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OVERVIEW:

THE IMPORTANCE OF INNOVATION AND ENTREPRENEURSHIP

CHAPTER OBJECTIVES

After studying this chapter, readers should be able to:

- describe the core meaning of innovation in organisations, including its elements, benefits and challenges
- describe what entrepreneurship is and what entrepreneurs do
- explain why and how innovation leads to business benefits, advantage and competitiveness in markets
- describe the fundamental differences between new-stream/exploratory activities, and mainstream/exploitative activities in organisations, and the possibility of tensions and synergies between these
- discuss the role of strategy, resources, measures of innovation, rewards/recognition for innovation, and innovative culture and behaviour, as part of a holistic approach
- explain the key role of leadership in stimulating innovation within organisations
- recognise that Australia has a relatively weak national innovation system compared to the world's best, but that entrepreneurial activities can and do still thrive here
- connect the benefits of systematic innovation capability to overall organisational benefits and performance.

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The critical ingredient is getting off your butt and doing something. It's as simple as that. A lot of people have ideas, but there are few who decide to do something about them now. Not tomorrow. Not next week. But today. The true entrepreneur is a doer, not a dreamer.

—Nolan Bushnell, entrepreneur

INTRODUCTION: INNOVATION IN AN ORGANISATIONAL CONTEXT

Innovation, essentially meaning doing things that are new in order to create value, is an imperative for established organisations because in any competitive market 'standing still is going backwards' relative to competitors. Opportunities and threats to all organisations have never been greater, due to the accelerating pace of change that is occurring in every aspect of almost every industry. For entrepreneurial start-ups and smaller organisations, innovation is central to their progress and success. In this book, we will examine and describe the key success factors for making innovation work, which can be adapted to any organisational context, whether large or small, well-established or newly formed, seeking to make sustainable profits or to succeed in the not-for-profit sector.

Entrepreneurship The art of creating value through the development and commercialisation of new goods or services, often in a new organisational context.

Markets Real or virtual places where buyers and sellers interact in order to exchange goods, services and money.

Start-up Newly formed organisation, often a business, for the purpose of commercialising innovative offerings.

Entrepreneurs People who build value within business organisations, often start-ups, through commercialising inventions into valuable innovations.

Innovation A set of processes for creating value: in the context of scaling up and marketing new products, services, business models or management methods.

Entrepreneurship involves creating value in markets, through doing things that are new, particularly in those markets, often while building the organisational resources needed to establish those activities. Start-ups—meaning new organisations grown from a zero base—are a particularly challenging form of entrepreneurial business, attempting to bring innovations to fruition while simultaneously building an organisation, often from scratch. Entrepreneurs often need to operate on many fronts at once, ranging from creating product or service designs, market testing them, finding and arranging financial resources, hiring and managing staff, facilitating production, distribution and services, managing client customer relationships, and a host of other things. Entrepreneurship is challenging and risky, but can be highly rewarding in many ways, as Mark Zuckerberg (founder of Facebook), Larry Page and Sergey Brin (founders of Google), and Richard Branson (founder of Virgin Group) would attest. Entrepreneurial activities that lead to innovations in organisations and society can be the most exciting thing that any of us ever do at work!

Innovation in context

Innovation and entrepreneurial activities are not usually ends in themselves, but are a means to an end, where that end is usually the creation of value and achievement of organisational or personal goals. Those goals are often financial, but especially in the case of social innovation,

might well be related to non-financial goals too. There is a context and purpose as to why people individually and collectively engage in these activities: namely doing new things. For example, imagine if Apple stopped innovating, and was offering the same phone to consumers for five years, while Samsung had gone forward with new features, benefits and more consumer value through lower prices on a continuing basis, or indeed imagine if Apple raced well ahead of Samsung on its features and designs. Market share would quickly change, and it would only take a short while for the laggard to lose their customers, and then their business. This is what happened to Nokia, which went from an industry-leading position to now being completely out of the industry. Or consider the battle for market share between Coles/Woolworths versus IGA versus Aldi, Bunnings versus Masters versus Mitre 10, ANZ versus Westpac versus Commonwealth versus NAB, Shell versus Caltex versus BP, and similar examples in many other sectors. These companies compete fiercely with each other for the customer's attention and consumption, continuously trying to provide higher levels of value to the customer, through product, process, business model and any form of innovation. Planning and implementing effective innovation has become a key area for competitive advantage.

The battle between companies like Apple and Samsung in terms of innovation is basically for 'product leadership' and value (which can be considered in terms of benefits per unit price). This product innovation race, however, is not the case in other industries and sectors. Consider, for example, iron ore, liquefied natural gas (LNG) or gold, which are essentially commodity items, and substantially undifferentiated in terms of their product specification compared with consumer electronics. For commodity items, innovation is still critically important, but it mostly manifests as process innovation, aimed at increasing the effectiveness of the supply function of that commodity item, specifically to lower costs, improve delivery and service, and perhaps flexibility of supply.

Whether it's producing or selling a highly differentiated product or service, or a commodity, the less innovative company will quickly lose its profitability and its market. Today innovation is a key battleground of competitiveness. Indeed it is not enough to be innovative; a business's innovation needs to be occurring with at least the same effectiveness as competitors just to remain competitive with them.

This book aims to set out the field of innovation, and the related field of entrepreneurship, in terms of their importance, meaning, constituent elements in an organisational setting, and benefits. Entrepreneurship and innovation each require many elements and capabilities to be planned and implemented well in order to achieve favourable results. They involve managing change and taking risk, both of which are notoriously difficult to do in organisations, which are generally much better at avoiding change and especially risk, and conducting themselves in a 'same old, same old' manner.

Defining and describing innovation

The terms innovation and entrepreneurship can mean many things to different people (see also Chapter 8, where entrepreneurship is formally defined and explained). 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, in BEA Briefing, 2009, p. 15)
>
> 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 organisational method. (European Commission, 2004, in BEA Briefing, 2009, p. 15)
>
> 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, in BEA Briefing, 2009, p. 15)

We will use a generally accepted interpretation of innovation, as follows:

> Innovation can mean new or enhanced products, services, processes, methods, or business models, in order to create value.

We note that this interpretation raises a number of questions about innovation, including how innovation is manifested in various organisations, who is involved in the process, and the benefits that accrue from innovation:

- The 'what' of innovation, from the definition immediately above, correctly signifies that virtually nothing that an organisation does is off limits in terms of innovation potential. Every aspect from how it is set up, structured, located and how it is positioned in its markets can be the subject of innovation, as well as the more usual aspects of new or improved products and services, process improvements, new technologies, revenue sources, marketing methods and business models.
- The 'how' of innovation is the subject of much of this book, where we will draw on research and case studies to document just what works for those who succeed with innovation, as opposed to those who have tried and failed, and even those who do not try. For the moment, a high-level view of how innovation works is that it must pervade almost every aspect of organisational life and systems if it is to become fully mature, including the important elements of strategic priorities, resources and processes, performance measures, rewards and recognition systems, and ultimately, the 'people factor' (that is, behaviour and culture).

When innovation is working well and delivering good business results, all these factors are contributing strongly.

- The 'how much' of innovation can be interpreted at two levels: first, how big are innovations to be, and second, how much innovation should an organisation undertake on aggregate. On an innovation's size or scale, anything is possible, from small tweaks of products and processes, called incremental innovation, to large breakthrough innovations, termed as radical. How much innovation is best for an organisation will depend on the organisation and its strategic positioning as well as on industry dynamics. In a market such as consumer electronics where product life cycles are short and technology moves quickly, a heavy emphasis on innovation is required to keep up and hopefully move ahead of competitors. Apple and Samsung invest enormous amounts of money into innovation, and a substantial part of their workforce is devoted to developing next generation products and services, as well as producing, delivering and marketing the current product range. In other contexts, such as in some industries and government departments, innovation need not be as intensive and pervasive as in consumer electronics, because the forces at play, such as technologies and processes, are not moving as fast. An example is in producing commodity-like food products such as sugar and beef. In the sugar and beef industries, innovation is indeed alive and well, mostly in process innovations (because the products are relatively standard), but is not moving as furiously fast as it is in the mobile phones market.
- Who benefits from innovation? Innovation is the lifeblood of organisations, aimed at satisfying a number of stakeholders. Principal among these and most directly impacted by innovation are the organisation's customers. When useful new features are incorporated into products and services, consumers benefit. When processes are improved through technical advances or business model innovation, such that costs are reduced, then customers or shareholders (or both) can benefit, depending on the extent to which the organisation banks the cost savings or passes them on as price reductions. When delivery performance (such as speed of responsiveness or reliability) is improved, typically through process innovation, then once again the benefits can be passed on to customers or perhaps price or volumes can be increased. Further, given that innovation is ultimately aimed at increasing the organisation's value proposition to its consumers, and hence drives its profitability and effectiveness, then the organisation's owners are key beneficiaries of innovation success. Innovation is a capability to be invested in, and for those who make such investment decisions, a return on investment is expected. No better example exists than Apple Inc., which has in recent times become the world's most highly valued company by market capitalisation, even beyond resources giants such as Exxon Mobil and BHP Billiton. Apple has one key factor that has driven it to such heights, namely how well it has planned and executed its many innovations, from products (such as the iPod, iPhone, iPad and Macintosh), through to innovative services (iTunes, App Store and Apple retail shops).

- A second key aspect of the 'who' of innovation is concerned with who does it. Innovation is not only the province of big, established, well-resourced companies. It is true that Procter & Gamble, Toyota, McDonald's, Samsung, 3M, Apple, GlaxoSmithKline and many other large companies do survive and thrive based on their innovation. But within these giant businesses, innovation is actually done by people, individually and in teams. Further, innovation is not just the province of scientists and engineers, or marketers and executives, or only those people working in research and development departments; rather, in all organisations, innovation can and should be the province of all employees, and even other stakeholders such as suppliers and customers who can provide insightful ideas to help populate the innovation idea bank. Everyone can develop innovative ideas, and in the best of organisations, this happens to a powerful degree.
- In any industry, which organisations can be expected to be most innovative? This is an exciting aspect of innovation, because now more than ever innovation is coming from younger, smaller 'upstart' people and organisations, often disrupting long-standing and well-resourced businesses. This is not a new phenomenon; for example, it was in the early 1980s that entrepreneurs Steve Jobs and Steven Wozniak started Apple at a time when the giant IBM dominated the computer industry. Now Apple is a key computer industry player, while IBM has exited that industry. However, more than ever there are many instances of start-up organisations going into niches, new industries and even challenging existing large companies through their innovations. These organisations can quickly scale up and reach global markets: just look at Facebook, Airbnb and Uber. Today innovation is the province of small and young companies, just as much as large and older companies. Indeed, start-ups in many ways find it easier to create and deploy an entrepreneurial culture, which is often stultified by the bureaucracy in larger or older rivals. A good example of this is the rivalry between McDonald's and Subway. Almost being a victim of its stunning six decades of success (1940–2000), McDonald's kept its offering largely the same for many years, having expanded globally to some 30 000 restaurant outlets and left positioning space for a start-up to enter the field with an innovative make-to-order, fresh baked, healthier offering. McDonald's has subsequently renewed its offering as well as having embarked on a strong innovation capability renewal initiative, but for a while, many observers would have argued that Subway 'stole McDonald's lunch' in terms of product leadership.

From the observations above, we can conclude that innovation is not a specialised or high-technology activity, but can be the province of all organisations, and everyone within them. It brings significant benefits, and threatens those who under-invest and underperform in innovation. In the twenty-first century, innovation is increasingly becoming a vital organisational capability.

CASE STUDY

RITZ CARLTON: INNOVATION IN TOP-FLIGHT HOTELS

Ritz Carlton has 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 are:

1 inspire vision
2 foster the right environment
3 stimulate ideas
4 test ideas.

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 has been shaped, managers then take steps to encourage the creation and development of those ideas. This is 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 put forward are tested and evaluated, which can be done through company developed evaluation matrices or other decision tools. According to Timmerman (2009), through the implementation of this four-step process (developed 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'.

For such new ideas, we have developed and described (see Chapter 4) 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.

Source: Timmerman, 2009

It's not about ideas. It's about making ideas happen.

—Scott Belsky, co-founder of Behance

Invention is not innovation

Usually, in terms of getting innovations to a point where they create value for stakeholders, one starts with ideas, of new or significantly enhanced products or services or processes, business models or a combination of these. However, there is a difference between ideation (having ideas that are hopefully valuable) and full innovation, which is the most difficult and challenging to

get right. To challenge this thinking we begin with the controversial assertion that 'Ideas are cheap'. Smart people are plentiful and smart people have lots of clever, potentially value-adding ideas. For example, people in universities, research institutes and think-tanks, as well as private inventors, come up with all sorts of weird and wonderful ideas. Does this on its own create value? Our answer is that only the potential for significant value is created in an idea, no matter how good it is. Ideas can strictly have commercial value and they can be bought and sold, or licensed for use, but their value as an idea is usually only a small fraction of what can be created when the idea is scaled up and brought to life at high volume. When Sony invented the Walkman portable cassette player, relatively little value was created through that pure first act of invention; however, when Sony was able to produce and sell 22 million Walkman units at high margins, then millions more later in the life cycle, some billions of dollars of value to Sony was created. If Sony had not been capable of scaling up the production and successfully marketing and selling this product at high volumes, would real value have been created just through the act of invention?

Following the success of Sony's Walkman, consider the compact disc that was invented by James Russell in 1965. Russell claimed intellectual property ownership of the compact disc through patenting it. The compact disc was first co-developed, then commercialised and launched into retail markets by Philips in 1980, and then along came Sony, with its background and reputation in Walkman portable sound reproduction players, manufacturing and quality systems, and its global brand, marketing and distribution expertise. Which of these entities—the inventor, the commercial pioneer or the ultimate mass-market commercialiser—received most of the value created through this radical new way of recording and playing back music and data? All three parties benefited from this successful invention, but while it was still just an invention, the benefits were small, and even when Philips further developed and launched it, the benefits were growing but not near full potential. Sony brought to this invention the marketing expertise, the Sony 'Discman' brand, the product quality assurance, and the manufacturing and distribution supply chain, which led to billions of dollars in value; and rightly, Sony appropriated much of the value, even though Sony was not the inventor or even the primary product developer.

Individual innovations versus a portfolio of innovations

Later in this book we will provide an outline of how to test and decide whether an idea or invention has potential commercial value as an innovation (see Chapter 4). Here we discuss how to manage not just single individual ideas and innovations, but to assemble a valuable portfolio of ideas into a development pipeline. These can include new offerings to the market, cost-reducing process enhancements, and changes to business structure or even a complete new business model. Business model innovation includes changes to the way a business is

set up and operates. Such innovations can be completely novel, as when Dell computers set up a 'make to order' system that allowed for customisation and a more efficient 'pull' supply chain than entrenched 'make to forecast' business models that 'pushed' product to markets. Amit and Zott (2012) suggest that business models can be innovated by adding new activities, such as through forward or backward integration, linking activities in new and different ways, or changing who conducts such business activities. They suggest that business model innovation can be stimulated by questions such as:

- How can new business model activities address new customer needs?
- What new activities will best serve these needs?
- How can such activities be linked in new value-adding ways?
- Who should conduct these activities and how should they be governed?
- What revenue models are possible?
- How will all stakeholders achieve a value creation increase?

While these questions are generic and do not give immediate leads or answers, they are a good starting point. Consider how companies such as Airbnb and Uber have created new business models by rethinking consumer needs for accommodation and transport, respectively, then finding innovative ways to provide these services. The original establishment of Federal Express can be similarly considered, when a basic delivery need was reconceptualised and a solution found that was 'outside the box'.

According to Nagji and Tuff (2012), the innovation portfolio is critical to innovation effectiveness,. They use the term 'total innovation', which involves having a clear innovation ambition, then balancing the elements of innovation efforts going into core, adjacent and transformational activities. They argue that a mix of 70 per cent core, 20 per cent adjacent and 10 per cent transformational innovation resources is how high performers balance their efforts, but they also note that returns on innovation effort come from the opposite proportions, namely 10 per cent core, 20 per cent adjacent and 70 per cent transformational. Nagji and Tuff point out that these proportions can and should vary between industry, competitive position and stage of development of the company. They also acknowledge that different skills and metrics are required for different categories of innovation. For example, core innovation and even adjacent innovation requires close analytical attention (that is, tightly managing the tests of an innovative idea; outlined in Chapter 4), whereas transformational innovation might require a more qualitative and imaginative approach, including people from multiple disciplines bringing disparate views to the innovation process (for a good example of transformational innovation, see the Diggerworks case study later in this book). Non-traditional innovative metrics might be useful in the transformational aspects of innovation; for example, Nagji and Tuff (2009) point out that for Google, the only performance metric and goal of transformational innovation is that the company learns from it!

Core innovation The improvement or renewal of elements of an organisation that are central to its success, such as its major product line.

Adjacent innovation Innovation of a related product, service or process to an existing innovation or process, or moving to a related new market, which usually creates value that is complementary or additional to existing value.

Transformational innovation Radical innovation, often disrupting existing products or processes and making large changes to the organisation's market offerings or processes, or its business model.

A caution has been issued by Gottfredsen and Aspinall (2005). In their article about innovation versus complexity, they point out that we must be careful in our innovation efforts to not overdo the complexity of an organisation's tasks. For example, the Mars Corporation pet food division, known as Uncle Ben's and later Mars Petcare, found that its innovation efforts in Australia led to it having an overly complex product range, of several hundred stock keeping units (SKUs), making manufacturing difficult and less than optimally efficient. Federal Express also faced issues with complexity and innovation. Federal Express was successful with its original supply chain design for moving parcels all over the USA because of the simplicity of its model: moving all parcels overnight through Memphis, Tennessee. The company came to grief when it applied this model to Europe because of the complexity that country border customs brought to its operations. This caused Federal Express to withdraw from Europe at great cost. It returned once cross-border European integration had advanced so that fast, clear and efficient overnight delivery now works with simplicity and speed.

Entrepreneurs do innovation, and more …

Having defined, illustrated and exemplified innovation in principle, let us now turn our attention to entrepreneurs: who are they and what do they do? To begin with, it is clear that entrepreneurs do things that are innovative; they do not just imitate existing products, services, processes and business models. Entrepreneurs find new ways to create value for stakeholders, and hopefully aim to profit from those activities. A key characteristic that differentiates many entrepreneurs from innovators within mature, established companies is that entrepreneurs are often also developing new businesses at the same time as they develop new products and services. This is the case particularly for start-ups, which by definition involves a business being created, from nothing, in order to promulgate and commercialise a new idea into a valuable innovation. The risks for entrepreneurs are often higher than for mature businesses, because mature businesses have a mainstream of operations in which they generate the cash flow for their innovation investments. If the ideas they try to commercialise fail during any period, they still have their mainstream base and they can try to innovate again in the next business cycle.

New-stream An organisation's new-stream is the unit within it that works on developing inventions and testing these for commercialisation and scale up.

In contrast, entrepreneurs do not have a mainstream funding source for the **new-stream** they are trying to build, and they often fail at the first hurdle because they have built a business around one single product or service. Entrepreneurs in start-ups often have little choice but to 'put all their eggs in one basket' when they are first starting up. They need courage, determination and single-mindedness, as well as large amounts of business acumen.

We hear about successful entrepreneurs such as Richard Branson and Steve Jobs, but we hear much less about the many entrepreneurs who tried and failed, often more than once, and hence did not become famous. We also hear about large mature businesses, yet many of these began as entrepreneurial ventures, such as those started by Henry Ford, Kiichiro Toyoda, Éleuthère Irénée du Pont, Alfred Bernhard Nobel and a host of others.

Entrepreneurs often attempt radical innovation, trying to disrupt whole markets, but this is highly risky. Kogan (see the Ruslan Kogan case study in this book) is an example of business that is disrupting retailing in Australia from electronics to grocery markets. Michael Treacy (2004) has pointed out the high risks of radical innovation, compared to the slow and steady path of multiple incremental innovations. Treacy argues that sometimes a radical innovation takes a company too far out front of the market, leading to too much market risk, and possibly also involving significant technical risk. We would argue that ultimately a portfolio approach should be taken, where the best set of innovations from a risk and return perspective are taken into consideration. Of course, working on incremental innovations does not preclude searching for and implementing radical innovations, and vice versa. Entrepreneurial start-ups may not have much choice other than to concentrate on only a small number of innovations, and be over-exposed to a single innovation. This is in contrast to large mature businesses such as the giant Procter & Gamble, which manages a balanced innovation portfolio based on the risk and return of innovations, individually and on aggregate.

Portfolio approach Can be taken by an organisation to measure and manage the aggregate strategy of a set of projects or initiatives.

If you're not a risk taker, you should get the hell out of business.

—Ray Kroc, founder of McDonald's

We should not underestimate the challenges that entrepreneurs, especially first-time start-up entrepreneurs, face when they try to build innovative ideas into businesses. Most fail. They have to create a legal structure and entity, set up systems of everything from accounting to human resources, raise and manage money and create a budget for their expenditure, make choices about technology, research the market and study their potential competitors, decide how they will manage their intellectual property, plan and execute the production and marketing of their offerings, and manage the expectations of a number of stakeholder groups, all while trying to progress their innovation through the development funnel. While most struggle to succeed in all these areas, and ultimately the statistics show that most do not commercially succeed, those who do make it, such as Steve Jobs, Bill Gates, Richard Branson and Mark Zuckerberg, make entrepreneurship a very attractive path to aspire to. In a later chapter of this book, we describe and discuss entrepreneurship in the context of both start-ups and within existing businesses in much more detail (see Chapter 8).

Innovation and competitive markets

There are many ways in which an organisation can compete, such as through superior performance in terms of cost, quality, delivery (speed or precision), flexibility or innovativeness. All these elements are possible means of creating competitive advantage. However, a single competitive advantage can be a fleeting thing, and almost never lasts for more than a few years, with some rare exceptions of companies that have been able to succeed through a single competitive strategy for decades.

Competitive advantage Defines the success factors for how an organisation achieves its goals, relative to its competitors, in markets, and can include elements such as low cost, superior quality or innovativeness.

Cost competitiveness can occur in any industry, especially where there is a distinctive lowest cost player. These companies offer mass-market products, at mass-market (low) prices, not at differentiated margins, yet they deliver value to customers, at a profit, through operational excellence that delivers them an efficiency dividend through low costs. These companies demonstrate lasting (multi-decades) cost advantages through their structural and systems advantages. National Australia Bank, for example, held the low-cost position in Australian banking in the 1980s and 1990s due to its strong balance sheet, which gave it the ability to borrow more cheaply than other banks, and its leaner operations; yet when it experienced some serious credit and foreign exchange problems after 2000 due to serious management missteps, the cost advantage was soon lost, as was much of its competitive advantage and share price premium. The bank's cost advantage was dissipated and so were its profit margins, and these have not been easy to recapture over the past 15 years.

For those running businesses in a high-cost country such as Australia, it is becoming increasingly difficult, and impossible in many industries, to be cost competitive with low-cost countries such as China, Vietnam, Cambodia, Thailand and India, where wages, energy, land, overheads, taxes and bureaucracy impose a much lower cost burden on overall operational efficiency. This is the principal reason whole industries have left Australia, including the textile, clothing and footwear industry, and, slated for 2017, the whole automotive manufacturing sector and its supply chain. It is also the reason why so many companies are offshoring call centres and data-processing operations, software coding, drafting, manufacturing and many other forms of value creation to lower-cost countries.

Value Created by and within organisations through offering consumers of its outputs (products and services) a series of benefits per unit of price charged for those outputs.

Since **value** is composed of benefits (to customers) divided by price, and price can be considered as 'cost plus margin', it is not an oversimplification to note that value and competitive advantage can only come from offering more benefits or lower prices than competitors. Furthermore, lower prices should be based on lower costs, unless the undesirable cutting of margins is the outcome. So it is important to consider benefits creation as well as costs. Hence, we next consider quality and services together.

While organisations in Australia and New Zealand used to operate with some advantages in quality and service relative to competitors in low-wage countries, these differences are being quickly eroded. In the manufacturing sector, even the best of sophisticated and luxury goods are now being sourced from China, at high levels of quality and often at much lower cost than if they were produced in Australia. A similar situation exists within the service sector: organisations with low costs in Asian countries may start with poor quality, but they quite quickly move up the quality capability curve. This happened in Japan in the 1970s and 1980s, followed by South Korea in the 1990s, and now China and others are quickly moving forward on quality. Information services from India and the Philippines are also outcompeting those from Australia in some sectors, where the perceived quality gap is closing fast.

When it comes to both delivery and flexibility, there are some advantages that local suppliers will always have, such as the local hairdresser (hair-cutting is unlikely to be offshored

for most people); however, many personal services such as dentistry, surgery and optometry are being offshored more frequently, as the overseas cost advantages overcome the locality or quality factor for some.

From an Australian (high-cost country) perspective, the cost disadvantage cannot be overcome in most basic manufacturing and some service sectors, while quality advantages are simultaneously eroding. Apart from some businesses that can only be delivered locally, such as unique tourism offers (e.g. Uluru), the remaining dimension for competitive advantage is innovation. Even tourism experiences, such as snorkelling at the Great Barrier Reef, have lower-cost offshore options such as snorkelling in Bali, Fiji or Thailand. So businesses must continuously differentiate the local offering from the lower-cost alternatives, and this means innovation. Entrepreneurs are increasingly needed, within existing organisations, and starting-up new organisations, to find new forms of value creation.

When it comes to innovation, the good news is that there is not a tilted playing field operating against high-cost countries: indeed, Australia's first world infrastructure, science and education base should provide advantages. With the right strategies, leadership and systems to promote and drive innovation within organisations, there is no reason why innovation cannot be a strong and lasting competitive weapon in Australia, New Zealand, Germany or anywhere it is correctly prioritised and managed. As already stated, innovation can act on all parts of an organisation, from the products and services offered to the market to its processes and business model. Hence, innovation can deliver advantages to both the benefits and the cost side of the value equation. Further, there is no limit to the potential of innovation, which makes it different in kind to cost and quality services. In the main there are ultimately diminishing returns on reducing costs and improving quality; for example, once defect rates are down below one part per million, there is not much further scope for this aspect of quality improvement. Similarly, once cost is squeezed to very low levels, waste is eliminated, productivity is high and low cost sources are activated, the scope for further 'direct squeeze' cost reductions diminishes. And if the cost advantage comes from outsourcing to low-wage countries, then what one firm does in this regard can be emulated by competitors, eroding relative advantage.

Innovation is not subject to diminishing returns like these. At least, not yet. Have we reached the limits of how the internet can be used for new and innovative purposes? Have we already implemented all the features, applications (apps) and benefits from mobile technologies? Has innovation in health care and medicines reached a plateau, where no further and new developments are expected? The answer is clearly an emphatic 'no'; indeed innovation appears to be accelerating in these and many other domains. This justifies our view that innovation should be considered the 'ultimate competitive weapon', and this is especially good news for those wanting to remain competitive despite the challenges posed by low-cost competitors in developing economies.

Innovation and operational excellence: Are they compatible?

Mainstream That part of an organisation which produces, markets and distributes the goods and services that customers require.

Most organisations, apart from pure start-ups, have a **mainstream** aspect of their operation, where they produce their goods or services. They take in inputs, add factors of production such as land, labour, methods and working capital, and value can be created through the production and sale of those offerings. In this mainstream, critical factors of importance are typically efficiency, quality and service delivery, and perhaps flexibility in terms of responsiveness. It is often important to run such mainstream operations in a 'lean' manner (see Chapter 8), and to use standard operating procedures for production and distribution. Once a mainstream is established and working well, then it is tempting to run it hard every day. For example, in an oil refinery, executives seek to achieve full capacity utilisation, and once it is running 'flat out', try not to change things and unsettle the stable equilibrium of the system. In Chapter 9 we will refer to this mainstream of activity as 'exploiting' existing assets, products and services.

Whereas a mainstream operation usually calls for stability and standardisation so as to maximally exploit its existing assets, innovation by its very nature requires change, and even trying things that may not work, seemingly in conflict with the philosophy and approach of standardised production. In Chapter 9 we refer to this as processes of 'exploring'. Many businesses struggle at least to some extent with the tension of the stability requirements of the mainstream, and the need to innovate/change/take risks. They point out that the invention process cannot be fully systematised or standardised, and there is some truth in this. However, once ideas have come into existence, then the bulk of the work that defines and differentiates successfully innovative firms from the rest of the pack can be systematised. The way that pharmaceutical companies such as GlaxoSmithKline, Pfizer and Merck take potential new medicines through development and testing phases lasting a decade or more is a highly structured and systematised process that leaves very little to chance in terms of process steps. Even so, most prototypes that they start testing do not end up in new pharmaceutical products on the market. These companies have rigorous tests in place, not just for the sake of safety and efficacy of the medicines, but for the commercial potential, manufacturability, marketability, financial viability, sustainability and other aspects of innovation that are vital for new product success.

Although operational excellence in the mainstream is usually thought of and implemented as repetitive manufacturing, service provision or perhaps processing work that tries to eliminate all forms of unnecessary variance, there is much to learn from this approach that can be adapted to the world of innovation. The key difference is that the mainstream does process work, such as processing insurance claims, mortgage applications, managing call centres or factories, whereas the new-stream environment entails managing innovations as projects. By definition, a new product development is only progressing if it starts work tomorrow in a further advanced state than it was in today. So how can we put discipline and standardisation into such a dynamic environment? This is where project management comes into play. Project management is a disciplined way to break down large initiatives (e.g. develop a cure for cancer,

or a new TV set design) into its constituent elements, develop budgets for these activities (of money and other resources), create schedules and milestones, accompany these with process sequencing specifications, and then assign individuals and teams with the responsibility to accomplish the tasks with thorough adherence to the plan. Project management provides the organising infrastructure so that managing change and developing innovations—taking ideas from invention to full commercialisation—can be done well, even accounting for the inherent uncertainty of innovation (see, for example, the Toray case study later in this book).

This high level of discipline can be applied to the management and governance of any individual innovation or entrepreneurial development, and also can be implemented across the organisation's whole portfolio of innovation projects. This is important from a strategic perspective, as it gives a view on not just effectively managing individual innovations, but on ensuring that over time the right set of projects are being invested in. If the aggregate picture is not effectively assembled, then even with good rigour and discipline at the individual level, it might be a case of 'doing the wrong projects, but doing them well'. Innovation at the enterprise level means choosing the right set of projects in the first place, as well as tightly managing each of them. A challenge here for most organisations is that over time, as innovation projects proceed, tough decisions may be required on the overall set of projects going forward. The aggregate view allows executives to make well-informed decisions about reallocating resources, killing off underperforming projects, ramping up others, or investing in higher levels of ideation. There are many benefits associated with closely and dynamically managing an active portfolio of investments, and adjusting this 'whole of new-stream' view so as to maximise the future mainstream potential of the organisation.

Australia's most successful biotechnology business, CSL (see the case study later in the book), provides a powerful exemplar in this regard. CSL continuously measures individual and aggregate prospects of its innovation development projects, and through doing so has become a global industry leader in blood plasma and related industries, introducing new market offerings through its mainstream, and creating tremendous amounts of value for its customers and shareholders. CSL executives realise that without its new-stream, its mainstream would soon fall behind the cutting edge in its industry, so the company allocates significant attention and resources to that new-stream 'funnel'.

This level of organisation with regard to innovation can be just as high and beneficial in an entrepreneurial start-up; it just does not need the formality of governance that a big company is likely to employ. Further, a start-up is likely to be engaged with a smaller set of initiatives, and possibly only one significant project, so the dynamic aggregation referred to above is not as relevant. However, the basic discipline, testing and evaluation, and preparedness to make even tough decisions to kill off a stream of work and not 'throw good money after bad', can be as important in a start-up as at the big end of town. After all start-ups are often short of resources, and entrepreneurs may have their house mortgaged, and loans from family and friends on the line in their business venture.

Much research has been conducted to attempt to discover why some companies can achieve sustained revenue growth through innovation, and why some are not successful in achieving this. A study completed by Kim and Mauborgne (1997) 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. 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, not letting its competitors set the parameters of its strategic thinking, CNN 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' (1997, p. 105).

Kim and Mauborgne suggested that 'competition should not be monitored as a benchmark in the strategy of innovation'. Instead, the objective of innovation should be 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, Diamantopolous & Kreuz, 2003). Many companies have been able to successfully adopt this philosophy by changing and altering existing 'rules of the game' in an industry and exploring 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 that saved on costs, promoted service quality to customers and increased revenues and profits. These were new process and business model innovations.

CASE STUDY

WOOLWORTHS: POINTS OF DIFFERENCE IN SUPERMARKET SHOPPING INNOVATION

Fierce competition across the global supermarket industry is driving changes to the supermarket shopping experience in many parts of the world. For example, the quest for differentiation in this highly competitive market has led Woolworths to develop several high-end specialty shops. For instance, at the Woolworths store in Sydney's Double Bay, shoppers can now enjoy an in-store pizza bar, barista, bakery and walk-in cheese room. These enhancements fit with the Woolworths' strategy of offering extended services that complement and fit with its existing offering and infrastructure. These trials will be evaluated, and consumers can expect to see such additional services rolled out more broadly once refined and proven to be successful.

Source: Fry, 2014

Breakthroughs and discontinuities

Skarzynski and Gibson (2008) believe 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 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 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 trade-offs and contradictions in the existing environment. For example, the inefficiency of the standard internal combustion engine in vehicles (only about 30 per cent of the energy in petroleum reaches the vehicles' wheels to create motion), and the unacceptable greenhouse gas contribution of these, has been a constraint for 100 years, with only minor improvements occurring over that time. There are trade-offs in engine and vehicle design, between acceleration rate and power on one hand, and fuel efficiency on the other. To break through this frontier of trade-offs, a radical 'outside the square' solution has occurred, namely the petrol–electric hybrid, which essentially doubles fuel efficiency in city traffic through recapturing and storing as electrical energy some of the previously wasted energy. And innovation is never-ending, so the next, even better generation of engine technology is rapidly developing. Once the fully battery-powered car is achieved, the electricity can be generated anywhere by any feasible means: coal, wind, nuclear, gas or hydroelectric, and transmitted to the car's battery system using any existing electricity transmission infrastructure. So the need for using dwindling and expensive and environmentally damaging liquid petroleum in many millions of inefficient car engines can be eliminated. The simple petrol engine, a breakthrough of 100 years ago, will thus be rendered essentially redundant by breaking through the constraints and contradictions of efficiency and pollution that locked it in.

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 (e.g. 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; successful businesses need to do more than simply react. Innovation will require proactive approaches to customer needs, technical matters and internal business systems and culture.

Skarzynski and Gibson (2008) define discontinuity as '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

Discontinuity A pattern of trends that has the potential to dramatically change competitive rules or industry structures, opening up substantial new opportunities.

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 its mobile phones, thereby gaining competitive advantage and huge youth appeal. This was 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 innovative company in the world. Following the success of its brand in three-dimensional (3D) entertainment, it realised it had exceptional skills in set design, costumes, story-telling and performance arts and decided to branch out into live theatre production. *Beauty and the Beast* and *The Lion King* are now among the most successful live musicals in the world. Disney's approach embodies systematic thinking about capabilities and their exploitation, in creating and meeting new market needs and opportunities, and much as for tangible products such as the fully electric car, its entertainment services must pass the eight tests of a new innovation (see Chapter 4) with flying colours.

Radical innovators and entrepreneurs are also able to understand and feel the unvoiced needs of customers, even those not perceived yet by the customers themselves. 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 people did not yet know they had (Skarzynski & Gibson, 2008). Consumers 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, people lined up to buy it at premium prices. More recently, the Apple iWatch has proven to be a similar type of product.

The unique challenges and benefits of innovation

Because innovation means investing in a new-stream of activities (exploration), and being able to mainstream those innovative ideas (exploitation), it presents unique challenges and benefits. The challenges are many, in particular the inherent uncertainty involved, as well as the time required for payback, or recovering investment into trying new things. This is quite extreme in the pharmaceutical industry, where the uncertainty is high and the time to pay back is long. Let's use this as an example. We have worked with a pharmaceutical firm on developing oncology drugs, in which every year it starts with a few hundred newly developed complex molecules, testing them for basic properties and evaluating their medical efficacy, side effects, manufacturability and many other aspects. A decade or so later, having gone through a large number of internal tests, just a few from that batch will go through a rigorous regulatory testing regime, in the hope of achieving approval to spend even more money on manufacturing and marketing the medicine. Consider the low success rate facing any single such molecule at the point of initial investment, where the company knows it will probably be 10 to 15 years until the

first revenue will materialise. Indeed, given the highly uncertain prospects and costs of that revenue stream, there is a distinct possibility that nothing marketable at all will come from that batch of investment.

All that risk and cost, as well as the long payback period (imagine the discounted cash flow ramifications of investing in year 1 with first revenue around year 15), means that margins and profits for those that do succeed must be significantly high to make it worthwhile doing such research and development. Next time we pay $50 for a bottle of pills that looks as if it contains just a few cents' worth of chemicals, we should recognise what we are really paying for: the decade-plus of investment, the work of researchers, the molecules that failed to get to market at all, and the cost of capital tied up in those efforts.

Pharmaceuticals is a fairly extreme case of both risks and therefore returns, but it has something in common with almost all innovations and new-stream investments. There is no guarantee that any innovation will work, and this means that managers must bring to the table a 'tolerance of risk'. This means accepting that not everything that we try and explore will work, which is a 'different in nature' way to how mainstream operators think and work, where exploitative stability, standard operations and predictability are more often the norm.

While there are significant risks and costs of investing in innovation, there are some benefits. At subsistence level is the point that one must 'innovate or die'. In other words, ultimately it is only innovation that will stop an organisation from withering on the vine. Furthermore, there are many positive business and organisational benefits to being successful at innovation. One major benefit is that innovation of products and services gives an advantage in the market of making those offerings more attractive to customers: this can be either taken as a profit premium through price differentiation, or used to drive increasing volume and market share. When innovative benefits can be clearly articulated and delivered to customers, they will come and buy, and they might pay a premium. Apple's products are great exemplars of this, in that they are premium priced and achieve high sales volumes due to their innovative design features. Apple's shareholders have done very well from all this.

A second benefit comes from innovative processes, technical advantages in operations or production and related methods (such as distribution, procurement, or any aspect of supply chain marketing or running an organisation more effectively). These can deliver advantages in cost, delivery speed or service, which again might attract a combination of premium prices or volume increases.

A third benefit of business innovation is that new business models, such as Uber's share car, Google's search engine, Facebook's social media and community services, Dell's direct supply model, or FedEx's hub and spoke overnight service, when first introduced to their markets, can drive growth and revenue in new ways. Business model innovations can create lower costs or improved customer benefits, or both.

A fourth benefit is the motivational stimulus for staff and the ability to win the 'war for talent' that comes from being an innovative organisation. Innovative organisations need smart,

creative people. Nearly all people are naturally curious and attracted to innovativeness, and hence this capability and profile (see also Chapter 8) can be used to attract and retain motivated and creative staff. Over one million people per year are reported to send their resumés to Google, chasing just a few thousand jobs, and allowing Google to have its pick of the best people in the industry!

CASE STUDY

BYRON GROUP: PROBLEM SOLVING DRIVES INNOVATION

The Byron Group, specialists in manufacturing and fitting out of emergency vehicles, prides itself on its strategic approach to innovation, which has evolved over the past 20 years of the company's existence. Its approach to innovation involves problem-solving processes to develop innovative solutions and add value for customers.

The Byron Group places a strong emphasis on customer relationships; and working closely with customers to ensure the best possible solutions are achieved. For instance, it has recently developed an automated loading system (ALS) stretcher for ambulances. This powered stretcher, made from carbon fibre, alleviates a major occupational health and safety issue by preventing the back injuries that often afflict paramedics. At the push of a button, the stretcher moves up and down and the patient can be moved without human lifting efforts.

In addition to creative problem solving, the Byron Group's factory floor can easily be transformed to incorporate new machines or production line processes. This means production can move quickly from high-tech vehicles to running a line of low-tech, high-volume products and back again with little disruption. Prototypes assist in the problem-solving and production processes, and use of prototyping technology means that more innovative products can be created faster and at less cost to the customer. The Byron Group's approach to innovation has allowed it to remain vibrant and competitive in the challenging landscape of manufacturing in Australia.

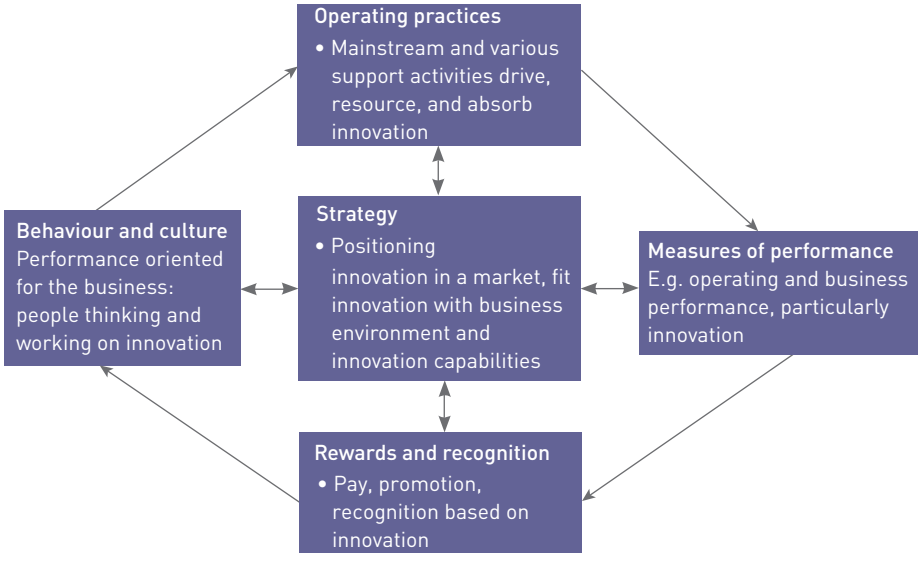
Source: Business Connect, 2014

SYSTEMATIC INNOVATION CAPABILITY

It is clearly possible to implement innovation effectively, and to do so in a systematic manner. There are firms both in Australia and abroad that manage innovation in a holistic and systematic way, and here we will examine how they achieve these high levels of innovation capability. Our

approach is to examine some key building blocks of innovation, as set out in the overview in Figure 1.1. We examined earlier how successful firms drive their activities in each of these areas, how each of the building blocks are connected, and how these connections can be exploited to achieve a powerful, company-wide innovation focus.

FIGURE 1.1 SYSTEMATIC INNOVATION CAPABILITY REQUIRES A FOCUS ON INNOVATION IN EVERY ONE OF THE KEY BUILDING BLOCKS AND THE CONNECTIONS BETWEEN THEM



First we will define each of the building blocks in Figure 1.1 and comment on some of the connections in this organisational 'innovation system'.

Strategy of innovation

A precursor for a **systematic innovation capability** is to consciously and purposively engage in an innovation strategy (see Chapter 2). Only then will it achieve enough resources, priorities and company-wide attention. Strategy is usually best made plain and explicit so that staff and all other 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 at 3M in terms of product and service innovation that leads to revenue growth, and similarly at Toyota in terms of process innovation that brings increased productivity and quality.

Systematic innovation capability The set of organisational characteristics that allow an organisation to repeatedly bring new offerings to market or scale up new processes or business models, including creativity, leadership elements and innovation processes.

It is possible to recognise the extent to which innovation is central to a business's 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. Core to this strategy will be scoping statements of the 'what' of innovation as well as how innovation activity will fit within the rest of the organisation's overall strategy and plans. A further key element involves considering just how much will be invested in innovation/new-stream work, which can range from a very small proportion of overall budget to the lion's share. For a mature organisation, innovation efforts might comprise up to 20 per cent of effort and budget, or be a lot less. A start-up, which literally does not (yet) have a mainstream, is doing 100 per cent pure new-stream work, so its innovation strategy and work comprises its complete focus and innovation effort.

Operating practices and resources: The mainstream's role

Risk taking Involves making resource allocation decisions that accept uncertain outcomes.

Operating practices (see Figure 1.1), that is, 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'. Here we should consider that the dividing line between new-stream and mainstream activities can indeed be a fuzzy one, in which crossovers and collaborations are constantly occurring between those producing today's offering, and those working on next-generation offerings.

Problem-solving activities encourage creativity and new ideas within and across new-stream and mainstream work processes. Ideas for improvement of processes and customer value creation can come bubbling up from the shop floor of the company's new-stream or mainstream, and be accepted and valued as such at the top floor. Similarly, the board and senior managers would lead with careful risk taking and willingness to experiment and think and work 'outside the square'. The resources that must be committed to convert strategic intent and talk into innovation deeds is evident in firms like Toyota, which even in the challenging global financial crisis (2007–08), continued to commit substantial resources to new product development, process improvement and related elements of progressing innovations. These resources 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.

A further property of successful innovator businesses is the ability of the mainstream to absorb new ways of doing things (processes and technologies), and not just to create the financial surplus to fund their development. An open-minded approach to striving for long-term progress, which is balanced against day-to-day pressure, is a prerequisite for this absorptive capability.

Measures of performance

Here the old adage of 'what gets measured gets done' applies. A critical measure of performance (see Figure 1.1) is the progress and achievement in creating value through innovation. Further, innovation inputs should 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 should be assessed and 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. Without the ability to measure innovation and the intent to reach targets, motivation will soon wane.

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

- I*nput measures of innovation* concerns the resources that are applied, such as the ratio of R&D specialists to total staff numbers. 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.
- I*nnovation 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.
- I*nnovation 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.

To manage innovation well, and to systematically drive it, 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.

Rewards and recognition

In systematically innovative companies we would expect to see staff explicitly recognised and rewarded (see Figure 1.1) for their innovation contributions. Such rewards may be monetary or 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: 'What gets measured gets done' can be extended to 'What gets measured and rewarded or recognised gets done, hard!'

Gustavo Manso, from MIT's Sloan School of Management, conducted considerable research looking at compensation and its relation to innovation outcomes, and reported that 'compensation schemes that tolerate early failure and reward long-term success promote

innovation' (Manso, 2009). 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, 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 process innovation and continuous improvement) is due partly to the Japanese-style system of employment and compensation. Their research found that employment and compensation systems deserve a top spot on the list of attributes that matter for innovation. For the rank and file staff throughout an organisation, a key question related to innovation performance is: do incentive systems help? Basically, will most people strive harder when there are monetary outcomes, benefits, pride through recognition, or something else in it for themselves? Quinn and Rivoli 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, where there is a relatively high fixed wage that is not linked to the company's performance, will tend to contain anti-innovative incentives. However, the study also found that the system that is both most beneficial to firms and employees is dependent on market circumstances. For example, the Japanese compensation system, which generally has a low fixed wage and includes a bonus that is largely dependent on the company's success, 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 & Rivoli, 1991). For those interested in innovative industries and in the innovative segments of markets, it would seem that incentive systems have the potential to be an effective means of stimulating innovation.

Behaviour and culture

Finally, to close the loop on innovation (see Figure 1.1), we should always remember that it is not machines or computers that do innovation, but people. Once the business measures of innovation are in place, based on strategies and operating resources focused 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 entrepreneurial action and success. An **innovation culture** can be created, in which it becomes second nature for employees to creatively attempt to find innovative solutions to challenges, to constantly strive for continuous improvement and innovation, and to know how to evaluate risk and return of new activities. In such firms, innovation becomes embedded as

Innovation culture The set of acceptable norms of behaviour in an organisation that are focused on creating new sources of value and benefit.

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 capability; however, even if it is far away on the horizon, it represents a worthwhile long-term goal, and we propose that the journey towards it should be highly value creating and satisfying in itself.

Companies which are extremely 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, a conservative management team had run Taco Bell in the early 1970s, 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 got Taco Bell moving forward and being innovative (Nevens, Summe & Uttal, 1990).

To nurture and grow a culture that 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. Further, rewards and recognition for innovation should be clearly communicated so as to energise the organisation (Braganza, 2009; see also Figure 1.1). Employees at all levels know, through their training and practices, of the tests of an innovative idea (shown in Chapter 4) that they can apply to their ideas. They know that an innovation idea will need to be scalable, marketable, technically capable, valuable to consumers, profitable and more!

Hewlett Packard (HP) 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 that 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 allowing their staff to develop ideas. 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, a Minneapolis-based food manufacturer, believes that while a relentless commitment to innovation is necessary, flawless execution is mandatory in order to develop, successfully implement and sustain new initiatives. Ten years ago, General Mills began to benchmark leading organisations around the world, both within and 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 three hours. The target was to reduce the 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.

The leadership factor in innovation

One key element, strategically vital to the achievement of systematic innovation, is not shown on Figure 1.1, and that is the leadership factor. It is absent from Figure 1.1 because to include it as a single building block anywhere on such a diagram does not do justice to the leadership element, which is the glue that holds the whole structure together. Leadership of innovation must pervasively construct and drive all elements of the Figure 1.1 system, including all the building blocks of:

- *Leading the setting where innovation strategy is developed and implemented*: Priorities and plans come from the senior ranks of organisations, where the ultimate decision-making responsibility lies. Just how much priority will be given to innovations is a matter of senior executive strategy making, because such decisions must be made by those responsible for the 'big picture' of the organisation within the industry, market and economy. A key strategic decision will be in deciding what the innovation budget will be focused on, and there are usually more opportunity areas than there are resources.
- *Leading in new-stream resourcing and absorbing innovation into the mainstream*: Senior executives have an important role to play in setting budgets for the new-stream of activities, as well as mainstream priorities and performance. The allocation of a proportion of profits to resource next generation innovations, radical and incremental, is a matter of strategy. The management of the portfolio of innovations, and choices about their individual and collective risk and return, are decisions to be made by an organisation's leaders. Decisions of what to mainstream, what to spin off and what to kill off are also the responsibility of high-level leaders, and will often be made at board level.
- *Leading in setting and verifying innovation measures*: As referred to above, measurement drives behaviour (people 'do what is inspected'), so a key decision is how (not whether) innovation will be measured. If leaders want to manage the balance between radical and incremental innovations, then an indicator variable of this ratio can be defined and measured. Similarly, if a strategic priority is cost reduction through process innovation, then this can and should be measured as a KPI. Most usually where innovation is a weapon for achieving profitable growth, then sales ratios from new products/services, and their profit margins, should be important KPIs. Leaders are responsible for setting strategy, as described above, then closing the responsibility loop via measuring progress and performance of strategy implementation and achievement.
- *Leading the recognition and rewards of innovation contributors*: Employees watch their leaders for symbols and signals of what is important in organisations. Through their actions, or inactions,

leaders will influence employees forming views and concluding whether innovation is encouraged, and leaders can use formal and informal ways to motivate innovation. Easiest and cheapest for leaders is to recognise, show appreciation, provide feedback about the achievements and benefits of employees' innovation efforts and accomplishments. A sincere 'thank you' and pat on the back is known by experienced managers to have a large benefit to cost ratio, and encourages large amounts of discretionary work effort towards achieving innovation outcomes, so this is perhaps paramount for leaders to work hard at. If leaders do not provide positive feedback and appreciation for those who innovate, motivation will fall away.

Some organisations include innovation activities or outcomes in their formal employee performance appraisal systems and criteria. This is another powerful lever of motivation, and can be fully explicit in such systems. When rewards, monetary or non-monetary, are provided, then employee attention is gained in a new and powerful way. Leaders can set up such reward systems to add to motivation and energy in stimulating innovation work.

- *Leading the behaviour and culture of innovation*: When senior leaders set up the budgetary resources, measures and rewards, and strategise about innovation, there is one remaining and powerful driver they can contribute (as in Figure 1.1): namely to lead by example in role modelling innovation within their own strategic and leadership domain. At board level, directors can be doing innovative things, or provide encouragement for innovation. Similarly, executives can be seen as welcoming and even driving positive change, rather than resisting it. Executives can lead by actively showing interest and getting involved with innovation projects, monitoring their development, and adding value through advising and contributing to problem solving. They will also send signals through their attitude towards risk taking: risk cannot be totally avoided, nor should it be mismanaged and overly or easily accepted, so senior leaders can add value in this domain in guiding this aspect of culture and behaviour.

  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.

To summarise, leadership of innovation is vital in order for organisational innovation to succeed and be sustained, from strategy, through managing innovation across each of the building blocks (Figure 1.1), and understanding how these elements of the innovation system can be combined to achieve the best overall outcome.

People: Who should execute creativity and innovation?

Participation in innovation ideation and project development works best when as many as possible of an organisation's employees are actively involved. Everybody is capable of having ideas, and with some training, they can be focused on being creative, knowing at least the rudiments of the business tests of innovation (described in Chapter 4), developing some teamwork and creativity skills, and then being more effective problem solvers and innovators. With systems in place to encourage and capture innovative ideas, it is possible to get as many as one innovative idea per employee per month to be brought into creation. Of course, some of these will be impractical, some will not be value creating and some will fail one or more of the core tests. Further, many will be minor in their nature and impact, but within the set of ideas created by a stimulated and skilled workforce, there will be some few small diamonds, and perhaps even a few larger diamonds. The innovative organisation must provide employees with a system whereby their ideas can be evaluated, and where worthwhile ideas can be developed and absorbed into the mainstream to drive new or enhanced forms of value creation.

Microsoft has implemented 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 'Ts' that reflect levels of competence and creativity in three areas: business, experience and technology.

In both summarising and expressing best practice, we draw here on Kanter's (2006) overview of innovation strategy and practices, in which she pointed out that:

- incremental innovations can aggregate to have a significant impact, and reliance on big breakthroughs is not optimal
- innovation should not be focused only on products, but any activity can be the subject of innovation
- a portfolio approach works best, of some shorter-term win projects and some bigger, longer-term investments
- innovation can be killed by too tight a set of control systems: people need to be able to use initiative, and be rewarded for doing so, rather than only following protocols
- innovations need to be connected to the mainstream business, via people
- major innovations may need to disrupt an organisation's existing business processes and capacity
- strong leadership of innovation activities is a requirement for success
- collaboration and team continuity are key success factors in innovation project developments

- innovations can and should come from anywhere in the organisation, such as 3M Post-it notes that came from a low-level work process (Kanter, 2006)
- creativity and innovation can be stimulated purposely, such as when IBM ran a three-day innovation festival, in which 140 000 people from 104 countries contributed some 37 000 ideas, and supported these with $100 million of resources.

THE STATE OF INNOVATION AND ENTREPRENEURSHIP IN AUSTRALIA

Innovation drives growth and long-term business and organisational sustainability. In Australia, innovation is widely regarded as a key to generating economic and social prosperity in the modern global environment, as well as a means of gaining competitive advantage both at home and abroad. There is much interest from both business and government in the potential of innovation to increase growth through increased productivity. There is a lot of talk, and many studies are conducted. Yet Australia ranks only 17th in the world in the 2014 Global Innovation Index. Countries as diverse as Singapore, Israel and the USA rank much higher in their innovativeness (Dutta, Lanvin & Wunsch-Vincent, 2014).

Even the Australian government concedes that the innovation performance of Australian businesses is poor by international standards (Government of Australia, 2013). Recent Australian government and industry reports point to a number of challenges to achieving higher levels of innovation, including the lack of a skilled workforce, poor management capability and lack of an innovation culture that relegates Australia to the position of a 'fast-follower' rather than a world leader in business innovation, particularly in terms of new-to-the-world innovations. Coupled with a lack of innovation funding due to high costs of development and implementation, innovation in Australia faces serious challenges.

The seminal 2008 Cutler Report, 'Venturous Australia', provided a review of the national innovation system and urged a major rethink about Australia's innovation policy. The report called for a proactive response to Australia's lagging productivity growth, and proposed that new approaches to innovation are a way to stimulate productivity and economic growth. One of the significant achievements of the Cutler Report was to redirect attention from supply-side aspects of innovation such as research and development (R&D), scientific experimentation and discovery, as well as commercialisation of research to more demand-side innovation such as the means by which organisations use knowledge and ideas to create new markets and meet customer needs. The report depicts innovation as a dynamic, evolving, learning process focused on knowledge production, knowledge application and knowledge diffusion. Knowledge production relies on creativity and problem solving, while knowledge application

involves entrepreneurship. Knowledge diffusion is related to higher levels of productivity and competitive advantage.

The Cutler Report provided the catalyst for the huge level of interest in managerial and organisational forms of innovation seen in Australia today. Cutler's vision included the need for much higher levels of entrepreneurial skill, as well as capabilities such as human resource management, business analysis and relationship management at the enterprise level. This established a focus in government policy on building both innovation capacity and performance in Australian organisations. Yet Australia still struggles to achieve higher and more consistent innovation rankings on a global level.

The Cutler Report recognised that innovation involves more than just scientific research or commercialisation of ideas. In order to achieve productivity and grow wealth in a knowledge economy, Australia needs to grow human capital in the form of knowledge skills and capabilities. This knowledge capital is fundamental to innovation, and innovation needs to be encouraged and embedded across business enterprises, public sector organisations and not-for-profit organisations alike. The Cutler Report also recognised the power of collaboration in a knowledge-driven landscape—collaboration to fuel innovation, transform organisations and achieve competitive advantage. As such, the report recommended improvements to venture capital investment to support and grow innovation in Australia.

Knowledge capital The asset stock of expertise and knowhow which can be used to create value through innovation, be it technical, managerial or marketing knowledge.

A 2014 report by McKinsey Australia stressed that Australia needs to raise its international economic competitiveness so as to stimulate economic growth and ensure long-term prosperity (Lydon, Dyer & Bradley, 2014). In order to achieve this, Australia must foster greater levels of innovation across the economy. Innovation can open up the economy, increase competitiveness and productivity, provide access to new markets and create new jobs. Only innovative Australian businesses that can make the most of global market conditions and global supply chains will be successful and prosper.

According to the McKinsey report, in order to maximise the potential of innovation, Australia should focus on industry sectors and job types where it can generate success (Lydon, Dyer & Bradley, 2014). Australia's global competitiveness can be improved by attracting more foreign investment and skilled immigrants through innovation and harnessing technology and learning. Jobs involving more complex interactions and judgments, such as knowledge-based work, are more likely to contribute to future growth. Increasingly sophisticated value chains, particularly in emerging economies, have changed the competitive landscape. Australia can take advantage of these changes if it recognises that opportunity lies in contributing knowledge and innovation no matter where the demand is located, across segments of the supply chain or production lines that may be dispersed over many different locations (Lydon, Dyer & Bradley, 2014). Australia's competitive advantage in the future lies in its highly capable and educated workforce and their ability to deliver innovation both at home and in an increasingly global marketplace.

In order to deliver this type of innovation, the Business Council of Australia, in two recent reports, advises that Australia must do away with restrictive government policy and regulations

that hinder efforts to create an innovative economy (Business Council of Australia, 2014a, b). Moreover, drawing on the potential of its human capital, the labour market needs to demonstrate flexibility and agility in a rapidly changing global environment. By embracing change, there is a better chance for Australia to develop the skills and capabilities in its individuals, universities, research organisations and businesses that will deliver innovation to support a sustainable and prosperous future.

A vibrant and burgeoning knowledge sector is needed to support innovation. According to StartupAUS (2014), Australia is positioned to make the transition from an economy based on resources, primary industries and domestically focused traditional businesses to one based on high-growth knowledge intensive businesses that can compete globally. Australia has underinvested in high-tech industries in the past and has one of the lowest rates of start-up formation, as well as one of the lowest rates of venture capital investment in the world. A 2013 World Economic Forum report claims that the start-up ecosystem in Australia lags behind other developed nations due to a lack of focus on entrepreneurship education, limited engagement of industry with universities and a lack of supportive culture for entrepreneurs (World Economic Forum, 2013).

But the news is not all bad—according to StartupAUS, the start-up sector has seen much increased activity over the last three years, including growth in accelerator programs, increased awareness of start-ups and greater media interest (StartupAUS, 2014). These positive indicators may all contribute to higher levels of innovation, but more proactive steps need to be taken. A 2014 PricewaterhouseCoopers study commissioned by Google predicts that high-growth tech companies could contribute 4 per cent of gross domestic product (GDP), or $109 billion, and add 540 000 jobs to the Australian economy by 2033 from a base of approximately 0.02 per cent of GDP today (PwC Australia, 2014).

In its 2014 report, StartupAUS provides an overview of the various elements that make up a successful start-up ecosystem. These elements include a proactive entrepreneurial culture, advice from experienced entrepreneurs, as well as role modelling and sharing success stories. A collaborative business culture and a supportive regulatory environment also provide a foundation for start-up success. The availability of capital, good technical infrastructure and a tolerance for risk complete the loop.

Microsoft's recent report, *Joined Up Innovation* (Microsoft Australia, 2014), suggests that innovation is not just about start-ups. Innovation should occur in all types of businesses and government organisations. As the report title suggests, a focus on interconnections in the innovation ecosystem—such as relationships between individuals and organisations across the innovation value chain—may hold the key to greater levels of innovation capacity. This involves reinventing the way organisations work by empowering staff and using networks and collaborative models. Similarly, the Australian Workforce and Productivity Agency recognises the importance of positioning the right skills in the right place at the right time in order to maximise innovation efforts and achieve greater productivity (Australian Workforce and

Productivity Agency, 2013). However, these skills must be managed and deployed in such a way that their full potential is realised.

Innovation is complex, and innovation capability is a valuable strategic resource, hence the great interest in innovation across government, private and public enterprise, as well as not-for-profit organisations. There are many stakeholders in the process of innovation and, increasingly, collaboration between stakeholders and across sectors is considered fundamental to the innovation process. Indeed, the theme of the Global Innovation Index Report for 2014 is the human factor in innovation, which it considers to be a fundamental factor in achieving innovation. Its study recognises the complexity associated with the role of individuals and teams in the innovation process, and the challenges involved in managing and nurturing the human aspects of innovation. The human contribution may be elusive, but includes elements such as creativity, critical and lateral thinking, as well as an entrepreneurial focus.

As noted earlier, Australia does not achieve a high ranking (17th) on the Global Innovation Index (Dutta, Lanvin & Wunsch-Vincent, 2014). This index provides innovation rankings for countries based on a number of factors, including strength of institutions; human capital and research capacity; information and communications technology (ICT) infrastructure; market sophistication; business sophistication; knowledge and technology outputs and creative outputs. A closer inspection of these performance factors for Australia reveals that the two lowest performing categories are knowledge and technology outputs on the one hand, and business sophistication on the other hand. By far the lowest category is that of knowledge and technology, including the capacity for knowledge creation, the impact of that knowledge and the strength of knowledge diffusion. Clearly, Australia needs to lift its game in this area, as knowledge is inextricably entwined with the process of innovation—without knowledge, there can be no innovation.

The second-lowest performance category concerns the level of business sophistication in Australia in terms of the relative percentage of knowledge-intensive work to other, more traditional forms of job roles. This category also looks at the strength of innovation linkages, such as the amount of university/industry collaboration, and the degree of knowledge absorption. Again, this is an area where a lot of improvements need to be made. Closely related to knowledge management, creative outputs and the degree of intangible assets also show substandard performance levels in comparison to the top performers in the Global Innovation Index rankings.

On a more positive note, the 'institutional factor' achieves the highest score overall. This pertains to various aspects of the political environment and political stability, the regulatory environment, as well as the business environment, including the ease of starting a business. Compared to many countries around the world, Australia has distinct advantages in these areas. The next step is to capitalise on some of these strengths in order to improve overall innovativeness. The degree of market sophistication in Australia also ranks highly, along with human capital and research and infrastructure, particularly ICT.

An example of the opportunity in Australia to be more systematic in developing innovation capability is in the nascent sports technology sector: this is a potentially large and growing area of innovation for sports participants at the amateur and professional level, and for spectating, including everything from sports physiology and performance management, sports equipment, nutrition and fitness, and sports presentation via new media (see the sports technology in Australia case study later in this book).

Australian Innovation System Report 2013

The Australian Innovation System Report (2013) provides a comprehensive overview of the Australian innovation system. A major theme in the report is the rise of Asia and the potential comparative advantages that could flow to Australia through greater levels of innovation and developing better knowledge of Asian markets. The relative strength of any national innovation system is to deliver productivity gains, and the social and environmental benefits that can lead to a better standard of living. While Australia enjoys a high standard of living and ranks highly in terms of Organisation for Economic Co-operation and Development (OECD) figures on GDP per capita and GDP per hour worked, comparison in terms of innovation capacity provide a glimpse into the state of the Australian national innovation system. Sectoral, regional and business-related data indicates that the main types of businesses trying to capitalise on the growth of Asian markets through innovation are mostly made up of large organisations in mining and primary industries such as agriculture. Education services also represent a large segment geared towards the Asian market. Yet overall, innovation capacity in Australia could be significantly strengthened, particularly through the participation of more small and medium enterprises (SMEs). As the report suggests, new-to-the world innovation is essential in order to compete in markets where high-value goods and services are a priority. Innovation also needs to be driven by linking business with science and engineering, as well as encouraging higher levels of business-industry research collaboration (Government of Australia, 2013, 2014).

In comparison to businesses that don't innovate, innovative Australian businesses that encourage collaboration with research organisations are 242 per cent more likely to report increases in productivity. Despite this (and other benefits to training and exports), Australia's overall levels of collaborative business innovation and business-to-research collaboration on innovation continue to compare poorly with other OECD countries. Other obstacles include the need for improved business culture and management capacity, better networks and infrastructure to maximise the flow and exchange of resources and ideas. In order to respond to these challenges, some Australian businesses are proactively incorporating high value-added services as part of their existing offerings. Data from the AIS report shows the percentage of innovation-active businesses in Australia reached its highest recorded value of 46.6 per cent in 2011–12. Other data indicates that most types of innovation are incremental in nature,

with new-to-the-world innovations comprising only a small percentage of innovation overall (Government of Australia, 2013).

Data in the report also indicates that Australia still relies heavily on the US and Europe for sources of ideas, investment, technology and innovation. Using global comparisons, the report suggests that Australia's innovation system does not appear to be as efficient as that of high-performing innovation systems in other countries. However, the environment for business innovation and entrepreneurship is very well regarded internationally, and overall the Australian population is highly qualified, with excellent economic conditions and a relatively high level of research output and quality. The report emphasises the importance of a high performing national innovation system in order to respond to rapid changes in the global marketplace, yet the Australian innovation system generates only 3 per cent of world knowledge, meaning that the economy relies on innovations generated elsewhere. This means that the majority of Australian businesses are modifiers and adopters of innovation and technology, rather than generating new-to-the world or breakthrough innovations.

While Australia's national innovation system is not ranked among the world's best, according to the AIS figures, Australia performs well in terms of the conditions supporting entrepreneurship and the dynamics of entrepreneurs, and Australia's rates of entrepreneurship are ranked within the OECD top five. Moreover, support for those wishing to become entrepreneurs is high. The biggest obstacle to Australian entrepreneurship appears to be barriers to competition. The AIS research reveals that Australians are more likely to become entrepreneurs than people in most other innovation-driven economies. Typically, start-up businesses display a central focus on technology in their products/services and 'work smart', leveraging their labour input in order to scale rapidly. The highest range of revenue per annum for start-up businesses is A$5 million, which is substantial. See also the case study in this book on ANCA, an Australian company showing strong innovation in machinery design and production.

THE STATE OF ENTERPRISE LEVEL INNOVATION PRACTICES IN AUSTRALIA

A recent survey conducted of over 2000 managers (members of the Australian Institute of Management) highlighted a number of key factors that relate to innovation outcomes for their organisations (Samson & Gloet, 2013). In Chapter 11, we will use that data to demonstrate the various categories of business and management practice that relate to the sub-themes of innovation, in terms of 'what works' for 'high innovation' versus 'low innovation' organisations. For this purpose, we composed an aggregate of nine measures of innovation outcomes, including number of new products/services, revenue growth ratios from new products services, and others, then defined the high innovation (HI) organisations as the top quartile (top 25 per cent)

performers, and low innovation (LI) as the lowest (bottom 25 per cent) innovation performers. The differences in the inputs and practices of those high and low performing groups were strong and significant, particularly in areas of:

1. *Leadership of innovation*: HI organisations expressed a much stronger executive role modelling and prioritisation of innovation and internal entrepreneurship within their firms as led by their board members and senior executives.
2. *Strategising for innovation*: Highly innovative organisations had stronger and more explicit innovation strategy statements.
3. *Resources allocated for innovation*: HI organisations devoted significantly more money and other resources (such as human resources) to internal entrepreneurship and innovation activities.
4. *Measuring and rewarding for innovation*: The 'measurement and rewards' emphasis was significantly stronger in HI than LI firms.
5. *Innovative culture and behaviour*: HI organisations had much stronger practices in terms of workforce behaviour than LIs. For example, the stimulation of ideation from employees was generally very strong in HIs and very weak in LIs. HI organisations more strongly encouraged entrepreneurial activities by employees than LIs.
6. *Acute focus on customers and their satisfaction*: Managers in HI organisations expressed very strong interest in driving high levels of customer satisfaction relative to LI organisations.
7. *Open innovation and collaboration*: HI firms expressed strong openness to working innovatively in joint ventures and collaborations with other organisations, whereas LI organisations did not.
8. *Innovation (new-stream) processes*: High-performing innovation-oriented organisations implemented strong and effective processes for exploration, testing and promulgating new products/services, processes, and for project managing these, relative to LI organisations.
9. *Sustainable development*: HI organisations gave more emphasis and effort to environmental and social/community outcomes than LI organisations, indicating that higher levels of innovativeness go hand in hand with stronger attention to broader sustainability prioritisation and achievement.

Importantly, these factors tend to act collectively and synergistically in creating new forms of value through innovation. The high innovation companies in our study, and in many other studies and case studies (see the CSL and KeepCup case studies later in this book), tend to be strongly implementing most or all of the nine factors described immediately above, such that they act together in a self-reinforcing 'full court press', as depicted in Figure 1.1. These HI companies have implemented a deep proactivity towards innovation that covers all of the listed factors. This proactivity centrally drives leaders to lead, strategise and resource innovation activity, and encourages employees to adopt innovation behaviours, to ideate and strive for improved outcomes through innovations. Reinforcement through measuring, reporting, valuing

and recognising and rewarding add further impetus and serve to embed the innovativeness and entrepreneurial spirit within the DNA of HI organisations.

These and other aspects of strength and proactivity of innovation practices were distinctly different across HI and LI organisations, indicating that there are indeed a clear and strong set of relationships between innovation and entrepreneurial processes, practices and behaviours, and the outcomes that HI organisations achieve, which is very different to the general lack of these practices and outcomes in LI organisations. In the following chapters, we will further examine these practices and report deeper details of how they relate to each of the building blocks of innovation performance.

THEORETICAL FRAMES FOR CONCEPTUALISING INNOVATION AND ENTREPRENEURSHIP

While innovation and entrepreneurship are practical fields, and indeed are fields in which practice leads theory, it is useful to examine more deeply some conceptual frameworks that have helped our understanding of these most intriguing phenomena.

There are a number of management theories that relate well to innovation in entrepreneurship. These include Schumpeterian innovation, transaction cost economics (TCE), the resource-based view (RBV) and the dynamic capabilities view (DCV). These four theories are among the most enduring of the major management theories and much has been written, tested and discussed in relation how they can be applied to real-life settings.

Schumpeterian innovation

Schumpeterian innovation evolved from the writings of Joseph Schumpeter in the 1940s. Schumpeter developed the idea he termed 'creative destruction' (Schumpeter, 1983). Creative destruction occurs when, unknowingly, the seeds of destruction are already being sown in relation to a successful organisation because its up-and-coming competitors are developing novel and innovative products and services that will eventually destroy the original organisation's very existence. The innovative new products and services of the rival organisation will become more desirable for the original organisation's consumers. This will result in consumers abandoning the original organisation in favour of its competitor's perceived new and superior products and services. The original organisation will lose its competitive edge and often fail.

There have been some potent examples of creative destruction of existing organisations based on their failure to embrace innovation and improvement. A good example is Digital Equipment Corporation (DEC). Founded in the USA in 1957, DEC folded in 1998. Incredibly, just a decade earlier in 1988, it was one of America's most highly profitable and successful companies

with profits totalling over $10 billion. However, by 1992 it suffered losses topping $2.8 billion and within six years from then had closed its doors and sold off any still-profitable divisions. The seeds of the destruction of DEC were ushered in by the company being too invested in its own proprietary systems which sought to lock in consumers to DEC's own equipment; but consumers resented this and it caused them to seek alternatives. In addition, DEC reached its lofty peak through a focus on minicomputers but was ultimately too slow to respond to the huge oncoming wave in the computer manufacturing industry of new, faster, more agile and vastly cheaper-per-unit workstations and personal computers.

DEC is a good example of creative destruction where decision-makers inside the company were committed to DEC's own proprietary computer systems and failed to compete with technological developments outside the company. Company leaders did not properly anticipate or perhaps underestimated some of the changes in consumer preferences that these developments would bring and perhaps the speed with which it would happen. DEC focused simply on what it already gave its consumers and not on what those consumers would rapidly evolve to wanting as time moved forward. So, in accordance with Schumpeter's notions of creative destruction, the company was eventually destroyed.

Transaction cost economics (TCE)

Oliver Williamson was instrumental in developing ideas and theories during the 1980s and 1990s related to transaction cost theory. The transaction cost economics (TCE) theory is concerned with particular costs to an organisation in an economic exchange with its partners, like customers or suppliers. Where buyers and sellers congregate in a market, the cost to the seller of the economic exchange involved in doing business with the buyer may increase based on a number of factors. These factors include uncertainty, frequency, asset specificity, bounded rationality and opportunism of behaviour.

In terms of uncertainty, TCE posits that the greater the uncertainty associated with the undertaking of an activity, the more difficult it becomes and potentially the higher the transaction costs become. The notion of frequency in TCE refers to the repetitive frequency and volume of similar transactions conducted inside an organisation, which assist an organisation developing internal efficiencies to manage such a repetitive transaction. If a transaction is infrequent inside an organisation then transaction costs would be likely to be higher. Asset specificity refers to assets in an organisation that have become customised, specialised or unique to a task. Transaction costs might be higher if such assets were used for purposes other than their customised, specialised or unique purpose inside an organisation. In terms of bounded rationality, transaction costs might increase based on the fact that managers inside organisations are limited by their own knowledge bases, skills and experience and may incur higher transaction costs because of these bounded limitations. In terms of opportunism of behaviour an organisation may behave in an unethical manner so as to be greedy or deceptive

to opportunistically take advantage of its exchange partners. Such behaviour may increase transaction costs based on the idea that disturbing smooth transactions based on trust and honest candour may diminish and cause market exchange disruption.

In terms of innovation, the TCE framework would hold that the higher the transaction costs incurred in an organisation or in a market economy, the higher the likelihood of innovation being disrupted, blighted or overshadowed. Elements like managers' bounded knowledge bases along with opportunistic behaviour can stifle the proper workings of the market and spell doom for entrepreneurial and innovative flair. The global financial crisis (GFC) is a good example of where the sum of both opportunistic behaviour and bounded rationality of individual managers working for Wall Street firms collided to bring about a far-reaching catastrophic financial event. The initial view from Wall Street was that the toxic financial packages which were bundled and sold en masse to often small-time investors (who were mostly deceived about their financial worth) were novel examples of financial innovation. This so-called innovation was in fact little more than opportunistic and self-serving trickery. In addition, because each individual who sold these packages was often unaware of the actual fine details of the package and unaware of the scale of the selling of the packages across the financial industry, this culminated in constituting a large-scale sum of bounded rationality.

Resource-based view (RBV)

The resource-based view (RBV) is a theory that places the organisation's resources front and centre in importance. These resources are simply organisational assets and may be commercial, financial, human or physical assets and may even be intangible like an organisation's intellectual property or its internal knowledge and capabilities. The RBV posits that it is critical that organisations establish heterogeneity, or competitive diversity, through their resources from other organisations. This heterogeneity is largely based on an organisation's unique bundle of resources and capabilities that create value. So, according to RBV theory, organisation value and hence competitive advantage can be created by an organisation in two ways. The first way can be via wealth in an organisation derived from a monopoly in an exclusive, unique or protected market environment. The second way can be through an organisation establishing resources which are valuable, rare, inimitable and non-substitutable (VRIN)—a key concept in the RBV established by Jay Barney in 1991.

An organisation can use its VRIN resources to create innovation. A good example is San Francisco-based firm CrowdFlower, which has created an online platform where self-selected global crowds comprising millions of people work on micro-tasks to improve and clean data sets. CrowdFlower has internally developed algorithms which are embedded in the online platforms they operate. These algorithms help guarantee the quality of the work done by their huge, distributed and amorphous crowd of workers. Running an artificial intelligence system in combination with a human crowd-powered system in an innovative manner has allowed

CrowdFlower to scale its work output rate to unprecedented levels. The crowd-based contributors of more than 5 million people accomplish seven human years of work each business day without CrowdFlower or its clients having the associated liability or costs of managing internal teams. The innovation is embedded in the scaling of the people-powered vast workforce alongside the technological invention that manages and controls the output and ensures consistent, high-quality results. The culmination of the innovation is that it allows crowds of people to complete tasks that solely computer-based big data analysis cannot. This provides an outstanding example of resources that are VRIN. These VRIN resources create a heterogeneity from rival organisations, which helps to cement competitive advantage for CrowdFlower.

Dynamic capabilities

A capability is seen as a competence or skill-set that organisations use in relation to task performance to ultimately steer operational performance towards desirable outcomes. A key theoretical commentator, David Teece (2014), simply sees capabilities as organisations doing things right and differentiates dynamic capabilities as organisations doing the right things. This differentiation results in an organisational mindset that moves the organisation from a focus on efficiency to one of innovation.

Dynamic capabilities The ability of an organisation to integrate, build and reconfigure both internal and external competences in response to rapidly changing environments.

Dynamic capabilities introduced the notion of dynamism to capabilities and so the elements of time and space become relevant. This view advanced the ideas developed by the resource-based view that had originally conceived a more static view of capabilities as a sub-set of the resources inside the organisation. In 1997 David Teece, Gary Pisano and Amy Shuen were instrumental in coining the initial definition of dynamic capabilities as the ability of an organisation to integrate, build and reconfigure both internal and external competences in response to rapidly changing environments. These dynamic capabilities therefore come to enhance an organisation's ability to achieve new and innovative forms of competitive advantage.

This view of dynamic capabilities has become even more prominent in hyper-competitive and globalised environments, particularly where high levels of innovation exist, along with increasing revenue returns and a high turnover of relevant competences required to maintain a competitive position. Organisations are now largely in competitive environments where they must configure, then reconfigure, then continue to reconfigure their capabilities in order to maintain their competitiveness and innovative edge. This is the essence of how dynamic capabilities work. An organisation that encourages dynamic capabilities will generally foster sensitivity to its competitive environment, promote the seizing of opportunities as they arise and spur organisational transformation by skilful and timely operational intervention to alter normal operational routines to foster innovative success.

At the same time an organisation must best use its existing capabilities to make optimal use of all its resources to help build, grow and refresh the assets within its remit. Such endeavours may extend outside the organisational boundary so the organisation may develop and

reconfigure its capabilities to draw on or learn from the input of important stakeholders such as suppliers and partners and even consumers.

Consider American multinational Apple and its associated 'apps' or applications, which are located in its 'App Store' for customer use. These apps are created by multitudes of external developers who use the tools supplied by Apple to create useful and usually inexpensive Apple-specific applications that enhance the customer's use of Apple's products. Apple runs a licensing agreement with these developers who will individually share in the revenue generated by each of their developed apps that are placed in the App Store and are sold. The ever-expanding array of apps and the timely provision of new apps to suit new Apple products is an example of dynamic capabilities at work. Apple as an organisation dynamically fosters this innovative process which continually transforms Apple's product offerings to constantly improve and innovate on the functionality of the existing products. Such transformational activity helps improve customer desire for continuously improving product offerings and helps position Apple as a highly competitive and innovative organisation as a result.

CHAPTER SUMMARY

Innovation can be the lifeblood of new value creation within organisations. Without innovation, organisations are likely to wither and die, whereas the creation of systematic innovation capability can become an ongoing source of value for all stakeholders. Innovation occurs in organisations of all shapes and sizes, from large companies to governments to start-ups. After initiating new ideas through processes of creativity or discovery, scale up of those ideas needs to be purposively and carefully led, so as to balance risk and return through innovation.

Entrepreneurs are innovators, who are usually working on their innovations in newer or smaller organisations. Both entrepreneurs and corporate innovators must balance risk and reward, resources and outcomes, and work to find ways to scale up their ideas into value-creating products, services, processes or business models that deliver competitive advantage within markets. Organisations that can do this on a continuing basis have developed a powerful competitive weapon, referred to as systematic innovation capability.

The state of innovation and entrepreneurship in Australia can be considered as patchy, or perhaps 'mixed' at best. Australia's large organisations that are well established have not generally been stellar performers in innovation terms, and there are relatively few successful and global organisations based on innovation capability. Yet there are many pockets of innovation and entrepreneurship excellence, in every sector of the economy that prove that it can be done. Small businesses are thriving based on innovation, and a new generation of entrepreneurial energy is being unleashed across the economy. Australia's largest organisations are learning to innovate and to build the innovation capability necessary for their progress, but the largest and most conservative organisations are doing so from a low base and are 'making haste slowly'. There is evidence that we should be cautiously optimistic about the prospects for Australia's entrepreneurship and innovation going forward. Yet we must always remember that the 16 countries that rank ahead of Australia in the global innovation rankings are not standing still and waiting for other countries to catch up!

Research has demonstrated that there are clear and significant factors that highly innovative organisations have invested in and strongly implemented. These factors act together to create a systematic approach that drives renewal and continued lifting of value creation in these organisations.

DISCUSSION QUESTIONS

1. What is the meaning of innovation and how does it manifest in large versus small organisations?
2. How would innovation be conducted differently in profit-seeking versus not-for-profit organisations?

3. Should an organisation focus more on radical innovations, or on incremental innovations, or on some combination of these?
4. If you were running a large bank, would you prefer to invest in new product designs or in new processes and technologies that reduce cost?
5. If your cousin told you about a radically new internet-based service she has thought of, and asked for your advice about its feasibility, how would you test her ideas?
6. Is there a way that start-ups can mitigate the natural risks associated with investing in a single idea?
7. How can entrepreneurs start up their new enterprises while also trying to generate new innovation through the product development process?
8. Given how much money and how long it takes to develop new medicines, would pharmaceutical companies be better off to wait for others to innovate, then copy those?
9. To achieve a systematic innovation capability in business organisations, what key building blocks need to be in place?
10. Does Australia's 17th place in the Global Innovation Index mean there is not much point even trying to create innovations here?
11. What might be the biggest barrier to Australian organisations becoming systematically more innovative?
12. If you were employed by a non-innovative business and tasked with the responsibility of increasing its innovativeness, what would you do first, second and third?

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