



Chapter 1: The innovation imperative

Learning Objectives



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 process rather than a single flash of inspiration
- the difficulties in managing what is an uncertain and risky process
- the key themes in thinking about how to manage this process effectively.



Activity: What is innovation?

Step 1. But what is innovation? Open question for the classroom to brainstorm, generate a list with examples on the board.

Step 2. For the list of examples that has been generated, think of the 'value' that those innovations created.



Activity: Innovation matters

Look at the Growth Champions website and prepare (or ask the students to prepare) a presentation highlighting why innovation is an important element in growth

<http://growthchampions.org/>

Ask the students to think of similar examples of companies that have been able to create, build and sustain growth through innovation.



Discussion: Who does innovation matter to?

- Entrepreneurs starting up a venture
- Established enterprises trying to grow
- Governments (local and national)
- Trade and sector bodies
- Supply chain 'owners'



Definition of Innovation

The word 'innovation' comes from the Latin, innovare, and is all about change.

Perhaps a more helpful definition of innovation is **'the process of creating value from ideas'**.

Does innovation matter? In what ways does it make a difference – economically, socially, living standards, humanitarian, etc.



Activity: Creating value through innovation

List all the different ways in which innovation might create some kind of value – and try to find ‘real world’ examples of such innovations.

Use the **Business Model Canvas**

[50 Most Innovative Companies](#)

Innovation & Entrepreneurship

Peter Drucker:

Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or service. It is capable of being presented as a discipline, capable of being learned, capable of being practised.



Innovation & Entrepreneurship

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



Activity: Forces for innovation

This activity explores some of the forces shaping the emergence of innovation and how they play out over time.

<http://www.innovation-portal.info/resources/activity-forces-for-innovation/>



Activity: Innovation futures

This activity gives students an opportunity to look ahead to some of the possible challenges in different future scenarios.

<http://www.innovation-portal.info/resources/activity-futures-for-innovation/>



Activity: Innovation and knowledge

There are several activities designed to explore the relationship between knowledge and innovation.

Case study and activity: <http://www.innovation-portal.info/resources/strategic-knowledge-based-innovation/>

<http://www.innovation-portal.info/resources/harvesting-knowledge-crops-activity/>



Innovation isn't easy

Barriers to innovation include:

- Seeing innovation as ideas, not managing the whole journey;
- Not recognizing the need for change;
- Mindset and complacency – core competence becomes core rigidity;
- Closed information network, insulated from new ideas.



Activity: Innovation isn't easy

This activity involves exploring examples of innovation failure and the difficulties of translating a good idea into practice.

<http://www.innovation-portal.info/resources/activity-innovation-isnt-easy/>



Can we manage innovation?

- Innovation as a series of experiments;
- Building 'routines' – behaviour patterns which become embedded;
- Structures, policies, procedures for making innovation happen;
- Culture – 'the way we do things around here'



Activity: The way we do things around here

This activity helps explore the different ways in which organizations have learned to manage innovation.

<http://www.innovation-portal.info/resources/the-way-we-do-things-around-here-2/>

Successful innovators...

- explore and understand different dimensions of innovation (ways in which we can change things)
- manage innovation as a process
- create conditions to enable them to repeat the innovation trick (building capability)
- focus this capability to move their organizations forward (innovation strategy)
- build dynamic capability (the ability to rest and adapt their approaches in the face of a changing environment)



Challenges on the innovation horizon

Context Change	Indicative Examples
<i>Acceleration of knowledge production</i>	OECD estimates that around \$1500bn is spent each year (public and private sector) in creating new knowledge – and hence extending the frontier along which ‘breakthrough’ technological developments may happen
<i>Global distribution of knowledge production</i>	Knowledge production is increasingly involving new players 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 – for example, Microsoft’s 3 rd largest R&D Centre employing thousands of scientists and engineers is now in Shanghai.
<i>Market expansion</i>	Traditionally much of the world of business has focused on the needs of around 1 billion people since they represent wealthy enough consumers. But the world’s population has just passed the 7bn 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.



Challenges on the innovation horizon (continued)

Context Change	Indicative Examples
<i>Market fragmentation</i>	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. [6] or along the so-called long tail – the large number of individuals or small target markets with highly differentiated needs and expectations.
<i>Market virtualization</i>	The emergence of large-scale social networks in cyberspace pose challenges in market research approaches – for example, Facebook with 1 billion members is technically the 3 rd largest country in the world by population. Further challenges arise in the emergence of parallel world communities – for example, Second Life now has over 6 million ‘residents’, whilst World of Warcraft has over 10 million players.
<i>Rise of active users</i>	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 – for example, the growth of Linux has been a user-led open community development. In sectors like media the line between consumers and creators is increasingly blurred - for example, You Tube has around 100 million videos viewed each day but also has over 70,000 new videos uploaded every day from its user base.



Challenges on the innovation horizon (continued)

Context Change	Indicative Examples
<i>Growing concern with sustainability issues</i>	Major shifts in resource and energy availability prompting search for new alternatives and reduced consumption. Increasing awareness of impact of pollution and other negative consequences of high and unsustainable growth. Concern over climate change. Major population growth and worries over ability to sustain living standards and manage expectations. Increasing regulation on areas like emissions, carbon footprint.
<i>Development of technological and social infrastructure</i>	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 have reduced the separation between users and producers.

Dimensions of innovation – what can we change?

Dimension	Type of change
‘Product’	Changes in the things (products/services) which an organization offers
‘Process’	Changes in the ways in which these offerings are created and delivered
‘Position’	Changes in the context into which the products/services are introduced
‘Paradigm’	Changes in the underlying mental models which frame what the organization does



Examples of the 4Ps model: Product

‘Product’ – what we offer the world	Windows 7 and 8 replacing Vista and XP – essentially improving on existing software idea New versions of established car models – e.g. the VW Golf essentially improving on established car design Improved performance - incandescent light bulbs CDs replacing vinyl records – essentially improving on the storage technology	New to the world software – for example the first speech recognition program Toyota Prius – bringing a new concept – hybrid engines. Tesla – high performance electric car. LED-based lighting, using completely different and more energy efficient principles Spotify and other music streaming services – changing the pattern from owning your own collection to renting a vast library of music
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Examples of the 4Ps model: Process

'Process' - how we create and deliver that offering	Improved fixed line telephone services Extended range of stock broking services Improved auction house operations Improved factory operations efficiency through upgraded equipment Improved range of banking services delivered at branch banks Improved retailing logistics	Skype and other VOIP systems On-line share trading eBay Toyota Production System and other 'lean' approaches Online banking and now mobile banking in Kenya, Philippines – using phones as an alternative to banking systems On line shopping
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Examples of the 4Ps model: Position

‘Position’

**– where we target
that offering and
the story we tell
about it**

HaagenDazs changing the target market for ice cream from children to consenting adults
Airlines segmenting service offering for different passenger groups – Virgin Upper Class, BA Premium Economy, etc.
Dell and others segmenting and customizing computer configuration for individual users
On line support for traditional higher education courses
Banking services targeted at key segments – students, retired people, etc.

Addressing underserved markets – for example the Tata Nano aimed at emerging but relatively poor Indian market with car priced around \$2000.
Low cost airlines opening up air travel to those previously unable to afford it – create new market and also disrupt existing one
Variations on the ‘One laptop per child’ project – e.g. Indian government \$20 computer for schools
University of Phoenix and others, building large education businesses via online approaches to reach different markets
‘Bottom of the pyramid’ approaches using a similar principle but tapping into huge and very different high volume/low margin markets – Aravind eye care, Cemex construction products



Examples of the 4Ps model: Paradigm

‘Paradigm’ – how we frame what we do	<p>Bausch and Lomb – moved from ‘eye wear’ to ‘eye care’ as their business model, effectively letting go of the old business of spectacles, sunglasses (Raybans) and contact lenses all of which were becoming commodity businesses. Instead they moved into newer high tech fields like laser surgery equipment, specialist optical devices and research in artificial eyesight</p> <p>Dyson redefining the home appliance market in terms of high performance engineered products</p> <p>Rolls Royce – from high quality aero engines to becoming a service company offering ‘power by the hour’</p> <p>IBM from being a machine maker to a service and solution company – selling off its computer making and building up its consultancy and service side.</p>	<p>Grameen Bank and other microfinance models – rethinking the assumptions about credit and the poor</p> <p>iTunes platform – a complete system of personalized entertainment</p> <p>Cirque de Soleil – redefining the circus experience</p> <p>Amazon, Google, Skype – redefining industries like retailing, advertising and telecoms through online models</p> <p>Linux, Mozilla, Apache – moving from passive users to active communities of users co-creating new products and services</p>
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Activity: Classifying innovation

Think of a list of innovations and classify them in terms of the themes in this section – incremental or radical, products or service, etc.

On the Portal there is an exercise to help you do this:

<http://www.innovation-portal.info/?s=classifying>



Activity: Architectural and component innovation

Think of a list of innovations and classify them in terms of architectural and component innovation.

On the Portal there is a framework to capture your answers.

<http://www.innovation-portal.info/resources/architectural-and-component-innovation-2/>



On the Portal following the same link, there is a ‘deeper dive’ – a more detailed explanation which introduces the concepts of ‘component’ and ‘architectural’ innovation



Types of Innovation

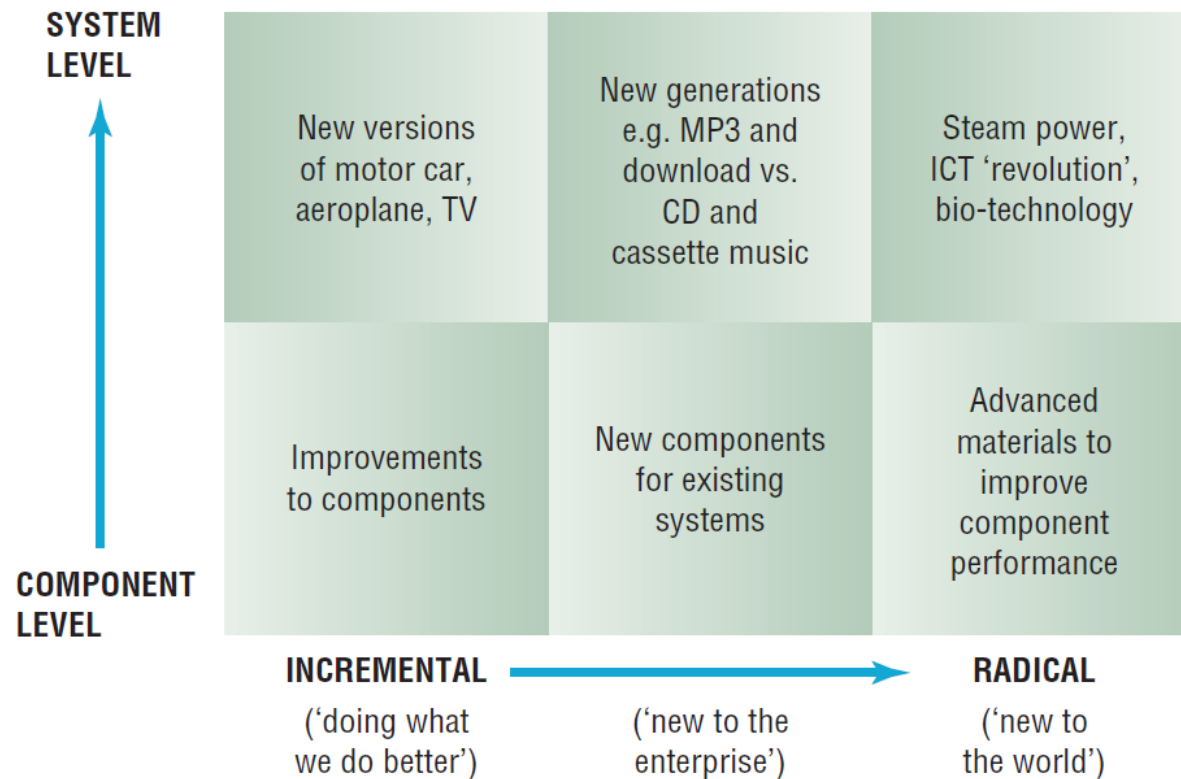


Figure 1.1 of the book illustrates the range of choices, highlighting the point that change can happen at component or sub-system level or across the whole system. Ask the students to provide more examples. You can use the flip chart paper to collect students’ examples about the matrix. You can divide the students into groups and ask them to think of more examples of (i) radical, (ii) incremental, (iii) product, and/or (iv) service innovation

A process model of innovation

4 key steps:

- recognizing the opportunity
- finding the resources
- developing the idea
- capturing value.

A process model

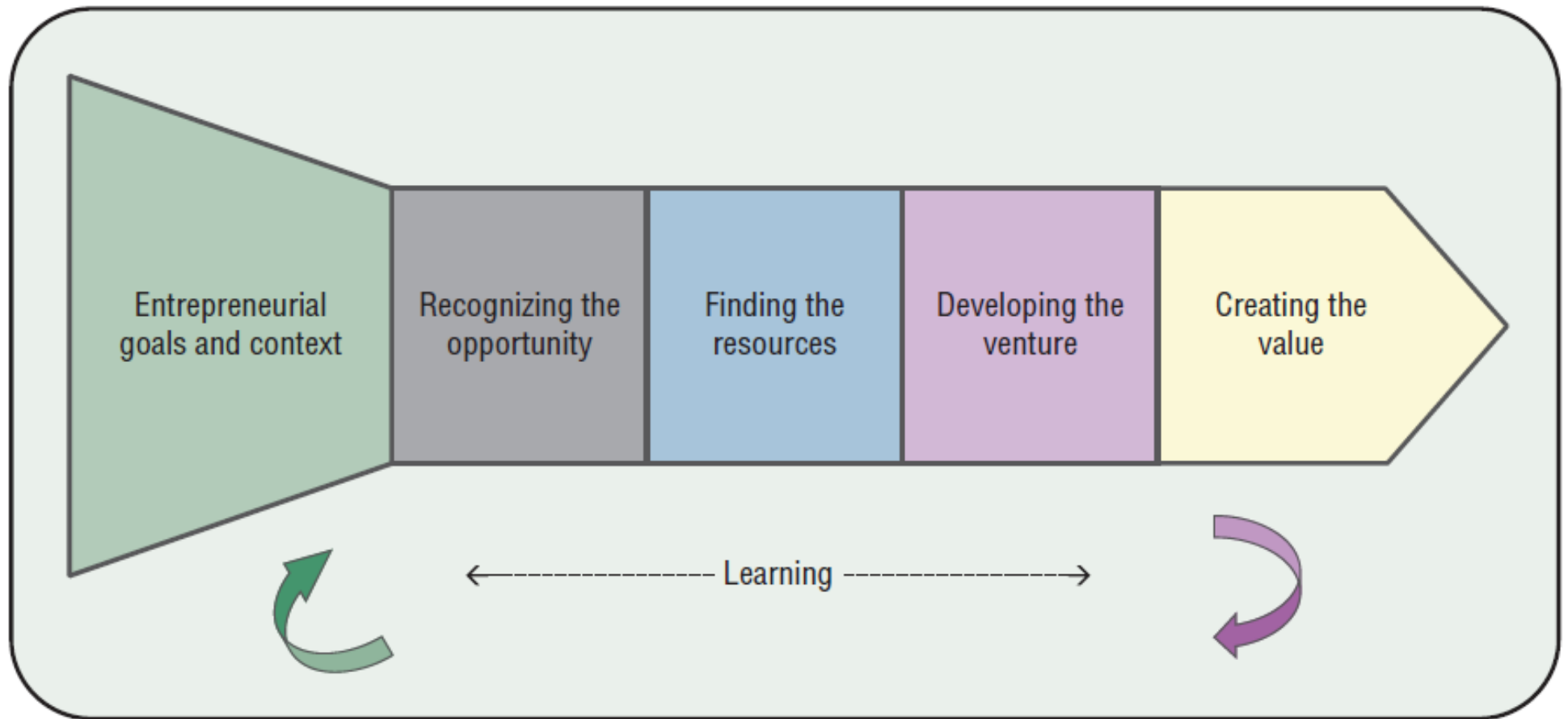


FIGURE 1.2 A model of the entrepreneurial process

Creating the context for success

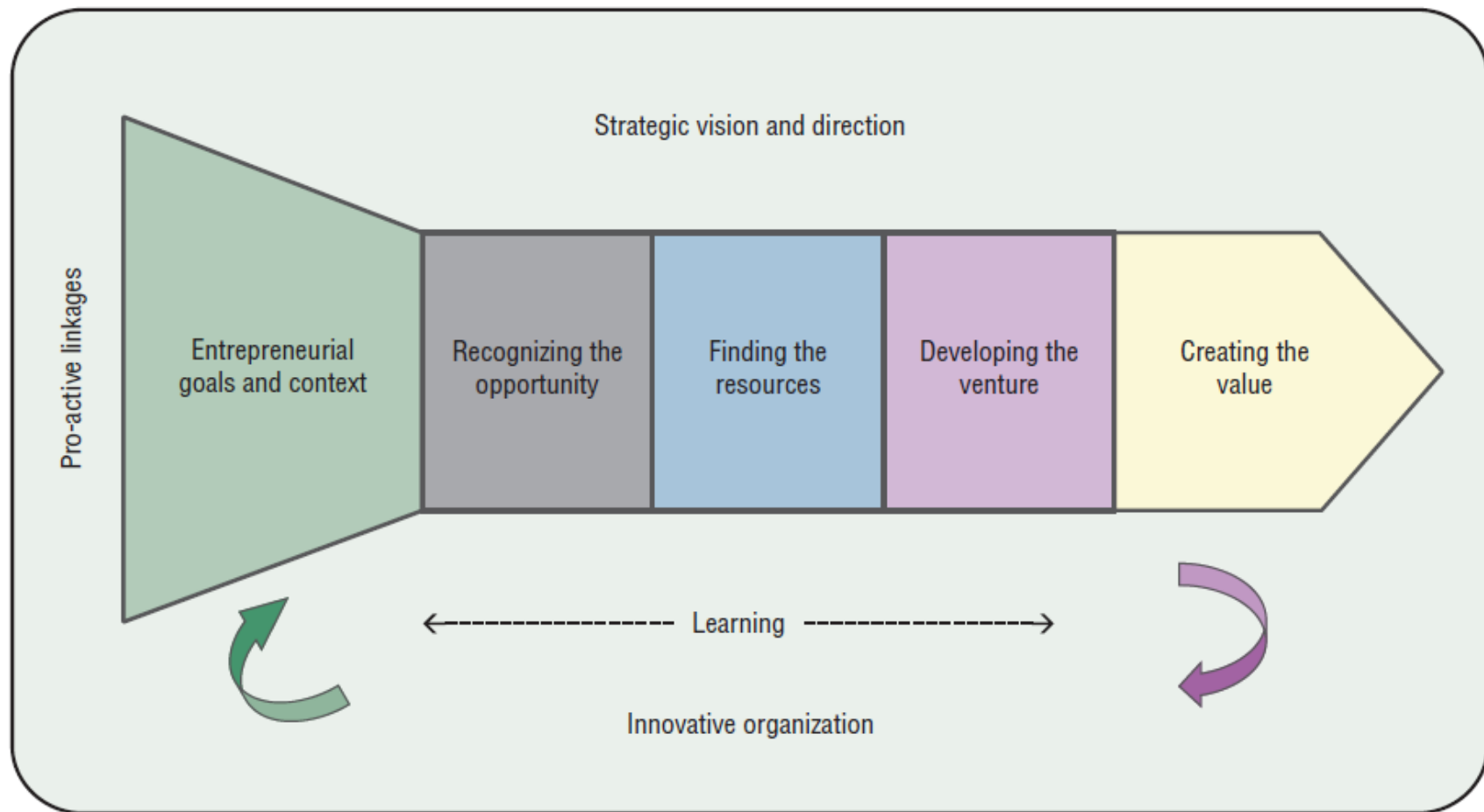


FIGURE 1.3 The resulting model: What we need to pay attention to if we are going to manage innovation well

Partial models

TABLE 1.5 The problem with partial models

If innovation is only seen as...	...the result can be
Strong R&D capability	Technology which fails to meet user needs and may not be accepted: 'the better mousetrap nobody wants'
The province of specialists in white coats in the R&D laboratory	Lack of involvement of others, and a lack of key knowledge and experience input from other perspectives
Meeting customer needs	Lack of technical progression, leading to inability to gain competitive edge
Technological advances	Producing products the market does not want or designing processes which do not meet the needs of the user and are opposed
The province of large firms	Weak small firms with too high a dependence on large customers
Breakthrough changes	Neglect of the potential of incremental innovation. Also an inability to secure and reinforce the gains from radical change because the incremental performance ratchet is not working well
Associated with key individuals	Failure to utilize the creativity of the remainder of employees, and to secure their inputs and perspectives to improve innovation
Internally generated	The 'not invented here' effect, where good ideas from outside are resisted or rejected
Externally generated	Innovation becomes simply a matter of filling a shopping list of needs from outside and there is little internal learning or development of technological competence



Discussion: Strategic advantage through innovation

To illustrate a discussion on commercial organizations and the ways in which innovation becomes a competitive advantage against crime, against humanitarian crises, etc., you can use some case studies on the portal:

<http://www.innovation-portal.info/resources/the-innovation-challenge-of-cybercrime-2/>

<http://www.innovation-portal.info/resources/humanitarian-innovation/>



Activity: Strategic advantage through innovation

On the Portal there is an exercise to help you explore possible sources of strategic advantage through innovation.

On this link you can find a table listing the ways in which strategic advantage can come from innovation:

<http://www.innovation-portal.info/resources/strategic-advantage/>

Creating an innovation strategy

- Strategic analysis: what could we do?
- Strategic selection: what are we going to do, and why?
- Strategic implementation: how are we going to make it happen?

Exploring innovation space

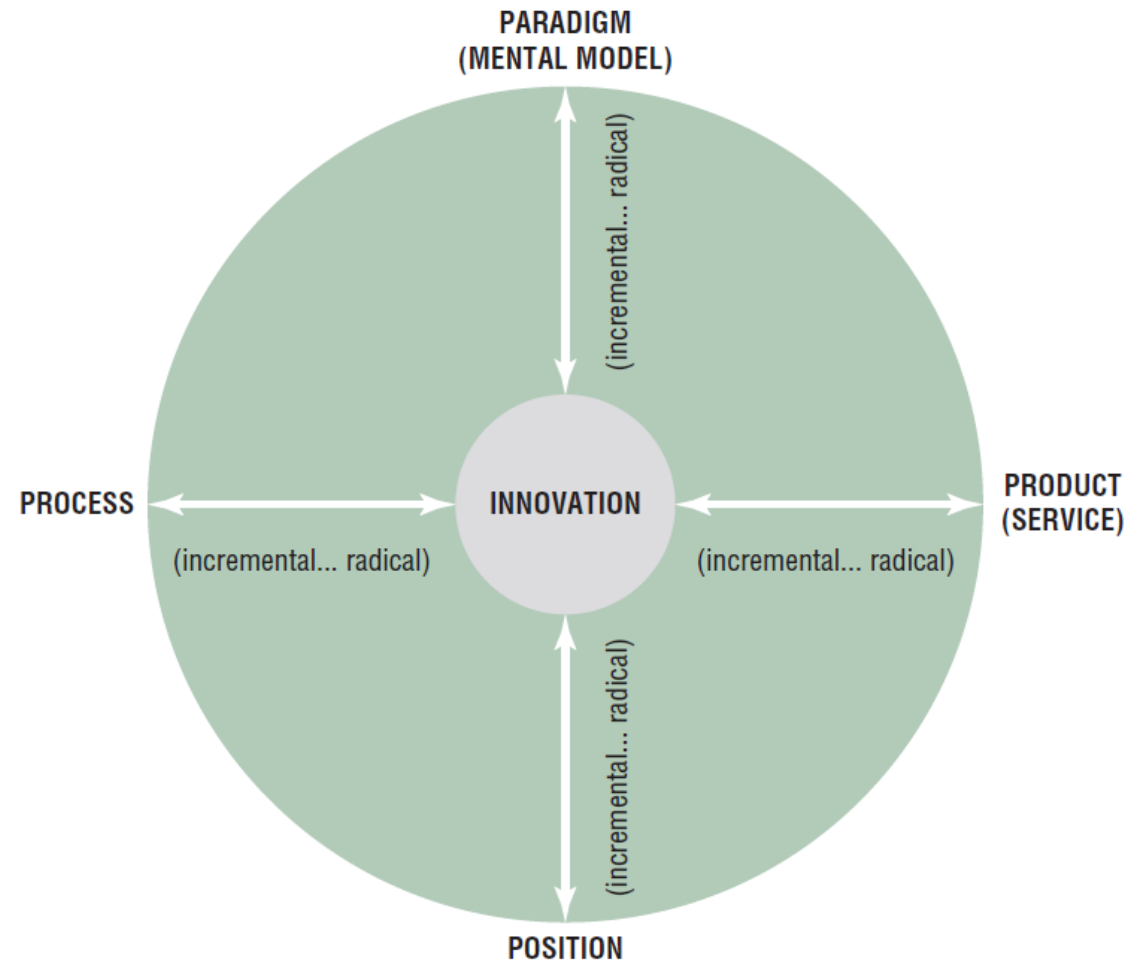


FIGURE 1.4 Exploring innovation space



Activity: Working with the 4Ps

There is a simple online quiz to begin to explore the model

<http://www.innovation-portal.info/resources/using-the-4ps-framework/>



Video: The 4Ps approach

In this video John Bessant sets out the basic framework of the 4Ps and how it can be used to explore innovation space

<http://www.innovation-portal.info/resources/exploring-innovation-space/>



Video: Using the 4Ps

The video of 'Finnegan's fish bar' shows how you can use the model with a simple organisation to explore innovation space. One activity is to get the class to watch it and then choose another simple example – a shop, a restaurant, etc. – and construct a 4Ps map of where and why it might innovate.

<http://www.innovation-portal.info/resources/finnegans-fish-bar/>

A transcript of the dialogue is available here:

<http://www.innovation-portal.info/wp-content/uploads/Finnegans-Fish-Bar-transcript.pdf>

Tools for strategic analysis

- [5 forces](#)
- [SWOT analysis](#)
- [PEST analysis](#)
- [Scenarios](#)
- (all of these are on the Portal and it is easy to link activities to using them)

Strategic selection

- What is our overall business strategy (where we are trying to go as an organization) and how will innovation help us get there?
- Do we *know* anything about the direction we want to go in – does it build on something we have some competence in (or have access to)?

Tools to help strategic selection

- [Competency mapping](#)
- [Matrix methods](#)
- [Boston matrix](#)
- [Bubble charts](#)
- [Business case](#)
- [Dragon's Den](#)
- (all of these are on the Portal and it is easy to link activities to using them)

Case studies of accumulating and redeploying competencies

- [Marshalls](#)
- [Kodak](#)
- [Fujifilm](#)
- [Philips Lighting](#)
- [Tesco](#)
- [Corning](#)
- (all of these are on the Portal and it is easy to link activities to using them)

Tools for strategic implementation

- FMEA
- Project management
- Gantt charts
- Business case
- Business Model Canvas

Activities around strategic implementation

- [Strategic planning for implementation](#)
- [Dragon's Den](#)
- (Follow the links to find these on the Portal)



Summary

Innovation is about growth – about recognising 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 it is the creative human spirit, the urge to make change in our environment.



Summary

Innovation is also a survival imperative. If an organisation doesn't change what it offers the world and the ways in which it creates and delivers those offerings it could well be in trouble. And innovation contributes to competitive success in many different ways – it's a *strategic* resource - helping to get the organization where it is trying to go, whether it is delivering shareholder value for private sector firms, or providing better public services, or enabling the start-up and growth of new enterprises.



Summary

Innovation doesn't just happen – it is driven by *entrepreneurship*. This powerful mixture of energy, vision, passion, commitment, judgement and risk-taking – provides the engine 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.



Summary

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 through into effective reality.



Summary

- The core process involves four steps –
 - recognising opportunities,
 - finding resources,
 - developing the venture and
 - capturing value.
- The challenge comes in doing this in organized fashion and in being able to repeat the trick.



Summary

This core process doesn't take place in a vacuum. We also know that it is strongly influenced by many factors. In particular, innovation needs:

- clear strategic leadership and direction, plus the commitment of resources to make this happen
- an innovative organization in which the structure and climate enables people to deploy their creativity and share their knowledge to bring about change
- proactive links across boundaries inside the organization and to the many external agencies who can play a part in the innovation process (suppliers, customers, sources of finance, skilled resources and of knowledge, etc.).



Summary

Research repeatedly suggests that if we want to succeed in managing innovation we need to:

- explore and understand different dimensions of innovation (ways in which we can change things)
- manage innovation as a *process*
- create enabling conditions to enable them to repeat the innovation trick (building capability)
- focus this capability to move their organizations forward (innovation strategy)
- build *dynamic capability* (the ability to reset and adapt their approaches in the face of a changing environment).



Summary

Innovation can take many forms but they can be reduced to four directions of change:

- ***product innovation***: changes in the things (products/services) an organization offers
- ***process innovation***: changes in the ways in which they are created and delivered
- ***position innovation***: changes in the context in which the products/services are introduced
- ***paradigm innovation***: changes in the underlying mental models which frame what the organization does.



Summary

- Within any of these dimensions innovations can be positioned on a spectrum from 'incremental' (doing what we do but better) through to 'radical' (doing something completely different). And they can be stand-alone (*component innovations*) or form part of a linked 'architecture' or system which brings many different components together in a particular way.



Summary

Building a capability to organize and manage innovation is a great achievement, but we also need to consider where and how innovation can be used to strategic advantage. Putting an innovation strategy together involves three key steps, pulling together ideas around core themes and inviting discussion and argument to sharpen and shape them. These are:

- Strategic analysis: what could we do?
- Strategic selection: what are we going to do, and why?
- Strategic implementation: how are we going to make it happen?



Summary

Any organization can get lucky once but the real skill in innovation management is being able to repeat the trick. So if we want to manage innovation we ought to ask ourselves the following check questions:

- Do we have effective enabling mechanisms for the core process?
- Do we have strategic direction and commitment for innovation?
- Do we have an innovative organization? Do we build rich, proactive links? Do we learn and develop our innovation capability?



Summary

- Most of the time innovation takes place within a set of rules of the game which are clearly understood, and involves players trying to innovate by doing what they do (product, process, position, etc.) but better. But occasionally something happens which changes the rules of the game (e.g. when radical change takes place along the techno-logical frontier or when completely new markets emerge). When this happens, we need different approaches to organizing and managing innovation. If we try to use established models which work under steady-state conditions we find ourselves increasingly out of our depth and risk being upstaged by new and more agile players.



Summary

- For this reason, a key skill lies in building ‘dynamic capability’ (the ability to review and reset the approach which the organization takes to managing innovation in the face of a constantly shifting environment).



Assessment questions

1. Does innovation matter? In what ways does it make a difference – economically, socially, living standards, humanitarian, etc.
2. Give ways in which strategic advantage can come from innovation. List the ways in which an organization does (or doesn't) use innovation to get and stay ahead of competition.



Assessment questions

3. How are 'innovation' and 'entrepreneurship' connected and how they are essential for survival and growth on a country/company level.
4. Imagine Nick Smith has an innovative product idea. What does he need to start with? What could be the first steps and what are the major challenges/barriers to expect?



Assessment questions

5. How does innovation contribute to competitive advantage? Support your answer with illustrations from both manufacturing and services.
6. Does innovation matter for public services? Using examples indicate how and where it can be an important strategic issue.
7. You are a newly-appointed director for a small charity which supports homeless people. How could innovation improve the ways in which your charity operates?



Team project exercises

Find a company whose experience you want to study. Using Table 1.2: Challenges in the innovation context – take a detailed interview with the general manager and explore the ways in which the changing context affects their business. Key context changes might include:

- Acceleration of knowledge production
- Global distribution of knowledge production
- Market expansion
- Market fragmentation
- Market virtualization
- Rise of active users
- Growing concern with sustainability issues



Team project exercises

Strategic advantage through innovation

Think about an organization with which you are familiar and about the other firms or players in its sector. How do they choose to try and position themselves for strategic advantage - and how do they use technology to help them do so? They may try and offer the lowest prices - and have heavy investments in clever machines which help them achieve this. Or they may try and offer the best designs - and back this up with a commitment to design and R&D.

Try and research the strategies of not only one firm but of several within the sector and build up a picture of how the sector is shaped by firms using technology to try and gain competitive advantage. You might like to use table 1.2 to help you think about how they are doing so - and to record your thoughts.



Team project exercises: Sector innovation patterns

Imagine you work for a firm involved in children's toy manufacturing. Now try and list the major changes in that sector over the past 25 years in terms of what contributes to competitiveness. Who (which firms) have been the winners and losers, and why? You are trying to get a feel in this for how technological change can shape the competitive dynamics of an industry so think about questions like these:

- How has the industry changed - and how has technology helped (or could it help) deal with these changes?
- What new technologies have emerged - and how have they been used?
- What are the main market demands (e.g. price, quality, design, customisation, speed of response, etc.) and how has technology affected the ability of firms to offer these?
- If a new entrant came into the industry what would he/she have to offer to become a market leader - and how might technology help them do so?



Team project exercises: Sector innovation patterns

You may need to spend some time researching the wider sector to build up this picture. Try and summarise your research in the form of short 'bullet points' which highlight the strategic role which technology plays. You might like to use the framework below which is partially filled in

<i>Major changes in the industry</i>	<i>Major new technologies</i>	<i>Main market demands and how technology affects them</i>	<i>How to become a market leader</i>
<p><i>Big influence of TV and films - increasing tie-ins</i></p> <p><i>Price pressures push actual manufacturing to the Far East</i></p> <p><i>Fashion industry with high risks - and benefits for the right products.</i></p> <p><i>Costs of new technologies mean fewer players can stay in the game of new product development - so consolidation of the industry</i></p>	<p>Electronics and programmability</p> <p>TV/Video and computer games - as competitors to traditional toys but also as complements which can extend their range - e.g. Lego bricks plus computer = programmable toys.</p>	<p>Strong price pressure - pushes manufacturing to low cost locations - technology relevant in keeping costs low whilst enabling consistent quality</p> <p>Major emphasis on design technologies</p>	<p>Close market understanding and the ability to communicate this deep into the organisation and configure products to meet these demands</p> <p>Broad knowledge base - especially in newer technologies like computers and software but also in design of parts.</p> <p>Access to distribution networks</p> <p>Strong design and marketing capability</p>