

1.5 A process view of innovation

In this book we will make use of a simple model of innovation as the *process* of turning ideas into reality and capturing value from them. We will explain the model in more detail in the next chapter but it is worth introducing it here. There are four key phases, each of which requires dealing with particular challenges – and only if we can manage the whole process is innovation likely to be successful.

Phase one involves the question of search. To take a biological metaphor, we need to generate variety in our gene pool – and we do this by bringing new ideas to the system. These can come from R&D, ‘Eureka’ moments, copying, market signals, regulations, competitor behaviour – the list is huge but the underlying challenge is the same – how do we organize an effective search process to ensure a steady flow of ‘genetic variety’ which gives us a better chance of surviving and thriving?

But simply generating variety isn’t enough – we need **to select** from that set of options the variants most likely to help us grow and develop. Unlike natural selection where the process is random we are concerned here with some form of *strategic* choice – out of all the things we could do, what are we going to do – and why? This process needs to take into account competitive differentiation – which choices give us the best chance of standing out from the crowd? – and previous capabilities – can we build on what we already have or is this a step into the unknown?

Generating and selecting still leaves us with the huge problem of actually making it happen – committing our scarce resources and energies to doing something different. This is the challenge of **implementation – converting ideas into reality.** The task is essentially one of managing a growing commitment of resources – time, energy, money and above all mobilizing knowledge of different kinds – against a background of uncertainty. Unlike conventional project management the innovation challenge is about developing something which may never have been done before – and the only way we know whether or not we will succeed is by trying it out.

Here the biological metaphor comes back into play – it is a risky business. We are betting – taking calculated risks rather than random throws of the dice but nonetheless gambling – that we can make this new thing happen (manage the complex project through to successful completion) *and* that it will deliver us the calculated value which exceeds or at least equals what we put into it. If it is a new product or service – the market will rush to our stall to buy what we are offering, or if it is a new process, our internal market will buy into the new way of doing things and we will become more effective as a result. If it is a social innovation, can we manage to make the world a better place in ways which justify the investment we put in?

Viewed in this way the innovation task looks deceptively simple. The big question is, of course, how to make it happen? This has been the subject of intensive study for a long period of time – plenty of practitioners have not only left us their innovations but also some of their accumulated wisdom, lessons about managing the process which they have learned the hard way. And a growing academic community has been working on trying to understand in systematic fashion questions about not only the core process but also the conditions under which it is likely to succeed or fail. This includes knowledge about the kinds of things which influence and help/hinder the process – essentially boiling down to having a clear and focused direction (the underpinning ‘why’ of the selection stage) and creating the organizational conditions to allow focused creativity.

The end effect is that we have a rich – and convergent – set of recipes which go a long way towards helping answer the practising manager’s question when confronted with the problem of organizing and managing innovation – ‘What do I do on Monday morning?’. Exploring this in greater detail provides the basis for the rest of the book.

VIEWS FROM THE FRONT LINE

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.

(Niccolo Machiavelli, *The Prince*, 1532)

Anything that won't sell, I don't want to invent. Its sale is proof of utility, and utility is success.

Everything comes to him who hustles while he waits.

Genius is one percent inspiration and ninety-nine percent perspiration.

I never did anything by accident, nor did any of my inventions come by accident; they came by work.

Make it a practice to keep on the lookout for novel and interesting ideas that others have used successfully. Your idea has to be original only in its adaptation to the problem you are working on.

(Thomas A. Edison)

Managing and innovation did not always fit comfortably together. That's not surprising. Managers are people who like order. They like forecasts to come out as planned. In fact, managers are often judged on how much order they produce. Innovation, on the other hand, is often a disorderly process. Many times, perhaps most times, innovation does not turn out as planned. As a result, there is tension between managers and innovation.

(Lewis Lehto, about the first years at 3M)

In the past, innovation was defined largely by creativity and the development of new ideas. Today the term encompasses coordinated projects directed toward honing these ideas and converting them into developments that boost the bottom line.

(Howard Smith, Computer Sciences Corporation)

To turn really interesting ideas and fledgling technologies into a company that can continue to innovate for years, it requires a lot of disciplines.

(Steve Jobs, Apple Inc.)

Scope for/types of innovation

If innovation is a process we need to consider the output of that process. In what ways can we innovate – what kinds of opportunities exist to create something different and capture value from bringing those ideas into the world?

Sometimes it is about completely new possibilities, for instance, by exploiting radical breakthroughs in technology. For example, new drugs based on genetic manipulation have opened a major new front in the war against disease. Mobile phones, PDAs and other devices have revolutionized where and when we

communicate. Even the humble window pane is the result of radical technological innovation – almost all the window glass in the world is made these days by the Pilkington float glass process which moved the industry away from the time-consuming process of grinding and polishing to get a flat surface.

Equally important is the ability to spot where and how new *markets* can be created and grown. Alexander Graham Bell's invention of the telephone didn't lead to an overnight revolution in communications – that depended on developing the market for person-to-person communications. Henry Ford may not have invented the motor car but in making the Model T – 'a car for Everyman' at a price most people could afford – he grew the mass market for personal transportation. And eBay justifies its multi-billion dollar price tag not because of the technology behind its online auction idea but because it created and grew the market.

Innovation isn't just about opening up new markets – it can also offer new ways of serving established and mature ones. Low-cost airlines are still about transportation, but the innovations which firms like Southwest Airlines, easyJet and Ryanair have introduced have revolutionized air travel and grown the market in the process. One challenging new area for innovation lies in the previously underserved markets of the developing world – the 4 billion people who earn less than \$2 per day. The potential for developing radically different innovative products and services aimed at meeting the needs of this vast population at what Prahalad calls 'the bottom of the pyramid' is huge – and the lessons learned may impact on established markets in the developed world as well.³

And it isn't just about manufactured products; in most economies the service sector accounts for the vast majority of activity so there is likely to be plenty of scope. Lower capital costs often mean that the opportunities for new entrants and radical change are greatest in the service sector. Online banking and insurance have become commonplace but they have radically transformed the efficiencies with which those sectors work and the range of services they can provide. New entrants riding the Internet wave have rewritten the rule book for a wide range of industrial games, for example, Amazon in retailing, eBay in market trading and auctions, Google in advertising, Skype in telephony. Others have used the web to help them transform business models around things like low-cost airlines, online shopping and the music business.³²

Four dimensions of innovation space

Essentially we are talking about change, and this can take several forms; for the purposes of this book we will focus on four broad categories: (The video of 'Finnegan's Fish Bar' on the website provides an example of how this 4Ps approach can be used to explore opportunities for innovation in a business.)



- 'Product innovation' – changes in the things (products/services) that 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.

Figure 1.1 shows how these '4Ps' provide the framework for a map of the innovation space available to any organization.³³

For example, a new design of car, a new insurance package for accident-prone babies and a new home entertainment system would all be examples of product innovation. And change in the manufacturing methods and equipment used to produce the car or the home entertainment system, or in the office procedures and sequencing in the insurance case, would be examples of process innovation.

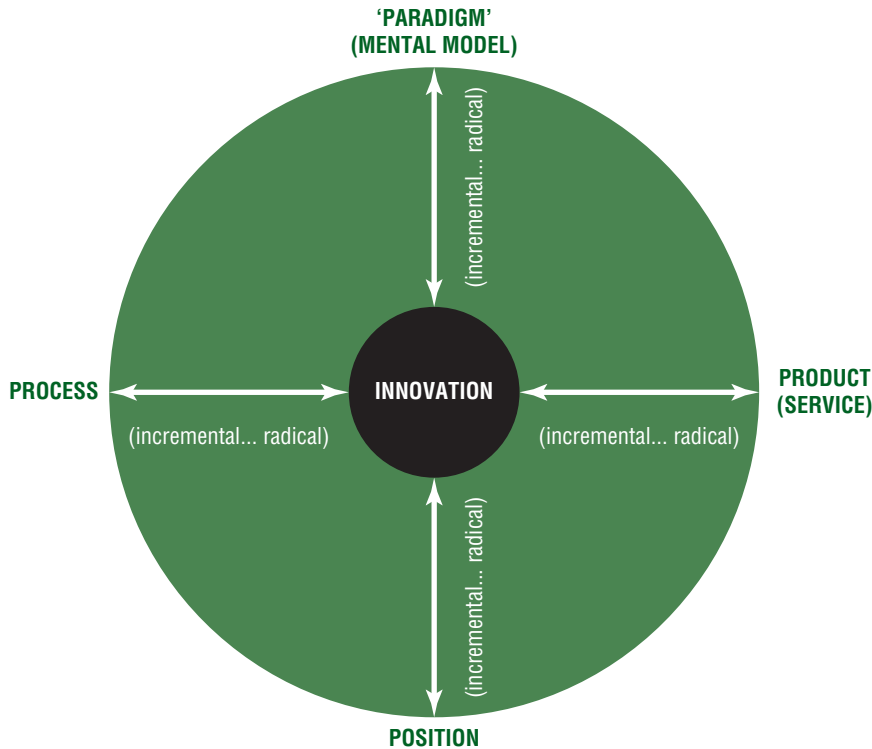


FIGURE 1.1: The 4Ps of innovation space

Sometimes the dividing line is somewhat blurred, for example, a new jet-powered sea ferry is both a product and a process innovation. Services represent a particular case of this where the product and process aspects often merge, for example, is a new holiday package a product or process change?

Innovation can also take place by repositioning the perception of an established product or process in a particular user context. For example, an old-established product in the UK is Lucozade – originally developed in 1927 as a glucose-based drink to help children and invalids in convalescence. These associations with sickness were abandoned by the brand owners, Beechams (now part of GSK), when they relaunched the product as a health drink aimed at the growing fitness market where it is now presented as a performance-enhancing aid to healthy exercise. This shift is a good example of ‘position’ innovation. In similar fashion Häagen-Dazs were able to give a new and profitable lease of life to an old-established product (ice cream) made with well-known processes. Their strategy was to target a different market segment and to reposition their product as a sensual pleasure to be enjoyed by adults – essentially telling an ‘ice cream for grown-ups’ story.

Sometimes opportunities for innovation emerge when we reframe the way we look at something. Henry Ford fundamentally changed the face of transportation not because he invented the motor car (he was a comparative latecomer to the new industry) or because he developed the manufacturing process to put one together (as a craft-based specialist industry car making had been established for around 20 years). His contribution was to change the underlying model from one which offered a handmade specialist product to a few wealthy customers to one which offered a car for everyone at a price they could afford. The ensuing shift from craft to mass production was nothing short of a revolution in the

way cars (and later countless other products and services) were created and delivered.²¹ Of course making the new approach work in practice also required extensive product and process innovation, for example, in component design, in machinery building, in factory layout and particularly in the social system around which work was organized. See [Model T case study available on the web](#).

Recent examples of ‘paradigm’ innovation – changes in mental models – include the shift to low-cost airlines, the provision of online insurance and other financial services, and the repositioning of drinks like coffee and fruit juice as premium ‘designer’ products. Although in its later days Enron became infamous for financial malpractice it originally came to prominence as a small gas pipeline contractor which realized the potential in paradigm innovation in the utilities business. In a climate of deregulation and with global interconnection through grid distribution systems, energy and other utilities such as telecommunications bandwidth increasingly became commodities which could be traded much as sugar or cocoa futures.³⁴

In their book *Wikinomics*, Tapscott and Williams highlight the wave of innovation which follows the paradigm change to ‘mass collaboration’ via the Internet which builds on social networks and communities. Companies like LEGO and Adidas (see [case studies available on the web](#)) are reinventing themselves by engaging their users as designers and builders rather than as passive consumers, whilst others are exploring the potential of virtual worlds like ‘Second Life’.^{27, 32} Concerns about global warming and sustainability of key resources such as energy and materials are, arguably, setting the stage for some significant paradigm innovation across many sectors as firms struggle to redefine themselves and their offerings to match these major social issues. Table 1.3 gives examples of innovations mapped on to the 4Ps model.

TABLE 1.3

Some examples of innovations mapped on to the 4Ps model.

Innovation type	Incremental – ‘do what we do but better’	Radical – ‘do something different’
‘Product’ – what we offer the world	Windows Vista replacing XP – essentially improving on existing software idea	New to the world software, e.g., the first speech recognition program
	VW EOS replacing the Golf – essentially improving on established car design	Toyota Prius – bringing a new concept – hybrid engines
	Improved performance incandescent light bulbs	LED-based lighting, using completely different and more energy efficient principles (see Philips and lightbulb case studies available on the web)
Process – how we create and deliver that offering	Improved fixed-line telephone services	Skype and other VoIP systems
	Extended range of stock-broking services	Online share trading eBay

(continued)

TABLE 1.3 (Continued)

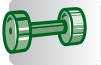
Innovation type	Incremental – ‘do what we do but better’	Radical – ‘do something different’
	<p>Improved auction house operations</p> <p>Improved factory operations efficiency through upgraded equipment</p> <p>Improved range of banking services delivered at branch banks</p>	<p>Toyota Production System and other ‘lean’ approaches</p> <p>Mobile banking in Kenya, Philippines – using phones as an alternative to banking systems</p>
Position – where we target that offering and the story we tell about it	<p>Häagen Dazs changing the target market for ice cream from children to consenting adults</p> <p>Low-cost airlines</p> <p>University of Phoenix and others, building large education businesses via online approaches to reach different markets</p> <p>Dell and others segmenting and customizing computer configuration for individual users</p> <p>Banking services targeted at key segments – students, retired people, etc.</p>	<p>Addressing underserved markets, e.g., Tata Nano which targets the huge but relatively poor Indian market using the low-cost airline model – target cost is 1 lakh (around \$3000)</p> <p>‘Bottom of the pyramid’ approaches using a similar principle – Aravind eye care, Cemex construction products</p> <p>One laptop per child project – the \$100 universal computer</p> <p>Microfinance – Grameen Bank opening up credit for the very poor</p>
Paradigm – how we frame what we do	<p>Bausch and Lomb – moved from ‘eye wear’ to ‘eye care’ as its business model, effectively letting go of the old business of spectacles, sunglasses and contact lenses all of which were becoming commodity businesses. Instead it moved into newer high-tech fields like laser surgery equipment, specialist optical devices and research into artificial eyesight</p>	<p>Grameen Bank and other micro-finance models – rethinking the assumptions about credit and the poor</p> <p>iTunes platform – a complete system of personalized entertainment</p> <p>Rolls-Royce – from high-quality aero engines to becoming a service company offering ‘power by the hour’</p>

TABLE 1.3 (Continued)

Innovation type	Incremental – ‘do what we do but better’	Radical – ‘do something different’
	<p>IBM moving 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>VT moving from being a ship-builder with roots in Victorian times to a service and facilities management business</p>	<p>Cirque du Soleil – redefining the circus experience</p>

Mapping innovation space

The area indicated by the circle in Figure 1.1 is the potential innovation space within which an organization can operate. (Whether it actually explores and exploits all the space is a question for innovation *strategy* and we will return to this theme later in Chapter 3.) [See web for 4Ps interactive exercise.](#)



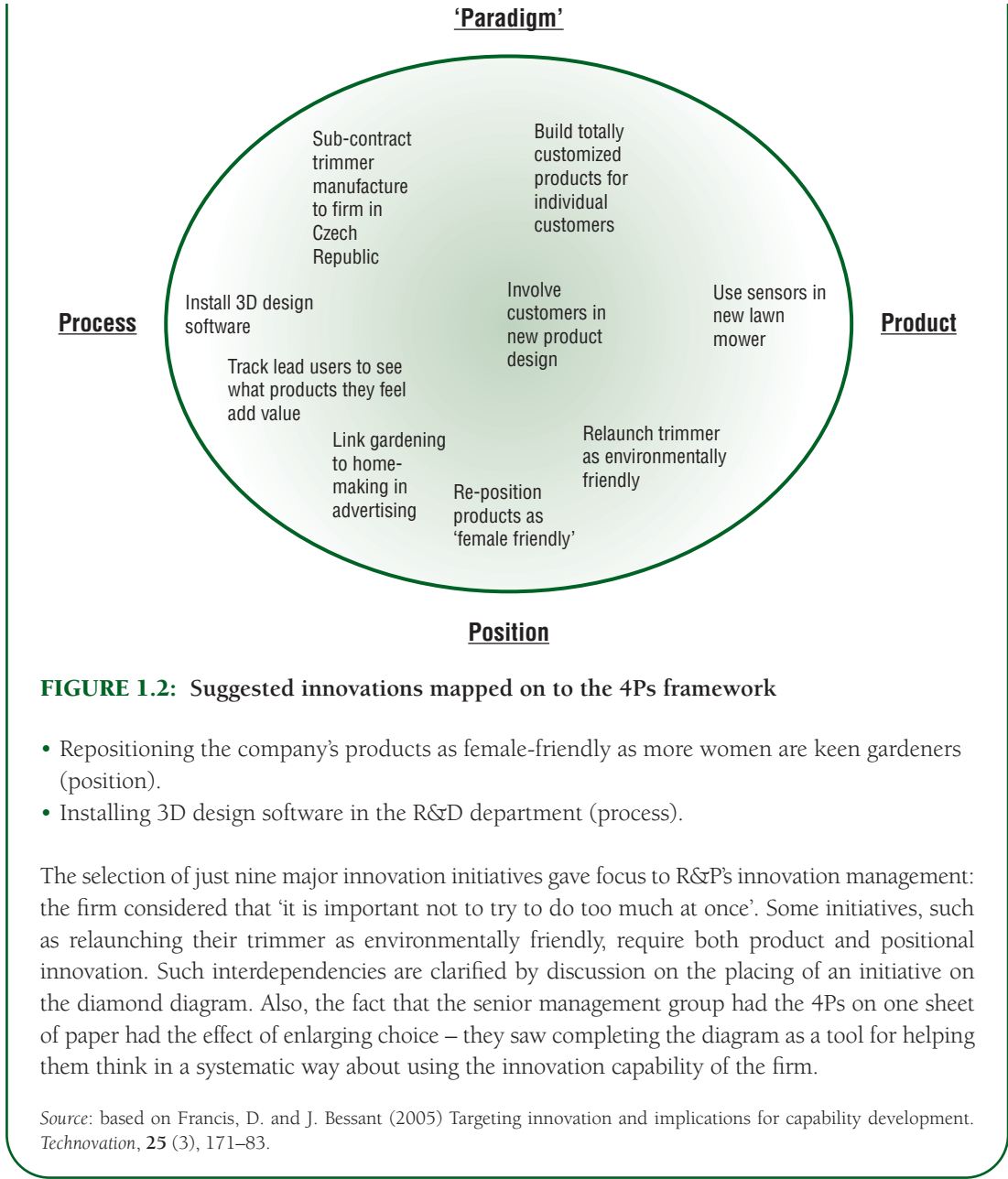
We can use the model to look at where the organization currently has innovation projects – and where it might move in the future. For example, if the emphasis has been on product and process innovation there may be scope for exploring more around position innovation – which new or underserved markets might we play in? Or around defining a new paradigm, a new business model with which to approach the marketplace.

We can also compare maps for different organizations competing in the same market – and use the tool as a way of identifying where there might be relatively unexplored space which might offer significant innovation opportunities. By looking at where other organizations are clustering their efforts we can pick up valuable clues about how to find relatively uncontested space and focus our efforts on these – as the low-cost airlines did with targeting new and underserved markets for travel.³⁵

RESEARCH NOTE Mapping innovation space

Figure 1.2 shows how the 4Ps approach was applied in a company (R&P Ltd) making garden machinery. The diamond diagram provides an indication of where and how they could construct a broad-ranging ‘innovation agenda’. Nine innovation activities were listed on the diamond chart, including:

- Building totally customized products for customer’s individual orders (paradigm).
- Using sensors in the next generation of lawn mowers to avoid roots and stones (product).



1.6 Exploring different aspects of innovation

The overall innovation space provides a simple map of the table on which we might place our innovation bets. But before making those bets we should consider some of the other characteristics of innovation which might shape our strategic decisions about where and when to play. These key aspects include: