

THEORY technology push/market pull

Any product can be categorised into a **technology push** or a **market pull**.

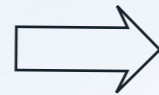
Technology Push = (NEW TECHNOLOGY) technological and scientific developments that are used by design teams to produce new products. You might not know you wanted one before.

EXAMPLE: Apple Ipad

Market Pull = (NEEDS OF SOCIETY) inspiration for new products often comes from the needs of society. The needs of society and the demands of a product are changing all the time meaning research and development teams often modify existing products for changed markets. These are often updates to existing ideas.

EXAMPLE: Programmable washing machine

Product 1 – First Mobile Phone



Product 2 – Apple Iphone



Product 5 - Sony Walkman



Product 6 - Apple Ipod Nano



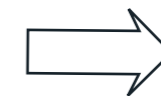
Product 3 - BAGGED Vacuum



Product 4 – Dyson (BAGLESS) Vacuum



Product 7 - Ford Capri



Product 8 - Ford Focus Electric Car





THEORY technological opportunity

Technological opportunity

Products which appear on the market, sometimes do so as a result of technological innovation. As we saw, this is often referred to as technology push. Scientists, engineers and designers are always looking for new ways of doing things and always striving for the ultimate solution to a given problem.

Often new technology is stumbled upon in this search. Sometimes the new technology has an immediately obvious application and sometimes not. Sometimes technology is transferred from one application to another.

In other words sometimes new technologies create new products and therefore a completely new market niche appears.

Examples of products from new technology:

Microwave oven - from research into wave energy-



Sony Walkman - through advances in microelectronics

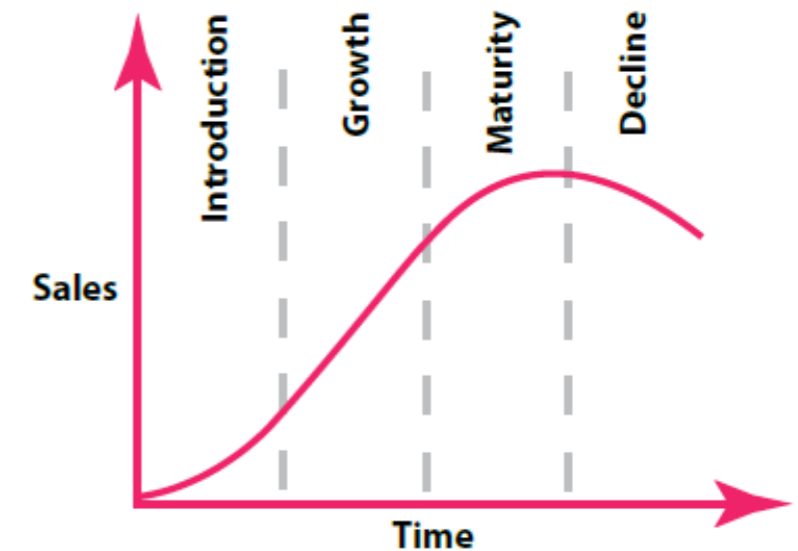


Ceramic knives - from space-shuttle research.-

THEORY product life cycle

The four main stages of the product life cycle are:

1. Introduction - A product is introduced into the market for the first time.
2. Growth - The product is beginning to be recognised and is becoming more popular
3. Maturity - The product has peaked in terms of costs, profits and sales.
4. Decline - The product is beginning to die out more innovative products are starting to replace it. These stages are illustrated in the diagram -



1. Introduction

- Marketing costs are extremely high as consumer product awareness needs to be created
- Sales are slow
- There are few to no competitors in the market
- Demand for the product has to be created
- Customers have to be encouraged to try the product
- There is very little profit at this stage
- Skimming and Penetration pricing may be used during this stage

2. Growth

- Costs are reduced due to economies of scale (The average cost of a product decreases as output and sales rise.) Larger quantities of the product are produced.
 - Product sales increases significantly
 - Marketing costs will be lower than in the introduction phase as awareness to the product has been created.
 - Product begins to make more profit
 - Consumer awareness of the product increases
 - Competition increases with new companies entering the market
- New competition leads to potential price decreases. Competitive pricing is used.

3. Maturity

- Production volumes increase and in effect costs are lowered
- Product sales peak and market saturation is reached
- More competitors enter the market
- Prices drop due to a boost in competitors products in the market
- Persuasive advertising takes place differentiation of brand and diversification of features are emphasized to increase or maintain market share.
- Marketing costs are lower than previous 2 stages. Sales promotion techniques are used e.g.: BOGOF
- Industrial profits decrease

4. Decline

- Costs become counter-optimal
- No marketing activity would take place during this phase as product is in decline.
- Sales start to decrease
- Profit margin diminishes
- Any profits are made through distribution and production efficiencies rather than increased sales
- Remaining stock sold off

THEORY product life cycle

All products have a finite life and their progress from beginning to end can be illustrated by using what is referred to as the 'Product Life Cycle Curve'. The product life-cycle illustrates the life of a product in a market with respect to sales, profits and costs. Sales of a product pass through each of the distinct stages of the products lifecycle. Products have different life expectancies and as a result can generally be split into 3 types of products known as Basic, Fashion and Fad.

Fashion products usually last for a shorter period of time than a basic product. Products within this group have a short lifecycle; the length of this cycle follows the latest fashion trend and popular styles. When fashion products have reached maturity their decline is normally quite rapid. Examples of products within this group are: Clothes, House décor etc. The fashion cycle will generally repeat itself every couple of years.

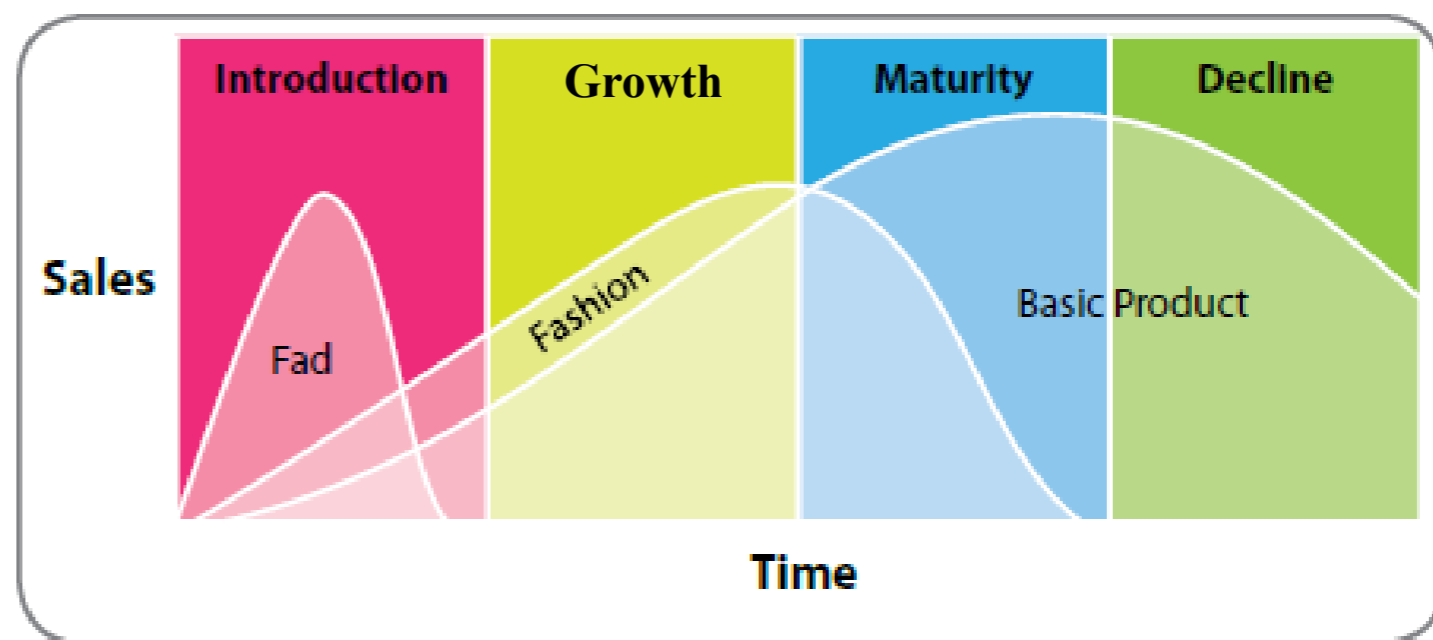


Basic products offer the longest product life-cycle. Products within this group have a stable and long life-cycle because there is a substantial need for the product in the market. These products will not generally decline unless there is a major product innovation to replace the need for the product. Examples of products within this market are: Cars, Refrigerators, Cookers, and Houses etc. The number of basic products sold are the highest of the 3 types of products (basic, fashion, fad).



Fad products offer the shortest life-cycle, this life-cycle will experience rapid growth followed by a very steep decline in sales. Fad products are normally adopted by groups of young people. Examples of products within this group Are: Furbies, Clackers, Tamagotchi, Roller Disco's, Foam Parties etc.

A products life-cycle is always illustrated by a graph, the shape of a products life-cycle will therefore differ depending on the type of product. The diagram illustrates the curved nature of these three types of products life-cycles.





THEORY intellectual property

Trademark

Trademarks are all around us nowadays; indeed you may be displaying some on your clothing as you read this. Most logos that you see on anything from adverts to clothing are Trademarks. They identify the product with a company, and the company hopes that its image will help to sell the product. Trademarks have been registered since 1876, at the Patent Office.

Trademarks are usually words, although it is becoming more common for other items to be protected in this way too, for example tunes (T-mobile) and aromas (perfumes, etc.). Companies protect their names to prevent other Competitors from copying or 'passing off' their products. It is common practice not to trademark the company's own name, but only the 'brands' that they produce. Some companies may wish to protect their company logo and in some cases this can be done, for example Nike.



Example

There are thousands of different trademarks in existence at present, and many more whose protection has expired. Trademarks have become a fashion accessory, particularly in the clothing industry, where clothing manufacturers use their trademarks to create very strong brand images, which the public find desirable and stylish.

Trademarks are applied in groups, each group representing a different range of products. For example, the name Mazda is trademarked by three different companies: the car manufacturer, the light-bulb manufacturer and the cooking-oil manufacturer. The reason this can be done is that each company operates in a different sector and thus will not be competing in the others' markets. There are different trademark sectors, and as it costs money to register for each sector, most companies only register in the sector that directly affects their business.



Process

Companies do not have to trademark their names, but it can be very worthwhile to do so. Even if a name is not registered, after some time it will begin to be associated with the product and rights will be established: these names have TM beside them. However, registering the trademark is much more clear cut and has distinct advantages. Trademarks are best applied for early in a product's life to prevent problems. When a company applies to the Patent Office for a trademark a search is carried out to find whether other companies are using the same or similar names. Companies can have the same name however if the other company falls into a different sector.

If a trademark is granted it can last forever, or as long as the company keeps paying the renewal fees every 7 years, and the letters RTM or the symbol ® can be used beside the name. The first ever trademark registered was by Bass, the brewers, and it is still registered.



THEORY intellectual property

Design Right

Design Right is a new form of IP that was introduced in the UK in 1988 and which is very similar to Copyright, although there are some important differences. Design Right's main similarity to Copyright is that it exists automatically, i.e. there is no application process involved. However this in turn means that it offers less protection, and is really only suitable for protecting items that fall out with the other forms of IP protection. Due to its simple nature it is also a cheap form of protection.

Examples

Design Right is particularly useful for protecting the way things look; shape, form and appearances of products that are different from before but sufficiently so to allow for patenting. For example, the appearance of a new toaster may be protected by Design Right because underneath the stylish case are the same mechanisms as the previous model's. As there is no formal registration system for Design Right, all that needs to be done is to mark the work 'Design Right' and date it. However, it is a good idea to keep the idea secret until this has been done and an original has been kept somewhere secure with proof of the date when it was done. Design Right only protects the idea in that specific form, and it is easy for competitors to copy with minor changes so as to avoid infringement of the Design Right. DR has a short lifespan of only 10 years from the first sales, and during the last 5 of these anyone is entitled to copy the design provided they pay a licence fee to the owner of the IP.

Registered design

Registered Design is a form of IP protection that was first used in 1787, in response to the demands of the textile manufacturers who were concerned about competitors using their patterns. It is still much used by industry today as this form of protection covers the appearance of a product, but not how it works. If the way it works is new then a Patent may be applied for, in addition to using Registered Design to protect its appearance. It is important to understand that one product may involve several or even all of the forms of IP protection.

Examples

Car body shapes are good examples of Registered Designs. Manufacturers want to stop other companies copying successfully styled cars, even if the technology inside the car is too similar to the previous models to be able to patent them. Distinctive features such as radiator grills can be protected as well as the overall body shape.

Process

The process for registering a design is similar to that for obtaining a patent and is also controlled by the Patent Office. The design has to be kept confidential before the application is filed, and then a search is carried out to see if there is any previous work that is similar. If the search does not show up any possible conflicts, the design is granted its Registration. Once granted, the registration can be kept for 25 years, as long as renewal fees are paid. If the company does not feel it is worth spending the money as the product's life cycle nears its end, they may allow its registration to lapse. This enables competitors to begin copying the design legally.

THEORY intellectual property

Patent

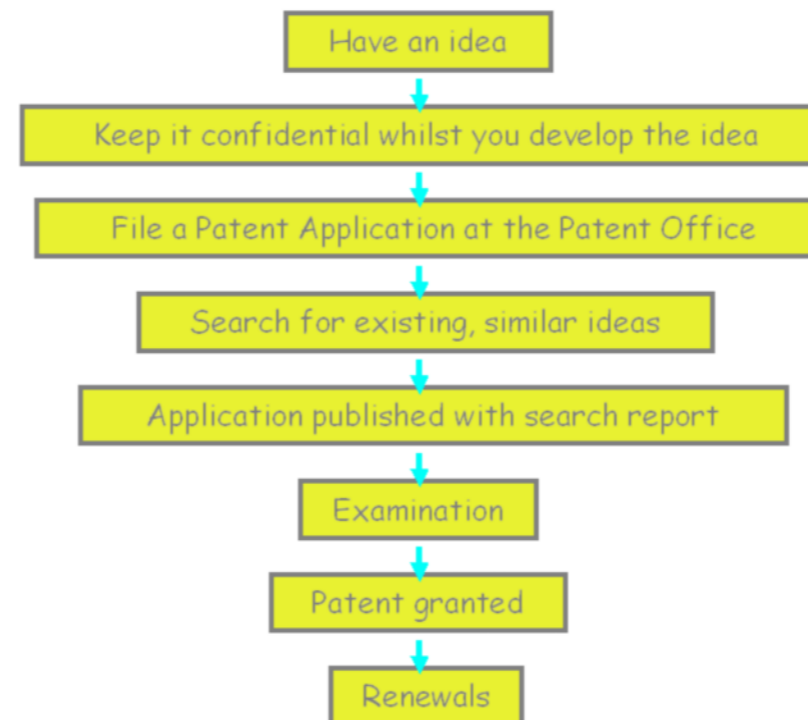
The first patent was granted in 1449, to John Utynam, who wanted to protect his method for making stained glass. He was granted a monopoly on the process for 20 years by the King, in the form of an open letter. This was the method before the Patent Office was opened in London in 1852. Nowadays, over 30,000 patents are applied for each year. If you own the patent on a product you will have exclusive design rights on it for up to 20 years. However, as part of the process the patent is made available to the public for any interested parties, including competitors, to see. This has two results: firstly, competitors can keep an eye on what the opposition are working on and see which way the market may be going; and secondly, 65% of research and development (R&D) has been done before and is available for viewing in the Patents Library. This can save vast sums of money in R&D budgets. The main aim of this process is to encourage innovation.

Examples

Tracks: Tanks and diggers are fitted with tracks which enable them to travel over soft ground without them sinking and becoming stuck. The first use of tanks was at the Battle of Cambrai in 1916, during WW1, and most people think that this was the first time that tracks had been used. In fact the first patent for such devices was issued in 1770! A famous example of a successful patent is the Anglepoise lamp. This was developed in the 1930s, and is still used worldwide today.



The flowchart below shows the main stages in obtaining a patent.



Patents do not have to be maintained for 20 years. They can be allowed to lapse by not paying renewal fees annually after the 4th year. If the patent lapses your competitors may start using your

