

Every invention is received by a cry of triumph  
which soon turns into a cry of fear.

BERTOLT BRECHT

# New-product development and product life-cycle strategies

CHAPTER

fourteen

## Chapter objectives

*After reading this chapter, you should be able to:*

- Explain how companies find and develop new-product ideas.
- List and define the steps in the new-product development process.
- Describe the stages of the product life-cycle.
- Explain how marketing strategy changes during a product's life-cycle.

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# Prelude case Nokia: game's on but not having fun!



Nokia has just fallen foul of the mayor of Rome after some stickers it distributed to promote its N-Gage gaming device ended up being plastered all over the city. Embarrassment was averted only when the Finnish company offered to pay for the costs of cleaning up. But stickers strewn across the monuments of the eternal city are not the only thing that Nokia, the world's leading maker of mobile phones, has struggled to shift. It has also had problems getting consumers excited about N-Gage, despite the massive marketing drive that has accompanied its first foray into the world of gaming consoles.

Nokia has set itself a target of selling 9 million of the devices worldwide in the first two years.

But at its full-year results announcement, reporting a robust performance from its main handset business, Nokia disclosed that it had sold only about 600,000 N-Gage devices globally to retail outlets in its first three months. And the number of consumers who have bought the device is likely to be significantly lower. The handset maker conceded that sales of the device in Asia had been 'modest' and North American sales had failed to meet its expectations. The relatively bright spot was Europe, which had accounted for the majority of sales so far, with the UK performing well ahead of other markets, it said.

But even the picture among leading retailers in Europe is at best mixed. The N-Gage – a combination of gaming device and mobile phone – is failing to fly off the shelves. At The Link, the UK cellphone retailer owned by Dixons Group, sales of the N-Gage are reported to have been hovering around a few hundred units a week across its network of more than 230 stores. 'Sales of N-Gage have been OK but unexciting', said Nick Wood, managing director of The Link.

Carphone Warehouse, Europe's largest mobile-phone retailer and probably Nokia's single biggest distributor of the N-Gage, has sold fewer than 50,000 of the devices across Europe since they reached its stores last October, according to senior staff at the company. Carphone has more than 1,100 stores in 11 countries across the continent, but well over half its N-Gage sales are understood to have come from the UK, supporting suggestions that demand for the device among mobile phone retailers in much of western Europe is failing to take off.

Anecdotal evidence appears to support this view. Michael Hultberg, deputy manager of the Game shop in Taby, north of

Stockholm, said: 'It's not been successful so far. It might be the lack of games, and the fact that it's quite complex to change games'. Game has 40 outlets in Sweden.

Lacklustre initial sales at cellphone retailers come despite heavy subsidies from the cellular operators which, in some cases, have reduced the cost of the device to nothing for users who sign up to annual contracts. This is particularly disappointing for Nokia as it had been counting on strong subsidies from network operators to help buoy sales of the N-Gage. Indeed, many analysts following Nokia have argued that it is the mobile-phone retailers that will account for the lion's share of N-Gage sales since, without subsidies, it is just too expensive.

At an unsubsidised price, the N-Gage has been selling for up to €400. This compares with about €120 for Nintendo's Gameboy Advance SP, the world's dominant portable game console. In addition, the Gameboy boasts a catalogue of more than 700 games, compared with fewer than 20 games for the N-Gage so far. Retailers say Nokia needs to lower its price if it is to turn the N-Gage into a mainstream consumer proposition. Subsidies from operators can have only a limited impact on sales, they say, because the target market for the N-Gage is pre-paid mobile phones, where the subsidies tend to be minimal. On pre-paid tariffs in the UK, the N-Gage has typically sold for £150 (€250) or more. 'We will only see strong rises in sales volumes if we can get pre-paid prices below the £99 mark', said Mr Wood. 'At £99 on pre-pay it would be a very good seller. Nokia needs to bring the prices right down.'

The sales experience at Woolworths, the high-street retailer, appears to support this view. Woolworths said strong demand in the run-up to Christmas had forced it to order extra stock. It has been selling the device in conjunction with Orange, the mobile operator, at £129.99 including a free game – one of the lowest prices on pre-paid tariffs for the N-Gage in the UK. Orange has been one of the strongest supporters of the device, but even with its above-average subsidies, the mobile operator is thought to have sold only about 30,000 units across all its different retail channels in the UK, including almost 900 Woolworths stores.

To increase sales, some analysts believe, Nokia should consider following Nintendo's business model where it sells its Gameboy for a minimal margin but reaps its financial rewards from the huge market for games for its consoles. Ilkka Raiskinen, senior vice-president of games at Nokia, insists this is not a route that Nokia intends to take, arguing that the N-Gage can command a much higher price over traditional games consoles such as the

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The N-Gage – a combination of gaming device and mobile phone – is failing to fly off the shelves.

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Gameboy because of its additional features, which include mobile telephony, Internet connectivity and the ability to play wireless multi-player games across devices. Most analysts readily support this view. But despite the additional features, they still believe the current price gap with the Gameboy is too great. Further, analysts argue that Nokia may be finding it difficult to generate strong sales of the N-Gage because of some intrinsic design flaws, such as a relatively short battery life or the inability to change game cartridges without removing the battery.

'What is a shame is that they did not take into account more feedback when it was first revealed in February 2003', said Ben Wood, analyst at Gartner, the technology research house. Mr Raiskinen responded that Nokia had learnt some valuable lessons about its strategy for N-Gage since launch, hinting that many of these lessons will feed through to improvements. 'We know where we have gaps', he said, pointing to areas such as its limited range of games, a lack of exclusive games for the N-Gage, and its distribution network in crucial markets such as the US. 'We have learnt a lot about the pricing dynamics and features that consumers value in a multi-function device.' Comments such as these, combined with lacklustre initial sales for the N-Gage, are fuelling speculation that Nokia is working on a successor that will incorporate improvements to some of its design flaws. Mr Raiskinen refused to comment apart from reiterating Nokia's long-term ambitions in the gaming market.

In terms of group financial performance, the N-Gage will have minimal impact next to annual global Nokia mobile-phone sales approaching 200 million units. But as Nokia targets several new markets for growth, its success or failure in the gaming arena may be highly symbolic.<sup>1</sup>

## Questions

1. Given Nokia's dominance in the mobile-phone market, why do you think they have shifted their attention to games rather than develop new products for the mobile-communications market?
2. Nokia's N-Gage appears to be failing despite the company's leading position in the mobile-phone market. What are the reasons for its failure and how could it be rectified?
3. Nokia has clearly spent enormous sums in developing a product as radically new as the N-Gage. Where in the new-product development process did they go wrong? Is it the strategy that resulted in the development of the N-Gage that was wrong, the product concept, its features, the marketing mix that supported its launch, market testing, or what?

SOURCE: Christopher Brown-Humes and Robert Budden, 'Nokia tries to learn a new game', Financial Times (5 February 2004).



# Introduction

In the previous chapter, we addressed decisions that marketers make in managing individual products or brands and entire product mixes. In this chapter, you will examine two additional product topics: developing new products and managing products through their life-cycles. New products are the lifeblood of an organisation. However, as the prelude case illustrates, new-product development is risky and many new products fail. The first part of this chapter therefore looks at the process for finding and growing successful new products. Once introduced, marketers want their products to enjoy a long and profitable life. In the second part of this chapter, we will see that products pass through several life-cycle stages and that each stage poses new challenges requiring different marketing strategies and tactics.

In competitive markets, the best and strongest firms sustain growth and maintain profitability over the longer term through successfully developing and launching a steady stream of new products or services. Firms must develop new products or services because of the rapid changes in customer tastes, technology and competition. Moreover, products have a finite life which is determined by the overall pace of new-product innovation taking place in the product market as well as by how well the marketing manager manages the brand during all stages of the product life-cycle. Introducing new products alone is therefore not sufficient. The firm must also know how to manage the new product as it goes through its life-cycle: that is, from its birth, through growth and maturity, to eventual demise as newer products come along that better serve consumer needs.

This product life-cycle presents two principal challenges. First, because all products eventually decline, the firm must find new products to replace ageing ones (the problem of *new-product development*). Second, the firm must be good at adapting its marketing strategies in the face of changing customer wants, technologies and competition (the problem of *product life-cycle strategies*). We look initially at the problem of finding and developing new products, and then at the challenge of managing them successfully over their life-cycles.

**Invention**—A new technology or product that may or may not be commercialised and may or may not deliver benefits to customers.

**Innovation**—An idea, service, product or technology that has been developed and marketed to customers who perceive it as novel or new. It is a process of identifying, creating and delivering new-product or service values that did not exist before in the marketplace.

**New-product development**—The development of original products, product improvements, product modifications and new brands through the firm's own R&D efforts.

## Innovation and new-product development strategy

Product innovation encompasses a variety of product development activities – product improvement, development of entirely new products, and extensions that increase the range or number of lines of product the firm can offer. Product innovations are not to be confused with **inventions**. The latter are new technologies or products which may or may not be commercialised and may or may not deliver benefits to customers. An **innovation** is defined as *an idea, service, product or piece of technology that has been developed and marketed to customers who perceive it as novel or new*. New-product development is an act of innovation which entails a process of identifying, creating and delivering new-product values or benefits that were not offered before in the marketplace.

A firm can obtain new products in two ways. One is through *acquisition* – by buying a whole company, a patent or a licence to produce someone else's product. Many large companies have decided to acquire existing brands rather than to create new ones because of the rising costs of developing and introducing major new products. The other route to obtaining new products is through **new-product development** in the company's own research-and-development department. By new products we mean original products, product improvements, product modifications and new brands that the firm develops through its own research-and-development efforts. In this chapter, we concentrate on new-product development – how businesses create and market new products.

## Risks and returns in new-product development

New product development is risky for a number of reasons, such as the following.

1. New-product development is an expensive affair. Pharmaceutical firms spend an average of £200 million or more to develop a new drug. This pales in comparison to what it costs firms like Sony to develop breakthrough consumer entertainment products – the company invested ¥200bn (€1.7bn) alone to develop the powerful semiconductor for the PlayStation2.<sup>2</sup>
2. New-product development takes time. Although companies can dramatically shorten their development time, in many industries such as pharmaceuticals, biotechnology, aerospace and food, new-product development cycles can be as long as 10–15 years. For example, the new-product launch cycle of consumer product firms such as Gillette may be anything from two to ten years. The uncertainty and unpredictability of market environments further raise the risks of commercialisation.

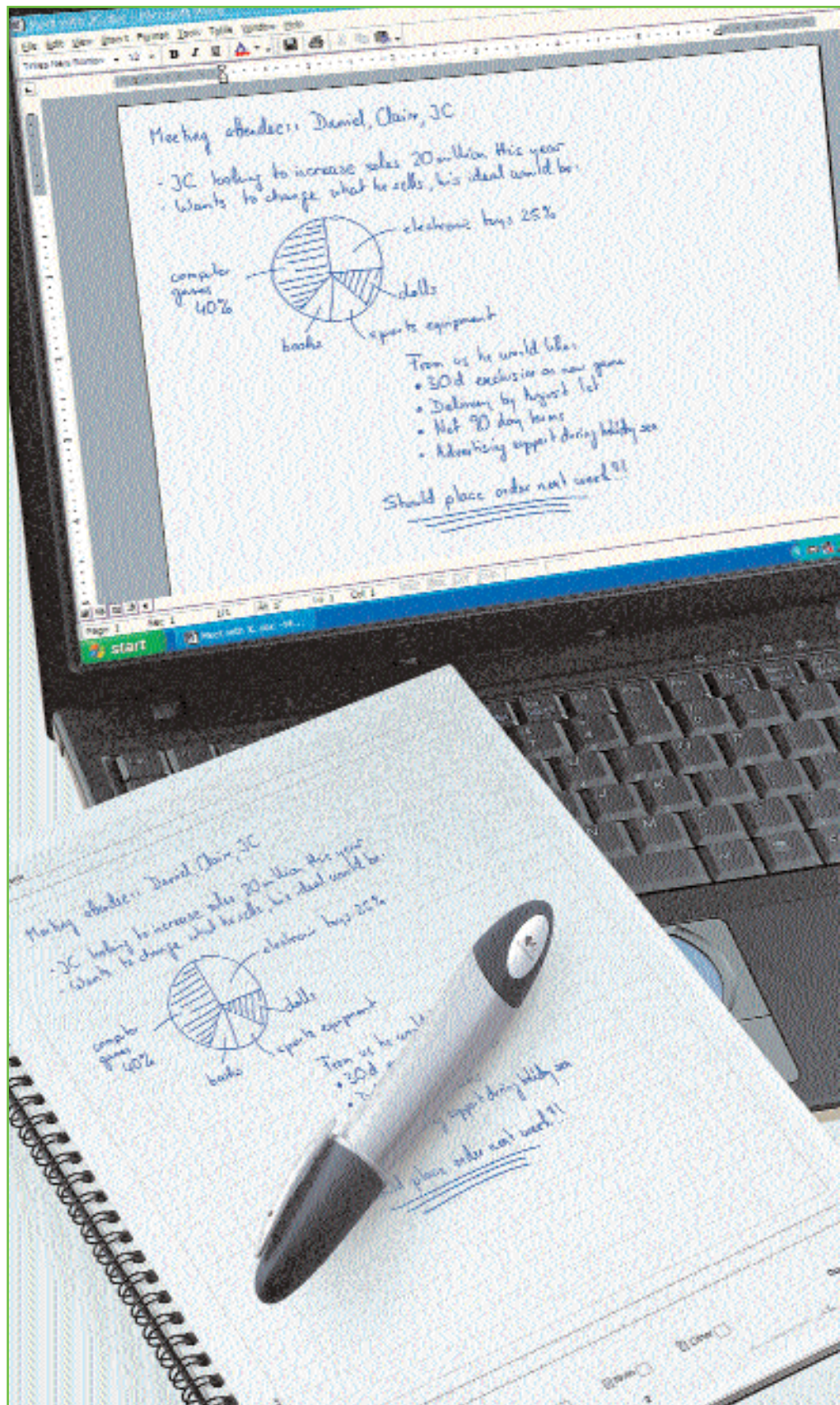
Consider the following example. Swedish start-up firm Anoto, with backing from Ericsson, the mobile-phone company, launched a high-tech pen that allows users to send handwritten notes and hand-drawn pictures over the Internet and to mobile phones. Slightly fatter than a normal pen, Anoto's pen writes in normal ink, but contains a small camera, radio transmitter, rechargeable battery and ink cartridge. Special paper is used which contains millions of tiny dots that the pen's camera can see, drawing a virtual picture of the writing in its memory and transmitting this picture using radio technology, Bluetooth, to a mobile phone. From there, the picture is sent across the Internet to a recipient's email inbox or displayed on the screen of a mobile phone. Bluetooth is backed by computer and communications firms such as Microsoft, IBM, Intel and Nokia. Although all this sounds exciting, analysts point to the risks and uncertainty surrounding the exploitation of new technology. Although the technology is a clever idea, Anoto's pen could well become obsolete, being eclipsed by voice recognition as it takes off in the next 2–3 years. Or, it may be superseded by simpler, competing technologies such as Logitech's bionic personal digital pens which use optical sensors and tiny memory chips to record a person's writing and store it on a computer for safekeeping.<sup>3</sup>

3. Unexpected delays in development are also a problem. History is littered with grand pioneering engineering projects which have failed to satisfy the original expectations of bankers, investors and politicians. The £10 billion cost of the Channel tunnel, which opened on 6 May 1994, a year later than originally planned, was more than double the £4.8 billion forecast at the start of the project in 1987.
4. New products continue to fail at a disturbing rate. Recent studies put the new product failure rate of new consumer goods at 90 per cent in Europe and the United States. Another study suggested that of the tens of thousands of new consumer food, beverage, beauty and healthcare products launched each year, only 40 per cent will be around five years later. Moreover, failure rates for new industrial products may be as high as 30 per cent. Still another estimates new-product failures to be as high as 95 per cent.<sup>4</sup>

Despite the risks, firms that learn to innovate well become less vulnerable to attacks by new entrants which discover new ways of delivering added value, benefits and solutions to customers' problems.

New-product development is risky. High-tech pens such as those recently pioneered by Anoto may be superseded by state-of-the-art devices like this Logitech® io™ personal digital pen.

SOURCE: Logitech® io™.



## Why do new products fail?

Why do so many new products fail? There are several reasons. Although an idea may be good, the market size may have been overestimated. There just wasn't the demand for the product. Perhaps the actual product was not designed as well as it should have been. It may be a 'me too' product which is no better than products that are already established in the marketplace. Or maybe it was incorrectly positioned in the market, priced too high, or advertised and promoted badly. A high-level executive might push a favourite idea despite poor marketing research findings. Sometimes the costs of product development are higher than budgeted and sometimes competitors fight back harder than expected.

## What influences new-product success?

Because so many new products fail, companies are anxious to learn how to improve their odds of new-product success. One way is to identify successful new products and find out what they have in common. Various studies suggest that new-product success depends on developing a *unique superior product*, one offering customers better quality, new features and higher value in use. Another key success factor is a *well-defined product concept* prior to development, in which the company carefully defines and assesses the target market, the product requirements and the benefits before proceeding. New products that are better than existing products at *meeting market needs* and delivering what customers really wanted invariably do well. Other success factors have also been suggested – senior management commitment, relentless commitment to innovation, smooth functioning and proficiency in executing the new-product development process.<sup>5</sup> Thus, successful commercialisation of new products requires a company to have a clear understanding of its consumers, markets and competitors and to develop products that deliver superior value to customers.

Successful new-product development may be an even bigger challenge in the future. Keen competition has led to increasing market fragmentation – companies must now aim at smaller market segments rather than the mass market, and this means smaller sales and profits for each product. New products must meet growing social and government constraints, such as consumer safety and environmental standards. The costs of finding, developing and launching new products will increase steadily due to rising manufacturing, media and distribution costs. Many companies that cannot afford the funds needed for new-product development will emphasise product modification and imitation rather than true innovation. Even when a new product is successful, rivals are so quick to copy it that the new product is typically fated to have only a short life.

So, companies face a problem – they must develop new products, but the odds weigh heavily against success. The solution lies in strong *new-product planning* and in setting up a systematic *new-product development process* for finding and growing new products. Top management must ultimately take the lead in setting the company-wide strategy and committing adequate resources to support product innovation.

Successful new-product development requires a company-wide effort. Successful innovative companies have more than a clearly articulated new-product strategy and consistent commitment of resources to new-product development. To ensure effective execution of new-product development, these companies have set up formal and sophisticated organisations for encouraging employees to excel in innovation and facilitating the new-product development process (see Marketing Insights 14.1). Let us now take a look at the major steps in the new-product development process.

New products that succeed offer unique benefits that make a difference for users.

SOURCE: Johnson and Johnson.

Agency: Liquorice.



The advertisement features a central image of a Nizoral anti-dandruff shampoo bottle. The bottle is white with a red cap and a red 'N' logo. The text on the bottle reads: 'Nizoral anti-dandruff shampoo', 'Treats & prevents dandruff and its symptoms such as dry flake, red, itchy scalp', 'Dermatologically tested', 'Fragrance free', 'For a healthier scalp', and '60 ml (2.03 fl. oz.)'. The background is a dark, textured red with a circular ripple effect around the bottle. At the top left, it says 'Johnson & Johnson MSD'. The main headline is 'See what's on the box'. Below the bottle, there is a paragraph of text: 'When it comes to itchy, flaky scalp, there is no other treatment more effective than Nizoral Anti-Dandruff Shampoo, because it both treats and prevents dandruff. The end.' At the bottom, it says 'Available from Boots, Waitrose, Superdrug, ASDA, Sainsbury's and pharmacies. Or visit [www.nizoral.co.uk](http://www.nizoral.co.uk) for your 50p off coupon.' At the very bottom, in small text, it says 'CONTAINS KETOCONAZOLE. ALWAYS READ THE LABEL. ASK YOUR PHARMACIST FOR ADVICE.'



## 3M: champions of innovation

## 14.1

3M's emphasis on innovation is legendary. Every 3M ad carries the headline: 'Innovation: Working for You'. But at 3M, innovation is more than just an advertising pitch. 3M views innovation as its path to growth, and new products as its lifeblood. The company markets more than 50,000 products worldwide. These products range from sandpaper, adhesives and laser optical discs to contact lenses, heart-lung machines and futuristic synthetic ligaments; from coatings for boat hulls to hundreds of sticky tapes – Scotch tapes, masking tape, super-bonding tape, acid-free photo and document tape and even refastening, disposable nappy tape.

Each year 3M launches more than 200 new products. 3M's goal is to derive 30 per cent of each year's sales from products introduced within the previous four years. And, astonishingly, it usually succeeds. In 2002, a full third of its \$16 billion (€13.2 billion) in sales came from products introduced within the past four years! It also earned the number-one spot on *Fortune's* list of companies most admired for innovation.

3M's impressive record is due to several factors. At 3M, new-product development doesn't just happen. The company works hard to create an environment that supports innovation. It invests some 6 per cent of annual group sales in research and development – almost twice as much as the average company. To develop new products of the future quickly, senior management tolerates informal structures. Its Innovation Task Force seeks out and destroys corporate bureaucracy that might interfere with new-product progress. Hired consultants also help 3M to find ways to make employees more inventive.

3M's innovative culture encourages everyone to look for new products. The company's renowned '15 per cent rule' gives all employees space, allowing them to spend up to 15 per cent of their time 'bootlegging' – working on projects of personal interest, whether those projects directly benefit the company or not. When a promising idea comes along, 3M forms a venture team made up of the researcher who developed the idea and volunteers from manufacturing, sales, marketing and the legal department. The team nurtures the product and protects it from company bureaucracy. Team members stay with the product until it succeeds or fails and then return to their previous jobs. Some teams have tried three or four times before finally making a success of an idea. Each year, 3M awards Golden Step Awards to venture teams whose new products earned more than \$2 million in domestic sales or \$4 million in worldwide sales, within three years of introduction.

The company knows that it must try thousands of new-product ideas to hit one big jackpot. One well-worn slogan at 3M is 'You have to kiss a lot of frogs to find a prince.' 'Kissing frogs' often means making mistakes, but 3M accepts blunders and dead ends as a normal part of creativity and innovation. In fact, its philosophy seems to be 'if you aren't making mistakes, you're probably not doing anything'.

## ...14.1

As it turns out, 'blunders' have turned into some of 3M's most successful products. There is the familiar story about the chemist who accidentally spilled a new chemical on her tennis shoes. Some days later, she noticed that the spots hit by the chemical had not become dirty. Eureka! The chemical eventually became Scotchgard fabric protector. They tell about the early scientist who had a deadly fear of shaving with a straight razor. Instead, he invented a very fine, waterproof sandpaper which he used to sand the stubble from his face each morning. This invention did not catch on as a shaving solution, but it became one of 3M's best-selling products – wet-dry sandpaper used for a wide variety of commercial and industrial applications.

Not least, there's the one about 3M scientist Spencer Silver who started out to develop a superstrong adhesive that didn't stick very well at all. He sent the apparently useless substance on to other 3M researchers to see if they could find something to do with it. Nothing happened for several years. Then Arthur Fry, another 3M scientist and a choir member, found that scraps of paper dabbed with Mr Silver's weak glue stuck nicely to pages marked out in his hymnal and later peeled off without damaging the hymnal. Eureka! Mr Fry's problem of marking places in his hymnal was solved. Thus were born 3M's ubiquitous Post-it notes, a product that is now one of the top-selling office supply products in the world!

It looks like 3M could easily amend its 'Innovation: Working for You' ad line to include 'and for 3M'. Still, there are limits. Some analysts question whether such a free-wheeling, no-questions-asked creative culture is appropriate, given the cost-reduction pressures of today's tougher economic times. In fact, 3M's CEO, Jim McNerney, is busily cutting costs and slimming down the company's workforce. He is also overhauling the 3M R&D organisation and culture, one in which even 3M old-timers agree that money hasn't always been spent wisely. According to one analyst, McNerney 'vows to take an organization of myriad product and research fiefdoms – which happens to be one of the most respected manufacturing concerns in the world – and hammer it into one shared corporate culture.' He is carefully examining where R&D dollars are spent and setting uniform performance standards and accountability across the company.

The risk is that the changing culture and organisational restructuring might stifle 3M's hallmark creativity. 'The most important thing about 3M – the single most important thing – is you get to do things your own way', says a senior 3M executive and 33-year veteran. McNerney understands the balancing act: efficiency versus hands-off R&D spending; accountability versus individual creative freedom. 'My job is to add scale in a fast-moving, entrepreneurial environment', he says. 'If I end up killing that entrepreneurial spirit, I will have failed.' For 3M, there is no room for complacency if it wants to remain a corporate superstar.

SOURCES: Quotes from Rick Mullin, 'Analysts rate 3M's new culture', *Chemical Week* (26 September 2001), pp. 39–40; and Michael Arndt, '3M: a lab for growth', *Business Week* (21 January 2002), pp. 50–1. Also, see Alison Maitland, '3M has succession taped', *Financial Times* (11 May 2000), p. 22; William H. Miller, 'New leader, new era' (November 2001), accessed online at [www.industryweek.com](http://www.industryweek.com); 'America's most admired companies', *Fortune* (4 March 2002), p. 75; for more information on 3M, visit [www.3m.com](http://www.3m.com).

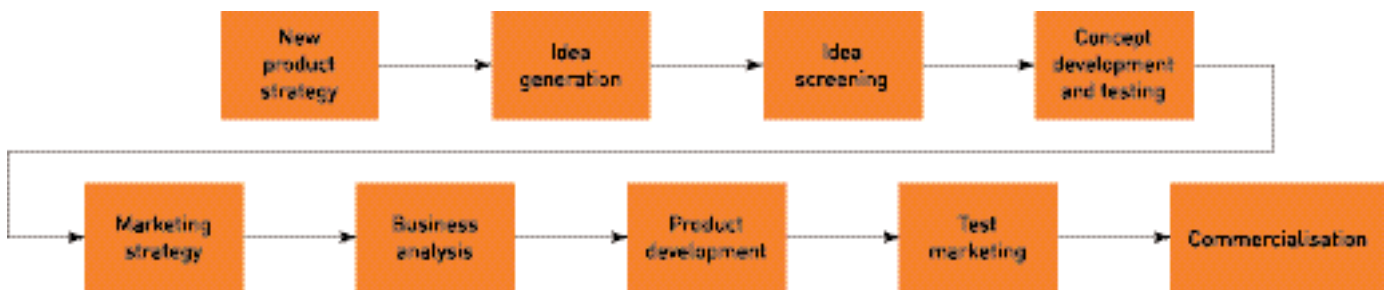


Figure 14.1 Steps in new product development

## New-product development process

The new-product development process for finding and growing new products consists of nine main steps (see Figure 14.1).

### New-product strategy

Effective product innovation is guided by a well-defined *new-product strategy*. The new-product strategy achieves four main goals: first, it gives direction to the new-product team and *focuses team effort*; second, it helps to *integrate* functional or departmental efforts; third, where understood by the new-product team, it allows tasks to be *delegated* to team members, who can be left to operate independently; and fourth, the very act of producing and getting managers to agree on a strategy requires *proactive*, not reactive, management, which increases the likelihood of a more thorough search for innovation opportunities.

Successful innovative companies place more emphasis upon the use of definitive strategy statements or a **product innovation charter (PIC)**. The PIC draws managers' attention to the reasons or *rationale* behind the firm's search for innovation opportunities, the *product/market* and *technology* to focus on, the miscellaneous *goals* or *objectives* (market share, cash flow, profitability, etc.) to be achieved, and *guidelines* on the nature or level of innovativeness that will sell the new product.<sup>6</sup> The charter spells out the priority that managers should place on developing breakthrough products, changing existing ones and imitating competitors' products. Given that many or most new-product ideas are likely to be unsuitable for development, senior management has to establish specific criteria for new-product idea selection. Ideas are accepted based on the specific *strategic roles* the new products are expected to play. A new product's role might be to help the company maintain its industry position as an innovator, to defend a market-share position, or to get a foothold in a future new market. Or the new-product might help the company to take advantage of its special strengths or exploit technology in a new way.

**Product innovation charter (PIC)**—A new-product strategy statement formalising management's reasons or rationale behind the firm's search for innovation opportunities, the product/market and technology to focus upon, and the goals and objectives to be achieved.

### Idea generation

The PIC should direct the systematic search for new-product ideas. **Idea generation** should be proactive and systematic rather than haphazard. This ensures that the company will find not only many ideas, but also ones that are good for its type of business. A company typically has to generate many ideas in order to find a few good ones. A recent survey of product managers found that of 100 proposed new-product ideas, 39 begin the product development process, 17 survive the development process, eight actually reach the marketplace and only one eventually reaches its business objectives. For pharmaceuticals companies, it can take some 6,000 to 8,000 starting ideas to produce one commercial success.<sup>7</sup>

**Idea generation**—The systematic search for new-product ideas.

To obtain a flow of new-product ideas, the company can tap many sources. Chief sources of new-product ideas include internal sources, customers, competitors, distributors and suppliers.

### Internal sources

The company can find new ideas through its own formal research and development efforts. It can pick the brains of its executives, scientists, engineers, designers, manufacturing and salespeople. Some companies have established ‘intrapreneurial’ programmes that encourage employees to think up and develop new product ideas (see Marketing Insights 14.1). Formal or informal suggestion schemes can also be used to tap staff’s ideas for improving production, products and services. Toyota claims that employees submit two million ideas annually – about 35 suggestions per employee – and that more than 85 per cent of these ideas are implemented.

### Customers

Good new-product ideas also come from watching and listening to customers. The company can analyse customer questions and complaints to find new products that better solve consumer problems. It can conduct surveys or focus groups to learn about consumer needs and wants. Or company engineers or salespeople can meet with or work alongside customers to get suggestions and ideas. For example, companies such as Hewlett-Packard, Sony, Toyota and many other effective innovators are known to have their design engineers talk with final consumers to get ideas for new products.

Customers often create new products on their own, and companies can benefit by finding these products and putting them on the market. About one-third of all the software IBM leases for its computers is developed by outside users.<sup>8</sup> Indeed, studies of new industrial product development by Eric von Hippel has shown that the highest percentage of ideas originate with lead users – those customers who make the most advanced use of the company’s products and who recognise the need for improvements before other customers do.<sup>9</sup>

Customers, however, may not always know their future needs and wants. If Philips had questioned consumers 30 years ago about what new audio technology they wanted, they would never have said a personal stereo – the idea would not have occurred to them. This is one of the reasons why Finnish mobile communications company Nokia employs a team of people around the world whose job is to think 10 years ahead and dream up ideas. They have to anticipate future needs before the consumer has even become aware of them. They must also predict the innovations of their rivals, so that the company can be one step ahead. Every so often, the ideas team hold focus groups for ordinary users and ask them what they want from their phones when they are on the move. The users are offered a handful of new ideas and their reactions are videoed. The team always pay attention to the quirky suggestions because there is often a lot of truth in them. The company also consults anthropologists to help unravel consumers’ reactions, and these generate leads which give the team something to build on. It was anticipating needs before they exist that brought about Nokia’s revolutionary 9000 Communicator, which was the world’s first all-in-one mobile communications device – a fax, phone, digital diary, calculator and palm-top computer all rolled into one.<sup>10</sup>

### Competitors

Competitors are another good source of new-product ideas. Companies watch competitors’ ads and other communications to get clues about their new products. They can research competing competitors’ products and services. For example, they can find out what customers like and dislike about competitors’ products. Or they can buy competitors’ new products, take

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them apart to see how they work, analyse their sales, and decide whether the company should bring out a new product of its own.

### Distributors, suppliers and others

Resellers are close to the market and can pass along information about consumer problems and new-product possibilities. Suppliers can tell the company about new concepts, techniques and materials that can be used to develop new products. Other idea sources include trade magazines, shows and seminars, government agencies, advertising agencies, marketing research firms, university and commercial laboratories, science parks, and inventors. Companies may also turn to new-product consultants to find new ideas and problem solutions to serve customer needs better.

For example, some years ago, Heineken of the Netherlands had to recall millions of bottles of its home-brewed Export beer due to contamination by glass particles. To avoid future such incidents, which are potentially very costly and damaging for the brand and the company, the brewer got its packaging research and development people to investigate potential solutions to the problem. They could not find anything they could buy off the shelf, so turned to the UK's PA Consulting Group, which looked at a variety of solutions, ranging from X-rays and gamma rays to nuclear magnetic resonance and ultrasonic techniques. PA eventually developed a solution inspired by a technique used by pharmaceutical firms to inspect vials. The consultants worked with a UK bottle-handling specialist and image-processing specialists to develop a system for Heineken. The safety innovation, as Heineken called it, underlined the importance of drawing inspiration from external parties to generate novel problem solutions.<sup>11</sup> ”

The search for new-product ideas should be systematic in order to ensure that many good ideas will surface, not sputter in and die. Top management can avoid these problems by installing an ideas management system that directs the flow of new ideas to a central point where they can be collected, reviewed and evaluated. The company may set up an ideas management system in a number of ways: appoint a respected senior person to be the company's ideas manager; create a multidisciplinary ideas management committee, consisting of people from R&D, engineering, purchasing, operations, finance, sales and marketing, who meet regularly and evaluate proposed new-product ideas; set up a freephone number for anyone who wants to volunteer new ideas to the ideas manager; encourage all of the company's stakeholders – employees, suppliers, distributors, dealers and so forth – to send their ideas to the ideas manager; and set up a formal recognition programme to reward those who contribute the best ideas.<sup>12</sup>

The ideas manager approach has two advantages. First, it helps foster an innovation-oriented company culture. It shows that top management supports, encourages and rewards innovation. Second, it yields a steady stream of ideas from which good ones will emerge. As the system matures, ideas will flow more freely. Importantly, companies that use such a formalised approach to finding new ideas will find that no longer will good ideas wither for the lack of a sounding-board or a senior product advocate.

'Intrapreneurial' programmes encourage employees to think up and develop new product ideas. 3M's spectacularly successful Post-it notes evolved out of such a programme.

SOURCE: 3M

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## Idea screening

**Idea screening**—Screening new-product ideas in order to spot good ideas and drop poor ones as soon as possible.

The purpose of idea generation is to create a large number of ideas. The purpose of the succeeding stages is to *reduce* that number. The first idea-reducing stage is **idea screening**. The purpose of screening is to spot good ideas and drop poor ones as soon as possible. As product development costs rise greatly in later stages, it is important for the company to go ahead only with those product ideas that will turn into profitable products.

Most companies require their executives to write up new-product ideas on a standard form that can be reviewed by a new-product committee. The write-up describes the product, the target market and the competition, and makes some rough estimates of market size, product price, development time and costs, manufacturing costs and rate of return. The committee then evaluates the idea against a set of general criteria. Typically, the committee asks questions such as these: Is the product truly useful to consumers and society? Is this product good for our particular company? Does it mesh well with the company's objectives and strategies? Do we have the people, skills and resources to make it succeed? Does it deliver more value to customers than competing products? Is it easy to advertise and distribute? Many companies have well-designed systems for rating and screening new-product ideas.



DaimlerChrysler's task is to develop its fuel-cell powered electric car into alternative product concepts, find out how attractive each is to customers and choose the best one.  
SOURCE: © DaimlerChrysler/Liaison Agency.

## Concept development and testing

Attractive ideas must be developed into product concepts. It is important to distinguish between a *product idea*, a *product concept* and a *product image*. A **product idea** is an idea for a possible product that the company can see itself offering to the market. A **product concept** is a detailed version of the idea stated in meaningful consumer terms. A **product image** is the way consumers perceive an actual or potential product.

### Concept development

DaimlerChrysler is getting ready to commercialise its experimental fuel-cell-powered electric car. This car's low-polluting fuel-cell system runs directly on methanol, which delivers hydrogen to the fuel cell with only water as a by-product. It is highly fuel efficient (75 per cent more efficient than petrol engines) and gives the new car an environmental advantage over standard internal combustion engine cars or today's super-efficient petrol-electric hybrid cars. DaimlerChrysler is currently road-testing its NECAR 5 (New Electric Car) subcompact prototype and plans to deliver the first fuel-cell cars to customers in 2004. Based on the tiny Mercedes A-Class, the car accelerates quickly, reaches speeds of 90 miles per hour, and has a 280-mile driving range, giving it a huge edge over battery-powered electric cars which travel only about 80 miles before needing 3–12 hours of recharging.<sup>13</sup>

DaimlerChrysler's task is to develop this new product into alternative product concepts, find out how attractive each concept is to customers and choose the best one. To increase the likelihood of concept acceptance, some firms involve the customer (or potential customer) in concept development – customers may, for example, be invited to the DaimlerChrysler's design reviews in the early stages of the new-product process. The following product concepts for the fuel-cell electric car might be created:

- *Concept 1.* A moderately priced subcompact designed as a second family car to be used around town. The car is ideal for running errands and visiting friends.
- *Concept 2.* A medium-cost sporty compact appealing to young people.

**Product idea**—An idea for a possible product that the company can see itself offering to the market.

**Product concept**—A detailed version of the new-product idea stated in meaningful consumer terms.

**Product image**—The way consumers perceive an actual or potential product.

- *Concept 3.* An inexpensive subcompact ‘green’ car appealing to environmentally conscious people who want practical transportation and low pollution.
- *Concept 4.* A high-end sports utility vehicle (SUV) appealing to those who love the space SUVs provide but lament the poor petrol mileage.

## Concept testing

**Concept testing**—Testing new-product concepts with a group of target consumers to find out whether the concepts have strong consumer appeal.

**Concept testing** calls for testing new-product concepts with a group of target consumers. The concepts may be presented to consumers symbolically or physically. Here, in words, is *Concept 3*:

An efficient, fun-to-drive, fuel-cell-powered electric subcompact car that seats four. This methanol-powered high-tech wonder provides practical and reliable transportation with virtually no pollution. It goes up to 90 miles per hour and, unlike battery-powered electric cars, it never needs recharging. It’s priced, fully equipped, at €25,000.

For some concept tests, a word or picture description might be sufficient. However, a more concrete and physical presentation of the concept will increase the reliability of the concept test. Today, marketers are finding innovative ways to make product concepts more real to consumer subjects. For example, some are using virtual reality to test product concepts. Virtual reality programmes use computers and sensory devices (such as goggles or gloves) to simulate reality. For example, a designer of kitchen cabinets can use a virtual reality program to help a customer ‘see’ how his or her kitchen would look and work if remodelled with the company’s products. Virtual reality is still in its infancy, but its applications are increasing daily.<sup>14</sup>

After being exposed to the concept, consumers may then be asked to react to it by answering the questions in Table 14.1. The answers will help the company decide which concept has the strongest appeal. For example, the last question asks about the consumer’s intention to buy. Suppose 10 per cent of the consumers said they ‘definitely’ would buy and another 5 per cent said ‘probably’. The company could project these figures to the population size of this target group to estimate sales volume. Concept testing offers a rough estimate of potential sales, but managers must view this with caution. The estimate is uncertain, largely because consumers do not always carry out stated intentions.<sup>15</sup> Potential customers may like the idea of the new product, but might not want to pay for one! It is still important to carry out such tests with product concepts so as to gauge customers’ response as well as to identify

**Table 14.1** Questions for fuel-cell-powered electric car concept test

1.	Do you understand the concept of a fuel-cell-powered electric car?
2.	Do you believe the claims about the car’s performance?
3.	What are the main benefits of the fuel-cell-powered electric car compared with a conventional car?
4.	What are its advantages compared with a battery-powered electric car?
5.	What improvements in the car’s features would you suggest?
6.	For what uses would you prefer a fuel-cell-powered electric car to a conventional car?
7.	What would be a reasonable price to charge for the car?
8.	Who would be involved in your decision to buy such a car? Who would drive it?
9.	Would you buy such a car? [Definitely, probably, probably not, definitely not]



aspects of the concept that are particularly liked or disliked by potential buyers. Feedback might suggest ways to refine the concept, thereby increasing its appeal to customers.

## Marketing strategy development

Suppose DaimlerChrysler finds that Concept 3 for the fuel-cell-powered electric car tests best. The next step is to develop a **marketing strategy** for introducing this car to the market.

The **marketing strategy statement** consists of three parts. The first part describes the target market, the planned product positioning, and the sales, market share and profit goals for the first few years. Thus:

The target market is younger, well-educated, moderate-to-high income individuals, couples or small families seeking practical, environmentally responsible transportation. The car will be positioned as more economical to operate, more fun to drive and less polluting than today's internal combustion engine cars or hybrid cars, and as less restricting than battery-powered electric cars which must be recharged regularly. The company will aim to sell 100,000 cars in the first year, at a loss of not more than €15 million. In the second year, the company will aim for sales of 120,000 cars and a profit of €25 million.

**Marketing strategy**—The marketing logic by which the business unit hopes to achieve its marketing objectives.

**Marketing strategy statement**—A statement of the planned strategy for a new product that outlines the intended target market, the planned product positioning, and the sales, market share and profit goals for the first few years.

The second part of the marketing strategy statement outlines the product's planned price, distribution and marketing budget for the first year.

The fuel-cell-powered electric car will be offered in three colours and will have optional air-conditioning and power-drive features. It will sell at a retail price of €20,000 – with 15 per cent off the list price to dealers. Dealers who sell more than 10 cars per month will get an additional discount of 5 per cent on each car sold that month. An advertising budget of €20 million will be split 50–50 between national and local advertising. Advertising will emphasise the car's fun and low emissions. During the first year, €150,000 will be spent on marketing research to find out who is buying the car and to determine their satisfaction levels.

The third part of the marketing strategy statement describes the planned long-run sales, profit goals and marketing mix strategy:

The company intends to capture a 3 per cent long-run share of the total car market and realise an after-tax return on investment of 15 per cent. To achieve this, product quality will start high and be improved over time. Price will be raised in the second and third years if competition permits. The total advertising budget will be raised each year by about 10 per cent. Marketing research will be reduced to €60,000 per year after the first year.

**Business analysis**—A review of the sales, costs and profit projections for a new product to find out whether these factors satisfy the company's objectives.

## Business analysis

Once management has decided on its product concept and marketing strategy, it can evaluate the business attractiveness of the proposal. **Business analysis** involves a review of the sales, costs and profit projections for a new product to find out whether they satisfy the company's objectives. If they do, the product proceeds to the product development stage.

To estimate sales, the company looks at the sales history of similar products and conducts surveys of market opinion. It then estimates minimum and maximum sales to assess the range of risk. After preparing the sales forecast, management can estimate the expected costs and profits for the product, including marketing, R&D, manufacturing, accounting and finance costs. The company then uses the sales and costs figures to analyse the new product's financial attractiveness.

**Product development**—Developing the product concept into a physical product in order to ensure that the product idea can be turned into a workable product.

## Product development

So far, for many new-product concepts, the product may have existed only as a word description, a drawing or perhaps a crude mock-up. If the product concept passes the business test, it moves into **product development**. Here, R&D or engineering develops the product concept into a physical product. The product development step, however, now calls for a large jump in investment. It will show whether the product idea can be turned into a workable product.

The R&D department will develop one or more physical versions of the product concept. R&D hopes to design a prototype that functions, is able to satisfy and excite consumers and can be produced quickly and at budgeted costs. Developing a successful prototype can take days, weeks, months or even years. Sometimes product design and development may pose a serious challenge for the firm and companies have to find ways to get round these obstacles.

Microsoft's 'TabletPC', launched in the UK in 2002, was heralded to be the 'next stage in the evolution of the PC'. Doing away with a keyboard, users should be able to operate the PC by speaking to it or writing on an electronic pad. But, there was a catch – the TabletPC had not been fully tuned to understand the English accent. Speech-recognition technology is still in its infancy and requires further development. Equally, the PC's ability to read handwriting was not up to scratch. Although the software has been refined by taking handwriting samples from 40,000 people in Reading, Manchester and Edinburgh, handwriting recognition technology will take a number of years to mature. Although the product has been launched, the problems faced by early users suggest that there are significant product development challenges to be overcome.<sup>16</sup> ”

Consider another example – the experience of Dentronic, a company spun off from Sweden's University of Umeå. Dentronic developed a new dental system called Decim, a composite for filling teeth that replaces mercury amalgam, which is a serious health hazard for dentists who have to handle it on a daily basis. Decim is better than other modern alternatives based on polymeric materials as it is longer lasting and has lower toxicity problems. However,

the material, based on zirconium dioxide, requires a special combination of software and hardware systems to make up the filling. Unlike amalgam, it cannot be mixed as a paste in the surgery. Instead it involves advanced manufacturing techniques. A cast has to be made of the patient's tooth cavity as the model for CAD/CAM preparation of a corresponding inlay. The cast is captured by a special laser scanner, converted into a three-dimensional drawing, with manual adjustment of the chewing surface. A numerically controlled manufacturing unit automatically machines the inlay to shape, and, after polishing, it is cemented in place in the tooth, giving a perfect fit. Through an innovation network agency, IRC Northern Sweden, Dentronic secured the collaboration of a British software house as well as signed up with French ceramic materials supplier Norton Desmarquet which developed and manufactured exclusively for the company. Thanks to these external partners, Dentronic was able to surmount serious development and production problems which would have stalled the firm's efforts to commercialise its new non-toxic technology. Dentronic launched the Decim system under the brand name Denzir in Sweden in November 1999, followed by rapid international rollouts over 2000.<sup>17</sup>

When the prototypes are ready, they undergo rigorous functional tests under laboratory and field conditions to make sure that the product performs safely and effectively.

The prototype must have the required functional features and also convey the intended psychological characteristics. The fuel-cell-powered electric car, for example, should strike consumers as being well built, comfortable and safe. Management must learn what makes consumers decide that a car is well built. To some consumers, this means that the car has 'solid-sounding' doors. To others, it means that the car is able to withstand heavy impact in crash tests. Consumer tests are conducted, in which consumers test-drive the car and rate its attributes. For some products, prototyping and product development may involve both the key intermediaries that supply the product or service and the final consumer or end-user.

When designing products, the company should look beyond simply creating products that satisfy consumer needs and wants. Too often, companies design their new products without enough concern for how the designs will be produced. Companies may minimise production problems by adopting an approach towards product development called *design for manufacturability and assembly* (DFMA). Using this approach, companies work to fashion products that are *both* satisfying *and* easy to manufacture. This often results not only in lower costs but also in higher-quality and more reliable products.

### Test marketing

If the product passes functional and consumer tests, the next step is **test marketing**, the stage at which the product and marketing programme are introduced into more realistic market settings.

Test marketing gives the marketer experience with marketing the product before going to the great expense of full introduction. It lets the company test the product and its entire marketing programme – positioning strategy, advertising, distribution, pricing, branding and packaging and budget levels. The company uses test marketing to learn how consumers and dealers will react to handling, using and repurchasing the product. The results can be used

**Test marketing**—The stage of new-product development where the product and marketing programme are tested in more realistic market settings.

to make better sales and profit forecasts. Thus a good test market can provide a wealth of information about the potential success of the product and marketing programme.

The amount of test marketing needed varies with each new product. Test marketing costs can be enormous. It takes time that may allow competitors to gain advantages. When the costs of developing and introducing the product are low or when management is already confident that the new product will succeed, the company may do little or no test marketing. Companies often do not test market simple line extensions, minor modifications of current products or copies of successful competitor products. However, when the new-product introduction requires a big investment, or when management is not sure of the product or marketing programme, the company may do a lot of test marketing.

The idea of test marketing also applies to new service products. For example, an airline company preparing to introduce a secure, cost-saving system of electronic ticketing may try out the new service first on domestic routes before rolling out the service to international flights. Or it might offer the ticketless system on its busiest routes and restrict the test to its most frequent travellers. The system's effectiveness and customers' acceptance and reactions can then be gauged prior to making the decision to extend the service to cover all of its domestic or global networks.

Whether or not a company decides to test market, and the amount of testing it does, depend on the cost and risk of introducing the product on the one hand, and on the testing costs and time pressures on the other. Although the costs of test marketing can be high, they are often small when compared to the costs of making a major mistake. A classic example is the Omo 'Power' fiasco. Unilever learnt a costly lesson when it skipped formal test marketing of its revolutionary Omo 'Power' laundry detergent. It forged ahead with a £200 million Europe-wide launch in 1994. The company spent another £70 million on the withdrawal of the defective, clothing-annihilating detergent a year after its introduction.

When using test marketing, consumer-products companies usually choose one of three approaches – standard test markets, controlled test markets or simulated test markets.

### Standard test markets

Using standard test markets, the company finds a small number of representative test cities, conducts a full marketing campaign in these cities and uses store audits, consumer and distributor surveys and other measures to gauge product performance. It then uses the results to forecast national sales and profits, to discover potential product problems and to fine-tune the marketing programme.

Standard market tests have some drawbacks. They can be costly and may take a long time – some last as long as three to five years. Moreover, competitors can monitor test-market results or even interfere with them by cutting their prices in test locations, increasing their promotion or even buying up the product being tested. Finally, test markets give competitors a look at the company's new product well before it is introduced nationally. Thus, competitors may have time to develop defensive strategies and may even beat the company's product to the market.

Despite these disadvantages, standard test markets are still the most widely used approach for major market testing. However, many companies today are shifting towards quicker and cheaper controlled and simulated test marketing methods.

### Controlled test markets

Several research firms keep controlled panels of stores which have agreed to carry new products for a fee. The company with the new product specifies the number of stores and geographical locations it wants. The research firm delivers the product to the participating stores and controls shelf location, amount of shelf space, displays and point-of-purchase promotions, and pricing according to specified plans. Sales results are tracked to determine the impact of these factors on demand.

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Controlled test-marketing systems like Nielsen's Scantrack and Information Resources Inc.'s (IRI) BehaviorScan track individual behaviour from the television set to the checkout counter. IRI maintains panels of shoppers in carefully selected markets.<sup>18</sup> It measures TV viewing in each panel household and can send special commercials to panel member television sets. Panel consumers buy from cooperating stores and show identification cards when making purchases.

Within test stores, IRI controls such factors as shelf placement, price and in-store promotions. Detailed electronic scanner information on each consumer's purchases is fed into a central computer, where it is combined with the consumer's demographic and TV viewing information and reported daily. Thus, BehaviorScan can provide store-by-store, week-by-week reports on the sales of new products being tested. And because the scanners record the specific purchases of individual consumers, the system also can provide information on repeat purchases and the ways in which different types of consumers are reacting to the new product, its advertising, and various other elements of the marketing programme.

Controlled test markets usually cost less than standard test markets and take less time than them (six months to a year). However, some companies are concerned that the limited number of small cities and panel consumers used by the research services may not be representative of their products' markets or target consumers. And, as in standard test markets, controlled test markets allow competitors to get a look at the company's new product. Nonetheless, experienced research firms can project test-market results to broader markets, while accounting for biases in the test markets used.

### Simulated test markets

Companies also can test new products in a simulated shopping environment. The company or research firm shows, to a sample of consumers, ads and promotions for a variety of products, including the new product being tested. It gives consumers a small amount of money and invites them to a real or laboratory store, where they may keep the money or use it to buy items. The researchers note how many consumers buy the new product and competing brands. This simulation provides a measure of trial and the commercial's effectiveness against competing commercials. The researchers then ask consumers the reasons for their purchase or non-purchase. Some weeks later, they interview the consumer by phone to determine product attitudes, usage, satisfaction and repurchase intentions. Using sophisticated computer models, the researchers then project national sales from results of the simulated test market.

Recently, some marketers have begun to use interesting new high-tech approaches to simulated test market research, such as virtual reality and the Internet.

Virtual reality tools such as Simul-Shop can recreate shopping situations in which researchers can test consumers' reactions to such factors as product positioning, store layouts and package designs. Suppose a breakfast cereal marketer wants to test reactions to a new package design and store-shelf positioning. Using Simul-Shop on a standard desktop PC, test-shoppers begin their shopping with a screen showing the outside of a grocery store. They click to enter the virtual store and are guided to the appropriate store section. Once there, they scan the shelf, pick up various cereal packages, rotate them, study the labels and look around to see what is on the shelf behind them. About the only thing they can't do is open the box and taste the cereal. The virtual shopping trip includes full sound and video, along with a guide who directs users through the experience and answers their questions.

Other services such as Alternative Realities Corporation (ARC) offers a virtual reality amphitheatre called the VisionDome. The Dome offers 360 by 160 degrees of film projection, allowing as many as 40 people at one time to participate and interact in a virtual reality experience. When conducting research on, say, a car, customers can go into a VisionDome, see that car in three dimensions, look at it from every angle, sit in it and take it out for a test drive. Customers can immerse themselves totally in the product. They can configure that car exactly the way they want it.

Virtual reality as a research tool offers several advantages. One, it is relatively inexpensive. A virtual reality store can display an almost infinite variety of products, sizes, styles and flavours in response to consumers' desires and needs. The technique's interactivity allows marketers and consumers to work together via computer on new product designs and marketing programmes. Finally, virtual reality has great potential for international marketing research. With virtual reality, researchers can create virtual stores in each country and region where the new product will be launched, using the appropriate local products, shelf layouts and currencies. Once the stores are online, a product concept can be quickly tested across locations. Research results, revealing markets with the greatest opportunity for a successful launch, can be communicated to head-quarters electronically. Virtual reality research also has its limitations. Like any simulated shopping situation, it never quite matches the real thing. It is not clear how true test participants' responses are in a simulated experience.<sup>19</sup> ”

In general, simulated test markets overcome some of the disadvantages of standard and controlled test markets. They usually cost much less, can be run in eight weeks and keep the new product out of competitors' view. Yet, because of their small samples and simulated shopping environments, many marketers do not think that simulated test markets are as accurate or reliable as larger, real-world tests. Still, simulated test markets are used widely, often as 'pre-test' markets. Because they are fast and inexpensive, they can be run to assess quickly a new product or its marketing programme. If the pre-test results are strongly positive, the product might be introduced without further testing. If the results are very poor, the product might be dropped or substantially redesigned and retested. If the results are promising but indefinite, the product and marketing programme can be tested further in controlled or standard test markets.<sup>20</sup>

### Test marketing new industrial products

Business marketers use different methods for test marketing their new products, such as product-use tests, trade shows, distributor/dealer display rooms, and standard or controlled test markets.

#### *Product-use tests*

Here the business marketer selects a small group of potential customers who agree to use the new product for a limited time. The manufacturer's technical people watch how these

## Chapter 14 New-product development and product life-cycle strategies

customers use the product. From this test the manufacturer learns about customer training and servicing requirements. After the test, the marketer asks the customer about purchase intent and other reactions. For some products, product-use tests may involve both the business customer and final or end-user.

### *Trade shows*

These shows draw a large number of buyers who view new products in a few concentrated days. The manufacturer sees how buyers react to various product features and terms, and can assess buyer interest and purchase intentions.

### *Distributor and dealer display rooms*

The new industrial product may be placed next to other company products and possibly competitors' products in the showrooms. This method yields preference and pricing information in the normal selling atmosphere of the product.

### *Standard or controlled test markets*

These are used to measure the potential of new industrial products. The business marketer produces a limited supply of the product which is sold by the salespeople to customers in a limited number of geographical areas. The company gives the product full advertising, sales promotion and other marketing support. Such test markets let the company test the product and its marketing programme in real market situations.

## Commercialisation

Test marketing gives management the information needed to make a final decision about whether to launch the new product. If the company goes ahead with **commercialisation** – that is, introducing the new product into the market – it will face high costs. It may have to spend, as in the case of a new consumer packaged good, between €10 million and €200 million for advertising, sales promotion and other marketing efforts in the first year. The company will have to build or rent a manufacturing facility. It must have sufficient funds to gear up production to meet demand. Failure to do so can leave an opening in the market for competitors to step in.

### **Commercialisation—**

Introducing a new product into the market.

For example, when London-based electronics company Psion introduced its Series 5 palmtop organisers, the products were so popular that the firm could not meet demand initially. The backlog of orders was taking some four months to clear. Potentially, that left a gap in the handheld computer market for American and Japanese rivals, who built similar machines based on an operating system designed by US software giant Microsoft.



The company launching a new product must make four decisions.

### **When?**

The first decision is introduction timing – whether the time is right to introduce the new product. If it cannibalises the sales of the company's other products, its introduction may be delayed. If it can be improved further, or if the economy is down, the company may wait until the following year to launch it.

## Where?

The company must decide where to launch the new product. Should it be in a single location, or region, several regions, the national market or the international market? Few companies have the confidence, capital and capacity to launch new products into full national or international distribution. They will develop a planned market rollout over time. In particular, small companies may enter attractive cities or regions one at a time. Larger companies may quickly introduce new products into several regions or into the entire national market.

Companies such as Nokia, Unilever, Procter & Gamble and Colgate-Palmolive, with international distribution systems, may introduce new products through global rollouts. Colgate-Palmolive used a 'lead-country' strategy for its Palmolive Options shampoo and conditioner: it was first introduced in Australia, the Philippines, Hong Kong and Mexico, then rapidly rolled out into Europe, Asia, Latin America and Africa. However, international firms are increasingly introducing their new products in swift global assaults.

## To whom?

Within the rollout markets, the company must target its distribution and promotion to customer groups who represent the best prospects. These prime prospects should have been profiled by the firm in earlier research and test marketing. For instance, Vertu, Nokia's 'retro-modern' mobile phone, with a sapphire face and a body available in platinum, white gold or stainless steel and sold at an astonishing £14,950, was targeted at movie stars and the super-rich kids. Generally, firms must fine-tune their targeting efforts, starting with the innovators, then looking especially for early adopters, heavy users and opinion leaders. Opinion leaders are particularly important as their endorsement of the new product has a powerful impact upon adoption by other buyers in the marketplace.

## How?

The company also must develop an *action plan* for introducing the new product into the selected markets. It must spend the marketing budget on the marketing mix and various other activities.

For example, when Germany's Siemens unveiled its new fashion mobile phone brand, Xelibri, in 2003, the main thrust of Xelibri's launch strategy was to establish credibility as a fashion brand. Xelibri hosted the opening party of the London Fashion Week to which celebrities and opinion-leading editors and journalists of the fashion press were invited to celebrate 'Xelibri's birthday party'. This, together with other selected fashion events and a comprehensive PR campaign, drew huge media attention, including the support of fashion industry influencers, while creating high brand and product awareness among fashion-savvy people globally. David LaChapelle, the celebrated fashion photographer, was assigned to create pictures to emphasise Xelibri's fashionable, provocative image, consistent with its intended brand identity. Advertising was used to sustain the high brand awareness already created by the other communication tools; TV and cinema ads served to reinforce Xelibri's fashion statement. Being positioned as a fashion accessory, upmarket department stores like Selfridges in the UK and Peek & Cloppenburg in Germany,



that did not sell mobile phones before, were used as the primary distribution channel for this new line of phones. To broaden the product's reach, traditional mobile phone retail outlets were used, but worked to specially agreed point-of-sale arrangements to support Xelibri's fashion positioning.<sup>21</sup>

## Organising for new-product development

Many companies have traditionally organised their new-product development process into the orderly sequence of steps shown in Figure 14.1, starting with determining the new product strategy and ending with commercialisation. Under this **sequential product development** approach, one company department works individually to complete its phase of the development process before passing the new product on to the next department, as in a kind of relay race. The sequential process has its merits – it helps bring order and control to risky and complex new-product development projects. But the approach also can be fatally slow. In fast-changing, highly competitive markets, such slow-but-sure product development may result in product failures, lost sales and profits and crumbling market positions.

Today, 'speed to market' and reducing new-product development 'cycle time' have become pressing concerns to companies in all industries. One study, for example, found that a six-month delay in introducing a new product cut its lifetime profits by one-third. By contrast, spending 10 per cent over the development budget will reduce profits by only 2 per cent.<sup>22</sup>

In order to get their new products to market more quickly, many companies are adopting a faster, more flexible, team-oriented approach called **simultaneous product development**, or team-based or collaborative product development. Under this approach, company departments work closely together through cross-functional teams, overlapping the steps in the product development process to save time and increase effectiveness. Instead of passing the new product from department to department, the company assembles a team of people from various departments that stays with the new product from start to finish. These teams typically include people from the finance, marketing, design, manufacturing or operations, and legal departments, and even supplier and customer companies. Simultaneous development is more like a rugby match than a relay race – team members pass the new product back and forth as they move down-field towards the common goal of a speedy and successful new-product launch.

Top management gives the product development team general strategic direction but no clear-cut product idea or work plan. It challenges the team with stiff and seemingly contradictory goals – 'turn out carefully planned and superior new products, but do it quickly' – and then gives the team whatever freedom and resources it needs to meet the challenge. The team becomes a driving force that pushes the product forward. In a sequential process, a bottleneck at one phase can seriously slow or even halt the entire project. In the simultaneous approach, if one function hits snags, it works to resolve them while the team moves on.

However, the simultaneous approach has some limitations. Superfast product development can be riskier and more costly than the slower, more orderly sequential approach. It can often create increased organisational tension and confusion. Moreover, the company must take care that rushing a product to market does not adversely affect its quality – the objective is not merely to create products faster, but to create them *better* and faster. Despite these drawbacks, in rapidly changing industries facing increasingly shorter product life-cycles, the rewards of fast and flexible product development far exceed the risks. Companies that get new and improved products to the market faster than competitors gain a dramatic competitive edge. They can respond more quickly to emerging consumer tastes and charge higher prices for more advanced designs.<sup>23</sup>

### Sequential product development

—A new-product development approach in which one company department works individually to complete its stage of the process before passing the new product along to the next department and stage.

### Simultaneous product development

—An approach to developing new products in which various company departments work closely together, overlapping the steps in the product development process to save time and increase effectiveness.

Successful new-product development is not just about having a special organisational *structure* for new-product development. An innovative organisation must have, at its helm, *top management* that gives priority to new products, which are seen as the life-blood of the company. Their *vision* for innovation is clearly communicated to, and its *value shared* by, staff at all levels of the organisation. A clear *strategy* as guiding force, backed by top management support, ensures that teams consistently perform. Top management not only believes wholeheartedly in, but also devotes sufficient resources to, new-product development. A strongly innovative organisation is also committed to its people (*staff*), investing continually in helping them to acquire and maintain the necessary *skills* to meet the challenge of innovation. The organisation must also embrace the *product champions* who, against all the odds, strive to take projects to completion. They, in turn, rely on the *executive champion*, whose authority is invaluable in fighting off the political battles that interfere with new-product progress. Furthermore, information and communication *systems* are designed to facilitate learning and to ensure that information flows quickly to critical individuals responsible for making or implementing new-product development decisions. Real innovation is a risky activity, so firms must foster an *entrepreneurial culture* and *climate* for innovation, with planning, control and reward systems encouraging risk-taking as opposed to its avoidance. Last, but not least, to innovate effectively, firms must build customer-focused, functionally well-integrated organisations. In successful innovative firms, new-product development is seldom left to chance. There may be an element of luck underpinning successful commercialisation of innovations. Luck, unfortunately, is not easy to replicate. The lessons of strategic new-product planning and implementation, however, are.<sup>24</sup>

We have looked at the problem of finding and developing new products. Next, let us examine the problem of managing them over their life-cycle.

## Product life-cycle strategies

### Product life-cycle (PLC)—

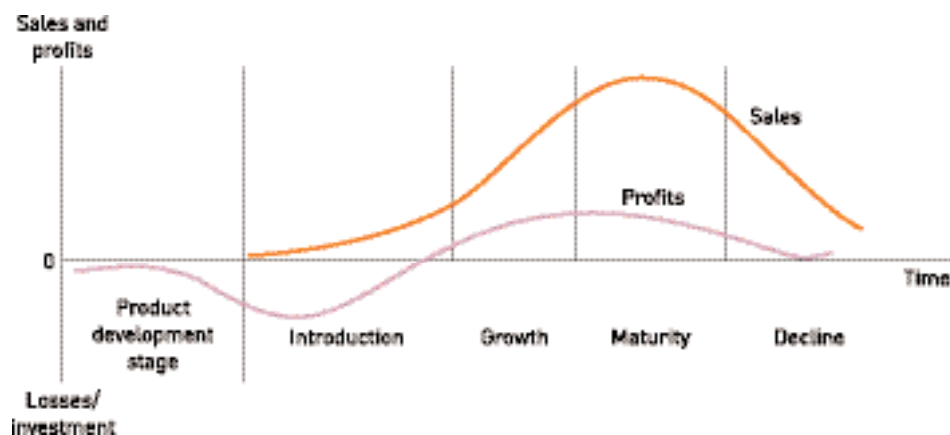
The course of a product's sales and profits over its lifetime. It involves five distinct stages: product development, introduction, growth, maturity and decline.

After launching the new product, the management challenge lies in making sure that the product enjoys a long and healthy life. The new product is not expected to sell for ever, but the company will want to recover a decent profit to cover all the effort and risk that went into launching it. Management is aware that each product will have a life-cycle, although the exact shape and length is not known in advance.

Figure 14.2 shows a typical **product life-cycle (PLC)**, the course that a product's sales and profits take over its lifetime. The product life-cycle has five distinct stages:

1. *Product development* begins when the company finds and develops a new-product idea. During product development, sales are zero and the company's investment costs mount.

**Figure 14.2** Sales and profits over the product's life from inception to demise



## Chapter 14 New-product development and product life-cycle strategies

2. *Introduction* is a period of slow sales growth as the product is being introduced in the market. Profits are non-existent in this stage because of the heavy expenses of product introduction.
3. *Growth* is a period of rapid market acceptance and increasing profits.
4. *Maturity* is a period of slowdown in sales growth because the product has achieved acceptance by most potential buyers. Profits level off or decline because of increased marketing outlays to defend the product against competition.
5. *Decline* is the period when sales fall off and profits drop.

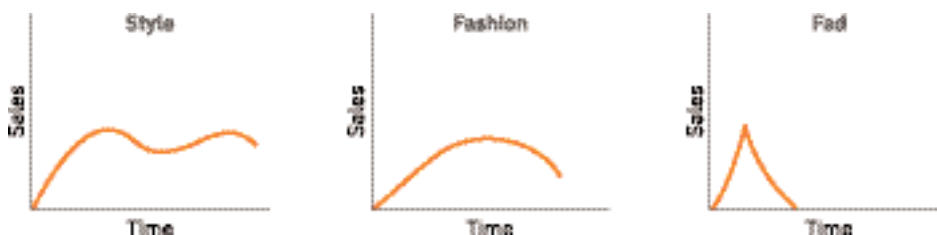
Not all products follow the product life-cycle. Some products are introduced and die quickly; others stay in the mature stage for a long, long time. Some enter the decline stage and are then cycled back into the growth stage through strong promotion or repositioning.

The PLC concept can describe a product class (petrol-engined cars), a product form (people-carrier) or a brand (the Ford Explorer). The PLC concept applies differently in each case. Product classes have the longest life-cycles. The sales of many product classes stay in the mature stage for a long time. Product forms, in contrast, tend to have the standard PLC shape. Product forms such as 'cream deodorants', the 'dial telephone' and 'cassette tapes' passed through a regular history of introduction, rapid growth, maturity and decline. A specific brand's life-cycle can change quickly because of changing competitive attacks and responses. For example, although teeth-cleaning products (product class) and toothpaste (product form) have enjoyed fairly long life-cycles, the life-cycles of specific brands have tended to be much shorter.

The PLC concept can also be applied to what are known as styles, fashions and fads. Their special life-cycles are shown in Figure 14.3. A *style* is a basic and distinctive mode of expression. For example, styles appear in British homes (Edwardian, Victorian, Georgian), clothing (formal, casual), and art (realistic, surrealistic, abstract). Once a style is invented, it may last for generations, coming in and out of vogue. A style has a cycle showing several periods of renewed interest.

A *fashion* is a currently accepted or popular style in a given field. For example, the more formal 'business attire' look of corporate dress of the 1980s and early 1990s has now given way to the 'business casual look' of today. Fashions tend to grow slowly, remain popular for a while, then decline slowly.

Fads are fashions that enter quickly, are adopted with great zeal, peak early and decline very fast. They last only a short time and tend to attract only a limited following. Fads often have a novel or quirky nature, as when people start buying Rubik's cubes, 'pet rocks' or yo-yos. Fads appeal to people who are looking for excitement, a way to set themselves apart or something to talk about to others. Fads do not survive for long because they normally do not satisfy a strong or lasting need or satisfy it well.<sup>25</sup> However, some products, like Ty Inc.'s Beanie Babies, may begin life as fads but later become sought-after products that fetch a high price. Beanie Babies were originally children's toys. The craze has now passed over to adults who now make up 70 per cent of collectors. They trade the 212-strong range of animals on the secondary market (Beanies that sold for a few euros can trade for thousands), take out insurance policies in case their Beanies are stolen, and write in for legal advice about how to split their collections if they get divorced!<sup>26</sup>



**Style**—A basic and distinctive mode of expression.

**Fashion**—A current accepted or popular style in a given field.

**Fads**—Fashions that enter quickly, are adopted with great zeal, peak early and decline very fast.

**Figure 14.3** Marketers need to understand and predict style, fashion and fad

The PLC concept can be applied by marketers as a useful framework for describing how products and markets work. But using the PLC concept for forecasting product performance or for developing marketing strategies presents some practical problems.<sup>27</sup> For example, managers may have trouble identifying which stage of the PLC the product is in, pinpointing when the product moves into the next stage and determining the factors that affect the product's movement through the stages. In practice, it is difficult to forecast the sales level at each PLC stage, the length of each stage and the shape of the PLC curve.

Using the PLC concept to develop marketing strategy can also be difficult because strategy is both a cause and a result of the product's life-cycle. The product's current PLC position suggests the best marketing strategies, and the resulting marketing strategies affect product performance in later life-cycle stages. Yet when used carefully, the PLC concept can help in developing good marketing strategies for different stages in the product life-cycle.

We looked at the product development stage of the product life-cycle in the first part of the chapter. Now let us look at strategies for each of the other life-cycle stages.

## Introduction stage

**Introduction stage**—The product life-cycle stage when the new product is first distributed and made available for purchase.

The **introduction stage** starts when the new product is first launched. Introduction takes time, and sales growth is apt to be slow. Well-known products such as instant coffee, personal computers and mobile telephones lingered for many years before they entered a stage of rapid growth.

In this stage, as compared to other stages, profits are negative or low because of the low sales and high distribution and promotion expenses. Much money is needed to attract distributors and build their inventories. Promotion spending is relatively high to inform consumers of the new product and get them to try it. Because the market is not generally ready for product refinements at this stage, the company and its few competitors produce basic versions of the product. These firms focus their selling on those buyers who are the readiest to buy – usually the higher-income groups. For radical product technologies, such as mobile telecommunications, business or professional users were the earliest targets.

A company might adopt one of several marketing strategies for introducing a new product. It can set a high or low level for each marketing variable, such as price, promotion, distribution and product quality. Considering only price and promotion, for example, management might *skim* the market *slowly* by launching the new product with a high price and low promotion spending. The high price helps recover as much gross profit per unit as possible, while the low promotion spending keeps marketing spending down. Such a strategy makes sense when the market is limited in size, when most consumers in the market know about the product and are willing to pay a high price (these consumers are typically called the 'innovators'), and when there is little immediate potential competition. If, however, most consumers in the limited market are unaware and know little about the innovation, and require educating and convincing, a high level of promotion spending is required. A high-price, high-promotion strategy also helps the firm to *skim rapidly* the price-insensitive end of the market in the early stages of the new product's launch.

On the other hand, a company might introduce its new product with a low price and heavy promotion spending (a *rapid penetration* strategy). This strategy promises to bring the fastest market penetration and the largest market share, and it makes sense when the market is large, potential buyers are price sensitive and unaware of the product, there is strong potential competition, and the company's unit manufacturing costs fall with the scale of production and accumulated manufacturing experience. A low-price but low-promotion spend (or *slow penetration* strategy) may be chosen instead if buyers are price conscious, but the firm wants to keep its launch costs down because of resource constraints.

A company, especially the *market pioneer*, must choose a launch strategy consistent with its intended product positioning. It should realise that the initial strategy is just the first step in a grander marketing plan for the product's entire life-cycle. If the pioneer chooses its launch

strategy to make a ‘killing’, it will be sacrificing long-run revenue for the sake of short-run gain. As the pioneer moves through later stages of the life-cycle, it will have continuously to formulate new pricing, promotion and other marketing strategies. It has the best chance of building and retaining market leadership if it plays its cards correctly from the start.<sup>28</sup>

### Growth stage

If the new product meets market needs or stimulates previously untapped needs, it will enter a **growth stage**, in which sales will start climbing quickly. The early adopters will continue to buy, and later buyers will start following their lead, especially if they hear favourable word-of-mouth. Attracted by the opportunities for profit, new competitors will enter the market. They will introduce new product features, improve on the pioneer’s product and expand the market for the product. The increase in competitors leads to an increase in the number of distribution outlets, and sales jump just to build reseller inventories. Prices remain where they are or fall only slightly. Companies keep their promotion spending at the same or a slightly higher level. Educating the market remains a goal, but now the company must also meet the competition.

Profits increase during the growth stage, as promotion costs are spread over a large volume and as unit-manufacturing costs fall. The firm uses several strategies to sustain rapid market growth as long as possible. It improves product quality and adds new product features and models. It enters new market segments and tries to grow sales further by selling through new distribution channels. It shifts some advertising from building product awareness to building product conviction and purchase, and it lowers prices at the right time to attract more buyers.

In the growth stage, the firm faces a trade-off between high market share and high current profit. By spending a lot of money on product improvement, promotion and distribution, the company can capture a dominant position. In doing so, however, it gives up maximum current profit, which it hopes to make up in the next stage.

### Maturity stage

At some point, a product’s sales growth will slow down and the product will enter a **maturity stage**. This maturity stage normally lasts longer than the previous stages, and it poses strong challenges to marketing management. Most products are in the maturity stage of the life-cycle, and, therefore, most of marketing management deals with the mature product.

The slowdown in sales growth results in many producers with many products to sell. In turn, this overcapacity leads to greater competition. Competitors begin to cut prices, increase their advertising and sales promotions, and raise their R&D budgets to find better versions of the product. These steps lead to a drop in profit. Some of the weaker competitors start dropping out of the industry, and the industry eventually contains only well-established competitors.

Although many products in the mature stage appear to remain unchanged for long periods, most successful ones stay alive through continually evolving to meet changing consumer needs. Product managers should do more than simply ride along with or defend their mature products – a good offensive is the best defence. They should stretch their imagination and look for new ways to innovate in the market (market development), or to modify the product (product development) and the marketing mix (marketing innovation).

### Market development

Here, the company modifies the market in order to increase the consumption of the current product. It repositions the brand and aims it at new users and market segments which the company is not currently serving, as when Johnson & Johnson targeted the adult market with its baby powder and shampoo. The company may want to reposition the brand to appeal to a larger or faster-growing segment, as Lucozade did when it introduced its new line of drinks

**Growth stage**—The product life-cycle stage at which a product’s sales start climbing quickly.

**Maturity stage**—The stage in the product life-cycle where sales growth slows or levels off.

aimed at younger users, not convalescents, the original target segment for the brand. The company must also look for ways to increase usage of the product among present customers. Amazon.com sends permission-based emails to regular customers, letting them know when their favourite authors or performers publish new books or CDs.

## Product development

The company might try to modify the product by changing characteristics, such as quality, features or style, to attract new users and to inspire more usage. It might improve the product's quality and performance – its durability, reliability, speed or taste, for example. In an attempt to maintain its dominance of the world computer-games market, five years after the launch of PlayStation 1, Sony introduced PlayStation 2 (PS2), which offers a jump in performance and versatility. The PS2 incorporates two new semiconductor chips, the 'Emotion engine' 128-bit processor and the massively parallel 'Graphics Synthesiser', which give far richer and more detailed graphics than the first-generation machine. Its digital video disc (DVD) player also shows recorded films, and with a software upgrade, users can plug it into digital cable networks, transforming the PlayStation into a broadband Internet-access device that can download games, films and music produced by the company's other business divisions.<sup>29</sup>

The firm might add new features that expand the product's usefulness, safety or convenience. For example, Nokia keeps adding new functions to its line of mobile phones, the

Adding value to a product in the late stage of its product life-cycle is important. Swatch, eager to demonstrate their commitment to finding solutions to consumer problems, never cease to innovate.

SOURCE: Swatch AG.

The advertisement features a grid of 20 different watch faces, each with a unique, colorful design and text. Below the grid, the text reads "or Swatch Access." followed by an image of a Swatch Access watch with a metal link bracelet. To the right of the watch is a small logo for "Swatch Access" with the text "Swatch Access is not only a watch. It's also a hands-free ski-pass already in use in many of the most beautiful ski resorts of the world like those mentioned above." Below the watch image, the Swatch logo is displayed with the word "access" underneath it. At the bottom, the slogan "Time is what you make of it." is written. In the bottom right corner, there is a logo for "KeyWatch" with the text "A Swatch Group Company".

## Chapter 14 New-product development and product life-cycle strategies

mobile communications network operator Orange adds new services to trigger more usage of its network, and Sony keeps adding new features to its Walkman and Discman lines. Some firms may exploit technological innovations to revitalise the product as in the case of L'Oréal's new thickening shampoo for men. It's new 'Elvive for Men' shampoo contains Regenium-XY, a combination of one of hair's vital substances and a new active ingredient, which acts on the hair roots, strengthening and thickening the hair.

Finally, firms can improve the product's styling and attractiveness. Thus car manufacturers restyle their cars to attract buyers who want a new look. The makers of consumer food and household products frequently introduce new flavours, colours, ingredients or packages to revitalise consumer buying.

### Marketing innovation

Marketers can also try to modify the marketing mix – improving sales by changing one or more marketing-mix elements. Price cuts attract new users and competitors' customers. Marketers can launch a better advertising campaign or use aggressive sales promotions – trade deals, discounts, premiums and contests. The company can also move into larger market channels, as Dell Computers did when it pioneered telephone selling of personal computers. Or they can use mass merchandisers, if these channels are growing.

Finally, the company can offer new or improved services to buyers or create unique and distinctive value propositions that deliver superior benefits to users. For example, not so long ago, many householders in the UK had little choice but to burn coal to keep their houses warm. But since 1947, when the coal industry was nationalised, the introduction of the 1956 Clean Air Act and the availability of cleaner, more convenient natural gas from the North Sea from the 1970s saw annual household consumption of coal in the UK fall from more than 38 million tonnes to 1.6 million tonnes by 2003. Today, over three-quarters of British homes are supplied with gas, while those that do not burn gas are more likely to heat their homes with oil or electricity than coal. However, CPL, the country's biggest coal merchant and manufacturer of smokeless fuel, argues that, despite the declining trend, there is still life in the sector. The product has changed – typically coal was delivered loose to homes in one-hundredweight sacks, but today CPL sells an increasing amount of four-kilogram bags of smokeless fuel from supermarkets and garage forecourts. The latter outlets are ideal for occasional users – they burn fuel not to warm up the home, but because they like the romantic atmosphere it creates. Burning coal is increasingly a lifestyle choice for many users, according to an industry spokesperson. So, never underestimate the potential for turning around any dying commodity! What next? Designer fuels, perhaps.<sup>30</sup>

### Decline stage

The sales of most product forms and brands eventually dip. This is the **decline stage**. The decline may be slow, as in the case of oatmeal cereal, or rapid, as in the case of gramophone records. Sales may plunge to zero, or they may drop to a low level where they continue for many years.

Sales decline for many reasons, including technological advances, shifts in consumer tastes and increased competition. As sales and profits decline, some firms withdraw from the market. Those remaining may reduce the number of their product offerings. They may drop smaller market segments and marginal trade channels, or they may cut the promotion budget and reduce their prices further.

Carrying a weak product can be very costly to a firm, and not just in profit terms. There are many hidden costs. A weak product may take up too much of management's time. It often requires frequent price and inventory adjustments. It requires advertising and sales force attention that might be better used to make 'healthy' products more profitable or to create

**Decline stage**—The product life-cycle stage at which a product's sales decline.

## 14.2 Smile! Leica takes you back to the good old days

FT

The march of technology leaves its mark on many industries. Consumers' insatiable appetite for the latest gadget often rapidly obsolesces old technologies and companies' means of delivering consumer benefits. As the saying goes, 'New technology often kills old business.'

The same may be said of the camera industry. The global camera market is rushing towards digital domination. Sales of digital cameras overtook those of their traditional analogue peers in 2002 and are forecast to account for 63 per cent of the market by 2006. Some prophets of doom in the industry are even predicting the demise of film, used in box Brownies and their successors for more than a century. Asian production values mean the average shelf-life in the camera store for a new digital model is just six months; and a year or so later it is likely to be uneconomic or even impossible to repair for lack of spare parts. Such is the rate of change that one UK photography magazine recently mistakenly chose for its Camera of the Year award a digital camera no longer in production.

In the middle of this computerised maelstrom sits Leica, the German-based camera equipment and sports optics maker, which has just launched the Leica MP, a mechanical analogue camera that relies on design and manufacturing techniques harking back to the 1950s. Some might argue that a period of gloom in the world economy – with Leica's biggest markets, the US and Germany, particularly hard hit – is a dangerous time to fly in the face of the global trend towards digital photography. But Jean-Jacques Viau, marketing product manager, brushes aside such fears, describing the launch of the MP as 'a logical move'. He adds: 'For every action, there is a contrary reaction.'

Leica occupies a small upmarket niche and aims to show that smaller operators can thrive by rejecting mainstream trends and catering for that vocal minority more interested in precision instruments than in increasing electronic automation. As Mr Viau says: 'We could be the shelter for people who react to the changes of model every six months.' That shelter does not come cheap. The MP costs about £1,850 (€2,775) *excluding* the lens.

Unlike the more common single lens reflex cameras – where you look directly through the lens – rangefinders such as the MP have separate viewfinder and focusing devices. Leica may have invented 35 mm photography but it does not have the rangefinder market to itself. In recent years, it has been coming to terms with competitors using former German brand names, most of which have been snapped up by the Japanese.



Cosina saw a gap in the market for a cheaper rangefinder and launched the Voigtlander Bessa range – at about a quarter of the price of a Leica. Other companies include Contax, owned by Japan's Kyocera; Konica; and Rollei, an independent German-based company. The resurgence of interest in back-to-basics cameras has been pronounced and has benefited Leica. It sold more than 16,000 rangefinder cameras in 2002, the most since 1968. Robert White, an independent retailer in the south of England, says: 'People are realising there's more to life than a piece of plastic. It's back to the good old days.'

For now, Leica may be bucking the mass digital trend but discerning photographers are snapping up its luxury analogue cameras. As digital dominance marches on, Hanns-Peter Cohn, Leica's chief executive, is far from complacent. Leica is reaping the rewards of its restructuring of the past five years, which has involved cutting its debt and reducing stock levels. The retail expertise of luxury goods manufacturer Hermes, which has a 31 per cent stake in Leica, has helped to position Leica as a luxury purchase. He sees this route as crucial. 'For the future, it's important that we have our own shops', he says. 'It started in Hamburg. Why not in central London, [or] in Madison Avenue, New York? And why not on one corner of the street a flagship Hermes store and on the other corner a little Leica shop? There are a lot of people all over the world who like to buy value, real value, and we have only one problem: to find them.'

SOURCES: Adapted from Ian Chapman, 'A camera focused on luxury', *Financial Times* (31 March 2003), p. 15; see also Scott Morrison, 'Consumer photography develops speedily', *Financial Times* (12 January 2004), p. 29; Amy Yee and Dan Roberts, 'Kodak hopes for digital boom', *Financial Times* (23 January 2004), p. 25.

new ones. A product's failing reputation can cause customer concerns about the company and its other products. The biggest cost may well lie in the future. Keeping weak products delays the search for replacements, creates a lopsided product mix, hurts current profits and weakens the company's foothold on the future.

For these reasons, companies need to pay more attention to their ageing products. The firm should identify those products in the decline stage by regularly reviewing sales, market shares, costs and profit trends. Then management must decide whether to maintain, harvest for cash or drop each of these declining products.

Management may decide to *maintain* its brand without change in the hope that competitors will leave the industry. For example, Procter & Gamble made good profits by remaining in the declining liquid soap business as others withdrew. Alternatively, management may decide to reposition the brand in the hope of moving it back into the growth stage of the product life-cycle. Or management may find new ways to revitalise the business, as in the case of Leica, the German-based camera equipment and sports optics maker which sought to buck the mass digital camera trend through targeting discerning photographers with a new line of upmarket, old-tech (analogue) equipment (see Marketing Insights 14.2).

Management may decide to harvest the product, which means reducing various costs (plant and equipment, maintenance, R&D, advertising, sales force) and hoping that sales hold up. If successful, harvesting will release cash and increase the company's profits in the short run. Or management may decide to drop the product from the line. It can sell it to another firm or simply liquidate it at salvage value. For example, declining real ale sales in the UK during the 1990s caused dozens of regional brewers to close down, while others including the country's largest brewers, Bass and Whitbread, sold off their brewing interests to foreign groups such as the Belgian Interbrew.<sup>31</sup> If the company plans to find a buyer for the declining product-business, it will not want to run down the product through harvesting.

Importantly, before divesting an old product, management should carefully consider whether the product or technology can be revived at all. As some firms have found, ditching old technologies completely can be a mistake, because technologies dismissed as yesterday's habit may turn out to be not such old hat after all.

Consider the following examples. Clockwork, once a standard technology used to power clocks, watches and children's toys, was made obsolete by battery-powered gadgets. However, as the power needed by modern circuitry decreases, clockwork is becoming a feasible power source once more. Wind-up torches and radios are on sale and the US military is even considering hand-cranked satellite navigation devices and landmine detectors that would save soldiers from carrying bulky battery packs.

Electronic devices containing valves, then transistors and finally microprocessors displaced mechanical components used in calculators some decades ago. Now, microscopic mechanical components are also staging a comeback. These are used in a new class of silicon chips which perform functions that electronic devices cannot, such as tiny silicon arms and levers that act as compact filters, timekeepers, optical switches and sensors.<sup>32</sup>

”

Table 14.2 summarises the key characteristics of each stage of the product life-cycle. The table also lists the marketing objectives and strategies for each stage.<sup>33</sup>

## Chapter 14 New-product development and product life-cycle strategies

	Introduction	Growth	Maturity	Decline
<b>Characteristics</b>				
Sales	Low sales	Rapidly rising sales	Peak sales	Declining sales
Costs	High cost per customer	Average cost per customer	Low cost per customer	Low cost per customer
Profits	Negative	Rising profits	High profits	Declining profits
Customers	Innovators	Early adopters	Middle majority	Laggards
Competitors	Few	Growing number	Stable number beginning to decline	Declining number
<b>Marketing objectives</b>	Create product awareness and trial	Maximise market share	Maximise profit while defending market share	Reduce expenditure and milk the brand
<b>Strategies</b>				
Product	Offer a basic product	Offer product extensions, service, warranty	Diversify brand and models	Phase out weak items
Price	Use cost-plus	Price to penetrate market	Price to match or beat competitors	Cut price
Distribution	Build selective distribution	Build intensive distribution	Build more intensive distribution	Go selective: phase out unprofitable outlets
Advertising	Build product awareness among early adopters and dealers	Build awareness and interest in the mass market	Stress brand differences and benefits	Reduce to level needed to retain hard-core loyals
Sales promotion	Use heavy sales promotion to entice trial	Reduce to take advantage of heavy consumer demand	Increase to encourage brand switching	Reduce to minimal level

**Table 14.2** Summary of product life-cycle characteristics, objectives and strategies

SOURCE: Philip Kotler, *Marketing Management: Analysis, planning, implementation, and control*, 11th edn, © 2003, p. 340. Reprinted by permission of Pearson Education, Inc., Upper Saddle River, NJ.

## Summary

An organisation's current products face limited life spans and must be replaced by newer products. But new products can fail – the risks of innovation are as great as the rewards. The key to successful innovation lies in a total-company effort, strong planning, a marketing focus and a *systematic new-product development process*.

We examined the new-product development process which covers nine stages. The process starts with determining the *new-product strategy*, which provides direction for the new-product development effort. Next, the company must find new-product ideas. *Idea generation* may stem from internal sources and from external sources, such as customers, competitors, distributors, suppliers and others. Next comes *idea screening*, which reduces the number of ideas based on the company's defined criteria. Ideas that pass the screening stage continue through product *concept development*, in which a detailed version of the new-product idea is stated in meaningful consumer terms. In the next stage, *concept testing*, new-product concepts are tested with a group of target consumers to determine whether the concepts have strong consumer appeal. Strong concepts proceed to *marketing strategy development*, in which an initial marketing strategy for the new product is developed from the product concept. In the *business analysis* stage, a review of the sales, costs and profit projections for the new product is undertaken to determine whether it is likely to satisfy the company's objectives. Positive results here move the concept into *product development*, which now calls for a large jump in investment. As the product becomes more concrete, it is subjected to functional and customer tests. If it passes these tests, the product moves to *test marketing*, at which the product and marketing programme are tested in a more realistic market setting. The company goes ahead with *commercialisation* if test-market results are positive. The purpose of each stage is to decide whether the idea should be further developed or dropped.

Each product has a *life-cycle* marked by a changing set of problems and opportunities. The sales of the typical product follow an S-shaped curve made up of five stages. The cycle begins with the *product development* stage when the company finds and develops a new-product idea. The *introduction stage* is marked by slow growth and low profits as the product is distributed to the market. If successful, the product enters a *growth stage*, which offers rapid sales growth and increasing profits. Next comes a *maturity stage*, when sales growth slows down and profits stabilise. The company seeks strategies to revitalise sales growth, including market, product and marketing-mix modification. Finally, the product enters a *decline stage*, in which sales and profits dwindle. Management must decide whether to maintain the brand, without change, hoping competitors will drop out of the market; harvest, by reducing costs and maintaining sales; or drop the product, selling it to another firm or liquidating it at salvage value.

## Discussing the issues

1. Choose a familiar company and assume that you are responsible for generating new-product ideas. How would you structure your new-product development process? What might be the most valuable sources of new ideas? How would you stimulate the development of new ideas in this organisation?
2. What factors must new-product development managers consider when testing new-product ideas and concepts with potential customers? How might the Internet assist

marketers in their efforts to determine potential customers' attitudes and responses towards new-product ideas?

3. Imagine that you have just developed a revolutionary new games console that may eventually lead to an entirely new portable gaming activity. Propose a marketing strategy which you will present to potential investors. What factors should you consider to increase your chances of securing investors' interest in this new product?
4. Do you think that the product life-cycle concept is a useful marketing-planning tool? Why or why not?
5. Which product life-cycle stage, if any, is the most important? Which stage is the riskiest? Which stage offers the greatest profit potential? Which stage appears to require the greatest amount of 'hands-on' management? You may use practical examples to address these questions and to explain the thinking behind each of your answers.

## Applying the concepts

1. Go to a grocery store you normally shop at. Make a list of 10 items that appear to be new products. If you prefer, you can visit an online retail store and perform the exercise. In either case, note any information provided by the store or product packaging concerning the new offering. Rate each product for its level of innovation: give a '10' score for extremely novel and highly innovative products and '1' for a very minor change such as an improved package or fragrance. How truly new or innovative are these products overall? Do you think companies are being too risk averse because 'pioneers are the ones who get shot'?
2. 'Danger, Will Robinson! Danger!' might be one of the most memorable phrases ever uttered by a robot. However, today, the phrase would more likely be 'Buy Me! Take Me Home!'. Who will offer the first practical, affordable home robot? NASA? Intel? Sony? Lego? Did you say Lego? Yes, the same little company that developed those great plastic building blocks has now developed several models of home robots (such as the R2-D2 model from *Star Wars*) that sell for as little as €250. These Lego model kits contain Lego pieces, light and touch sensors, gears and a minicomputer brick that forms the core of the system. The small, efficient robots already perform many hard-to-believe tasks (without complaining), and Lego is making daily upgrades. Copycat competitors have already begun a modification frenzy that will one day produce an awesome personal assistant. See [www.lego.com](http://www.lego.com), [www.legomindstorms.com](http://www.legomindstorms.com), [www.lugnet.com](http://www.lugnet.com) and [www.crynwr.com/lego-robotics](http://www.crynwr.com/lego-robotics) for more information.
  - (a) Who might the first customers be for a Lego robot? Explain.
  - (b) Project the product life-cycle for this new product. Explain your thinking.
  - (c) Outline a strategy for positioning this product away from the toy category and into the 'personal-device' category. What would be the most important aspect of this positioning strategy? What headline would you select for the first Lego robot advertisement? In what media would you advertise? Would you use the same headline ad? Explain.
  - (d) Design a quick test-market study for the Lego robot. Where would you administer the test?
  - (e) What other new products might complement Lego's robot line and how should Lego extend the robot concept into other products? Are these effective strategies for managing the robot line over its life-cycle? Explain.

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### WEB RESOURCES

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# Concluding concepts 14

## Red Bull: waking a new market



### Stimulation

Little did Austrian businessman Dietrich Mateschitz suspect when he visited Bangkok in the early 1980s that his trip would launch not only a new product but also a new product category. Mateschitz, international marketing director for Blendax, a German toothpaste producer, encountered Krating Daeng, a 'tonic syrup' that Red Bull Beverage Company had been marketing in Thailand for years. Mateschitz discovered that one glass of the product eliminated his jetlag.

Returning to Austria, Mateschitz began a three-year product development process that included the drink's image, packaging and marketing strategy. In 1987, he obtained the marketing rights to Red Bull (the translated Thai name) from the Thai company and launched his marketing strategy.

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Typical energy drinks, like Red Bull, contain about as much caffeine as a cup of coffee.

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### The product

Although marketers credit Red Bull with creating the 'energy drink' category, the pursuit of drinks to enhance performance and well-being is not new. Coca-Cola made similar claims in 1886 and Gatorade enhanced the performance of Florida University's Gators football team. In Britain, Lucozade helped pep up tired housewives in the 1980s and energise athletes in the 1990s.

Red Bull is a lightly carbonated energy drink that comes in slender aluminium cans. The label indicates that it has 110 calories, 0 grams of fat, 200 milligrams of sodium, 28 grams of carbohydrates, 27 grams of sugar, and less than 1 gram of protein. Ingredients include sucrose, glucose, sodium citrate, taurine, glucuronolactone, caffeine, inositol, niacinamide, calcium pantothenate, pyridoxine HCL, vitamin B<sub>12</sub>, and artificial flavours and colours, all mixed in carbonated water.

Sounds delicious? Well, that is part of the problem. Each of an energy drink's ingredients has a specific purpose – but each also has its own taste, and in some cases an aftertaste. It's no easy matter to blend the ingredients to get the correct benefits for the consumer but also something the consumer will drink voluntarily.

Energy drinks sometimes include *amino acids* that are protein building blocks. Taurine, for example, is an important aid in the release of insulin and can prevent abnormal blood clotting. Because researchers have cited a deficiency of *vitamins and minerals* as being associated with

a lack of energy, beverage makers often include them in energy drinks. Niacin (vitamin B<sub>3</sub>) works with other vitamins to metabolise carbohydrates. Riboflavin (vitamin B<sub>12</sub>) helps combat anaemia and fatigue by helping to manufacture red blood cells.

Some drinks include *botanicals* such as ginkgo biloba, guarana and ginseng. Ginkgo biloba is purported to provide mental energy and 'sharpness' by stimulating blood flow to the brain. Finally, most energy drinks contain *caffeine*, an alkaloid stimulant that the body absorbs and circulates to all body tissues. Caffeine affects the central nervous system, the digestive tract, and the body's metabolism, boosting adrenaline levels to increase blood pressure and heart rate. Typical energy drinks, like Red Bull, contain about as much caffeine as a cup of coffee.

Packaging is also important. Some fruity energy beverages come in glass bottles, but many energy drinks that contain light-sensitive vitamins, like B<sub>12</sub>, come in slender metal cans to prevent the vitamins from breaking down.

### The marketing strategy

Mateschitz designed an unusual marketing strategy. 'We don't bring the product to the people', he argues, 'we bring people to the product.' Initially, when Red Bull entered the market, it used traditional beverage distributors. But as the product gained popularity, the company began to pursue a more focused distribution strategy. Red Bull sales representatives now approach a beverage distributor and insist that he or she sells only Red Bull and no other energy drink. If the distributor will not agree, Red Bull hires young people to load the product in vans and distribute it themselves.

The company divides the market into territories, with sales teams in each area responsible for developing distribution and targeted marketing plans. Each of the teams is equipped with a bespoke iPAQ pocket PC that they download to a Red Bull webpage using GPS-enabled mobile phones. The local team seeks to determine where people aged 16 to 29 are hanging out and what they find interesting. First, the sales team calls on popular clubs and bars that will offer the drink on-premise. As incentives, the team offers Red Bull coolers and other promotional items. Red Bull works with individual accounts rather than large chains because it has found that the process goes much faster due to the lack of bureaucracy. It has also found that young people in local hotspots are open to trying new things and help generate a



'buzz' about Red Bull. However, the company does not endorse all the new things people try, like mixing the product with vodka or tequila, and it has a FAQ section on its website, [www.redbull.com](http://www.redbull.com), to counter the many rumours that have developed around the product.

Second, the sales team also opens off-premise accounts such as gyms, healthfood stores, and convenience stores near colleges. The product sells for about €2 in convenience stores. In addition, 'consumer educators' roam local streets and hand out free samples. The company has encouraged students to drive around with big Red Bull cans strapped to the tops of their cars and to throw Red Bull parties focused on weird themes.

Contrary to traditional promotion practice, Red Bull advertises only *after* it believes a local market is maturing. The company's philosophy is that media can reinforce but not introduce a brand. Thus, it builds demand even before it introduces the product at retail. Only about 19 per cent of the €100 million the brand spent on promotion in 2000 was for measured media. Red Bull spends about 35 per cent of sales on promotion. The company has also begun sponsoring extreme sporting events and extreme athletes.

### Uncanny results

Does all this grassroots marketing work? In 2001, Red Bull sold 1.6 billion cans in 62 countries, up 80 per cent over 2000. In the United States, Red Bull entered the list of the top 10 carbonated beverage distributors with a mere 0.1 per cent market share – but its case volume grew 118 per cent over 2000 to 10.5 million cases. It now captures a 70 to 90 per cent share of the energy drink market.

With results like that, it did not take long for competitors to jump in. Pepsi bought South Beach Beverage Company (makers of the SoBe brand) and developed an energy drink it calls 'Adrenaline Rush'. Coca-Cola jumped in with KMX. Beermaker Anheuser-Busch joined in with a product it calls '180' to denote that it turns your energy around 180 degrees. In early 2000, another Thai company, Otsotspa, entered the fray with its own energy drink, called 'Shark'.

Mateschitz does not seem concerned about competition. He knows Red Bull has a tremendous head start and strong local marketing teams. He already has plans to enter Brazil and South Africa. However, Mateschitz does have a few concerns. 'It makes no sense to build a company on one product', he argues. So far, he has put the Red Bull brand on only one other product. LunAqua is a still water that the company claims it bottles only 13 times per year, during each full moon when the moon reaches

its full 'energy level'. There is also a variety of LunAqua that contains caffeine. But Mateschitz knows that it will take more than just moon power to stay ahead of the competition in the energy drink market. You can bet he will be up all night, sipping Red Bull and developing new product ideas.

Also, while his eye is on global expansion, trouble is brewing closer to home. France and Denmark have banned the drink. The European Commission challenged an attempt by France to ban Red Bull because of its high level of caffeine and other products. However, the European Court of Justice upheld France's right to ban the drink.

The drink had been implicated in the death of Ross Cooney, a healthy 18-year-old student from Limerick in Ireland. The inquest said the teenager died of Sudden Adult Death Syndrome, but called for an enquiry into high-caffeine energy drinks.

Britain's Committee on Toxicity investigated Red Bull in 2001 and found it safe, although it advised pregnant women against drinking it and other high-caffeine drinks. However, it looks like Ireland will soon be following Denmark and France in banning the product. Will others follow?

### Questions

1. Based on the information in the case, evaluate Red Bull's product development process. What process would you recommend as it considers developing new products?
2. At what stage of the product life-cycle are energy drinks as a category? What does this position imply for category competitors?
3. Do you believe there is a long-term market for functional foods and beverages like energy drinks? Why or why not?
4. Using the 'product-market expansion grid' presented in Chapter 2 (see Figure 2.5), recommend specific ideas for Red Bull in the areas of market penetration, product development, and market development.

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