

## Product development, innovation and the product life cycle



### Introduction

Profitable and innovative commercial businesses are ones which provide customers with exactly what they need and want.

*Portakabin* is an example of such a business. *Portakabin* has been the UK's market leading modular building innovator for more than 50 years, operating in 6 countries and employing more than 1,300 people. The marketing of *Portakabin* is central to its past, present and future success.

*Portakabin* is a business to business (B2B) organisation. Its customers are other businesses. This makes its approach to marketing different to more consumer-focused organisations. *Portakabin* operates both in the secondary and tertiary sector, manufacturing and hiring a range of modular buildings. These vary from one-off portable buildings for doctor's surgeries to vast modular schools, hospitals and office complexes. Its buildings are made off-site, transported and constructed on site.

*Portakabin* began supplying the first portable PK16 building in 1961. At the time this was a unique product and the business has built its success by continued innovation. One of its major extension strategies involved hiring out its buildings locally as an interim arrangement for businesses. It currently has more than 90 Visitor and Hire Centres.

Recently *Portakabin* launched its latest product, the Yorkon Building System (YBS). This new product is at the cutting edge of modular building technology. Its design is the culmination of extensive planning involving market research, research and development.

Yorkon is a brand that belongs to the *Portakabin Group*, dating back to 1980. Any large, permanent building that needs to be designed and then built is sold under the Yorkon brand.

*'For a company whose history is based on innovation and design quality, the launch of a major new product is something to get excited about. It is particularly important when that product takes the manufacture of steel-framed buildings into a new era of flexibility, aesthetics and speed of build. The Yorkon Building System is designed to give you all the benefits of traditional build, such as the ability to fit any footprint and external walls without sections or columns and all of this is still delivered up to 50% faster than traditional buildings.'*

The case study focuses on the processes involved in creating the Yorkon Building System and the role of marketing in launching the new product.

### The importance of marketing

Marketing is a central function in any business. Marketing involves getting the right product at the right price, promoted using the right messages/media and sold in the right place (the 4 Ps). At the core of effective marketing is the requirement to satisfy customers' needs precisely. The closer the marketing mix of product, price, place and promotion are to customer requirements, the more likely it is that a business will be successful.

In the modular construction market *Portakabin* customers range from small businesses needing to hire a small short-term building





for a few weeks, to the construction of large, permanent multi-storey offices. The marketing department has to determine what customers need now and anticipate future needs in order to design appropriate products to meet these needs. This involves technical research and development as well as market research.

The building industry is very competitive. *Portakabin* has managed to remain at the head of the modular buildings market through its efficient marketing strategies. *Portakabin* competes both with rival businesses in the modular buildings market and those building with traditional materials such as bricks and mortar. This means that *Portakabin* must keep up-to-date with changes in the building industry to remain competitive.

Whilst *Portakabin* prides itself on the quality of its buildings and spends time developing the products, it does not take a solely product-orientated approach to its marketing. Product-orientated businesses tend to develop new products to the highest standard and then promote and sell those products to as many customers as it can find. A market-orientated business, however, uses market research to find out what customers want and need now and in the future. It then designs and produces products to meet these needs.

Market-orientation provides many benefits to a business. It lessens risk as you already know that customers want the benefits your product and service provides. *Portakabin* focuses heavily on developing buildings and materials that suit specific customer requirements. It employs highly skilled and qualified technicians to manufacture its top quality buildings. For instance, when building a hospital ward, the customer wanted the cabling and fibre optics for the equipment to be built into the fabric of the building, along with insulation to minimise heat loss and improve energy efficiency. *Portakabin* developed materials and constructed pre-fabricated walls in its factories to fulfil these specific needs.

Whilst all of the elements of the marketing mix are important, the product aspect will be the focus for the remainder of this case.

## Product design

*Portakabin* must keep up-to-date with its building structures to ensure it meets the needs of its twenty first century customers. This aspect of the product relies heavily on innovative designs. Design involves making the product distinctive. *Portakabin* uses 'value analysis' to develop products that achieve the right balance in the minds of its customers. The mnemonic FACUP is a useful way of remembering the key elements to consider with any product's design:

- **F**unction
- **A**ppearance/**A**esthetics
- **C**ost
- **U**nleashes
- **P**rofits

*Portakabin* designers must ensure that the appearance of its products is suited to its customers' needs. In such a competitive industry it is important that they be aesthetically pleasing. The cost of production should be as efficient as possible. *Portakabin* excels here as it is able to manufacture buildings efficiently in its own state-of-the-art factory. There are many functional factors that must be taken into account when designing a product. These include:

- safety
- reliability
- maintenance
- convenience
- efficiency.

The latest product that *Portakabin* has designed is its Yorkon Building System (YBS). The YBS is an example of new product development (NPD) which is the process of researching, designing and marketing a new product. Research and development are distinctive elements of NPD.



Research and development is the process of conceiving, developing and testing possible new products until they meet the requirements stipulated by the market. The YBS required the development of new production processes and materials. These included factory production techniques that enabled a flexible product:

*'The new production processes give Portakabin the flexibility to produce buildings using more than a thousand permutations of automatically produced walls, roofs and floors. It means that a building can be precisely manufactured to the customer's desired footprint, making maximum use of the available space.'*

The outcome is that the YBS has long walls uninterrupted by sections or columns. In other words, architects can give customers exactly what they want, making it totally customer-focused. Advancements in technology also play a key role in NPD, for instance:

*'The new product has been made possible by a state-of-the-art production technique that uses the largest automated press of its kind in Europe.'*

The outcome of the new technology is that *Portakabin* can combine over 2500 precision components to an accuracy of the smallest fraction of a millimetre. This is not possible with traditionally built structures. The third element of the R&D was developing new materials. *Portakabin* developed everything from the design of the windows, the external colours, claddings and finishes to a choice of styles for roofs and entrances so that thousands of combinations are possible. The result is that the final building is designed to the customer's exact specification.



## New product development

It is one thing to develop new techniques, materials and technological processes. What makes a business successful is the ability to use such techniques and processes to deliver production competitively. *Portakabin* operates in a market that is extremely sensitive to changes in the external environment. In particular, changes relating to both limiting carbon emissions and increasing energy efficiency. These all come through the design stage into new product development. Being a sustainable business is part of the culture of *Portakabin*. The design process involves 5 elements:

- a design brief
- specification including appearance and function
- consideration of alternative solutions
- realisation (where the final choices are decided and prototypes made)
- testing of the product.

Sustainability and environmental implications are high on the agenda for many organisations, however, for *Portakabin* they are considered at every aspect of product design through to delivery. This includes:

- the energy efficient insulation materials used to lower running costs of its buildings (YBS is in the top 5% of UK buildings for air-tightness)
- its ISO 14001 certified factory with a zero waste to landfill policy
- the fact that *Portakabin* buildings require an estimated 90% fewer vehicle movements to site than traditional build techniques, reducing the buildings carbon footprint.

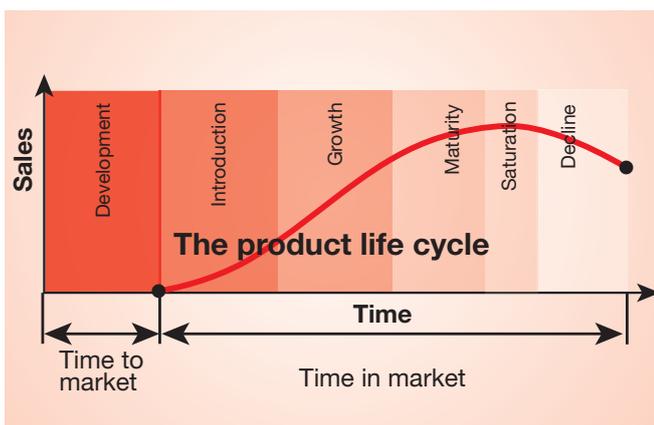
To succeed, most businesses need to create a unique selling point (USP) that makes it stand out from its competitors. This is especially important in competitive markets like the building industry. The customer promise at *Portakabin* is its USP. The promise ensures builds are delivered on time and on budget. In the last 9 years, 99.7% of *Portakabin* buildings have been delivered on time and on budget - compared with a construction industry average of only 58% on time and 34% on budget. This commitment reinforces the excellent reputation that *Portakabin* has within the industry.

## The product life cycle

When considering investing in research, development and design, a business should always be aware of the product life cycle (PLC) associated with the products in its portfolio. The life of a product is the stages that relate to the pattern of sales and consist of:

Development	Where new ideas and processes are tested, prototypes made and trialed
Introduction	Strong advertising and promotion campaigns, low sales initially
Growth	Increased awareness, increased sales, competitors start to challenge
Maturity	Sales reach peak, the cost of supporting the product declines, market share may be high and competition likely to be greater
Saturation	Sales growth stops and start to dip and profits start to fall
Decline	Product outlives/outgrows its usefulness, for example, technology/fashions change and sales decline

The time period associated with the product life cycle will vary according to the product and other influences. For some, the whole life cycle could be a matter of days or weeks, for instance a piece of fruit. Others may be months, for instance seasonal items like fashion garments. For *Portakabin*, its products are expected to last decades. It is important to adapt the marketing mix in order to respond to changes in the market. Marketing strategies such as seeking new markets, promotion, pricing and developments that add value can extend the PLC.



The YBS is in the introduction stage of its life cycle. *Portakabin* has invested heavily in promoting this product to increase awareness in the market and help make the launch successful. Examples of how interest has been created in this new product include an extensive development of its website which promotes the benefits and attributes of the YBS. Existing customers have also been introduced to YBS through direct mailing.

Depending on where the product is in the life cycle, different marketing strategies will be used. The key is to recognise how sales are changing and the effects of competition on sales and profits. Most businesses will seek to develop new products to launch so that the growth period coincides with the saturation stage of existing products. This enables a smooth transition and enables profits to be maintained. The profits from products in the maturity stage tend to finance the development of new innovations.

The commitment of *Portakabin* to constant innovation has been one of the main reasons it remains a market leader. As the sales of YBS grow the future success of the product will help finance further research and development.

## Conclusion

In competitive markets a business must constantly adapt its marketing strategies to stay ahead of its competitors. A key aspect of this is the need to design and develop products that meet customer needs whilst delivering profits. *Portakabin* has invested heavily in designing the Yorkon Building System in response to changing customer needs for flexible, energy efficient buildings that meet changing and more stringent building regulations.

The understanding of the product life cycle and particularly extension strategies, based on adding value through product development and competitive pricing, has kept *Portakabin* as a market leader and enabled it to position itself to increase sales into new markets.

1. Describe four main factors to take into account when designing a new product. (2 marks)
2. Explain two benefits of new product development to a business in a competitive market. (4 mark)
3. Analyse the role of promotion in extending a product's life cycle. (6 marks)
4. Evaluate the extent to which constant innovation guarantees business success. (8 marks)