Chapter 1

What Is Innovation – And Why Does It Matter?

Learning objectives
By the end of this chapter you will develop an understanding of:

• what ‘innovation’ and ‘entrepreneurship’ mean – and how they are essential for survival and growth
• innovation as a series of changes which create some kind of value
• types of innovation – incremental/radical and component/system
• innovation as a process of change.

What Is Innovation?

Innovation is everywhere. You don’t have to look very far before you see the magic word on advertising hoardings, company websites, on TV and in the press. And it’s not just in the world of commercial products and services – much of the discussion in the public sector these days is all about how innovation is the way forward. For example…

‘We always eat elephants…’ is a surprising claim made by Carlos Broens, founder and head of a successful toolmaking and precision engineering firm in Australia with an enviable growth record. Broens Industries is a small/medium-sized company of 130 employees which survives in a highly competitive world by exporting over 70% of its products and services to technologically demanding firms in aerospace, medical and other advanced markets. The quote doesn’t refer to strange dietary habits but to their confidence in ‘taking on the challenges normally seen as impossible for firms of our size’ – a capability which is grounded in a culture of innovation in products and the processes which go to produce them.

Despite a global shift in textile and clothing manufacture towards developing countries, the Spanish company Inditex (through its retail outlets under various names including Zara) has pioneered a highly flexible, fast-turnaround clothing operation with over 2000 outlets in 52 countries. It was founded by Amancio Ortega Gaona, who set up a small operation in the west of Spain in
La Coruna – a region not previously noted for textile production. The first store opened there in 1975. They now have over 5000 stores worldwide and are now the biggest clothing retailer; significantly, they are also the only manufacturer to offer specific collections for northern and southern hemisphere markets. Central to the Inditex philosophy is close linkage between design, manufacture and retailing and their network of stores constantly feeds back information about trends which are used to generate new designs. They also experiment with new ideas directly on the public, trying samples of cloth or design and quickly getting back indications of what is going to catch on. Despite their global orientation, most manufacturing is still done in Spain, and they have managed to reduce the turnaround time between a trigger signal for an innovation and responding to it to around 15 days.

At the other end of the scale Kumba Resources is a large South African mining company which makes another dramatic claim: ‘We move mountains.’ In their case the mountains contain iron ore and their huge operations require large-scale excavation – and restitution of the landscape afterwards. Much of their business involves complex large-scale machinery – and their ability to keep it running and productive depends on a workforce able to contribute their innovative ideas on a continuing basis.

People have always needed artificial limbs and the demand has, sadly, significantly increased as a result of high-technology weaponry, such as mines. The problem is compounded by the fact that many of those requiring new limbs are also in the poorest regions of the world and so are unable to afford expensive prosthetics. The chance meeting of a young surgeon, Dr Pramod Karan Sethi, and a sculptor, Ram Chandra, in the hospital in Jaipur, India, led to the development of a solution to this problem: the Jaipur Foot. This artificial limb was developed using Chandra’s skill as a sculptor and Sethi’s expertise and is so effective that those who wear it can run, climb trees and pedal bicycles. It was designed to make use of low-tech materials and be simple to assemble. For example, in Afghanistan craftsmen hammer the foot together out of spent artillery shells, while in Cambodia some of the foot’s rubber components are scavenged from truck tyres. Perhaps the greatest achievement has been to do all of this for a low cost. The Jaipur Foot costs only $28 in India. Since 1975, nearly one million people worldwide have been fitted with a Jaipur limb and the design is being developed and refined, for example using advanced new materials.

Case Studies detailing Kumba’s high involvement innovation activities is available on the Innovation Portal at www.innovation-portal.info
Case Studies exploring these companies, together with many other examples of innovation, are available on the Innovation Portal at www.innovation-portal.info

The word ‘innovation’ comes from the Latin, *innovare*, and is all about change. Perhaps a more helpful definition in terms of what we actually have to manage is that innovation is the process of creating value from ideas.

And as we’ll see in this book, there are plenty of directions in which we can do this. We can change the products and services which we offer, the ways we create and deliver those offerings, the markets we offer them to and the underlying models about how we do what we do.

Of course, there are differences in the novelty of the changes we introduce. For example, updating the styling on a car is not the same as coming up with a completely new concept car which has an electric engine and is made of new composite materials as opposed to steel and glass. Similarly, increasing the speed and accuracy of a lathe is not the same thing as replacing it with a computer-controlled laser forming process. There are degrees of novelty in these, running from minor, incremental improvements right through to radical changes which transform the way we think about and use them. Sometimes these changes are common to a particular sector or activity, but sometimes they are so radical and far-reaching that they change the basis of society, for example the role played by steam power in the Industrial Revolution or the huge changes resulting from today’s communications and computing technologies.

Activity to help you compile a list of innovations and try to classify them in terms of the themes in this section – incremental or radical, products or service, etc. – is available on the Innovation Portal at www.innovation-portal.info

And innovation is often like Russian dolls: we can change things at the level of components or we can change a whole system. For example, we can put a faster transistor on a microchip on a circuit board for the graphics display in a computer. Or we can change the way several boards are put together in the computer to give it particular capabilities – a games box, an e-book, a media PC. Or we can link the computers into a network to drive a small business or office. Or we can link the networks to others on the Internet. There’s scope for innovation at each level – but changes in the higher-level systems often have implications for lower down. For example, if cars – as a complex assembly – were suddenly designed to be made out of plastic instead of metal it would still leave scope for car assemblers – but would pose some sleepless nights for producers of metal components.
Activity to help you think about architectural and component innovation is available on the Innovation Portal at www.innovation-portal.info

Figure 1.1 illustrates the range of choices, highlighting the point that such change can happen at component or sub-system level or across the whole system…

Figure 1.1: Types of innovation [Tidd SIM artwork log rev_1]

Innovation and Value

All of these are about making changes, and doing so not for the sake of change itself but in order to create value. Value may be defined in terms of creating a product or service which others find useful and which they value. In business terms they are prepared to pay for it to express how much they value it – and this provides the economic underpinning for innovation. Entrepreneurs use new ideas to create value propositions – it is cheaper, you can have it faster, it is of higher quality, it has more features, etc. – which they hope people in the marketplace will value enough to make a purchase.

But value isn’t only commercial – innovation can also be about creating social value. Take the case of Dr Venkataswamy, an eye surgeon in India who retired after a long career working in one of the best eye hospitals there. He used his retirement to follow through a long-held passion: to try to bring good-quality eye care, specifically cataract surgery, to the millions of Indians who were unable to afford it in a country where public health care is still limited. His efforts were focused around finding new ways of delivering such surgery and in particular cutting the costs from an average of $300 per operation to $30. Over many years he developed an alternative, through his Aravind Eye Clinics, which is now able to provide care at an average cost of $25 – a social innovation which has literally transformed the lives of millions.

Case Study on Aravind Eye Clinics, together with others describing similar innovations in health care, is available on the Innovation Portal at www.innovation-portal.info

Activity to explore different ways in which innovation could create some kind of value – and to identify actual examples of such innovations is available on the Innovation Portal at www.innovation-portal.info
Innovation and Competition

All of our examples are also about using changes to create a competitive edge. Let’s be clear about what we mean by the word ‘competition’. In some cases it is rivalry between firms for markets, and innovation helps provide the difference, making something faster, cheaper, with more features, etc. But ‘competition’ of a different kind drives the public sector – competing against the challenge of limited resources, for example providing high-quality health care to a growing and ageing population without raising taxes. Or it is the underlying ‘competition’ against illiteracy through education innovation, or against limited mobility by transport innovation. There is even the equivalent of a competition going on in the world of law and order: criminals are constantly seeking new ways to commit crime and policing is having to innovate to keep pace with or, better, get ahead of this.

Case Study detailing a report on cybercrime and how it is becoming a rapidly moving innovation battleground is available on the Innovation Portal at www.innovation-portal.info

And in the third sector – of charities, voluntary workers, and humanitarian agencies – the need for innovation is clear. Here ‘competition’ may be about competing with the problems posed by an earthquake and how to replace communications, access to shelter, food or water with viable alternatives before starvation and disease have a major impact. Or about competing as fund raisers for a share of people’s disposable income.

Case Studies of innovation by humanitarian agencies are available on the Innovation Portal at www.innovation-portal.info

Activity to help you explore possible sources of strategic advantage through innovation is available on the Innovation Portal at www.innovation-portal.info

Innovations don’t come from thin air. They are driven by a quest for opportunity or a response to threat. It’s a bit like Darwin’s model of the survival of the fittest, in which organizations find ways of coping with competitive and hostile environments. But the big difference is that there is an element of deliberate rather than random variation – innovation involves conscious experimentation.

If we look at the pattern of innovation in a particular sector, we will see that it is a mixture of occasional radical change (doing something different) punctuating long periods of incremental (doing what we do but better) change. There are times where experiment is high risk and much longer periods when the variation is stabilized and improved upon. We can see this if we look back
over different sectors – for example, the music industry grew up on the back of innovations like radio and the gramophone. For a long time it was concentrated on a mature industry which rode successfully several changes in distribution format (vinyl, cassettes, CDs) before the digitalization revolution sparked by the invention of the mp3 player led to massive disruption. Similarly, the light bulb developed by Edison, Swann and others dominated lighting for over a century but has now given way to massive shifts in the industry on the back of the move to solid state electronics.

Case Studies on the changing music industry and the dimming of the light bulb are available on the Innovation Portal at www.innovation-portal.info

Activity to help you explore different patterns of innovation across sectors is available on the Innovation Portal at www.innovation-portal.info

Innovation and Entrepreneurship

A key idea associated with making changes is the entrepreneur. This is an individual or group who sees an opportunity and takes the risk of trying to exploit it. If they succeed, they gain an edge – and then others notice what they are doing and start to imitate. One of the important theorists on innovation was Joseph Schumpeter, one-time finance minister of Austria, and his core ideas relate to the importance of entrepreneurship.¹

Entrepreneurs come in all shapes and sizes – from the lone genius who battles single-handed to bring his/her idea to fruition (James Dyson) to the start-up team whose creative interchange helps shape something new (Larry Page and Sergey Brin of Google, Bill Gates and Paul Allen at Microsoft, the Angry Birds team at Rovio) through to social entrepreneurs like Dr Venkataswamy of Aravind, Devi Shetty (the Henry Ford of heart surgery in India) or Muhammad Yunus (the Nobel prizewinning founder of Grameen Bank).

Case Studies describing several of these social entrepreneurs are available on the Innovation Portal at www.innovation-portal.info

But ‘entrepreneurs’ are also part of any large established organization, trying to propose and introduce changes which will renew its products, services or operating processes. Their names may not be so familiar but they work on the inside trying to renew what the organization offers and the ways it creates and delivers those offerings.

And – as we’ve seen – the motivation for entrepreneurship varies from those who are trying to create commercial value to those with more of a social concern.
Video Clip of several social entrepreneurs are available on the Innovation Portal at www.innovation-portal.info

This idea of entrepreneurship driving innovation to create value – social and commercial – across the lifecycle of organizations is central to this book. Table 1.1 gives some examples.

Table 1.1: Entrepreneurship and innovation

<table>
<thead>
<tr>
<th>Stage in lifecycle</th>
<th>Start-up</th>
<th>Growth</th>
<th>Sustain/scale</th>
<th>Renew</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creating wealth</strong></td>
<td>Individual entrepreneur exploiting new technology or market opportunity</td>
<td>Growing the business through adding new products/services or moving into new markets</td>
<td>Building a portfolio of incremental and radical innovation to sustain the business and/or spread its influence into new markets</td>
<td>Returning to the radical frame-breaking kind of innovation which began the business and enables it to move forwards as something very different</td>
</tr>
<tr>
<td><strong>Creating social value</strong></td>
<td>Social entrepreneur, passionately concerned to improve or change something in their immediate environment</td>
<td>Developing the ideas and engaging others in a network for change – perhaps in a region or around a key issue</td>
<td>Spreading the idea widely, diffusing it to other communities of social entrepreneurs, engaging links with mainstream players like public sector agencies</td>
<td>Changing the system – and then acting as an agent for the next wave of change</td>
</tr>
</tbody>
</table>

Innovation and Knowledge

One last point is worth making here: the key role played by knowledge in innovation. The ability to make the kind of changes we looked at above depends on creating or acquiring and then deploying knowledge to create value. Essentially, what organizations know and have learnt is a core asset which they can leverage. This may be technology or it may be understanding of markets, and the knowledge involved may be in explicit or tacit form. But the evidence is clear: paying attention to creating, capturing and using knowledge is critical in innovation. One indicator of just how important it has become is the sheer scale of investment in R&D, which is currently running at $1500
billion per year! We’ll look closely at this theme in the book, not least because in such a knowledge-rich world the challenge is increasingly one of managing flows of knowledge around an increasingly global and networked space. This challenge is often given the label ‘open innovation’. We’ll return to it later in the book.

**Activity** to help you explore the importance of strategic advantage through knowledge in innovation is available on the Innovation Portal at www.innovation-portal.info

### Why Does Innovation Matter?

As we’ve already seen, innovation is about survival and growth – if we don’t change then competitive forces may threaten our future. But on the positive side there are real opportunities for those able to manage the process well. For example, in its regular survey of ‘innovation leaders’ in 25 sectors of the economy, the consultancy Innovaro reports not only that these companies outpace their competitors on a year-by-year basis but also that this has a marked effect on their share price. In the period 2003 to 2013, they regularly outperformed the average share price index on the NASDAQ, Dow Jones and FTSE markets, and in 2009, when other companies’ share prices grew on average by between 40 and 70%, the Innovation leaders’ average growth was 130%.

It’s also important for whole economies – as the economist William Baumol pointed out: ‘Virtually all of the economic growth that has occurred since the eighteenth century is ultimately attributable to innovation.’ Not for nothing do regional and national governments spend a great deal of money trying to stimulate and support innovation in different ways.

But part of the problem is that innovation involves a moving target – simply being able to manage it effectively today is no guarantee of long-term success since technologies, markets, regulations and other elements are constantly changing. So successful innovators are concerned to develop ‘dynamic capability’ to change their approaches. The risk is clear if organizations fail to keep pace: there are plenty of examples of major corporations which began with an innovative flourish but ended up beaten by their failure to innovate fast enough or in the right directions. The examples of great photographic pioneers Kodak and Polaroid are graphic reminders that competitive advantage doesn’t always last, even if you are a major spender on R&D and have powerful marketing skills.

**Case Studies** of this challenge – Fujifilm and Marshalls – are available on the Innovation Portal at www.innovation-portal.info
To Whom?

Innovation is about survival and growth, so simply leaving things to chance is not a great approach. Instead, individuals and organizations need to take innovation seriously; it has to be more than just a slogan. And that means having some clear idea of where and how making changes can take us forward – a ‘strategy’ and some idea of how we will implement that strategy, how we will make innovation happen.

But innovation also matters to a range of what we might call ‘policy agents’ – organizations which have a broader concern with innovation. These include:

- governments (local and national): innovation creates economic growth, jobs, etc., so fostering innovation becomes a key issue
- trade and sector bodies: their interest is in stimulating innovation to make for sector health and competitiveness
- supply chain ‘owners’: any supply network is only as strong as its weakest link, so it makes sense for firms to try to manage their supply systems and upgrade them.

Case Study describing supply chain learning, which explores this theme, is available on the Innovation Portal at www.innovation-portal.info

Innovation matters to all of these players but their concern leads us in two complementary directions. For the individual enterprise it is about how to organize and manage the process – and policy agents can create an environment which helps this directly (e.g. through advice or money) or indirectly (e.g. through favourable tax or other policies). But there is a second and increasingly important level, which is about systems. Innovation is a multiplayer game and needs different bits of the network to work together – in supply chains, regional clusters, industrial sectors, etc. There’s growing interest in such systems of innovation – local, regional and national – and how policy agents can help develop them.

Innovation Isn’t Easy!

Coming up with good ideas is what human beings are good at; our brains are fitted with this facility as standard. But taking those ideas forward is not quite so simple – and the evidence is clear. Most new ideas, and most entrepreneurs carrying them, fail. It takes a particular mix of energy, insight, belief and determination to push against these odds – and even more judgement to know when to stop banging against the brick wall and move on to something else.
While the road for an individual entrepreneur may be very rocky with a high risk of hitting potholes, running into roadblocks or careering off the edge it doesn’t get any easier if you are a large established company. It’s a disturbing thought, but the majority of companies have a lifespan significantly less than that of a human being. Even the largest firms can show worrying signs of vulnerability, and for the smaller firm the mortality statistics are bleak.

Many small and medium-sized enterprises (SMEs) fail because they don’t see or recognize the need for change. They are inward looking, too busy fighting fires and dealing with today’s crises to worry about storm clouds on the horizon. Even if they do talk to others about the wider issues, it is very often to people in the same network and with the same perspectives, for example the people who supply them with goods and services or their immediate customers. The trouble is that by the time they realize there is a need to change it may be too late.

But it isn’t just a small firm problem – there is no guaranteed security in size or in previous technological success. Take the case of IBM, a giant firm which can justly claim to have laid the foundations of the IT industry and one which came to dominate the architecture of hardware and software and the ways in which computers were marketed. But such core strength can sometimes become an obstacle to seeing the need for change – as proved to be the case when, in the early 1990s, the company moved slowly to counter the threat of networking technologies – and nearly lost the business in the process. Thousands of jobs and billions of dollars were lost and it took years of hard work to bring the share price back to the high levels which investors had come to expect.

A common problem for successful companies occurs when the very things which helped them achieve success – their ‘core competence’ – become the things which make it hard to see or accept the need for change. Often the response is what is sometimes called ‘not invented here’ – the new idea is recognized as good but in some way not suited to the business.

(A famous example of this was the case of Western Union, which, in the nineteenth century, was probably the biggest communications company in the world. It was approached by one Alexander Graham Bell, who wanted it to consider helping him commercialize his new invention. After mounting a demonstration to senior executives, he received a written reply which said that ‘…after careful consideration of your invention, which is a very interesting novelty, we have come to the conclusion that it has no commercial possibilities … We see no future for an electrical toy’. Within four years of being invented, there were 50,000 telephones in the United States and within 20 years five million. Over the next 20 years, the company which Bell formed grew to become the largest corporation in the United States.)

Sometimes the pace of change appears slow and the old responses seem to work well. It appears, to those within the industry, that they understand the rules of the game and that they have a good grasp of the relevant technological
developments likely to change things. But what can sometimes happen here is that change comes along from outside the industry – and by the time the main players inside have reacted, it is often too late.

For example, in the late nineteenth century there was a thriving industry in New England based on the harvesting and distribution of ice. In its heyday, it was possible for ice harvesters to ship hundreds of tons of ice around the world on voyages that lasted for as long as six months – and still have over half the cargo available for sale. By the late 1870s, the 14 major firms in the Boston area of the United States were cutting around 700,000 tons per year and employing several thousand people. But the industry was completely overthrown by the new developments which followed from the invention of refrigeration and the growth of the modern cold storage industry. The problem is that the existing players often fail to respond fast enough to the new signals coming from outside their industry – as was the case for many of the old ice industry players. 4

Of course, for others these conditions provide an opportunity for moving ahead of the game and writing a new set of rules. Think about what has happened in online banking, call-centre linked insurance or low-cost airlines. In each case the existing stable pattern has been overthrown, disrupted by new entrants coming in with new and challenging business models. For many managers, business model innovation is seen as the biggest threat to their competitive position, precisely because they need to learn to let go of their old models as well as learn new ones. By the time they do so they may well have been overtaken by newcomers for whom this is the only business model and one they are well placed to exploit.

It’s not all doom and gloom, though. There are also plenty of stories of new firms and new industries emerging to replace those which die. And in many cases the individual enterprise can renew itself, adapting to its environment and moving into new things. Consider the company Stora in Sweden, which was founded in the twelfth century as a timber cutting and processing operation but which is still thriving today – albeit in the very different areas of food processing and electronics.

Case Study on Marshalls, a UK family business that has been operating for over 100 years and is still growing through its commitment to innovation and its agile approach to management, is available on the Innovation Portal at www.innovation-portal.info

Can We Manage Innovation?

The first point here is to recognize that there is something to be managed. Innovation is not simply a random process but rather a sequence of
planned experimentation. This is the difference between the Darwinian idea of survival of the fittest and the way innovation works; in the latter case the variation is planned and designed. It is still risky and may not succeed but it is a purposive activity.

And we know something about this sequence of planned experimentation. It involves a process of searching for possible opportunities (generating variation), selecting a particular one (selection) and then implementing it (propagation). Making this happen involves a set of behaviours which, over time, become learnt and embedded – ways of searching, ways of selecting, ways of implementing. These represent distinctive patterns of behaviour which shape the way innovation is managed.

At the outset – a start-up business – there won’t necessarily be a clear pattern but a series of experiments, a bit like a child learning to walk for the first time. But there is learning from experience and from failure so that over time the start-up entrepreneur learns to manage the process and can repeat the trick, starting up other ventures or introducing other innovations to grow his/her business. By the time we look at the business in a mature state it has ‘routinized’ a lot of this, with structures and formal processes in place for searching (market research or R&D), selecting and allocating resources for innovation projects and project management systems for taking ideas through to reality.

Of course, it’s also not a case of ‘one size fits all’. There will be different patterns depending on the size of the organization and the sector in which it operates, for example. Small organizations have little structure and limited resources, so their ‘process’ for managing innovation may be informal, whereas giant pharmaceutical corporations need a range of structures and procedures to enable innovation to happen in a coordinated fashion. Service sector businesses work closely with customers and emphasize search behaviours which try to articulate and use insights around their needs – whereas high-tech businesses may be more concerned with formal scientific R&D and behaviours which enable that to work well. And whole industries have lifecycles associated with them. We can see the car industry now as a mature sector with a history of over a hundred years, whereas nanotechnology and applied genetics are still in their infancy. Innovation in new sectors tends to focus on product/service offerings as the main target, whereas in more mature sectors it shifts to the ways we create and deliver those offerings, for example can we make them cheaper or faster?

Success in innovation, be it as an individual first-timer or a global corporation, is not just about having a good idea and assembling the resources (people, equipment, knowledge, money, etc.) to make it happen. It’s also about having the capabilities to manage them – and these are the hardest to get a handle on – but they make or break the process. So what is involved – and how do we know?
Over the past hundred years a wide range of studies have attempted to answer these questions. Researchers have looked at case examples, at sectors, at entrepreneurs, at big firms and small firms, at success and failure. Practising entrepreneurs and innovation managers in large businesses have tried to reflect on the ‘how’ of what they do. The key messages come from the world of experience. What we’ve learnt comes from the laboratory of practice rather than from some deeply rooted theory.

The Case for Strategic Innovation Management

One final point in this chapter. We’ve seen that innovation matters and that in order to survive and grow organizations need to pay attention to managing the process. This is of concern not only to those directly involved but also to a wider gallery of players – governments, supply chain owners, trade and sector agencies – who have a concern that innovation happens and happens effectively. And we have begun to see that there is something – a process of finding opportunities, choosing projects and implementing them – which is common to innovation and needs to be managed. We need to learn and develop the capability to do this.

But innovation takes place in a changing world. New technologies emerge, new markets appear, financial, legal, social rules change. So organizations not only have to innovate to survive and grow but also need to innovate in the ways they approach this problem of managing the process. For example, at the beginning of this century the Internet was still in its infancy and we had only just begun to see its potential role in changing the way innovation happened. Now we are in a world where increasingly products and services are delivered in virtual space and where markets are increasingly focused around social networks and communities. The potential for information flow across this world is huge: Facebook with over one billion members would qualify as the world’s third largest country by population! All of these changes have an impact on what we can do in our search, select and implement process, and so organizations have had to learn new tricks to take on board these new challenges.

Table 1.2 gives an idea of these challenges.

<table>
<thead>
<tr>
<th>Context change</th>
<th>Indicative examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acceleration of knowledge production</strong></td>
<td>OECD estimates that around $1500 billion is spent each year (public and private sector) on creating new knowledge – and hence extending the frontier along which ‘breakthrough’ technological developments may happen.</td>
</tr>
<tr>
<td><strong>Global distribution of</strong></td>
<td>Knowledge production is increasingly involving new players,</td>
</tr>
</tbody>
</table>
### knowledge production

especially in emerging market fields like the BRIC (Brazil, Russia, India, China) nations – so there is a need to search for innovation opportunities across a much wider space. One consequence of this is that ‘knowledge workers’ are now much more widely distributed and concentrated in new locations (e.g. Microsoft’s third-largest R&D centre employing thousands of scientists and engineers is now in Shanghai).

### Market expansion

Traditionally much of the world of business has focused on the needs of around one billion people since they represent wealthy enough consumers. But the world’s population has just passed the seven billion mark and population, and by extension market, growth is increasingly concentrated in non-traditional areas, like rural Asia, Latin America and Africa. Understanding the needs and constraints of this ‘new’ population represents a significant challenge in terms of market knowledge.

### Market fragmentation

Globalization has massively increased the range of markets and segments so that these are now widely dispersed and locally varied – putting pressure on innovation search activity to cover much more territory, often far from ‘traditional’ experiences – such as the ‘bottom of the pyramid’ conditions in many emerging markets or along the so-called long tail – the large number of individuals or small target markets with highly differentiated needs and expectations.

### Market virtualization

The emergence of large-scale social networks in cyberspace poses challenges in market research approaches (e.g. Facebook with one billion members is technically the third-largest country in the world by population. Further challenges arise in the emergence of parallel world communities (e.g. Second Life now has over six million ‘residents’, while World of Warcraft has over 10 million players).

### Rise of active users

Although users have long been recognized as a source of innovation, there has been an acceleration in the ways in which this is now taking place (e.g. the growth of Linux has been a user-led open community development). In sectors like the media, the line between consumers and creators is increasingly blurred (e.g. YouTube has around 100 million videos viewed each day but also has over 70,000 new videos uploaded every day from its user base).

### Growing concern with sustainability issues

Major shifts in resource and energy availability prompting search for new alternatives and reduced consumption. Increasing awareness of the impact of pollution and other negative consequences of high and unsustainable growth. Concern over climate change. Major population growth and worries over our ability to sustain living standards and manage expectations. Increasing regulation on areas like emissions and our carbon footprint.

### Development of technological and social infrastructure

Increasing linkages enabled by information and communications technologies around the Internet and broadband have enabled and reinforced alternative social networking possibilities. At the same time the increasing availability of simulation and prototyping tools has reduced the separation between users and producers.

Throughout this book we’ll look at the idea of ‘dynamic capability’ – learning and building capability not just to organize and manage innovation but
also to step back and review how we do this. And having taken a step back to review, implementing changes in the ways we make innovation happen – new or different ways and letting go of some of the older ones.

Summary

- Innovation is about growth – about recognizing opportunities for doing something new and implementing those ideas to create some kind of value. It could be business growth; it could be social change. But at its heart is the creative human spirit, the urge to make change in our environment.
- Innovation is also a survival imperative. If an organization doesn’t change what it offers the world and the ways in which it creates and delivers its offerings, it could well be in trouble. And innovation contributes to competitive success in many different ways. It’s a strategic resource to getting the organization where it is trying to go, be that delivering shareholder value for private sector firms, providing better public services or enabling the start-up and growth of new enterprises.
- Innovation doesn’t just happen. It is driven by entrepreneurship. This powerful mixture of energy, vision, passion, commitment, judgement and risk-taking provides the power behind the innovation process. It’s the same whether we are talking about a solo start-up venture or a key group within an established organization trying to renew its products or services.
- Innovation doesn’t happen simply because we hope it will. It’s a complex process which carries risks and needs careful and systematic management. Innovation isn’t a single event, like the light bulb going off above a cartoon character’s head. It’s an extended process of picking up on ideas for change and turning them into effective reality. The core process involves four steps: recognising opportunities, finding resources, developing the venture and capturing value. The challenge comes in doing this in an organized fashion and in being able to repeat the trick.

Further Resources

More detailed discussion of these themes can be found in our companion books, Managing Innovation: Integrating technological, market and organizational change, now in its fifth edition, and Innovation and Entrepreneurship’, now in its second edition. Peter Drucker’s famous Innovation and Entrepreneurship provides an accessible introduction to the
subject, but perhaps relies more on intuition and experience than on empirical research. And there are several other textbooks including those by Goffin and Mitchell, Trott, Schilling and Dodgson, Salter and Gann.

There are several compilations and handbooks covering the field, the best known being *Strategic Management of Technology and Innovation*, containing a wide range of key papers and case studies, though with a very strong US emphasis. A more international flavour is present in Dodgson and Rothwell and Shavinina.

Case studies of innovation provide a rich resource for understanding the workings of the process in particular contexts. Good compilations include those of Baden-Fuller and Pitt, Nayak and Ketteringham and Von Stamm, while other books link theory to case studies, for example Tidd and Hull with its focus on service innovation. Several books cover the experiences of particular companies, including 3M, Corning, DuPont, Toyota and others.

Various websites offer news, research, tools, etc., for example AIM (www.aimresearch.org) and NESTA (www.nesta.org.uk).

References


Deeper Dive explanations of innovation concepts and ideas are available on the Innovation Portal at www.innovation-portal.info

Quizzes to test yourself further are available online via the Innovation Portal at www.innovation-portal.info

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Summary of online resources for Chapter 1 – all material is available via the Innovation Portal at www.innovation-portal.info

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