.

19. Customers generally like to do business with innovative companies, as it is intrinsically attractive, however customers generally do not like to share or bear any of the risk of innovations.

As consumers we are naturally curious and inquisitive about new things, and indeed that applies generally to the human condition. If there is a new solution to a problem, a clever one, that creates net positive value for customers, then customers will want it. And if an innovation passes the eight tests shown in Table 1, it is likely (but never guaranteed) to be successful. But customers will generally not want to take risks unless there is commensurate benefit for them. This explains why sunrise industries sometimes bump along and start slowly: no one wants to be the guinea pig, where perceived risks exceed benefits. Customers want low risk in their purchased services and products. Customers do not even like variability in specifications, much less risk of product or service failure. However they do want more value: meaning they do want better solutions. Lonely Planet uses many lead users, who have stronger interest in cutting-edge services than the mass market, to introduce and test new ideas and services. Microsoft does similar with its Alpha and Beta testing that uses lead customers to test and refine its offerings. Ferguson Plarre cannot do this in the same way because its products are food and neither can Toyota, for safety and accreditation reasons. However both these companies clearly do conduct extensive tests in order to reduce risks before their products are launched. For Stretchtex, customers specify their needs in specialty fabrics and Stretchtex then creates the fabric solution, with little risk taken by customers. Newcrest Mining puts significant amounts of its own capital at risk in developing new mines, in exploration and in new mining techniques, and the customer, who buys the gold, takes none. GPC Electronics takes the risk out of the client's hands, by demonstrating essentially guaranteed superiority of benefits.

20 Effective innovation pays off in the long run, and for many it pays in the short run too.

For those who invest well in innovation, there is a premium in the market places, for innovative products, and in stock markets too. Apple achieves premium prices for its products, as does Sony, 3M and Samsung. Newcrest achieves significant cost advantages that drive superior profits. Ferguson Plarre achieves market leadership and reputation that drives repeat purchasing, through its new products. Lonely Planet similarly achieves an edge by embracing new technologies and services. At a more fundamental level, it is reasonably likely that small companies such as Textor, Stretchtex, GPC Electronics, GRL Mobile and Specialty Textiles would no longer exist if they were not continually and systematically innovative and successfully so. These smaller companies lack economies of scale and without some differentiating feature would have no profits if they were reduced to competing in commodity products. Instead, Stretchtex recently acquired the equipment from one of its competitors which did just that: being unable to be significantly innovative, it was forced to shut down due to lack of competitiveness and profits. Boston Consulting Group showed in its research (BCG 2005), that world class innovators develop a significantly superior return on shareholders' funds in the

long run, over the general market. Our case study companies are doing similar. Toyota is by far the most profitable mass producer of vehicles, accounting for almost half of the world's market capitalisation in its industry. And it should be remembered that until relatively recently, Toyota was not considered a leader in product design and technology, but rather was more innovative in processes, waste reduction and 'cost-down' activities, rather than revenue driving or 'head turning' vehicles. Newcrest Mining has a premium in its stock market valuation due to its cost reductions from innovation, and even further from its capability to do further cost reduction and mine development, as a result of the market recognising its systematic capabilities to explore, manage risk and implement new methods and technologies.

Figure 2 shows these principles in terms of their role in systematic innovation capability strategy, processes and resources, measures and payoff, and behaviour /culture elements.

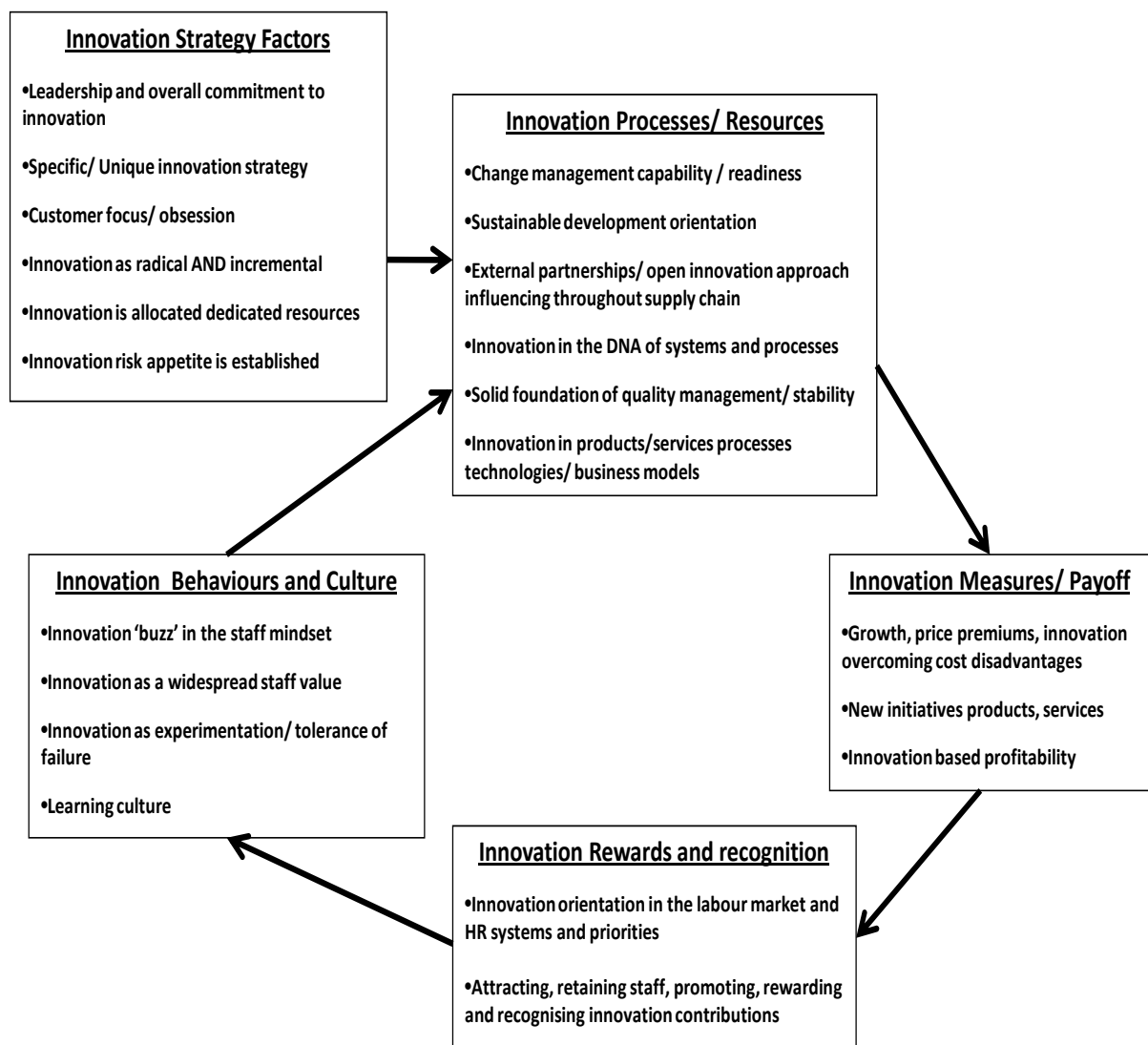


Figure 2 elements and principles of systematic innovation capability from the case study companies

7. Managerial implications: How your organisation can drive forward on systematic innovation capability

In this section we examine the process and content of how an innovation capability can be developed to become systematic. What does it need? The 20 principles of *systematic innovation capability* common to our case study companies are herein revisited with a set of guiding questions posed to executives wishing to develop those innovation capabilities. Implementing the answers to these challenges will become your systematic innovation capability.

Innovation needs a plan. For any single innovation initiative such as a new product or service, there needs to be a plan of implementation, of passing the 8 tests (see Table 1), managing or reducing risks, and winning the benefits. For systematic innovation capability, even more and better organisation is needed. In this section we give guidance for companies wishing to increase their innovation effectiveness, by asking the necessary questions that lead to a plan to improve the organisation's systematic innovativeness.

To begin with, before visiting any of the innovation principles, it is worth considering an organisation's overall strategic commitment to innovation.

Is your company, including its key stakeholders, committed to innovation as a long term strategy? It should be remembered that becoming systematically innovative is not a fad, or a tactic. It is a significant strategy. It requires investment strong leadership and patience. There will be failures, and persistence will be needed in the face of such.

Now we can examine the 20 specific aspects of systematic innovators, and invite executives to answer some key questions and, in doing so, construct a plan for going forward on innovation capability. These principles are presented in Table 2, with a descriptor for each and a guideline or question for executives to use to respond to the challenge expressed in each principle.

Table 2: Practical managerial guidelines arising from each of the innovation principles

<u><i>Principle of Innovation</i></u>	<u><i>Description of this element: challenge and forward opportunity for innovators</i></u>	<u><i>Practical guiding question</i></u>
<p>Principle 1:</p> <p>There is no single or simple recipe for innovation</p>	<p>What therefore is our firm’s opportunity to create an innovation-based competitive advantage? Is it primarily product/ service focussed, or will it be more in processes, or should it become part of our business model itself? To answer this fundamental question, we need to examine the market opportunities we face, and our capabilities, both technical / systems –based, and human creativity based. A clear statement of our innovation focus is required, to guide action and resource allocation. What new capabilities will our organisation need?</p>	<p>What will be the primary domain of our innovation efforts?</p> <hr/>
<p>Principle 2.</p> <p>Strong, determined, energetic, dynamic leadership of the organisation seems a necessary prerequisite</p>	<p>How strong is our senior leadership commitment to innovation? Without this strength, our innovation is likely to be a short term fad, not a long term strategy and capability.</p> <p>Senior executive leadership is a necessary condition for long term capability driving, as it leads to focus and priority setting, and guides and legitimises actions at all levels.</p>	<p>Write a statement verifying the our senior executive leadership commitment to innovation as a central plank of our organisation’s future:</p>
<p>Principle 3:</p> <p>These firms have a particularly strong sense of customer focus.</p>	<p>How strong and deep does the customer focus go in our organisation? Is it deeply and sincerely led from the top so as it becomes an ‘organisational value’? If customers are seen as a necessary evil, innovation will not be likely to become systematic. A genuine concern for superior customer outcomes is a key ingredient that motivates innovation, whether it is to improve services and products</p>	<p>Our approach to using innovation for customer value creation involves...</p> <hr/>

	for customers, or to create value through process improvements to lower costs. A policy statement about our use of innovation to create value for customers should be written.	
Principle 4: Innovation involves implementing change, so change management capability and readiness for regular change are prerequisites.	How open are our staff to change, or are they tradition bound and wedded to ‘same-old same-old’? Innovation requires change, involving introducing new things, and open-minded staff are needed. This means not being defensive, not having a fear-based or blame-based culture, and having a shared sense of a risk appetite.	Our approach to risk-taking and change is: <hr/>
Principle 5: Sustainable development factors, such as waste reduction, staff well-being, and environmental output improvement go hand in hand with innovation.	Innovation in organisations is aimed at increasing the value that our organisation creates. It also involves things that are NEW, meaning new products, services, processes, technologies or business methods. Introducing sustainable development ideas and initiatives are also about doing things differently or doing different things. They are by definition innovations. In order to engage in energy use reduction, or staff well-being processes, innovation is required: changes are implemented. The concepts of innovation and sustainable development are entirely complementary. One can spur on the other!	What is our organisation’s policy and effort level on sustainable development initiatives and strategies? Write a proactive policy statement here: <hr/>
Principle 6: Innovation is often done well by involving partners from outside the organisation: open innovation works.	Our firm does not have to work on its own in its innovation efforts. There are likely to be other firms which have complementary capabilities, technologies, values and processes, such that synergy is potentially created between us and them, if we collaborate. To innovate, we don’t have to invent all aspects of our initiatives. We can open the organisation to joint efforts, ventures and partnerships.	Write a statement outlining the three to five best partnerships or collaborations that would allow your organisation to more successfully implement innovations.
Principle 7: There is a definite payoff	How best can our innovations be converted into value creation opportunities? Value is a	Of our potential areas for innovation, what are the top

<p>to being innovative: first staying in business, then growth and price premiums, then differentiation and profitability.</p>	<p>function of customer benefits per unit of price, so innovations should contribute to one or both of these value generating components. Cost reducing innovations can be valuable too!</p> <hr/>	<p>five, rank ordered by value creation potential?</p>
<p>Principle 8: Innovation helps firms to win in the labour market.</p>	<p>People are attracted to innovators, whether they are individuals or organisations. They want to work in environments in which challenging and interesting initiatives are occurring. Hence organisational innovativeness attracts talented people. We can win in the labour market, sometimes called the ‘war for talent’, through having a demonstrable systematic innovation capability.</p>	<p>What human resources will we need, be able to get, and target for driving our innovation implementations? How will we let the world know of our innovation intentions and capabilities, including signals to the labour market?</p>
<p>Principle 9: Innovation can be leveraged throughout the supply chain.</p>	<p>Hand in hand with the strategy of open innovation, if we are only innovative inside our asset base it will limit the scope of our achievements. Systematically innovative companies work to exert influence up and down the supply chain, and where it exists, around the whole extended ‘supply network’, in order to achieve mutual benefits from the innovations of its supply chain partners. These can be in the form of improved (e.g. better designed or less costly) components from suppliers, lower costs of supplied services, lower costs of using those inputs, better use of ‘our’ services by clients/ customers, or other means.</p>	<p>What is our company’s key opportunity set to influence supply chain members to drive value creation through their innovativeness? How will we influence them to innovate to create shared value in the supply chain?</p> <hr/>
<p>Principle 10: Innovation can become fully embedded in a firm’s ‘DNA’.</p>	<p>Innovation is expected and inspected in successfully innovative companies. Measures and rewards for innovation are systematic and significant enough to get people’s attention, interest and action in these firms. Innovation is deeply embedded in how people work, how</p>	<p>How does/ will our firm measure our innovation, and go on to link these measures to rewards and recognition systems in order to powerfully motivate our innovation culture</p>

	they approach problems, customers, suppliers processes and services. Everyone is motivated to innovate, and ‘inspected’ for their innovation contribution.	and behaviours?
Principle 11: Innovation becomes part of everyone’s mindset in the best of firms.	For a systematically innovative organisation, everyone talks about and implements ‘doing things differently’ and ‘doing different things’. It is not just tolerated, it is expected. The search for solutions that are outside the square is normal in these organisations. In the most innovative companies, there is a ‘buzz’ of innovation, a passion for it, which does not just happen by itself or self-sustain. It is driven and nourished.	How does our organisation promote the notion of being unconventional and creative in work processes and of experimenting, bootlegging and searching for ‘new’ when appropriate, rather than sticking only to tried and true traditions?
Principle 12: To become systematically innovative, a firm must be at least competent at ‘quality management’.	Quality management means focussing on the customer requirement and achieving a stable and waste free set of processes for fulfilling them. Stability is a platform for freeing up staff and leader’s attention to innovation. If basic production and service processes are not ‘in control’ then innovations will be difficult to implement and these quality issues need to be attended to first.	Where is our firm on the ‘maturity grid’ of quality, as a platform for future innovation implementation?
Principle 13: Once the systematic innovation capability is strong, the sky is the limit: it can overcome other aspects of competitive disadvantage.	Innovation capability can drive volume of orders, or premium margins, or cost reductions. It is a never-ending opportunity for progress. For advanced firms and industries, the effectiveness of innovation is THE key to competitive advantage.	How well does our company drive its innovation to achieve competitive advantage, and differentiation from low-cost or other competitors?
Principle 14: If the innovation is driven	While innovation capability usually needs a champion to drive its development, eventually	Is the maturity of our innovation strong enough to be

<p>by a small group of leaders/ executives, then the risk occurs that once they are gone, the innovation capability and priority will dissipate.</p>	<p>it needs to become an organisational wide mindset and achieve structural legitimacy (measures, rewards, budgets). It becomes part of the culture too.</p>	<p>independent of any individual in our organisation, in the sense that if that key driving individual left, it would continue unabated? What plans do we have to achieve such maturity?</p>
<p>Principle 15: Innovation can be any combination of product, service, process, and technology or business model.</p>	<p>What are the most fertile (valuable) areas for our firm's innovations? Globally leading innovators use a combination of new products/ services for existing customers, for new customers, improving existing products /services and process innovations that reduce costs. What is the optimal mix of these categories for our firm?</p>	<p>Given that innovation can be literally anything that is new, what are the most promising innovation categories our organisation has as its opportunities?</p>
<p>Principle 16: Innovation can be incremental (small) or radical (large), and when it is large it is usually followed by a series of incremental improvements.</p>	<p>While it is perhaps an admirable quality for an organisation to attempt to advance only via small step innovations, there is massive advantage if these can be related or grouped around some larger breakthroughs. Both are important ingredients.</p>	<p>What is our organisation's potential for one or more breakthroughs and whether this happens or not, what is our capability for widespread small step innovations? How will we stimulate both types of innovation?</p>
<p>Principle 17: Innovation is not free. It requires investment in capability building, training and experimentation</p>	<p>There may be a need for technical skill building, training to support culture change, or even just a communication of the 'new' innovation policies and priorities. It may be necessary to buy in or develop some intellectual property. These have a cost in terms of money and effort. Research and Development and market research need to be sufficiently funded.</p>	<p>In attempting to balance short term performance objectives with long term capabilities and innovations, what is the optimal amount for our organisation, neither too much nor too little, to invest in innovations and innovation capability?</p>
<p>Principle 18:</p>	<p>This means an understanding and willingness</p>	<p>What is our approach to risk</p>

<p>innovation means taking risk, technical, market risk etc, and so managing risk prudently, along with costs and benefits, is a core capability.</p> <hr/>	<p>to accept some failures, along with successes. It involves a tolerance of some risk, and an expectation that it is the portfolio that is key to overall success, within which some individual innovations will succeed and some will fail.</p>	<p>taking, expressed as a policy statement aimed at guiding decision makers regarding the process for and the decisions under uncertainty that will underpin our innovations?</p> <hr/>
<p>Principle 19: Customers generally like to do business with innovative companies, as it is intrinsically attractive, however customers generally do not like to share or bear any of the risk of innovations.</p> <hr/>	<p>Technical and market research is often used to screen innovation activities, and to prioritise where to allocate scarce innovation resources (principally budgets and efforts).</p>	<p>How will we manage the risks of our innovative services, products and processes, in order to minimise their negative impact, particularly on customers?</p> <hr/>
<p>Principle 20: Effective innovation pays off in the long run, and for many it pays in the short run too.</p> <hr/>	<p>This point is about maximising the business benefits of our organisations innovations. When value is created through innovation, it then becomes a question about which organisations benefit from it, to which extent.</p> <hr/>	<p>What are our firm's plans for winning the business benefits of your innovations?</p> <hr/>

Order and priority of these principles

Is there some order, priority or sequencing of these principles? It is certainly the case that not all are equal, in any sense. First and foremost comes the principle of leadership, and the other principles related to innovation strategy (see Figure 2). Without the right leadership factor, resources will not be allocated nor focussed on innovation, measures will not be right and so firm-wide innovation behaviour will not

be in place. Once the leadership and strategic factors (Figure 2) are in place, then the resources will be able to take effect, measures will become real to staff and the right behaviours will take place.

We stress that while the case study companies we studied were quite different from each other and in many senses unique, that the principles seem quite general across these, almost regardless of their size, industry and ownership structure.

8. Case Studies

Ferguson Plarre: innovation and sustainability intertwined

Steve Plarre and his brother Michael have in recent years assumed operational control of the 100 year old company founded by their great grandfather and built by their father, then merged with the Ferguson operation into what it is today, Ferguson Plarre Bakehouses. The Ferguson side of the business operates the retail side of the partnership and the Plarres run the ‘upstream’ manufacturing operation.

From their state-of-the-art facility in Northwest Melbourne, the business creates and produces a range of bakery products, sold through the network of 48 stores in Victoria. The company has won a prestigious award for sustainable development, which has brought both competitive advantage, and a market edge:

“We have done a lot in sustainable development. Our market and industry are not especially ‘green’ oriented; however we will lead them there. Having said that, we have to market the ‘green image’ very carefully because of the potential for harmful and incorrect price perceptions in consumers” (Steve Plarre).

Some examples of sustainable development initiatives that have been innovative have been new efficient equipment use such as a new heat reclaimer, which reduces substantially the water heat load in the business. Moving also to gas has reduced total energy consumed and saved costs.

FP has learned a lot from and also gives knowledge back actively to the industry association (BIAV, Bakery Industry Association of Victoria), which is a form of its open innovation. The company has also done a lot in its new facility to achieve energy efficient climate control, such as through its highly efficient air conditioning system.

The Ferguson Plarre market position is about “halfway up the market”, being known as good quality Australian fare, and its nearest direct competitor is the Michel’s Patisserie business. Of its 48 store network, most, 45 are franchised and only three are owned by the Ferguson Plarre business. Ferguson Plarre chooses not to produce bread, with differentiates it from Bakers Delight, Brumbies and other bakery chains, as a matter of conscious strategy. Ferguson Plarre has a strategy of differentiating its brand based on history, family baking, sustainability differences and innovation.

Ferguson Plarre has not attempted to patent products, but does protect its company name. It uses trademarks of products to get a competitive edge, and many local consumers would know of its products Tiddly Oggie and Sponge on the Run as examples of its unique offerings to the Victorian market. Further innovations have been the recent web based DesignaCake service. Celebration cakes such as birthday cakes represent 15% of Ferguson Plarre’s revenue, and for these it is now possible for consumers to upload a photo via the web and design and order such cakes online. It also operates an image library, which customers can choose from, of over 300 images. This business is complex and due to the high variety and low volume, it has previously not been a high margin product line but that is changing with innovations like DesignaCake.

Although it has had a long term family branding image, it has been challenging to truly differentiate the company. The equipment and the raw materials are essentially standard across the industry. Ferguson

Plarre's new product success rate averages approximately 10%, which is standard for this and even other similar industries. Ferguson Plarre is ramping up its effort and the discipline of its processes in looking for new fashion products and services. Examples are take home pies, which became an opportunity during the global financial crisis as people worked longer and ate out less, and "Sex in the City" cupcakes. The company tries to keep ahead by closely observing social trends, such as needs for comfort foods, and by entering award competitions which will allow it a market edge.

Two examples of products that it tried and quickly withdrew from the market, after slow sales, were its Beef and Beer flavoured pie, and its Aphrodisiac Cake. Although differentiation through new products is challenging, every few months it launches a new product idea.

With some 120 staff comprising full and part timers, equivalent to some 90 full time equivalents, new product development is championed and catalysed by three key individuals. Everyone's best ideas are welcomed and are evaluated. Open innovation is practised and the senior managers travel the world looking for new product and service ideas. From a recent international study tour, Steve Plarre and others brought back and implemented a total of 10 new products.

Ferguson Plarre leadership style is seen as important in driving forward on innovation and sustainable development activities and outcomes. The open innovation is fostered through a leadership style characterised as enthusiastic, lead-by-example, 'super-open-door' and family atmosphere. All employees bring ideas forward and successes are celebrated with enthusiasm. The leadership style is:

"We shepherd people from behind, let people go with their ideas, through a participative style" (Steve Plarre).

Mike Plarre and others have the requisite technical and process knowledge to develop new product cooking and formulation procedures. Ferguson Plarre operates a test kitchen and has a skilled baker who works on these new product ideas. The new product decisions are taken based on an expected ROI and minimum gross profit margins but without formal budgets. However the company has grown to a size where budgets are being developed generally for the first time. Steve Plarre is the engine of innovation, and he is responsible for embedding it in the culture and behaviours of the company. Their key criteria is that any innovation must bring differentiation (hence brand value) or profit or both. Although the company has not had traditionally many formal operating measures, it is now implementing these, and for innovation effectiveness this is a KPI of 5% of sales each year expected to be from new products.

Staff at Ferguson Plarre are recognised for their contributions to innovation, although this is quite informally done. Movie vouchers have been used quite a lot. Recognition symbols such as lunches and dinners have been given out. Flexibility of hours has also been a reward. A good deal of non-financial rewards have been used also, and the company newsletters also gives recognition to innovation contributions. This fits the culture of this family oriented company, which has many loyal long term staff and low turnover of those staff. The company pays above industry averages and award levels and has many groups of family members working in it. Staff are recruited and brought in based on their cultural and talent/ skills fit.

While the owners and senior leadership team are seen as the critical catalysts of innovation, there is some staff who are not yet highly innovative in their approach. They are resistant to change. While the managers try to be proactive and innovative in their actions and style, they recognise their limitations in having been insular and worked only in this company and industry, hence needing to make large efforts to become 'worldly' enough to stay at the edge of innovativeness. The company style is open, having worked with an open innovation process in its facility design, with suppliers, equipment suppliers and even with non-direct competitors.

The company backs its innovations with a well structured set of process and disciplines which are unusually strong for a small family company. Recipes are all documented, and Lean systems through '5S' have been implemented. Weekly management meetings are held with a formal agenda. Systems for formal induction are used and the company has established and uses OH&S and risk management systems. It has a formal food safety plan in place and working well.

New product developments at Ferguson Plarre are required to meet the following objectives:

- Grow sales
- Appeal to new markets
- Increase seasonal sales
- Create a point of difference
- Take advantage of market trends

The desired outcomes are increased profitability for franchisees and the Ferguson Plarre company, and increased brand value. New product goals are to achieve any of increased shelf life, profitable pricing, vegetarian options and differentiation. The new product development process involves annual planning, input from retailers, creation of a new product list and a timetable for product release. Business outcomes and goals include primarily new product sales as a proportion of total, profitability of new products compared to the company average, and sales volume of new products during launches. A detailed step-by-step approval and sign-off process has been defined.

The key to continued business success at Ferguson Plarre is clearly its leadership, including substantially its leadership of innovation capability and sustainability activities.

GPC Electronics: Innovation through supply chain

GPC Electronics is an electronics manufacturer, competing with those which have similar equipment and technical capability all around the world, and based in much lower cost countries: so how does GPC use innovation to compete? The answer is not in the product design, because this company makes to order and customer specification, not in process technology because the latest processing equipment becomes available and standard all over the world, but rather in the differentiated value proposition and business model itself

Christopher Janssen and Phil Cavanaugh are strategically focused executives who will never fall into the trap of looking too much inside their business for sources of competitive advantage while ignoring the factors and connections outside the business' walls. Some business facts of life for GPC are that some 70% of the total cost cake for them is in components. On these inputs, there is little or no competitive advantage possible; in fact there is perhaps some advantage in scale for their much larger competitors. Direct labour is about 40% of the value add in this type of operation, hence the company has strategically positioned itself to include a "China option", of having manufacturing done there, rather than in Sydney. GPC developed and implemented its China strategy in 2009 to deliver flexibility and cost advantages as follows (see box)

The challenge for Australian contract electronic manufacturing companies has always been to stay competitive and build a successful business in an industry faced with ever decreasing margins, rising labour costs and increasingly sophisticated demands from customers globally.

The succession and disappearance of many contract electronic manufacturers on the Australian landscape is testament to the challenging nature of the business. The emergence of low-cost Chinese electronic manufacturing capacity – which is fuelled in part by low labour costs thanks to an enormous Chinese population – is defined by some as the final 'threat', the ultimate death knell to whatever remnants remain of Australian

According to managing director Chris Janssen and COO Phil Cavanaugh, The key aspect of innovation at GPC is "Management innovation". This means offering customers a different approach to doing business. They help customers by finding 'outside the box solutions' to drive their customers' success forwards. An example is their build-to-order, fast cycle factory. They carry no stock, and run a pull system for customers. There is much reduced rework, and little or no stock obsolescence under this operating model. This approach far transcends those who approach supply by considering only direct production costs on a 'per piece' basis.

Hence the key domain of innovation in this company is in the supply chain, and the business process, with a competitive manufacturing capability being an assumed given. This internal capability of excellent processing capability is a must to support the innovative value proposition of GPC, and should not be underestimated or undervalued as a necessary ingredient of their success. It includes their manufacturing capability and quality control, which must be first class to compete, and also their information management capability, which must match the quality of their physical transformation and logistics systems. GPC is a hard-driving user of SAP using these information systems to drive and support their *fast response* capability. They ruin their whole company (apart from payroll) on SAP, including all supply chain functions, which makes them an advanced user of such technology, especially compared with other SMEs. This provides competitive advantage through the high level of discipline attached to being well organized through SAP.

Inside GPC Electronics

GPC Electronics runs as a small and informal group, with some 350 people in the electronics sector and a sister business, Utilux, employing some 200+ people. GPC electronics staff are distributed as 200 in Sydney, 100 in Christchurch and some 50 people in its Chinese operation.

CEO Christopher Janssen has concentrated 95% of his time and effort on marketing. The differentiated customer value proposition is not standard in the industry and requires significant effort and finesse in explanation to potential clients. Phil Cavanaugh is supply chain general manager and runs the operations of the company, ensuring that customer orders are filled with high reliability and quality. Phil also contributes with Christopher and a leadership team in devising strategies and solutions which create and sustain the differentiation that characterizes GPC's market position.

To achieve its offer to customers, GPC engages very much in cross functional thinking and has forced itself to depart markedly from having its managers work solely up and down standard departmental silos. These traditional silo mentalities would not permit GPC to devise and implement whole of supply chain solutions for customers. Hence managers from design areas, production, logistics, marketing, sales, accounting, procurement, IT and administration, engage jointly in problem solving, planning and customer value creation processes. The philosophy and approach is of "always looking for solutions that add additional value, always questioning, always flexible, never rigid". GPC makes electronics to order, but also makes business solutions and supply chains to add value.

GPC strategy turns into capability

GPC's innovation pipeline is not new products, in the way a pharmaceutical company has a laboratory in which it conducts R & D, which hopefully delivers some 'new-stream' products into a mainstream of production and sale. GPC's innovation pipeline is with respect to customers' needs, where they are, and where they are going to: indeed it is a case of seeing trends, and sometimes making trends in how customers conduct their supply chain arrangements. It is also a service based differentiation, for example SAP is not only an internal tool for GPC to use in managing its processes, but GPC makes a read-only version available to customers so they can track their delivery windows. Most low-cost contract manufacturers would not be providing such services. The SAP capability had first to be established- quite an investment- then and only then can it be converted into a service feature.

GPC providing more than just electronic products

GPC aims to solve customer problems and make their businesses better. An example is that GPC noticed as a supplier that one key customer was having difficulties within its own operations with its forecast accuracy, so GPC offered to create an improved forecasting system, and did indeed implement such. This also allowed GPC to improve its understanding of this customer, improve its supply responsiveness, and strengthen the relationship.

GPC now operates a more efficient supply function to this customer based on improved accuracy and fast cycle responsiveness to demand. Such value adding is completely beyond the technology of the electronic circuits that GPC sells to this and other customers.

Much of the impetus is the positioning of the CEO, Chris Janssen in his marketing efforts: when interacting with customers, it is more than just chasing standard orders; the approach is to challenge and ask questions about customers' operations and configurations. On more than one occasion Chris and GPC have suggested a different way of operating to the customer, received a response of "no it can't be done or improved like that, and if you can prove it we'll buy from you". Then GPC has won orders for its electronics through such brain based value adding. Chris often brings such challenges back to his team, pointing out in weekly Monday meetings with the cross functional team that a customer or potential customer does things in a certain configuration of supply chain, and challenge the team to find an improved operating regime which he can take back to the customer as part of a value proposition. This has worked on more than one occasion to win GPC orders.

GPC is not a company in which only the CEO and management team are allowed to be innovative. It is a case of innovation in the large and the small: GPC's factory store-man for example is allowed and expected to contribute to innovation and improvement.

How does GPC motivate its staff to engage in these differentiated strategies?

The main and central focus is value adding for customers. CEO Chris Janssen knows that if the company is getting it right for customers, then GPC will survive and prosper in this very competitive industry, and the converse is known to be equally true. So, everyone is engaged and feels close to the customer, and folded in to the vision of 'making a difference' to customers.

This has not evolved recently or even over time, but has been in place since the company's inception. Staff are strongly involved and engaged in making their collective future secure, successful and satisfying. Many employees are long serving with over 20 years in the company. And the culture is preserved as described.

As to suggestions from all staff for improvement, there is a 'no fear' approach to whether ideas are good or bad, and whether they succeed or fail. Risk is understood, accepted and carefully managed. While people are given opportunities to grow and develop their potential and skills, there is no money paid directly for good ideas, even major breakthroughs. "A lot of good ideas just come up" according to Christopher Janssen.

Middle managers in GPC come up from the shop floor, which brings two significant benefits. These managers really know the business and the operation deeply, and further they live and embody the approach of people being able to develop and improve their lot in working life. Progression and personal growth are the reward. This approach has migrated from the factory where it started, to now be throughout the business.

Further an important ingredient of GPC's positive culture is the strength of its feedback processes. In particular when good things happen, people get positive feedback, which is highly energizing for them and everyone around them. It is usually a collective 'pat on the back'. GPC believes that monetary bonuses "are a two-edged sword" and has stayed generally away from widespread use of these. As the CEO says, "People know who the contributors are".

Management meetings are focused on positive outcomes and discussion centers on the issues, "The what, not the who!" GPC has its eye on the customer in focusing on the outcome for which it is responsible and the customer does not need to be concerned with how those outcomes are achieved. In short, the value proposition is of highly reliable sound quality and supply, taking the customer's worry and risk away. The company sets a level of 95% on time delivery performance, which works better for them and for customers than either higher or lower levels: it is optimized.

The management philosophy is based around excellence in breadth, not depth, and the use of and solutions making use of cross functional teams bringing cross functional solutions to customer challenges.

GPC also runs a very lean management structure. Management of GPC is benchmarked as being lower cost than for similar businesses in China! The main reason is that most GPC staff and processes are substantially self-managing. GPC is also able to present to local and regional customers as being a lower risk supplier than its Chinese competitors. By making to demand rather than to inventory, costs are reduced, and this comes through fast change cycles and hence small lot sizes that are feasible.

In short, "the aim is to make customers more competitive and successful, not just do the production tasks." (Christopher Janssen, CEO). GPC realizes that it cannot and should not try to compete head on with large Tier 1 suppliers such as Solectron: GPC just does not have the scale to compete with high volume, low margin contractors.

GPC achieves up to 12 set ups in its electronics factory per day, whereas competitors do only a few per week, giving them speed and flexibility based response advantage. Through this approach, combined with building to demand, GPC thrives in a high cost country. GPC can build thousands of different variants in days, whereas other suppliers must lock in and freeze production schedules with lead times of 20 weeks! A standard GPC build to demand lead time is four weeks. This allows its customers to achieve premium prices. Whereas competitors have minimum batch sizes of 200 boards or units, GPC can custom build to batch sizes of one unit.

How does GPC measure itself?

Regarding measurement of innovation, GPC does so informally, as it is small enough for the top management team to keep their collective fingers on the pulse of all the important details. Trends are carefully monitored and improvement is always sought, however specific measures of innovativeness are not considered necessary.

GPC does measure and drive hard on time itself. This means it strives for speed. The company also measures quality and process controls. Cost is measured and trends are monitored carefully, and done against the goals that are set for cost reduction. However the key goal, and therefore the key measured outcome, is growth through customer's success and growth.

The company also is engaged in achieving business benefits from being a sound citizen in terms of environmental performance and solid corporate citizenship. It uses recycled paper and water, for example. It has achieved and practices the ISO 14000 standard.

What barriers exist to GPC's further growth and innovation?

The main challenge to growth and further success through expansion is cited by GPC executives as market access. GPC experience is that breaking in to the USA is challenging from Australia. American customer requirements are based on standards, whereas GPC brings a flexible approach, which is not valued there, yet. Further American customers look to either local or Chinese suppliers. GPC has strategically positioned itself by establishing operations in China for a range of future developments. So far, the advanced approach of GPC in providing value added supply chain solutions has been beyond the comfort zone of many North American customers, who look traditionally for standard contract supply arrangements from local or Chinese sub-contractors.

A second barrier to GPC's progress is on matters such as safety, in which this company maintains the highest of standards and practices, however still is subject to overly bureaucratic and complex requirements imposed by various agencies of governments. This imposes direct costs on the company above what seems necessary, and even more costly, reduces the speed-based competitive advantage that the GPC fast cycle business model requires.

On its 'wish list' GPC would like to have Tax concessions for processes development, currently only available for product development. GPC has a highly innovative IT system which does not qualify for such support. A further challenge is being seen as Australian-based. In some overseas markets, high value added companies in industries such as electronics are not traditionally seen as an Australian area of expertise or advantage. GPC executives meet the resistance of Australia not being seen as a 'smart' country, unlike the reputation, for example, of Singapore.

GPC has also not found it easy to work collaboratively with Universities. This company does work with equipment suppliers on improvements, but finds universities generally challenging to penetrate. The same applies to CRCs. From GPC's perspective, these organizations focus on technical excellence, not business needs and excellence. GPC would like to see a renewed customer focus from these organizations. Whereas GPC sees itself as aligned very strongly to its customers' requirements, it does not experience Universities, CRCs and CSIRO as having business acumen and a similar focus on industry as a consumer of their outputs. The balance according to GPC in these institutions is limited, because even though the technology they produce may be of high quality, it is limited in transfer to the private sector by the lack of business knowledge and attention to the business sector as its consumer.

How does GPC manage its intellectual property?

The generic strategies of IP are commonly referred to as block, run, hide or team up. Since the GPC competitive advantage is primarily its business model and its management knowhow, patenting is neither viable nor feasible, and so the main IP strategy is to 'run'. This fits its overall approach business too! By moving fast and continually so, those who might copy it will always be a little behind, at least. GPC has the approach of 'openness', and keep moving ahead of the industry in terms of value adding solutions.

GPC does fiercely protect its customers IP, through a policy of giving customers confidentiality of designs and relationships.

Knowledge is managed in this company on a person to person basis, through the cross functional team processes.

Summary

In a high tech industry, this company has a 'low tech' innovation based competitive advantage. The process technology and the products, which involve sophisticated electronics, are indeed commodity like, and it is the 'management innovation' that GPC cultivates and exploits for advantage. This involves:

- Strong committed intelligent leadership
- A fully involved workforce and cross functional teams
- A full on prioritisation in all aspects and processes of work, on customer value creation
- A view of finding points of difference in solving customers problems, reconfiguring supply chains, taking the customer to a 'new place'
- GPC management is persistent and proud of this approach. They also exude patience along with the persistence.
- GPC has a strong passion and belief in what they are doing. This is supported by the evidence of their success, of course.
- In selling solutions to customers that are outside the box, there are sometimes challenges of course, but the self belief, the track record, and the persistence/ patience characteristic lead to enough successes to make this a highly viable strategy and form of innovation.
- GPC people like to ask 'why?' as a starting point for going outside the square.
- Finally the underpinning of GPC's strategy, the glue and the foundation for all else is the leadership, which can be summed up as 'highly proactive'. A recent example of pro-activity is in moving ahead of the game in Australia in implementing ROHS (reduction of hazardous substances), which has become a requirement in the European customer base.

GRLmobile: creating a green-field innovative brand

Michele Hamdorf had been a senior executive in a range of larger companies, when she decided to strike out and build a new business, inspired by John Ilhan. The entrepreneurial spirit is alive and well in this business and this innovator. Michele recognised that the large telecommunications companies, known as Telco's, were trying to be all things to all people in Australia and that there should be ways to appeal to niches and tailor attractive services to particular market segments. Michele chose to create a new brand and set of services aimed at females, and more aimed at young females. Amongst other things, Michele's market research showed that females talk much more and longer on the phone than males. They are also now stronger than ever before in their roles as decision makers, consumers, and they are empowered in their spending and consuming. The new business had to be in a growth market and segment, and female oriented mobile phones were ripe for such a new business.

The clever new brand 'GRLmobile' was created to appeal directly to the female, 'youth quake' in spending and consuming. It was clearly a potentially fast growing market. Generations Y and Z considered a mobile phone as a must, and females increasingly consider it not just for its utility but also as an accessory that from which they are inseparable. Phones have recently become much more functional with smart phones such as iPhones delivering arrange of information services. GRLmobile positioned the phone as part of a female's fashion, and GRLmobile was to be more than just phones and phone plans. The brand extended into other aspects of fashion. GRLmobile was created to mean clothes, fashion, friends, gossip, and the prepaid phones were aimed at creating a tribal set of consumer/ followers. Once launched, GRLmobile offered free SMS and calls to consumers 'GRLfrnds', aiming to achieve industry best / lowest standards of churn, which was high for the larger Telco's.

The prepaid offering to youth (meaning people under 30) brought advantages to both GRLmobile and customers. It meant that customers could not ring up large bills, which appealed to those who had done so, or who had heard of the horrendous stories of such. It also brought cash flow advantages. GRLmobile ~~created~~ initiated an innovative feature called SOS (meaning save our sisters), of a \$3 credit when the phone prepaid account ran out. The offering was positioned and created not as a technical product with detailed technical features being part of the explicit offer, but more of an understanding of the customer, knowing that youth female mobile phone users often run out of credit.

GRLmobile conducted careful market research of how women buy phones and phone accounts. Women want to buy phone packages that are easy to use, ability to SMS and MMS their friends, phones that look good, more so than buying the technology. In addition they are interested in packing up with their phones, fashion, film and music features. GRLmobile created its brand around a bright magenta colour which is highly powerful and recognisable, and was a suitable

pink for girls. The logo stood for girls, and in texting language is the standard for girls, namely GRL.

GRLmobile became 'Australia's mobile phone service for chicks'. The website was established as GRL mobile.com.

Apart from the innovation of the brand and the overall business premise, GRLmobile went on to work up a series of innovations and value-adds. These included giving initial credit to the customer, giving credit rollover which competitors never did, providing girl to girl free communication services, and hot pink handsets. Further services were given as bundles of services such as Kylie Minogue signature perfume, with phones, a 'Chick-tionary' for new language interpretation that GRLmobile created and documented, a bag with a phone pocket for GRLmobile customer/ 'chicks', and the overall integrated packaging of this 'tribal' brand. GRLmobile coined the phrase 'fashmo', meaning fashion plus mobility. Further innovations followed, such as girl's undies and T shirts with phone pockets, holsters for phones, lanyards and jewellery for the phones. Although a boutique operator, GRLmobile products and services became the number 4 highest selling items in Australia Post, one of its distributors, and indeed a very large retailer itself. So while the basic phone product came first, dozens of new services and products followed, all integrating and building the branded theme and the tribal GRLmobile concept.

GRLmobile established KPIs, which it measures carefully and uses as management tools. These include cost of goods sold, cost per acquired customer, churn (aiming for less than 10%), average revenues per user (ARPU), volume of subscribers, invested asset base, and others. These were used to set goals, for example, along with churn goals of under 10%, which means retention of 90%, a challenge was to move customers from a \$19 monthly plan to the more profitable \$29 plan (since the cost of acquisition is high). The volume of subscribers reached 20,000, and stretch targets of 40,000 were set. The business has very little fixed capital, as it leverages its infrastructure from Crazy John's, which is itself an innovative business model.

Key to the innovative success was the open innovation approach and the relationships with partners. Michele Hamdorf built relationships with Target and Australia post which became major outlets for GRLmobile. This was evident in the November / December 2009 period of Christmas sales when GRLmobile products and services featured in a total of 60,000,000 catalogues around Australia.

In its positioning GRLmobile brought 'cool' and Web 2.0 to traditional retailers, such as Target and Australia Post, and created a successful niche such that a mobile phone became more than just a utilitarian device for its customers. Further innovations were to begin ramping up by buying databases of potential customers, and GRLmobile has now developed its own data bases which it sells as a service.

GRLmobile maintained Facebook, Twitter and MySpace pages as well as a blog. These ‘below the line’ marketing tools incurred no cost, but enabled GRLmobile to interact with their customers in a place where their target market was already playing. Customers would opt-in to become fans or followers of the brand, which meant that they were more receptive to GRLmobile’s updates. These included product offerings, competitions, videos and photos of fans enjoying GRLmobile’s various experiential activities. Maintaining a presence in social media also helped GRLmobile live by its slogan ‘we play where our GRLfrnds play’.

The communication and marketing positioning and messages of GRLmobile have been substantially viral communication, fitting its strong ‘tribal’ position. This viral marketing has worked well, along with the knowledge in the market of the distribution outlets, comprising Crazy John’s, Target, Australia Post etc.

While GRLmobile has not formally measured its innovation outcomes and progress as such, for this start up company, brand and operation:

“Every day was about innovation” (Michele Hamdorf, Founding Managing Director).

The company was characterised by being opportunity driven and by leading and responding quickly through fast decision making based on ‘fast leadership’, meaning dynamic active decision-making.

GRLmobile created websites for its partners Target and Australia Post, and brought additional brand awareness back to these large organisations, of new cool offerings, via GRLmobile links. Target EFTPOS terminals were enabled to recharge GRLmobile phone accounts. GRLmobile also penetrated Woolworths and Coles groups giving it broad coverage.

Being part of a larger group was a sound strategy, because of the technical and other expertise and infrastructure that it brought, however it also brought constraints of bureaucracy to some extent, especially from those who were not fully on board with the vision of GRLmobile, and whose mindset was still in the old way of thinking and working with mobile phones, as relatively unbranded, non-fashion items.

Michele realised that she was only going to succeed if she achieved GRLmobile becoming a fashion oriented brand, not just a phone and phone services supplier, so she created a team of some 25 people who were ‘fashion people’, not technologists. The technical resources could always be brought in from the parent company, Crazy John’s. The staff were hired primarily on their attitude, which was required to be ‘can do’, can deal with adversity and complexity, innovative (think and solve problems outside the square), and is fully aligned, ‘bought into’, the GRLmobile vision and style. GRLmobile advertised, attracted people and hired via its strongly thematic website, which led to good alignment of candidates in the first place. In summary, GRLmobile wanted to hire people who were like the customers. GRLmobile wanted people who

were entrepreneurial and suited the vision. People were hired such as web designers who would take great pride in their work and outcomes. A culture of high energy and excitement in implementing the vision was created by Michele and embodied throughout the staff. Success was celebrated, keeping with the theme, using pink champagne, and employees who made great contributions were given gifts, days off, movie tickets and personal hand written notes by the managing director, Michele Hamdorf. Staff worked extremely hard to build the brand and the company, with an almost cult-like devotion.

In leadership terms, Michele worked hardest on the relationships with key retailers, since without them there was no channel to market, and no growth would be possible. Inside and outside, visible, dynamic and energetic leadership was the key.

Such entrepreneurial start-ups are fraught with risk, and this one is no different. Risk was actively managed, including sales risk, brand success/fail risk, and technical risk. There are always unforeseen occurrences; for example, the very day after Michele joined the Crazy John's group to start the GRLmobile brand and company build within it, the founder and CEO of Crazy John's, who was Michele's sponsor and key supporter in this bold initiative, died suddenly and unexpectedly. Since then the parent company of GRLmobile has been bought and sold 4 times in 3 years, which has meant that GRLmobile has existed in a volatile corporate environment. GRLmobile got to the point where it accounted for more than 30% of Crazy John's prepaid turnover, a very substantial player indeed, for a niche start up. Once Crazy John's was finally acquired by VHA, Vodafone Hutchison Australia, GRLmobile became a tiny part of that larger group. Michele has achieved partnerships with Myer group and Dick Smith brands as resellers of GRLmobile services and products. However the major new challenge is to not lose the entrepreneurial culture and spirit as part of a much larger corporation. The innovation continues, next is GRLtv, aimed at further building the brand, and this is followed by plans for a string of new GRLmobile services. A loyalty program was yet another innovation: bonuses were given to loyal users, and discounts were negotiated and set in place for GRLmobile customers with aligned businesses. Along with the younger female customers came a second wave of customers, namely their mothers, in the 40+ age bracket. This opened up a new sub-market for additional services. GRLmobile has done a lot of market research, but also used trial and error to 'see what works' implementing rapid service prototyping.

Quality was an important consideration, as the quality of service must not give people a reason to churn, and Michele led the attention to detail standards of quality achievement from the front. Michele ensured that she signed off personally on all key elements of process and marketing, (as required by the ACCC). And in this entire fast moving environment, Michele and GRLmobile kept developing the brand and the market offering, such as with the mini hair styler, a GRLmobile exclusive product which came bundled with a phone. This product had a quality problem and was recalled, due to packaging problems. The recall was executed smoothly with affected customers contacted and offered an immediate refund. GRLmobile needed to build other

competencies which were new to this industry, such as supply chain management for its goods including perfume, which meant meeting stringent standards and regulations.

GRLmobile and its leadership team, principally its founding managing director, Michele Hamdorf, had to overcome many challenges to bring the vision into the reality that it now has achieved. First was the death of the Crazy John's founder, before GRLmobile was even brought into existence, and the dwindling corporate support that followed needed to be rebuilt. Second was the building of a 'culture within a culture': never an easy undertaking. Third was to really create a brand like GRLmobile within the blokey culture of Crazy John's. Next was the breaking of market barriers to create the brand: GRLmobile sponsored and conducted experiential activity at a variety of music, fashion and surfing festivals around Australia and gave out GRLmobile-branded fake tattoos and condoms to girls. The condoms were branded "Get it on" 10,000 of these were handed out at promotional events. The idea was to bring 'cool' to the new brand and to phones and the Telco industry, an innovation in itself, as Telstra and Optus are not positioned to be 'cool'. Perhaps the biggest barrier was the naysayers all over the traditional parts of the sector, saying GRLmobile was a fad and would not catch on and would not last.

Intellectual property (IP) has been carefully managed at GRLmobile. Michele and her colleagues created a style guide for all the company's offerings and the GRLmobile brand. Everything that is GRLmobile is trademarked. And registered trade-names have been created. The company spent \$200,000 a significant amount on registering URLs and IP. This was to protect GRLmobile using dot.com and a lot of similar names to GRLmobile.com, in order to protect the brand identity.

The brand was reinforced with the offerings of celebrity, fashion, gossip and handbags, plus of course phones and their services, which became the magenta themed GRLmobile! The service was leveraged with RSS feeds and inputs coming in, which made GRLmobile a fashion hub. Partners became important: Nick Kay for example who was category manager of Dick Smith 'bought' the vision and became a significant retailer for GRLmobile, through learning of the importance of the fashion/ gossip celebrity aspects of the brand from his daughter. Michele realised that with a brand like GRLmobile all you have as a core asset is indeed the IP! Through one of her licensors, celebrity Britney Spears threatened GRLmobile over the use of an image of her and GRLmobile found that 3rd party IP can be problematic.

Future opportunities abound such as the current initiative to take GRLmobile to the post-paid contract market. Finally in 2010, with GRLmobile established, settled and growing dynamically its founding managing director has decided to walk away from it, and go on another in her life's series of entrepreneurial and innovative venture.

Lonely Planet; brand and innovation go together

Gus Balbontin, Global Innovation Manager for Lonely Planet, works mostly in its head office in Melbourne Australia. His title is 'global innovation manager', and his key responsibilities are to drive and deliver innovations of all forms to the company, yet he has no staff and limited budget. He engages in 'Guerrilla Warfare Innovation':

"What works best here is to light fires and let them spread: try not to force it because that kills it" (Gus Balbontin). The Lonely Planet culture wouldn't permit or allow a formalised approach to innovation. The approach is to have irregular but carefully orchestrated 'hack days' in which ideas are brought up from groups of staff and quickly tested and prototyped, then evaluated by a cross section of staff from around the company. These hack days create a buzz of invention and innovation in the company.

Gus manages this innovation process, but it needs the creativity and innovation efforts of a large group of the company's 600 staff.

Gus employs an innovation concept which is a process of moving from 'inspiration to realisation'. It requires a balance of creativity and a harnessing of the forces of randomness and chaos in the early stages of a concept's development, through various stages of increasingly disciplined control, plans, governance of the innovation, allocation of resources, process management etc. Throughout this process, Gus and his senior colleagues are careful to apply the right style of leadership and management as needed to encourage and control these processes.

The process at Lonely Planet involves a series of steps:

1. Inspiration, meaning the inside and outside sourcing of innovative ideas
2. At the hack days, idea generation leads to rapid development, creativity and simulation of product/ service mock-ups
3. Experimenting and prototyping, involving 'guerrilla warfare'
4. Choosing, prioritising and then 'projectising' and delivery

Gus Balbontin and Lonely Planet have found step 3 above to be the critical and challenging step.

Hack days involve idea generation and prototyping, so that coming out of the hack days are the tested ideas.

Lonely Planet has found that traditional project planning has not worked: techniques such as Gantt charts, cost/benefit analysis and related traditional approaches just stymie creativity, and do not bring ideas to fruition. So Lonely Planet now uses agile methods of product development:

which is live, dynamic and collaborative. The evaluation of all ideas is tested and evaluated across the pillars of Lonely Planet's strategy.

Ideas which are then candidates for development are then classified according to whether they are high or low in value, and effort: clearly Lonely Planet is looking to develop high value and low effort projects.

Lonely planet does extensive field testing of its new ideas: 3500 people worldwide are given the ideas and their views and reactions are collected and analysed. Local focus groups are used too. Extensive use of video technology is made, known as observational research, in which video is taken of prototype users and analysed to refine product and service experiences.

The crux of success is what happens between idea generation and full-blown project development and management: this is the critical stage where getting it right makes a key difference to the future of the company.

As an example, in 2004, the print product (principally books and magazines) was scattered, so it was centralised in order to better organise and control it. Operations in London, USA, France and Australia were all consolidated to Melbourne. Then the company started to standardise the processes of New Product Development. The company achieved a decrease in new product development cycle time from 12 months to three, using the agile system! 'Handoffs' that are inefficient were reduced, fixed or eliminated. Teams were face-to-face, speed and dynamism was achieved. It beats the waterfall / Gantt chart mechanism of organising product development according to Lonely Planet.

This dynamic/ agile process of NPD was refined via a series of loops, first in the creation of new regional guide books, in which the development cycle time was reduced from 12 months to 3. The method was then refined and re-applied to the renewal process of a series of discover guides. In the third iteration, new country guides were developed using this system, with even more effectiveness and success, in which LONELY PLANET brought more process controls into play, even in the early steps of NPD.

Lonely Planet is wedded to and gets great benefit from using teams which widely represent different functions in the organisation, to work on these NPD projects. These cross functional teams bring people together from all key functions:

- Logistics
- Layout
- Cartography
- Editing

- Project management
- Printing
- Marketing
- Production
- Finance
- Sales

This cross functional team approach leads to faster innovations and more effective outcomes.

In the most recent iteration of NPD, which is a new series of country guides, which comprise 60% of Lonely Planet sales revenue, the process has been further refined, from the inspiration, an online forum over a 3-week period, was used to crash the product development cycle time and make it both more efficient and effective.

Lonely Planet domain of products and innovation

Lonely Planet organises its products and services around the ‘travel cycle’, which it defines in steps in a cycle:

1. inspiration
2. planning
3. on the road
4. reminiscing

New services are being developed across all the above steps, using new technologies such as smart-phones etc.

Gus and Lonely Planet have ramped up their innovation efforts as they refine their product development methodology. In the latest iteration of this, country books, they included an online forum as part of the hack days and development process. They achieved 200 ideas from this forum, which represents a real and powerful “bring the voice of the customer” into the innovation process. Lonely Planet also uses outside experts to complement its staff idea contributions and lead users, which is their way of implementing open innovation. This process has worked well enough so as to encourage Lonely Planet to drive it harder, faster and further in its development through each of its major iterations of new product development. The company has taken a decision to use a similar method to consider a whole of business transformation, in a

sense meaning that this home-grown generic innovation methodology will and can be applied to the lonely planet business model and structure itself.

The current and next generation of innovation is to re-examine the way that product development occurs: it is currently a traditional process of book development, reflecting the company's history and roots.

“We go to all new media, attached to our traditional ‘main machine’ of book development and production, and it doesn’t always work as effectively and quickly as we would like” (Gus Balbontin).

How Lonely Planet goes about developing new internet based services is currently adapted from how it develops new books, and Gus has recognised that there must be a better way, and is using the innovation process to seize this opportunity to improve.

The new approach is to transform from a quite linear process of development of nooks and related products to a whole-of-company system of ‘content in’ using the company content management system (CMS), which is to be separated from deployment of that content. Lonely Planet has some 80 authors regularly contributing written content along with images, video and other forms of content coming in. On the output side, there is a constantly developing set of forms of products and services, from books to E books, TV products, internet services and mobile phone content etc. The aim is to reorganise the content in process into a hub from which products and services can draw material. A necessary prerequisite for effective deployment of this new approach is that the agility of the company and its products is not lost, but is enhanced. The aim is to make this new approach and system a company wide approach, rather than have a number of approaches that develop at the margin and are somewhat ad hoc.

Lonely Planet strategy

Lonely Planet is positioned as an ‘edgier’ style of product than other travel information sources. It is more adventurous in both the items that it covers and describes, and in its style. Its books even include occasional swear words, when they are determined to be suitably descriptive, which would not be found in traditional books such as Frommers. Lonely Planet guides are more ‘intimate’ than others, more informative and more like a ‘Bible of travel’, according to market research. Lonely Planet has not been as successful in the USA than in other regions, perhaps because of the more conservative approach taken in markets and by consumers there. A question facing Lonely Planet is whether it can customise its products to different tastes, which it expects will be technically possible in the very near future.

Lonely planet has been the first in its industry to move into mobile phone applications and TV products. It also distinguishes itself by not accepting advertisements in its books, whereas its competitors do so. Lonely Planet remains an independent voice from travel suppliers.

The new ownership of the parent company BBC has brought some changes, for example TV expertise and networking capability and a change in style to the 'edgier style'

The 'edginess' is highly descriptive and differentiates Lonely Planet products from its competitors, appealing to the roots of market segments from where the company originated.

"We are fearless about telling it as it is" (Gus Ballbontin)

In terms of positioning in its markets, the company has established a very loyal core of followers, whom they call 'world adventurers'. These customers comprise about 10% of the Lonely Planet market, and are the leading edge of consumers. They are "Lonely Planet travellers", loyal to Lonely Planet and they write back to Lonely Planet, providing valuable information which is captured by the company for future use. Many of these are long term customers, supporters of the company of some 30 years.

Lonely Planet is clearly much more than a travel book company these days. Its 'Thorntree' online forum has some 500,000 users including its world adventurers.

While the brand of this company is very powerful, and widely known globally, the fast moving innovation-based competitiveness and strategies of the company have hardly been publicised. Lonely Planet has been a quiet achiever until recently. The new ownership and CEO of the company are changing this slowly, using the brand more effectively and focussing on transforming the company via a series of large and small innovations. Hence innovation strategy and implementation effectiveness are core and critical to its future success and growth.

In the past, failure was a problem, as it traditionally is in the conservative book publishing industry. With the new system of hack days, fast prototypes and connected process steps, failure is significantly cheaper and is detected earlier, hence it is more easily accepted and experimentation is further fostered. The attitude to risk and potential project failures also starts with the type of people who are recruited and the culture that is fostered. Whereas the people used to be primarily from publishing with a perfectionist attitude, there is now more of a new economy approach, where it is accepted that speed is important and that not everything will work, and particularly not work perfectly. Lonely Planet's CEO uses the phrase "ruthless experimentation".

Lonely Planet abandoned the traditional pipeline and funnel on innovations: it failed them. Instead, the company now carefully controls the new ideas process, screening them, giving people 3-4 weeks to propose ideas, and through the hack days, and other methods, taking the best ideas forward. The company has found that extroverted people are well suited to the open collaborative approach of the intensive hack days, but it does not suit everyone. More introverted people are still able to contribute their ideas on innovations and the development of new ideas through an online process.

Lonely Planet is committed to using its innovation resources in a focussed manner. Gus Balbontin tries very hard not to 'wound' ideas at any stage, either they are promoted and encouraged through the processes or they are fully killed off. Wounded ideas 'fester' and are unproductive. Lonely Planet has found that this disciplined approach is highly effective. The culture of Lonely Planet is still not fully into the 'new economy' mode and has its roots back in publishing. There are still perfectionists, and some who are not fully involved in the fast prototyping, and further cultural change is on the agenda. While the process of experimentation allows LONELY PLANET to further develop its products and processes, there is room to further integrate the 'new stream' of the company with the 'main stream'.

In making clear decisions about which ideas go forward and which are killed off, Lonely Planet starts with the strategy filter. This means directly passing the test of whether the new idea fits with the business strategy and direction. There is then a series of testing challenges conducted by panels and focus groups. This is followed by prioritisation sessions with LONELY PLANET executives, where formal 'kill' or 'go forward' decisions are made and resources are allocated.

There is no fixed budget for innovative activities and product development. Decisions are made regarding resources, in real time, as the company remains committed to a high level of agility. There is no formal plan of engagement in innovation terms.

Lonely Planet practices innovation partly through collaboration with other organisations. Examples are an open relationship with a partner company, O'Reilly Media. Gus Balbontin has exchanged information with many other players in this space around the world and has been on extensive study tours to exchange this information first hand. These study tours of visiting like minded companies globally has been extremely valuable in keeping Gus and Lonely Planet thinking and working on innovations at the edge of the fast moving world of electronic and digital media.

Measurement

Lonely Planet has not instituted formal measures of innovation. It does keep tabs on its success and failures as projects, such as recalling that CMS (customer management systems) failed twice before lessons learned were used to get it right the third time. It is however, working in an intuitive, organic manner. The Lonely Planet style and size is such that KPIs are not necessary at this point. Gus is not committed to increasing the degree of formality at this point or in the foreseeable future, wanting to keep the agility strong as a first priority over formality. However the innovation outcomes and returns on investment are closely monitored by the Global Leadership Team of Lonely Planet and the Board, which shows strong interest in innovation and its deliverables.

As to resources for making such innovations happen, Gus does not have any of his own staff, but, with no direct reports and full time staff, is considered and works as the catalyst of many

other staff who have mainstream full time jobs, and also contribute in a significant way to Lonely Planet new stream via projects. The company runs virtual teams and hack days that drive projects. An example is a group of 10 people, highly cross functional as a team, in a 6-month project.

Lonely Planet has not had a culture in the past of paying for performance. There is a new bonus system coming in with the new leadership and ownership. Active performance rating is also a relatively newly applied concept in Lonely Planet. Recognition systems have been active more for managers, and have not yet got to the 'shop floor', such as a line cartographer. There is little formal recognition of contributions of innovative activities that are explicit, as Gus is trying to foster high levels of innovation in a 'guerrilla' manner: doing innovation but not calling it innovation. Gus reports to two members of the Group leadership team, who are direct reports of the CEO. As global innovation manager, Gus is part of a 25 person senior leadership team, one level below the 6 person group leadership team. It is at the Senior Leadership Team level that Gus is trying to embed innovation.

Lonely Planet is making sustainable development a part of its activities and is active. The link between sustainable development and main stream of innovation is limited to date, however the company is proactive on environmental management, especially in its printed products division. In terms of social contributions, the Lonely Planet culture fits this approach, and there are numerous activities going on, including the Lonely Planet foundation in Cambodia and the Wheeler foundation run by the company founders.

Within Lonely Planet there are still some recognised 'bumps', along the road to world class innovation practices. Whereas the innovation style is fast and agile, the finance department still requires the traditional business cases and budgets, which is understandable but causes some complexity of objectives. The underlying industry culture is perfectionist and hence quite careful and slow to move. Editors who are an important step in product development steps are from this publishing background and bring this traditional view of getting the material and the product fully right before release, even if it takes months.

Lonely Planet would like to be able to draw on a stronger innovation culture generally in Australia, where innovation success is strongly celebrated. Australia has nothing similar, even on a smaller scale to the overseas TED conference. Further open innovation is constrained by a great deal of legal matters, such as copyright, NDAs and bureaucracy, which while necessary, do add to the friction of getting innovation done quickly and effectively. Gus believes that just as iTunes has 'transformed and done' the music industry, there are 'clunky' aspects of legal frameworks which lag well behind the needs of E businesses and the Twitter generation. Lonely Planet purposely does not work too diligently on IP protection, preferring to be a fast mover. It holds no patents, but of course does hold copyrights, although it knows that these are widely infringed upon in parts of Asia, through illegal copying and printing of its books: an irritant

which it tolerates. Intellectual Property has not been a formal concern because the strong brand of Lonely Planet is assumed to ‘carry us through’. In respect of keeping its knowledge contained, and well managed, the method is mostly organic and informal. The balance that is pursued is between incremental innovation and radical changes, supported by knowledge. Lonely Planet believes that it does a fine job of knowledge management in its products for its customers, but has room for improvement in its internal knowledge management processes and outcomes. It is clear, however that the 550 staff at Lonely Planet, the 220 freelance authors and the millions of customers in both the old economy and particularly the new economy services provided by Lonely Planet, are in for a time of great change, fast servicing of their needs, and dynamically developing new ways of creating, processing and accessing knowledge about the world.

Microsoft: a global innovator

Microsoft has been an innovative company since its first day of existence. Founder Bill Gates drove not just invention of new software, but massively successful scale up and commercialization. This has led to Microsoft creating a tremendous amount of wealth in many economies, and contributing to the improved productivity of many organizations which use its software. Many people in many organizations use Microsoft products for much of their working day, every day.

So how has Microsoft remained innovative from its early days as a small and entrepreneurial company to where it is now a large company? Has it preserved its capability to be systematically innovative? What strategies and systems, rewards and measures drive Microsoft to 'keep on keeping on a path of innovation, and avoid succumbing to large company bureaucracy that can creep in and lead a once successful company to become a slow and lumbering giant?

According to Tony Ward, Director of Marketing and Operations of Microsoft in Australia, first is the nature of Microsoft's strategy: this is a truly global company, with much of its revenue outside its home country of USA. It does not develop products for any single country market, and while there are no local products, there are innovation activities going on in lots of countries aimed at global markets. New products are developed and new markets are developed, including work done in Australia, although the central product innovation activities are in the USA.

Local innovations in Australia were on new business models for Microsoft and new ways to structure licensing agreements, which were then 'exported from Microsoft Australia to other parts of the company.' Australia is indeed a relatively large market for Microsoft, with only approximately 0.3% of the world's population; Australia is Microsoft's 8th largest country market.

A local innovation has been in the business model created as nineMSN, which is a joint venture between Microsoft and the Channel Nine network. Further, new packages of software products were originated in Microsoft Australia, such as Microsoft Office, which is a high selling and very effective global product.

Microsoft applies a 'ring fenced' budget for marketing in each market, for looking at local opportunities and particularly for innovations in local markets from its global product/ service set. Locally, including in Australia, Microsoft sets in place a budget for developing innovative business strategies: of which the development of nineMSN is an example. The Microsoft approach is to nearly always start with the market opportunity: aiming to ensure that it never develops initiatives of any type which do not have a customer base and a relevant value proposition for that customer base. This is a significant aspect of Microsoft's focus: market first,

then resources second. After a market opportunity is developed that is salient for Microsoft, strategies for responding to it are brainstormed and tested. Resources are applied and tactics for responding to the market opportunity are then implemented.

As to the key Microsoft resource, they point to their people as such. Twice each year Microsoft does people performance measurement/ management, with all staff classified into three categories. Those who are deemed to be superior performers, as against solid performers, can only achieve such, through their contribution to innovative business practices. Further, rewards for people are also based on innovation. This is a combination of local, regional and global innovation performance.

New investments at Microsoft are essentially 100% concerned with innovation. This includes new products, new business models, and new technologies.

Microsoft's approach to systematic innovation is comprehensive: it comprises

- Measures of innovation. Microsoft measures its ratio of new business and new initiative and value creation
- Culture, meaning that innovative behaviours are encouraged
- A strong performance oriented culture, "We raise the bar every year" (Tony Ward, director of marketing and operations , Microsoft Australia)
- Microsoft has developed a positive competitive culture and way of working, striving to always improve.
- Microsoft encourages a 'Type A' personality, meaning a high energy, active and ambitious approach to business. There is no room for complacency in the innovation activities of Microsoft.
- Everyone at Microsoft is expected to achieve. It is a driven company, including in how it goes about developing its innovation initiatives. It's called the 'achievement-based' culture.
- Microsoft pays incentives of various kinds for innovation activities and successes.

Microsoft encourages all staff to contribute new business and related ideas, then has structured processes to take the best of these from 'new-stream' to main-stream. An example is Project Victa, in which all staff were asked to contribute innovation ideas. Managers evaluated these and chose the best to take forward, based on value creation potential for customers and for Microsoft. Examples might range from driving internal cost savings by reducing the use of paper to sales growth through partnership development with customers.

One highly valuable project that came from staff during this project was to take the Microsoft small business server technology into the medium sized business segment.

Microsoft conducts a large amount of research and development. These efforts are focused on developing products and services looking 2 generations ahead, known as “N+2”. This means investing in products that will be marketed some 5 to even 10 years away. The N+2 efforts are carefully coordinated with the ‘N+1’ efforts, where N+1 means the next generation in development and planned for release typically within 1 to 3 years. Throughout this work, judgments are consciously made with respect to the mix of radical versus incremental innovations, and how these aspects of the extent of innovation pertain to risk and return.

Sustainable development has been a strong theme driving innovation and change within Microsoft. This idea, conceptualized most easily at Microsoft through the triple bottom line (financial, environmental and social outcomes), leads them to do almost everything differently to when only the financial bottom line drove activities. An example is in selecting staff. Concern with sustainability and the triple bottom line is keenly looked at. “We want to hire people with a strong concern for society and the environment” (Tony Ward, Microsoft Australia). Microsoft does not have the highest base rates of pay in its industry, but its reputation and incentive system make it capable of competing in the labour market. A clear signal and a tangible resource is that in addition to the significant cash and software grants Microsoft makes each year, each employee is also given three days per year to work in charitable organizations. In this way, Microsoft is giving to charity and asking its employees to share in this value and activity. Similarly, Microsoft engages in numerous environmental initiatives. These triple bottom line activities and resources are strongly aligned with more general innovation activities, they signal pro-activity in approach, engagement with society, long term commitment, recognition of a broad set of stakeholder interests, and are hallmarks of a company committed to generally being progressive.

Microsoft has moved forward with the implementation of a number of environmental initiatives, which simultaneously created business value and environmental improvements. An example is the move from distribution of software on disks and cds to downloading them, resulting in lower environmental footprints, costs for Microsoft and improved customer convenience.

Microsoft measures monthly growth, and the aspects of this growth that come through innovation. It has a balanced scorecard, just for its innovation activities. An example was an approach to marketing developed in Microsoft Australia in 2006, aimed at the medium business sector (companies with 250 to 1000 people employed). A new customer focused sales process was developed in Australia, migrated from Microsoft Australia to Microsoft globally and measures demonstrated this resulted in three to four times market growth rates in that sector. This approach was to change the focus of sales activities to move away from ‘cold calling’ and concentrate resources on fewer potential customers as prospects. The renewed sales process was highly successful and led to substantially higher sales. It led to the creation of further new jobs.

Microsoft, like all large and successful companies, needs to work hard to ensure that it remains customer focused. It aims to keep the voice of the customer as one of its key drivers through doing systematic customer satisfaction surveys every 6 months and using the information from these to drive its actions. This data is collected worldwide within Microsoft and benchmarked through comprehensive analysis, cross-sectionally across Microsoft and longitudinally within every division. It is used to drive both corrective actions and continuous improvements, and to be a key input to customer driven innovations.

Microsoft's product development teams do thousands of hours of user testing of products and services, including focus groups. Product release usually involves Beta testing, for example 8 million people globally tested Windows 7 before it was officially released on the market. Microsoft has developed a refined process for product development and commercialization, based on freezing the product design late in the process, but working to a frozen release date.

How does Microsoft work with other organizations, and is its approach to innovation open or more closed? The answer is that some aspects of Microsoft's work is open while others are closed. For example, all sales processes in Australia is conducted through partners. These partnerships result in win-win sales relationships, and also bring market intelligence back through the partners to Microsoft. Microsoft is clearly taking an open approach to developed software, working with its partners on installation and platform application matters. However on next generation software, and particularly its N+2 works, it keeps a closed approach.

Knowledge management is an important consideration in Microsoft. The company uses a Sharepoint system, which includes many features, and it considers itself a mature company in terms of global knowledge management.

How could Microsoft become even more competitive, particularly from an Australian base? Its view is that countries have to compete, albeit differently from companies in terms of achieving innovation. Microsoft would benefit substantially from further government incentives such as tax breaks for R&D similar to those given in Ireland. Microsoft works well with a number of state governments in Australia to develop innovation initiatives. However it clearly needs positive government actions in order to make Australia continue as attractive relative to the environment provided in places such as India.

Newcrest: innovation in a commodity business

The Newcrest mining business has focussed on long term resilience of its value creation capabilities in recent years. Each year it conducts an annual board strategy retreat, and in recent years a long term sustainable position has been pursued.

Innovation has recently been driven in the company in order to achieve step change capabilities and performance improvements. Examples of innovations have been in the move from mining and processing in dry climates of the world such as Australia and southern Africa to tropical environments, where these different conditions require different methods. A further opportunity has been to pursue productivity and other resilience improvements by moving from batch process and transport methods, such as in materials handling and movement to continuous flow, with examples being graders and trucks to conveyor systems. Changes to operations have also led to significant reductions in labour and overhead costs, energy use and cost, and water use.

Step change initiatives at Newcrest involve innovation activities that are aimed to create margin improvements, through finding new paradigms of working, with a focussed approach to doing only five active projects at any time. An example is at the Gosowong site, where costs were reduced from \$300 per ton to \$150 through re-engineering the operating procedures. There are further initiatives which are aimed at delivering a cost reduction to \$120 per ton. This delivers business benefits which are direct profit drivers, and extends the asset life through making additional local ore sources viable. The mine life extends beyond 2020 on this basis which also is of significant benefit to the local community. This has been achieved through significantly re-engineering processes at and surrounding the mine and its administrative processes.

Newcrest has also been innovative in moving to a system of cave mining, and has also introduced innovation involving significant technical risk in this caving. This work has involved joint efforts and technology agreements with Codelco. Newcrest has engaged in processes of open innovation with Codelco and others, meaning that progress is not kept secret, but is shared with technology partners for mutual benefit and sharing purposes. Caving technology is different in every mine, and brings risk. The Newcrest approach is to identify and approach risk management and reduction through making a series of small steps in solving technical problems. Codelco and Newcrest are engaged in a joint learning curve and risk reduction process.

In contrast to the continuous improvement approach of ‘small steps’, the whole of Newcrest is now pursuing large improvements through innovations. Newcrest now plans and organises its initiatives on three horizons:

Horizon 1 is production oriented involving small step continuous improvement and lower risks. This horizon involves refreshing and developing human capabilities within the company, instilling common values and behaviours, alignment, and full implementation of a five year plan.

Horizon 2 involves larger and medium steps of improvement, of the order of \$100,000 or more per instance. Larger initiatives in this horizon of regional growth include strategic investments and expansions at PNG, Namosi, Gosowong and Ridgeway Deeps sites. These are significant to the ten to twenty year perspective for the company.

Horizon 3 is its long term innovation strategy, and may mean taking carefully calculated risks, on new assets and technologies/ methods. This long term perspective is focussed on global growth, and involves innovative activities in leading edge caving methods and rapid mine development processes.

This ‘three horizon’ approach is applied at all significant operating sites. It involves defining improvement projects, large and small, at these sites and driving change initiatives at these, which are clearly defined and structured. An example is the exploration and possible use of gold mineralogy techniques such as bacterial oxidation, bio-heap leaching and other non-traditional methods. Another is ore-sorting, including implementing this underground to reduce costs and material handling and movement.

The company has a current trajectory which limits its gold production and lowers its gold to copper ratio, which it is determined to overcome, in its major vision of being a continuing global gold player. Hence a high level vision is to achieve up to 3 million ounces of gold output in 5 years, grow gold reserves to 60 million ounces, and diversify regions and technologies to reduce the risk of its investments and innovations. A related ambition is to remain in the low cost quartile and hence achieve total shareholder returns that are higher than other gold companies. In a commodity business such as gold (and copper), superior returns can only be sustainably achieved through innovation, which means taking calculated risks and achieving an average of superior cost- and volume- driving returns (price has to be accepted from the market).

Newcrest has substantially increased the degree of structure and discipline throughout its planning processes in recent years in order to achieve this. There is a well-formed annual planning cycle, which applies and coordinates activities right across the portfolio of assets and mines, from exploration activities through the production, distribution and marketing and supporting services. These are broken down by site/ mine into initiatives which are carefully managed and monitored. Capabilities are being developed and this means investments into lean methods and six sigma techniques and philosophies, skills, rapid technology implementations and external relationship development capabilities. Technological capabilities are an important part of this development. Newcrest is moving forward with continuous tunnelling methods and expects to achieve continuous production within a decade, always looking to improve on safety and productivity through reducing the use of people and replacing them with reliable automation, including new technologies that are developed within Newcrest and with its technical/ business partners.

The management of this risk is done via the concept of ‘optionality’ at Newcrest, in which as many as five initiatives may be invested in as part of the pursuit of a particular outcomes such as a technical solution, with the expectation that approximately two of these five initiatives will work. The approach has previously been rather unsystematic in past years, with initiatives being not fully integrated and considered as part of the portfolio. However in recent years, these

initiatives have been evaluated as they contribute to the overall picture of risk and return/profitability.

Three examples are:

1. Refractory gold processing, in which the effectiveness of gold yields can be increased. This uses POX technology.
2. Ore sorting on a conveyor, which is entirely novel to gold mining and ore. This method uses optical technology to sort ore into useful pieces for processing and waste, as they are different in appearance.
3. Low cost pre-stripping, uses dozers and can eliminate trucks.

Whereas initiatives 1 and 2 above are already implemented, initiative 3 above is still in proving stages.

Further current technical and other innovations involve using biotechnology for leaching and fracturing rock. Work is underway jointly with CSIRO on a number of research projects to support these initiatives.

Further work on sorting and detection of mineral rich rocks aims to increase the yield and efficiency while reducing the effective cost, using technologies such as infrared, optical, X-ray and microwave.

The mainstream Newcrest strategy, calls for a number of developments involving innovation and hence risk. The ambitious overall goal is for 3 million ounces of gold and 200,000 tonnes of copper in five years. This is to be gained at first quartile margins. The means for achieving this are unique capabilities, meaning innovations being mainstreamed in exploration, caving, lateral mine development, continuous improvement and step change improvement.

Newcrest takes a pull approach to innovation, namely it tries to solve real problems and finds technologies to these known problems, more that push approaches. Examples are solutions such as Reef miner which has come from the platinum industry, and rope conveyors. These and other systems have become needed due to the move to new mining environments by Newcrest, where there is high rainfall and steep terrain. These conditions are conducive to conveyors ahead of trucks.

Measures of innovation and rewards

Newcrest does careful feasibility studies and uses financial performance evaluation to measure the inputs and the outputs of its innovation initiatives. Ultimately financial feasibility is measured against the degree of uncertainty in each venture.

Rewards in Newcrest are related to performance outcomes, for all managers and others such as engineers. These are structured as base salaries, plus a short term component as cash incentives, plus longer term incentives structured as share allocations. Staff are given gain-sharing opportunities, based on SMART goals which are the drivers of significant variable rewards, depending on performance. Each person has 3 such goals, meaning that the system is quite simple, and it is clear. The goals are open and transparent for all managers and some others to see, so that all managers can know the goals of all other managers.

An example of this is senior manager Andrew Logan, Newcrest's General Manager of Development, who reports directly to the CEO. Andrew must achieve step change improvement initiatives. He is also responsible and involved in the achievement of annual plans for driving change. Andrew and his colleague German (pronounced Herman), also are involved in coaching staff as well. This has involved developing the more widespread use of systematic tools of analysis and problem solving. These techniques involve tools such as run charts, Pareto analysis, and other tools of statistical quality control and six Sigma methodologies.

A further responsibility for Andrew Logan is the job of challenging processes in the operations in behalf of 'head office', by questioning the process. Through doing this, Andrew Logan has been able to inject the culture of looking for innovative solutions into a traditional industry and previously traditional company that often did not adequately challenge these traditions.

Examples of innovative initiatives have been at Cadia East, where rapid prototyping of new methods has been implemented.

Newcrest has deliberately invested in thinking 'outside the square' through skills development, attempts at widespread cultural change, and through technical investments and initiatives. This had led to two major business advantages, namely growth and substantial cost reduction.

As a leader in managing risk and return associated with caving technologies, the Society for Mining Engineers has asked Newcrest to contribute sections to the Mining engineering Handbook.

In terms of business objectives of innovation, Andrew Logan has the express business goal of achieving returns on initiatives in less than two years payback, with faster and faster requirements on benefits delivery. Andrew and his CEO, Ian Smith, bring a top down approach to innovation leadership and the systematic corporate approach to it. The leadership approach to innovation comes from being bold, being innovative, having a 'fix it and improvement' culture, and improving all aspects of operating disciplines and cultures. This culture is quite new to Newcrest which has had a new lease on life from top to bottom in recent years, with turnover of its whole board, a new CEO and CFO, and new approaches to value creation through innovation that came with these. In summary, risk and return are now managed at Newcrest with discipline, structure and careful risk management.

Benefits to Newcrest of their stream of innovations have been substantial: for example in 2009, when the cost of gold production went up on average around the world by 11%, Newcrest achieved a 40% reduction, in \$A, which due to exchange rates translated into a 18% reduction in US\$ terms (Source: http://www.newcrest.com.au/upload/631_1x28x2010103550AM.pdf). These were achieved through a series of process innovations, including technical, managerial and business processes. At Telfer mine, this has included cost reductions from to \$908 to \$599 per ounce of gold in 18 months through process innovations. Large cost reductions have occurred at Gosowong through innovation. Newcrest has significantly increased its reserves and expects to generate a 40% lift in production in the next 5 years, with lower costs 'in the bag' and more to come (http://www.newcrest.com.au/upload/595_3x08x200943355PM.pdf).

In addition to the benefits from cost reduction that provide a return on invested funds and risks taken, Newcrest has recognised the need to develop new capabilities to fuel its further growth. One of these is the ability to acquire and integrate new assets. Exploration has been driven forward in Newcrest and a new capability has been developed in the processes of mergers and acquisitions (http://www.newcrest.com.au/upload/572_5x03x2009102534AM.pdf). Similar has occurred in risk management. As a result, Newcrest has delivered above average EBIT (http://www.newcrest.com.au/upload/534_3x12x2008105615AM.pdf), and through a continuing commitment on its people development as well, every expectation that its innovation capability and the performance that this delivers will continue.

Many of the Newcrest improvements have been based on methods improvements that have not needed any or much capital outlays (http://www.newcrest.com.au/upload/491_7x07x200855001PM.pdf). These have included a variety of operational and productivity improvements, but also similar effectiveness improvements in exploration, that have had similarly impressive outcomes to the cost reductions and output improvements in existing operations. Exploration in recent years has been more focussed on fewer sites, with higher success rates and significantly faster project developments.

Stretchtex: a specialist niche innovator

With a culture that is fast and agile, Stretchtex has continued to innovate in creating fabrics for clothing with remarkable properties that give strong consumer benefits. It is particularly successful in swimwear, sportswear and performance fabrics.

With the company having been in existence making performance fabrics for many decades, Stretchtex has had to be systematically innovative over many cycles in order to survive and prosper. Most of these markets are specialized niche markets, where sales volumes are not large, but prices can be quite high. Their main line of products are in the swimwear market, which has accounted for some 70% of their sales for some time. Perhaps their best known customer is the well known branded company and product line of Speedo. Their fabrics are particularly good for swimwear applications due to their chlorine resistance properties. Speedo provides a sound and stable base of sales volume for Stretchtex, while a range of other high-performance fabrics comprise the other 30% of sales, and deliver larger profit margins, some 70% of total. Apart from Speedo and a few other customers, the customer base is a 'cottage industry', which strongly influences how Stretchtex conducts its marketing activities.

Stretchtex continually looks for and finds new and innovative applications for differentiated products, for example in recent years, compression fabrics have become an area of large potential growth. These fabrics came originally from NASA, and Stretchtex innovated "Skins" fabrics from this source of a new product category.

Stretchtex keeps itself at the forefront of technology and product features, and competes on being fast to market and agile. They have worked with leading designers Peter Alexander and Body Science groups.

How does the innovation process work at Stretchtex?

The usual process for a new product development at Stretchtex is an initiation with a customer requirement. The customer specifies a 'wish-list' of properties and benefits desired from a fabric. Stretchtex then works to develop a fabric that responds to those customer requirements. This is a team effort conducted by a group of very experienced staff. Fibres often need to be combined and many test runs and cycles of trial and error are conducted to optimize fabric performance and match the requirements. Some examples of requirements are:

- Colour fastness
- Stretch and recovery
- Weight
- Water repellence

- Moisture management
- Sun/ UV rating
- Chemical resistance (eg chlorine)

Examples of special fabrics produced by Stretchtex have been for elite athletes in sports such as water-polo, basketball, and triathlon. In all these sports, Stretchtex has benefitted in market terms by supplying fabrics that were worn by medal winners in the Beijing Olympics (see box).

Another innovation from Stretchtex is the “BURQINI”, meaning swimwear for Muslim women.

How does Stretchtex management and protect its intellectual property?

Stretchtex does not have any patents, but competes on quality. Its brand and reputation as an industrial marketer was built on innovation, fabric properties, manufacturing quality and price. In order to achieve and sustain this competitiveness, lean manufacturing must be diligently practiced, costs watched very carefully, and quality control is very strict and strong. Stretchtex lost the supply contract with its most important client, Speedo, to a European supplier, however its superior quality, product and service allowed it to win back this important client.

Stretchtex continuously improves its products’ performance, such as stretch performance. A recent example is for Speedo, in which the next generation of fabrics will be further improved from last season’s. Improvements in water repellence, stretch and return, weight and other properties are constantly sought. In this category, Stretchtex has a technical edge over its competitors in the speed of its innovation cycles and product performance.

Stretchtex keeps a strong market focus: for example in swimwear, it does not try to compete in the high-fashion fabric market, where volumes of fabric are low, but rather works in the segment of somewhat lower price points of functionally superior and high technology fabrics.

How does Stretchtex’s supply function meet and blend with market requirements?

A team of three key Stretchtex executives have a combined total of over 100 years of experience in the industry. Their tacit knowledge gives the company an edge. They build close relationships with customers and are involved in long term trust-based relationships. These executives create value for customers by bringing them leading edge ideas that create value for these customers. This approach is similar to that of 3M, which strives to do more than just know the customer requirements but aims to lead it to a place of new and superior value creation. “It’s a case of matching our capabilities to meet and lead customer requirements: we are working at it every day” (senior Stretchtex executive).

Stretchtex has an outstanding capability of quick response: they can design, make, knit, dye, test and bring a new product to full trial and to a customer within two weeks. They conduct rapid prototyping and testing and bring solutions to their customers fast. Some of the products they design and test fail to meet requirements, or need many cycles of redesign before achieving acceptable specification. The company and its key executives take calculated risks and base these decisions on a wealth of experience.

This involves allocating some few hundred thousand dollars each year into product development, and these scarce resources in the company's 'New stream' are managed carefully, as are all other resources in this firm. The development processes are supported by various subsidies that from time to time come from government: textile industry support and R&D support schemes help and provide incentives to develop new products.

Stretchtex has dedicated resources for trials and sample runs, such as a dedicated warper machine.

Motivation, behaviour and culture at Stretchtex

Staff at this company are involved in innovation at all levels, led by the executives who keep them such. This company has a strong sense of pride, tradition of success and history of innovation, yet it is not tradition bound, rather it is agile! An example is of the operators in the warping and knitting processes, who are involved and are given feedback on performance. Executives 'fold them in' to the innovations.

Every one of the 24 staff talks to all the managers, there is a close relationship and little sense of hierarchy and formality. All managers are always accessible to all staff and communication is as needed, and productive. Through the collective team effort, "We want and we must and do achieve more winners than losers in our product developments" (senior executive).

As to rewards for staff, this company used to pay bonuses based on performance, but has now improved the benefits package paid to all staff, increased base pay, and moved beyond using money to incentivize. Staff are well paid indeed relative to industry standards. Machines are run efficiently on a 24 hour basis, 5 or 6 days a week in order to drive a sound return on fixed capital. Staff turnover is low in this non-union shop.

Measures are informal, as with a company this size it is possible to keep a finger on the pulse through the tacit knowledge that the management team has of the business, on a full time, intense, continuing basis.

This company pays great attention to sustainable development issues, and despite the experience of the leadership team, takes a leading edge approach to conservation and recycling. All

packaging is recycled. Products being shipped to Europe must pass stringent tests of sustainability and eco-friendliness, as tested by an independent Swiss firm. It has investigated and developed fabrics made from recycled fibres, however these are not yet cost competitive.

Stretchtex has opportunistically moved forward with UV protecting fabrics, such as Cancer Council endorsed fabrics for beachwear.

Stretchtex is certainly not without its challenges, which include:

- Machinery where the need is for faster, less expensive processes. In other words, even with all the new product efforts, process efficiency continually needs to move forward to keep the company competitive. Hence the company innovatively recently bought a significant amount of equipment from a bankrupt competitor.
- Distance from customers and trade fairs in the northern hemisphere is a barrier that imposes costs and timing difficulties

The company is fastidious in its management of quality, as it must give excellent performance to its customers who are paying premium prices for its high performance fabrics. Stretchtex conducts full (100%) product inspection and ensures high standards of uncompromising quality throughout its processes and staff. Returns due to quality problems are less than 1% of goods shipped. The product development processes have forged ahead of prior generations of products, for example prior nylon and lycra fabrics which had experienced problems in some swimming and high performance/ sports applications. Through making the market requirement closely fit the company's resource focus, Stretchtex has kept itself prospering when most of its competitors have left Australia or shut down. It has even recently expanded through buying a substantial amount of equipment from a failed competitor. The company's executive team stressed that their success is a strong function of technical leadership coupled closely with close relationship based contact with the customer base. These managers are very 'hands on'.

Stretchtex has productive relationships with many organizations, practicing a limited form of open innovation. These partners include CSIRO, APANZA, AWTA (wool testing authority), and universities such as RMITU.

Textor: Open innovation in a niche manufacturer

Textor Technologies (TT) is an Australian owned and operated company. Though small in size, it competes both here and abroad with its nonwoven products designed around the science of fluid transfer, in technically driven markets reliant on precision designed materials. Phillip Butler has led the company through a period of a management buyout, and subsequent growth through successful innovation.

Background and company history

The company's background and capabilities are as follows:

TT is Australia's foremost producer of nonwovens, offering an array of spunlaced, chemical or thermal bonded products for uses in medical healthcare and personal hygiene, cleaning, filtration, food packaging, automotive, building, agribusiness and the environment. All of TT's products have been designed using science principles of fluid transfer. The fibres, their surface finishes, the chemical or mechanical method of bonding the fibres into layers, all requires a complete understanding of the interplay between fibres in how they move and transfer fluid. This focus on fluid management has had the biggest impact in the medical and healthcare markets where a general improvement in wellbeing benefits the end consumer.

100 percent Australian owned since 2000, and headquartered at its Tullamarine plant, Melbourne, TT products are sold, in rollstock, in the domestic and, increasingly, the international market. Drawing on over 40 years manufacturing experience, but equipped with new generation technologies and sophisticated operating systems, TT is determined to work with its customers to explore the full commercial possibilities of nonwovens. (Source www.textortextiles.com.au)

In April 2001 Lantor Australia changed its name to Textor Technologies following a management buyout in December 2000. Founded in 1959 as a subsidiary of Lantor International, the company remained a traditional textile company until the early 1980's when it moved into production of high performance products.

New Ways of Doing Business

The change in name wasn't the only change in TT business practices. Supported by a new injection of capital and installation of new generation equipment, TT was able to broaden its product range and double in size within two years. But Phillip Butler understood it wasn't going to be 'just about the equipment'. To accelerate TT's growth, new innovative ways to conduct business were necessary.

The Process

Sophisticated supply chain management - Participating in industrial collaboration

TT collaborates closely with customers and suppliers within a total supply chain network. Establishing long-term relationships with suppliers ensures continuity of supply, efficient ordering, and the excitement of developing new raw materials that extend the range of technical possibilities.

Having customers who are both highly creative and demanding has allowed TT to streamline processes to a customer base that understands sophisticated manufacturing and principles of just-in-time supply management. Working both the suppliers' capabilities with the customers' needs helps TT find solutions and therefore success – greater knowledge and extended product range.

The Products

Partnership Focus

TT decided to succeed well it had to look outside the norm for inspiration and align itself with companies and industry bodies who were progressive. This way in drawing from many different areas, it was able to 'cross fertilize' ideas and come up with some innovative solutions. For example TT regularly takes technologies applied in the hygiene applications and applies them to product developments in filtration and food packaging applications. Further to these product development examples TT also takes inspiration from other industries such the dairy, automotive and the paper industries to improve their approach to housekeeping, process control, engineering and supply chain management.

Companies such as Kimberley Clark (its largest customer), Siemens (its sole supplier of sophisticated control systems), and Industry Bodies (such as CSIRO and Biotechnical CRC) have equally contributed to developing TT's expertise.

Intellectual property strategy at TT

TT's close collaboration with Kimberley Clark is also extended in open innovation collaborations with CSIRO and the biotechnology CRC. Work has begun on improving the odor control of products and other technical features.

TT also does not patent any of its innovations. Its approach has been to publish its product announcements and expects this to stop others patenting them.

The Team Approach

Open book management

The introduction of open book management techniques has produced exceptional levels of confidence and commitment from TT's workforce. In this process, all staff are invited to attend and participate in monthly profit and loss meetings and take personal responsibility for raising productivity or minimising costs in specific areas of the business. Ethical and co-operative behaviour leads to industrial harmony and a work-force that believes in the company and its products.

Inside the Plant

Materials

TT works with the full range of materials suitable for nonwoven manufacture including:

- Fibers such as polyester, viscose rayon, polypropylene, or fibre blends with special applications such as high absorption and high wicking.
- Chemical binders that are safe but can offer strong adhesive properties.
- Coatings such as low density polyethylene, or films and laminates.

These materials are blended, entangled and layered to achieve the best characteristics necessary for the customer's needs. The product range extends to both ends of the hydrophilic – hydrophobic spectrum.

Processes

Production of nonwoven substrates involves web-forming of the actual fibres, and can undergo additional treatment such as coating, laminating and composite layering of two or more layers for specific purposes.

TT offers high speed carding facilities capable of producing products suitable for markets such as:

- First aid dressing, pre-injection swabs and food filtration, are usually hydro-entangled;
- Fluid acquisition layers and food contact approved packaging are Thermally bonded; and
- Incontinence blankets, air filters and sound barriers are needle-punched

Capabilities

The ISO9001 accredited operation is equipped to run 24/7 to meet requirements ranging from small runs of 1000 square metres to those of 100,000 square metres and beyond on a *in full on time* delivery performance standard of 98%. Roll lengths of between 100 and 4000 metres can be produced on the production lines with a maximum finished width capability of 2.2 metres. All

production lines can obtain minimum finished widths of 20 cm, and conversion equipment can trim and roll to any requirement. All rolls are 100% visually inspected during conversion and are packaged appropriately to protect the finished product. Before conversion is approved, output is sampled for production and audit testing to ensure it meets agreed technical specifications such as weight, thickness, strength, and absorbency. (Source www.textortextiles.com.au)

Management of TT's innovation

With 50 staff including 20 shop floor employees, this small company makes a major investment in new technology and product development, employing a team of 13 engineers to develop new products and accompanying processes. Very high investment in innovation as a proportion of total revenue, illustrating the 'resource-up' part of its innovation strategy: innovation at TT is much more than talking the talk!

Factory utilization is important, and in order to get a sound return on the high installed capital base, TT is run on a 5 day, 24 hour basis. It is a non-union shop, and the practices of open book management leads to a strong relationship of trust and respect throughout. This creates a 'one-team' climate. The core values of the company are stated as openness, honesty and integrity. Pay levels are "above average, but not over the top" according to Phillip Butler. With the strong 'one team' atmosphere, this company has a loyal workforce and low staff turnover.

TT operates in unprotected (i.e.no tariffs) local markets and abroad it faces very competitive global players, therefore it is appropriately proud of its record of not just expanding in Australia, but also exporting to Singapore, Vietnam, India and China. Part of this success comes from a very close and tight relationship that TT has with a major customer, Kimberley Clark. This relationship gives TT a 'lift' in terms of market access to other markets that would otherwise be difficult, expensive and risky to try to enter.

With government support grants ending by mid 2010, this company has had to execute a plan to achieve full independence and sustainability. Prior to that, textile industry support has helped TT invest in its high technology program. TT is currently making large investments in its own R & D, and ramping up its competitiveness based on developments in its intellectual property of science and technology based expertise. It has one particularly strong relationship (Kimberley Clark, 56% of TT's revenue) which provides both significant supply and exchange of technological information. In TT's terms this relationship is very much a two way street in terms of value adding. An example, the knowledge about lean manufacturing and how to implement the 'Toyota production system' is said to have been taken from TT's philosophy to Kimberley Clark, and not the other way around. TT works directly with Kimberley Clark's global R & D Centres, on a direct basis, which shows how well TT is trusted within the Kimberley Clark group.

A constant challenge for TT is how it can survive and prosper in markets in which its many competitors are much bigger. This challenge can be considered in terms of TT's fixed costs of 13 engineers within its total workforce. Many companies in Asia, Europe or America would consider this as a cost burden. TT treats this 'technology engine' as an investment, and answers the competitive challenge with its capability in terms of:

- agility
- quality and
- innovation

Operational capabilities

Phillip Butler states he is 'obsessed' with process, meaning both process control and process improvement. This is seen as a source of competitive advantage, driving superior outcomes in cost and quality.

The company also has a strong focus on ecological sustainability, and is far sighted in doing so. It recognizes coming trends from market forces which will require higher levels of performance in terms of environmental impact.

A further source of advantage that comes from differentiation and innovation is the integration of process control software and hardware. All of this development is done in-house, which is quite a remarkable strategy and investment for a small company. The TT plant is very highly automated, with electronic control of all significant process steps and equipment linked to sophisticated data loggers and electronic control systems. This allows high leverage of human capital and effort, and precise monitoring and control of all processes. Given the high touch nature of TT's products, quality is an imperative, and this is achieved by a strong technology-based quality control system.

A supporting relationship in this open innovation model is the close relationship that TT has with its main equipment supplier, Siemens. Given its strategy of quality, agility and innovation, TT always chooses the world's best equipment for its manufacturing processes.

Summary of TT's Competitive Strategy

The strong and interdependent relationship with Kimberley Clark means that TT is almost a satellite of that company in some ways, given the strength of the supply relationship and the technology transfer and information sharing. This openness, translates cleanly and nicely into the open book internal management style and system. The culture of long term sustainability also

supports the technical investment and the philosophy of 'long term learning', with well planned product trials, strongly disciplined engineering and technical reviews of products and equipment.

Forward Planning

Phillip Butler is developing his son, Andrew to increasingly run major aspects of the business, including project management and disciplined control of new product developments. The strong belief is that a disciplined approach pays off. (Phillip is a strong believer in the 'Toyota' philosophy of standardization and discipline in all processes). This leads to a highly formalized approach to controlling all processes, which pays dividends.

Whereas the company used to revolve significantly around its small group of leaders, there is now a larger group of people who are authorized to make decisions. A deliberate strategy of delegation has been implemented where operators have been trained on continuous improvement processes. Five key development projects are ongoing at any one time and these clearly involve operators in their planning and implementation. In mainstream operations, factory staff are expected to use their judgment and override computer sophisticated controlled equipment as needed.

In order to achieve the changes to culture from directive to inclusive, Phillip and Andrew Butler have been somewhat paternalistic initially in driving the change, and have never backed off on their demands for high performance and exacting quality outcomes, yet have introduced 'learning' as a key new plank to the business. With learning comes skills and a desire to use new found knowledge, leading to delegated controls and decision making as a natural ongoing flow. People at all levels of the company are involved in technology based relationships with Siemens (SCADA system supply).

TT is looking to expand their product offerings in the baby care, fem care and incontinence product markets. Its close relationship with Kimberley Clark and other customers does not just pervade its technology standards but also its mainstream supply lines. TT runs a lean, low stock business, hence must have very sound and intense information exchange on orders and volume forecasts and requirements from its customers. This also contributes to reducing the holding cost of relatively expensive finished goods.

Measurement of innovation and performance

In this small business, innovation is not formally measured, nor needed to be, as Phillip and Andrew have their fingers closely on the pulse of the five development projects. However, just as innovation projects are managed with a hands-on passion based approach, production quantity

and quality is formally measured through the highly automated process equipment software that was developed in-house.

Resource management

The dominant philosophy of open book management has led to an open and trusting approach to operations management. There is a strong team based approach, with a focus on getting the work done rather than on individualism. Everyone is respected for what is achieved, nobody wears suits, and the informal approach supports openness and team based productivity.

As to compensation policy associated with this culture, there is only one class of profit sharing, with everyone getting an equal dollar amount from an annual bonus pool, meaning all staff share it exactly equally.

The internally strong team based and ‘high involvement’ approach to staff participation leads to a capability for channeling this high energy to provide strong individualized customer focus. Phillip and Andrew Butler manage each customer relationship individually, as some want ‘high touch’ and technical support, meaning a close and intense relationship (e.g. Kimberley Clark), and others do not.

What are the barriers and opportunities for TT going forward?

TT has many opportunities to move forward and profitably grow, though it faces some significant challenges. The markets for nonwovens are large and growing. New opportunities arise regularly. However some major challenges for TT are:

- Access to major markets. Although TT is in the sound position of being a strategic supplier to one major customer, it lacks scale to pursue other global market opportunities. This applies in the global markets for food products and wipes, and hygiene products. It’s a scale and cost issue.
- Universities, CRCs, and the CSIRO have not been able to work successfully with TT, on a consistent basis. This is not because there is not mutual value to be added, but because of the difficulty of IP management across such relationships. TT competes on agility, which necessitates speed to market, and large public institutions are more attuned to slower pace and focused in IP protection, which often slows down developments markedly. Hence the strategic fit in joint developments with such institutions has been a problem. TT’s approach of secrecy and when suited publishing its IP but not patenting, does not match that of larger and public institutions.

Partnership Plus

What started out as a hope to supply a small nonwoven component for an Australian made nappy over a decade ago, has developed into an equally reliant alliance. From supplying 100% of Australia's requirements, TT is now exporting into Kimberley Clark Singapore, Vietnam and India. Kimberley Clark uses TT as a site to conduct new product development trials. This adds significant value to the relationship with Kimberley Clark; TT is not just seen as a supplier of linings, but as a trusted ally in technological development processes. TT also gains an edge in its own knowledge about where new products are trending in Kimberley Clark and the industry from this activity. To conduct such activities, there is not just a relationship of trust across the TT- Kimberley Clark supply lines, but it also fits very well the capabilities of agility and innovation within TT. If TT was just a high volume, low cost manufacturer, there would not be such a capability and focus in innovation and development.

Don't Re-Invent the Wheel

TT has wisely used its areas of expertise to outperform its competitors. Its vast knowledge of fluid transfer has accelerated the timeframe of developing the next generation of femcare products currently undergoing clinical trials. To date, the results are very promising. This niche' market, although currently small was seen and therefore targeted by TT as a global and fast growing area.

Fresh Fish Anyone?

To ensure all highly coveted meat and fish arrive in perfect condition for the Japanese Market, products are packed with a special TT membrane. This food grade nonwoven ensures the meat and fish are not subjected to excess liquids or gases that can spoil fresh produce.

The Specialty Group: Niche market and high technology textiles

This company operates as two individual companies: Specialty Coatings (Aust.) Pty Ltd and Australian Composites Pty Ltd in a 35,000 sq ft advanced manufacturing facility in Melbourne and has been in business for 32 years, now run by the second generation, having been founded by current Chief Executive Officer Daniel Leipnik's father, Peter. Its past consisted of developing and producing a wide range of niche products as specialty industrial textiles. This company is small by global standards, and operating from Australia faces considerable competition from low cost countries on scale or cost, but it pursued, as its name says, a specialty or niche strategy in premium markets. These days the small runs of over 1000 different products the Company use to make to order have given rise to a highly efficient business that now produces a handful of specialty coated materials such as window furnishing and upholstery fabrics in very large quantities that make up the bulk of its revenues. Although the Company produces some two million meters of coated, laminated, or impregnated materials a year, it continues to invest significantly in new product development, employing textile and chemicals scientists. Its product designs lead the world.

Systematic Innovation at Specialty group

Business and marketing strategy

The early innovations at The Specialty Group were prompted primarily by customers. Customers specified their needs and The Specialty Group engaged in problem solving to find technical solutions for those needs. While this is clearly a sound market oriented approach, which leads to new products and services that by definition do have a sales channel, it can be limited in the scope and creativity of the innovations. When purely reacting to customer inquiries, even leading edge customer inquiries, there is a limitation in that customers may not know what is possible, but only what their short term requirements are. It is unlikely that most customers will think and take their suppliers 'over the horizon'. Within the last decade, The Specialty Group has continued to work closely with customers and their articulated needs, but has also invested increasingly in its own Research and development initiatives, ahead of customers' expressed needs. Hence its approach to innovation involves a balance of market pull and technology push. The Specialty Group has also made strong use of external sources of funds and expertise in pursuing their technological leadership position. While some executives complain that working with Universities, CRCs and accessing government resources is difficult and sometimes, 'too difficult to bother', Daniel Leipnik's approach is just the opposite, and he points to numerous beneficial breakthroughs that have resulted from strong engagement with a range of external groups, in a sense being the implementation of 'open innovation'.

The catch-cry at The Specialty Group in respect of its innovation approach is "Developing Tomorrow's Products". The aim is to be ahead of the rest of the world with product features and

their consumer benefits, which seems a big call, for a small company based in Moorabbin, Melbourne, but indeed has been largely achieved in a number of its product lines. The company does applied research, not pure research (which is left to universities and research institutes), however The Specialty Group systematically taps into and stimulates these institutions to conduct fundamental research, which it can then apply: always with the customer and the market in mind as the end game.

Daniel Leipnik works hard to overcome the challenge of operating out of Australia which he says is significant. He suggests that innovation is the only way to survive and prosper in a high wage/ cost country such as this. Innovation is seen by Daniel and his company as the path to true differentiation and premium pricing.

Most of this company's customers and the bulk of its sales revenue come from within Australia; however it projects the bulk of its future growth to be from global markets, and has invested in developing channels to these markets. While many companies have burnt a lot of cash in travel and associated costs of developing business in overseas markets, The Specialty Group has appointed existing agents all over the world, with appropriate incentives in place. This has saved them time and cost, and built a sales network very quickly. It also allows the small group of key people in the group to keep their eye on the ball of innovating and managing the business at home. The company is run as a lean operation, with sales above A\$10 m, having previously peaked some years ago at A\$20m. Employee numbers run to 30 in Moorabbin, and with some staff and agents overseas, to total effort is of over 45 people. This network has been created by the group to counteract the challenge of customer perceptions in the northern hemisphere of Australia being 'too far away' to be a sound supplier. Having agents and staff on the ground is a big investment for a small Australian company, but is judged by Daniel to be worthwhile and indeed is a necessary ingredient for growth through innovation as the Company works hard to return sales to the 20 mil p.a mark through both local and international sales growth.

A key part of the business and market positioning of the group is accomplished through its communications strategy. Daniel and his colleagues issue lots of press releases, circulate an online newsletter and use various other ways of making their capabilities and products known in the market, and these bring leads and eventuate in sales. The internet is used extensively to demonstrate The Specialty Groups market offering.

Market signals and trends are brought into the company by Daniel and the sales team who keep a finger on the pulse of major trends locally and around the world. This 'environmental scanning' investment has led to the development of significant new products for the building industry such as solar roof panel solutions and wind energy related products. Hence the climate change challenge facing the world was recognized as an opportunity and product innovation was initiated with that opportunity being targeted. Some of the company's products are 'new to the world' (e.g. solar roofing materials) but most of them are superior solutions to known or existing

requirements, such that the quality of the outcome for the customer is better or can be supplied at lower cost because of the technical improvements made. These improved technical solutions have been developed through the establishment of a small in-house team of scientists, who are networked to a range of public institutions (CSIRO and a range of CRCs and universities), providing the group with high leverage on its technical spend and base of core internal expertise. This company has proven by example that such interactions can be highly positive in delivering value creating innovation outcomes.

Investment in innovation and its rewards

The Specialty Group spends approximately 5% of its revenue directly on its innovation efforts, and plans to increase this ratio. It has had to learn to appreciate and implement innovation efforts with no guarantee of success, especially as it tries to run with ‘new to the world’ products. It has developed products that have been successful, and has had some flops. Hence a key skill has been to become competent at resource allocation and the disciplines of ‘calculated risk taking’. Although only about \$0.5m is invested in innovation efforts each year, Daniel Leipnik attests to the benefits of open innovation and the leverage that it brings as “absolutely fantastic”. This has included accessing government grants which also have led to a variety of beneficial collaborative technological developments.

The initiating sparks of The Specialty Groups innovations have included but not been limited to internal sources. Energlo which is the light sensitive clothing application came initially from the internal ‘science engine’ of five people working with the company. However another key source of ideas is from the sales force, who scour the marketplace for consumer’s unsatisfied needs, products that can be improved upon and new ideas that might be completely ‘outside the box’. There is a third important source of innovation sparking ideas, namely the marketplace, such as the involvement of The Specialty Group in a university (RMITU) inspired light weight modular composite car.

Once an idea is judged as worthwhile of some effort and resource, basic prototypes of products are developed in one of the company’s two laboratories and shown to clients for feedback, market response and further idea generating and refinement. Small batches are initially made for trialling and validation by potential customers. The development pipeline can take 12 months, and with the customer continuously in the loop as part of the innovation cycle, there is hoped to be a positive commercial outcome at the end.

The company looks for new products that have markets above \$1 million per year, and preferably multimillions pa, and screens out at an early stage any ideas that have only small potential markets, of \$0.1 m or smaller. Most product developments involve combinations of

known technology into new applications, so technical risk is low and technical success is relatively high, however the commercial success is a key risk factor.

Another area of innovation is The Specialty Groups process innovations. Plant managers and supervisors strongly drive for continuous process improvement and ideas bubble up from the shop floor about how to do things better, meaning all things. This can include increase in line running speeds, ensuring all machines keep working by having process workers over lap other crew's breaks, and selecting higher quality materials that will lead to better quality reduced B grade output. The company is run as a lean operation, with a culture of waste elimination. This is partially driven by the very strong sustainability orientation of the owners.

In addition to this, the Company has just embarked on a new environmental program called Green Leader (www.greenleader.ca) which certifies companies with eco labelling after the company undertakes resource efficiency audits and then complies with specific levels of resource use reduction. The Specialty Group is the first company in the world to sign up for this new program.

In a small company aiming to compete through differentiation and in particular innovation, the reach of the founders and the owner managers is deep and strong. The Leipnik family and their management team have a leadership style which is hands on, future focused, and demanding of growth. They respond to inquiries from their market and from customers very quickly, and this approach of high service and attentiveness to customer needs is filtered into every employees thinking and actions.

Operational capabilities and systems to deliver innovation

Daniel and his team work hard to ensure that creativity of their scientists and their innovations are converted into corporate value. Every two weeks Daniel chairs a product review meeting, involving sales staff, operations managers and the scientists. The aim is to coordinate the conversion of research and development efforts into mainstream products and to ensure that this is done with utmost efficiency, timeliness and quality. The team is effective. When there is a conflict between short term pressures of production orders and a desire to trial new products, scheduled production orders have priority in general, however a sound overall balance is achieved. An efficient production scheduling approach supports getting that balance right.

The scientific staff spend about 25% of their efforts and time on new product development and the rest on various types of technical support, of customer needs development, manufacturing, and product design and processing. New developments are assessed primarily through considering whether the development is technically feasible, whether profitable sales will be possible, and whether scaled-up manufacturing will be possible and efficient. Further the company always looks out for grants that might be available to support their efforts and, through this, has accessed R&D Start and TCF fund grants in recent years. The Company has attracted

the support of some 5 million dollars in Government funding over the past 10 years which has been directed at the purchase of new plant and equipment, R & D, international marketing and brand awareness, new computers, and general innovation.

Some key lessons within the The Specialty Group from previous innovation cycles have been to:

1. Work hard to define the technical scope of the project before resources are committed.
2. Validate partners as being the right substantial partners, with required capabilities
3. Work early in the process to get a sense of client's willingness to pay for the product, by knowing a target price.

Best practice in partner validation and matching

Daniel Leipnik has learnt from a European partner who sent The Specialty Group a 20-page detailed questionnaire to be returned before entering into an arrangement with them. This document was a deep and careful approach to ensuring that suppliers and partners are 'right for the purpose'. Specialty Group now uses a similar approach to validate the capability of prospective partners.

Innovation is organized and stimulated in Specialty Group through constantly striving to achieve new markets, new clients, and new partners. These aspects of innovation are clearly central to the mindset, strategy and importantly, the leadership approach in the company. Tradeshows, magazines and web-searching are the tools of environmental scanning used by this firm to "ensure we keep abreast of what's out there"

'Keeping score' on innovation success

For this lean company, sound attention is paid to the returns from its innovation efforts. The owner/ managers and their team keep on top of the most important measures of innovation success and outcomes. Specifically they measure:

1. New Product technical feasibility and production 'manufacturability'
2. Sales from new products
3. Profit margins from new products
4. Number of collaborations and their performance

Key operating / business measures which are regularly reviewed in the company are innovation performance reports, productivity, and scrap rates and quality, measured a 'first time through'

rates. This is in addition to the usual financial performance monitoring, which is seen as a set of outputs of innovation, sales and production efforts and performance.

Rewards, behaviour and culture

The Specialty Group pays bonuses to its sales staff only for ‘above target’ achievements and production staff have enjoyed annual bonuses too. Daniel Leipnik says that the workplace culture has moved past “slinging money at them for performance”. Managers are generally well rewarded in their base pay, and have bought into and strongly contribute to the innovation vision and strategy. However the company is strong on the use of recognition of achievements. This is seen as a psychological reward, and recognition of achievements and associated efforts is a key part of how job satisfaction is achieved. To this end, the Company makes visible through financial reward and public recognition, outstanding work or output demonstrated by staff. This is done through a presentation ceremony at the end of the calendar year.

The company is focused on ‘stretch’ and high achievement, which starts in the sales function and from the owner/ managers. The culture is strong and is about pushing for performance, for example 98% production efficiency is expected, which is high for a company which often makes many small batches of diverse innovative products.

The company insists that every person’s orientation and every effort is made to ensure client satisfaction. The products are premium price, and the highest of quality standards is adhered to. There is an attendant focus on delivery reliability and waste free operations that are ‘right first time’. The focus also embodies waste reduction in all forms. This connects directly to the focus on environmental sustainability, which is led from the top of this company. Demands from European customers and partners of high levels of environmental compliance and performance drew Daniels attention to this as first a compliance issue, but more recently as an opportunity to be proactive and get ‘ahead of the curve’, which he has done. The company is very active in its attention to reducing its footprint in terms of energy, water and waste. The workplace is kept clean, led through hands on managerial attention and standard setting. Very high OH&S standards are set and achieved.

In summary, the systematic innovation runs throughout this company and all of its systems and processes. Leadership is the key, providing the foundation, direction-setting and the resources for all staff and partners to engage with in implementing the innovation.

Barriers and challenges to innovation

The company has achieved much, yet has constant challenges to sustain and improve its competitive position. The company’s leaders see no shortage of business and innovation opportunities, yet are constrained by resource limitations, and scale. Being located in Australia is still a ‘tyranny of distance’ challenge, but can be and is lessened though making extensive use of

the internet. A further challenge is that Australia is seen in the northern hemisphere, particularly Europe as an environmental laggard and this image needs changing. Rather than wait for the government to achieve this, Daniel Leipnik is active in setting new standards for Specialty group which will take it to the cutting edge of environmental performance, and literally set new environmental standards (as a spin off business!) Daniel does not want to see his company or other Australian companies caught as Europe introduces much stricter requirements on imported products being carbon neutral, non-polluting etc. He sees this as either an opportunity or a threat, depending on the position we take, individually within companies, or nationally.

Intellectual property strategy

A key challenge for a differentiated company producing and selling new innovative products at high process is to protect its customer base and revenue stream from copies made by fast followers from low wage/ cost countries. The Specialty Group has changed its IP strategy in recent years from a blocking strategy of patenting, to one of principally moving fast to get ahead and stay ahead of followers and copiers. Patents proved to be expensive and limited in their effectiveness. The company's products were and are copied easily and wilfully, overseas. Their Energlo was copied in Thailand, but the copies didn't work well. So quality is recognized as part of the protection net of this company. Within the company, its limited size allows for IP and other forms of knowledge to be managed informally, and transmitted people-to-people via fortnightly meetings and less formal means. Teams form to brainstorm and look for breakthrough new products and application or technical features and product benefits. It operates as a quite informal network, including its network of external partners, more so than in rigid structures. Perhaps this is the advantage of being small, and making up for a lack of scale with the fluidity of speed, informality, and personal control through strong leadership and relationships.

Toyota: from quality leadership to innovation

The company has been long established in Australia, as both a manufacturer and a designer of vehicles, operating a technology centre in Notting Hill, a major manufacturing plant in Altona, Victoria and a Sales and Marketing head office functionality in Woollaware Bay, NSW. It locally produces the Camry, Hybrid Camry and Aurion vehicles. From its sites it services the Australian market where it has become the market leader, and also exports from Australia to markets such as the Middle East. Toyota executives stress that the innovation and continuous improvement in Toyota spring from the behaviours and practices that are its focus, at every level.

Toyota has core values of continuous improvement and respect. These drive the widespread use of innovative processes and the desire for constant improvement.

Toyota has a strong focus on teamwork as one of its core behavioural expectations. There is within all teams, a focus on the process at hand and how to improve it and this focus on process improvement means that there is a diminution of any sense of personal blame for people. Toyota's culture strongly emphasises consensus building, and consultation and influence leading to agreement of impacted stakeholders, on issue or process change. Hence an idea put forward for improvement or innovation by a person becomes- through the process of discussion and consensus building- 'Toyota's idea'. Then it is implemented once consensus is achieved as 'our idea'. This is seen as a key strength of Toyota's culture, and it leads to full collective effort once an idea is ready for implementation.

Toyota and the Japanese historical culture

In Australia, Toyota primarily employs local workers and managers at all levels, so a key insight concerns whether this originally Japanese collective and consensus culture works well in Australia. Toyota managers, who know well the cultural differences between the Australian and Japanese workplace, believe and have measures that it works nearly as well in Australia as in Japan. Clearly it is more mature in Japan, as it more culturally based, however in Australia it is "getting there," (a Toyota Australian executive).

In Australia Toyota is driven by the big difference that comes from its effectiveness of continuous improvement. Toyota Australia is target driven, sets stretch targets and this includes its rate of improvement such as in quality and cost reduction. Toyota expects great things from its suppliers too, and provides active assistance and encouragement to them. To achieve substantial improvement, Toyota conducts systematic and regular gap analysis, breaking down problems between actual performance in any period and a stretch target into components and analysing carefully where the improvement can come from. Again, the Toyota culture comes clearly into play here: "We bring up problems, not hiding problems" (Toyota Australia manufacturing manager). There is widespread use within all functions of Toyota of charts and data to illuminate problems and opportunities, and KPIs are set.

The culture of continuous improvement continues to mature in Toyota. For example Toyota effectively uses the Andon cord system in many of its functions, and it works well, whereas competitors have not yet implemented it as maturely. Andon requires every worker to take responsibility when any defect or out of specification work is seen to occur, by ‘stopping the line’, and hence bringing great and immediate focus on the problem and solving it quickly and effectively. This stops the propagation of errors and reduces the creation of all forms of waste. This is just one of the many aspects of the Toyota system that works well in Toyota Australia that is a mature part of the Toyota worldwide approach. These techniques and the knowledge of how to apply them and benefit from them are extended throughout Toyota’s supply chain:

“We have a team who work on all these things throughout our supply chain, with all our suppliers, its win-win” (Toyota Australia executive)

In terms of how Toyota achieves these process standards, methods and outcomes, it’s important that: “We must look and feel like a Toyota plant”

People who join Toyota are given 2 to 3 weeks on job development and workplace induction. They are taught the tools and methods, even the philosophies of work process improvement. Toyota executives know that many small improvements add up to make a big difference, especially when they are locked in and aggregated over time. Toyota practices improvement of all small issues, working to what is often called quality circles. This strongly includes waste reduction in all forms and performance improvement that is related:

- safety
- cost
- time
- materials

Waste reduction is a key driver of innovation in this company that has a strong eye for detail. Some interesting points of difference between Toyota and many other companies are that:

- Toyota makes these tools of quality; continuous improvement and innovation work to great effect, whereas many other companies have done so in fits and starts, and then abandoned them.
- Toyota Australia has been improving its ability to systematically improve their use for some 50 years
- Toyota uses these methods in every function, not just in the factory. It works in the office, in administrative processes, as much and as well as in the factory.

In terms of staffing, Toyota tries hard to recruit from the family and friends of existing staff [ONLY in manufacturing], where possible. It tries hard to be a valuable and integral part of the local community. Toyota does a series of tests of potential staff, and tries to ensure there will be a 'fit' with the Toyota way philosophy, values and methods. It engages in a 'cultural fit assessment'.

Toyota staff can be rotated through a series of jobs, to benefit their perspective on working at Toyota and assist with staff development. People are rotated in recent years on a global basis, which opens up opportunities and hence people find Toyota a very attractive place to work:

“People stay, they are generally long serving, and this preserves the culture” (Toyota Australia manager).

Bonuses are awarded to staff when targets are achieved, such as a cost reduction target. Union relations are positive – a collaborative approach is the way Toyota deals with its employee relations.

When it comes to total quality and innovation based improvement, a good question is often asked as to why it works in Toyota when others have not been able to stay the course:

“We accept and recognise that it works, it delivers. It's proven here. Others don't practise the behaviours” (Toyota Australia manager).

So how does Toyota's leadership drive for successful implementation of these cultural and systematic innovation and improvement behaviours? It started as a leader driven initiative, but has now taken hold throughout the company and occurs through team behaviours: it is just the expected norm.

“It is a way of thinking, it takes a lot of practice, and it takes years to mature. A key to the behaviour is genchi genbutsu (go to the source), we practice humility as a key point. Innovation is expected. ” (Toyota Australia plant manager).

Some key messages from Toyota Australia managers are that despite their accomplishments, complacency is guarded against. They are in a global competition that never goes away. Toyota must be competitive on cost, and this means with other car makers and other Toyota plants around the world. Another key capability is flexibility; it supports and goes hand in hand with innovation and continuous improvement.

“We encourage teamwork, and it works well in our quality circles. Every year we have a quality circles convention, executives and their families come to it, and people volunteer to participate. As to rewards for being involved, they are of job satisfaction; they are psychological not monetary most of the time.” (Toyota Australia executive).

The Toyota approach to innovation is that 80% of what is accomplished is small step improvement of all processes, along with a few 'big things'. The company is very systematic about decisions and systems. Consensus is key to those decisions being implemented effectively. Toyota works hard to leverage influence across the supply chain.

Toyota also tries to be proactive in sustainable development. It takes on innovative initiatives in this regard too. It supports and works with Conservation Volunteers Australia. It works closely with the local council. It makes social contributions to local schools. All such partnerships are built on building capability not just a one-off contribution, as the aim is a lasting and positive impact. Toyota measures its contribution and achievements carefully in sustainable development. It publishes an annual sustainability report, and sets targets for improvement. These goals are considered very important, part of its highest level of goals. An example of a recent goal was a 40% reduction in water use throughout the company.

Toyota faces many challenges in trying to be competitive and innovative in Australia. It is concerned that manufacturing is reducing in quantity. Mitsubishi has stopped manufacturing and all other producers have reduced their local Australian manufacturing scale and model breadth. Conversely Toyota has expanded its Australian operations and invested in expansion. To make Australia attractive for investment, Toyota must be able to provide a competitive workforce, in terms of education and skill levels. There must also be a viable supplier base, which means that suppliers must be able to export from Australia. Suppliers must also be innovative as this is seen as a high cost country. Toyota wants its suppliers to:

“Take charge of their innovation destiny” (Toyota executive)

It is a great time to be innovative as Toyota knows how to make continuous improvement work well, there is marvellous new technology coming available regularly and Toyota is always willing to help and support suppliers.

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10. Appendix

1. Outcomes

To support the work of the Industry Innovation Councils, the project will identify and analyse what industry leading companies do to build and exploit systematic innovation capability. The project will investigate how some organisations become and remain systematically innovative, and how they are able to exploit this for commercial advantage.

2. Project

The project will identify the characteristics of systematic innovation capability that are found in leading companies. The analysis will use a model developed by Professor Daniel Samson which connects a set of key building blocks that comprise organisational excellence. These building blocks include corporate strategy; operational processes; performance measurement; rewards and recognition; and organisational behaviour and culture.

A summary of the literature will be undertaken to identify best practice internationally, and refine a model of systematic innovation capability. The analysis will explore how these best practices are adapted and implemented in Australia by interviewing ten of Australia's best companies across industries covered by a number of the Industry Innovation Councils.

The case studies will investigate what each company is doing in relation to each of the key building blocks of systematic innovation capability, as well as analyse other important factors such as leadership; customer focus; barriers; interaction with other entities; knowledge and intellectual property management; and, sustainable development. After obtaining the data from the interview process, knowledge on systematic innovation across companies will be generated using cross case analysis methods. The analysis will highlight insights about similar and different approaches by companies and why they occur.

The findings of the project will be written up as a set of case studies (**'Case Studies'**) and an overarching report (**'Analysis Project Report'**).