

Costs, Profits and Break-even Analysis

Alas, this means coming to terms with numbers, something that seems to frighten a large proportion of Business Studies students. Before reaching the stage of actually drawing a break-even diagram we need to think what actually goes into one. First, we need to look at costs. They can be referred to in terms of output, time or product. When we speak of costs in terms of output and time we mean **FIXED** and **VARIABLE** costs. Remember fixed costs do not vary with output, whilst variable do. The **TOTAL** costs of a firm are its fixed and variable costs added together. We also need to remember that we borrow something from economists when we introduce time to the calculation. By this I mean the dreaded long and short run. Remember that in the short run the scale of the operation cannot be changed and any expansion in output has to come from what spare capacity may be available. In the long run the entire scale of the operation can be altered. Quite literally the company can open a new factory to meet the increase in demand for its products.

When looking at the actual product we need to remember that the costs we must now calculate are the **DIRECT** and **INDIRECT** costs. Some people prefer to call indirect costs overheads. Direct costs involve all the costs that can be directly related to the product or service. An example of this would be the materials needed to make a specific product. Indirect costs are those which cannot be directly allocated to a specific product or service. This might be the postage or telephone costs, which cannot normally be allocated to just one product or service. When we add the direct and indirect costs together we get what are known as the Total costs for the product or service. We also need to make certain that we understand what is meant by the term profit. What comes into the business via sales is the revenue and what goes out are the costs. So, the costs taken away from the revenue gives us our gross profit or surplus. When thinking about how we construct a break-even diagram we also need to look at **CONTRIBUTION**. This means how much the sale of one product puts towards the fixed costs of the company. Once the firm has met its fixed costs, the revenue that then comes in contributes to profit. So contribution per unit of output is equal to: the selling price - the direct costs of producing each unit of product. We calculate this by either;

- a. the contribution per unit x the number sold
- b. total sales revenue - total direct costs

So, what will the examiners be looking for?

1. They might ask you to provide reasons, implications, the reasons for a change in the outcome or what can be drawn from your calculations. Remember to think how, what, why, how and who when addressing a piece of analysis.
2. They may ask you to draw conclusions from what you have calculated. This might involve you in commenting on how a changing set of circumstances might influence the numbers, or what other factors would you want to see before offering advice on the calculations, or assessing the usefulness of what has been calculated, or whether you think the numbers can be maintained given the information you have and how do your numbers compare with previous figures available.

It's worth remembering that in many questions it's what you say, that is the quality of your comments that actually earn you the majority of marks.

Let's now turn our attention to break-even analysis.

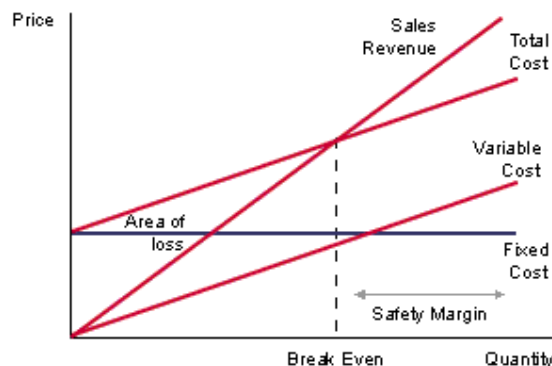
In short we are trying to establish the minimum amount we need to make in order for our sales revenues to cover our costs. Before we actually start to make our product or service we will incur high levels of fixed costs and no revenue will be flowing to offset these. As output expands so we receive revenue, however we also start to incur variable costs. Remember that price - direct costs shows us the contribution per unit of output As we sell, so we generate revenues that allow us to cover our fixed costs and eventually start to move into a profit-making situation. When calculating the break-even point we have to make certain assumptions. These are:

- the selling price remains the same whatever amount is sold
- fixed costs also remain the same regardless of output
- variable costs vary in direct proportion to output

To calculate the break-even point the formula is: $\text{fixed costs} / \text{contribution per unit}$

To put this on a graph we need to look at Sales Revenue - this is plotted against units sold. The higher the price the steeper the gradient line. The lower the price the less steep is the gradient line. This is the line marked sales revenue in the diagram below.

Before commencing production a firm must buy what are known as its FIXED ASSETS. These are the profit generating parts of the business and form the fixed costs. As such they have to be paid for regardless of output. Let's say that in our example the fixed costs are £10,000 whether we fully produce or make a complete zero amount of whatever it is we are producing. We can see in the diagram below that the fixed costs line is horizontal.



Next we need to look at our variable costs, which do vary with changes in output. Therefore the line on the diagram is upward-sloping. At zero production we will not incur any variable costs but as we expand by production by each successive unit made so we incur costs. If we decide on £3 per unit produced then we can start to make our calculations. When we add the fixed costs to the variable costs we arrive at the total costs. With fixed costs needing to be paid for regardless of sales we can predict that in most companies low levels of sales will not result in profits. However, as sales increase so the fixed costs are being spread over a larger output and will reduce per unit sold. To put this in more technical language the average fixed cost will start to fall. So, if for example output is 100 units, fixed costs are £100 per unit produced, then if output rises to 2000 units the average fixed cost will be £5 per unit

produced. The output required to break even is 2000 units (as marked break-even on the diagram above), at which level the total sales revenue and costs equate at £16000. It is always sensible to leave some room for change and so we introduce the concept of margin of safety. This is the difference between the actual output and the break-even output. So, if this company could produce 3000 items its margin of safety is 1000 units. A company which has a small margin of error has little room for errors or cost problems.

What then can examiners ask you to do with any numbers you manage to calculate? Well, they might ask you to:

- simply state the break-even output and the margin of error
- look at the contribution being made per unit of output to the covering of fixed costs
- compare targets with probable outcomes
- predict the possible success of a new firm which is considering entering a market
- use the graph to comment on prices, variable cost control problems and how to influence fixed costs

Whenever you are using a break-even analysis remember that they do have problems or disadvantages. These include:

- your calculations are only as good as the figures you are given
- sales may not be the same as output
- all of your workings are static
- the analysis takes no account of economies of scale

Examiners might also ask you to:

- comment on how useful a break-even chart is
- make an assessment of whether the firm should/should not produce or continue to produce
- move into a dynamic situation, where values are changing and you need to look carefully at the outcome and comment on the changes and the decisions they may affect

Good luck with the revision and don't let numbers get you down.

People in Organisations

When revising this essential area of any of the syllabuses/specifications you need to make certain that you have covered:

Motivation

When you think about this area, the main aim is that firms are trying to improve efficiency, productivity and quality. So, how do we make people more aware of how they work and what they produce? You will normally be given a context in which the question is set. Think carefully about this before starting your answer. Remember part of the mark scheme will be directed at how well you adapt your knowledge to meet the circumstances in which the question is set.

So, let's make certain that you know the basic theory. A little hint for your examination technique - the bigger the triangle normally the weaker the answer. In case you have not guessed I am talking about Maslow's triangle!

Theories

- Maslow:
According to Maslow human needs are split into five types - a hierarchy of needs. These are represented as a triangle with the highest level needs at the top. Behind each are some examples of how they might appear in a modern business context.
 1. Physiological- wage, salaries and working conditions
 2. Safety- security (safe job), other benefits eg sick pay and safe working conditions
 3. Social- team working and other functions that aim at building a bond within the workforce
 4. Esteem- positive feedback and chances for promotion
 5. Self- actualisation- creating challenges and tasks that are stimulating
- Herzberg:
According to Herzberg motivating factors are split into two groups:
 1. Hygiene factors- salary and security. Improving these lowers dissatisfaction but doesn't improve motivation or satisfaction
 2. Motivators- recognition, responsibility, work itself, achievement, advancement - these lead to increased motivation

In reality most management are trying to maximise the beneficial aspects and minimise those facts which de-motivate workers.

- Mayo:
His conclusions were that:
 1. Motivation comes from more than pay and working conditions
 2. Employees are group members - work is a group activity

3. Motivational factors include recognition, belonging, security
4. Informal groups create important influence on employee's attitudes
5. Supervisors need to focus on the individual social needs and the influence of informal groups

These theories are often set in the context of communication or the influence of workers on decisions whom not actually managers or supervisors. So, think about the power of the informal group.

- Taylor:
In his research the workers were seen as 'economic animals responding only to financial incentives'. A scientific approach to management led to maximum efficiency through specialisation. Jobs become boring and repetitive.

Motivation in Practice

Examiners won't just ask you to list all you know about Motivation. They will set it in a context and what follows are some the situations in which you might find you are being asked for your supported opinions. Remember, that when writing about people it is often an opportunity to include relevant material on communications and leadership.

Let's think of how poor morale in an organisation might show itself. As you are working your way through these THINK HOW you would react to them if they appeared in a question. What would you say and why?

- High levels of absenteeism and labour turnover
- Which would lead to higher costs for organisation due to above reasons
- This might cause a fall in the external image of the company, so the organisation might experience problems in recruiting and retaining employees
- It certainly could show itself in low productivity
- The combined effect of these would be to reduce competitive advantage

So, the company would have look into the CAUSES AND EFFECTS of any drop in morale and they might start to think about the introduction of EMPOWERMENT, which passes authority down the chain of command. By doing this management is trying to make employees feel to be in more control over their immediate working environment. It will hopefully boost a feeling of participation, involvement and being part of a team. If it works it should improve both the quantity and quality of the output from employees. They might consider introducing more team-based working methods.

These could be developed via job rotation, enrichment and the empowerment already covered to try and boost performance of both the individual worker and the group/team to which they belong. Elsewhere jobs could be made less boring, which takes us back to Mayo / Maslow. Hopefully, you can see direct links to some other topics you have covered like quality circles.

Of course we must not forget the power of money as an incentive, but it is usually only part of a package. The package might include a move from piece rates to profit sharing and share-ownership and other ways in which individual performance can be reflected in the remuneration received for the work.

So, think about the following as you revise this very important part of your course:

- Can I link the various theories together to show how thinking on motivation has evolved?
- Can I set them in context?
- Is it only money that increases job satisfaction?
- Where else and how else do people gain satisfaction within their lives?
- Does a 'one size' approach to motivation fit all workers?
- How do changing circumstances affect motivation within the workplace?
- Does personality, experience and other attitudes, such as leadership style influence the success or otherwise of motivation theories and their application?
- Can I set motivation in a wider context and include other factors that now influence people in their place of work, e.g. the role of women or the changes in contracts?

If you practice putting Motivation into certain contexts and thinking about how you would react to changing circumstances, then you are following the best revision route to what will appear in your examinations.

Marketing

Marketing will probably constitute quite a large component of your final examinations whatever business course you are following. Let's take a look at Market Research.

Market Research

Market Research is the process of gathering information on potential customers. You will probably look at information that shows buying habits, lifestyles and perceptions of BOTH current and prospective customers.

There are various types of research and these are:

- **Market** - which concentrates on analysing the potential for those products/services you already produce, forecasting the possible demand for future products, forecasting sales, studying market trends, analysing market characteristics, looking for the reasons why companies have specific market shares.
- **Product** - which concentrates on how customers/consumers will react to proposed new products or developments, comparing the strengths and weaknesses of competitive products, researching various forms of packaging and presentation, forecasting how current products will have to change to remain fresh with consumers, testing marketing plans.
- **Price** - which concentrates on analysing price responsiveness (elasticity), looking at which products make a contribution to profits and how much, how customers view certain prices and 'price points', deciding how credit and the ways available for purchasing products affect consumer demand.

Some companies also research customer perception of sales and advertising campaigns and which forms of product distribution work best for certain products.

Remember Market Research involves BOTH Primary and Secondary data. The first refers to information that does not already exist. Its collection can therefore be expensive and time-consuming. However, it should be accurate and relevant to the business involved. The second refers to information that has already been collected. The data is comparatively cheap to acquire but might not be accurate or exactly that required by the business.

There are two types of research, which we call field and desk. The first, field research is based on the collation of primary data and therefore involves actually asking people or researching something new. It can take many forms, which include: surveys, observations, loyalty cards, panels and group discussions and market testing. Desk research concentrates on using data, which has already been collected. It can be collected by using information already held by the firm, using official information and records, asking for access to information stored by professional bodies and by searching publications such as newspapers.

N.B. Whenever you are revising this important topic always remember to set your answer against the context in which the question is set. An example of this would be that a small engineering firm are unlikely to hire a London based research organisation to carry out expensive customer surveys for them. Also, always think about:

- cost

- speed of collation
- accuracy
- reliability
- age of information
- any special characteristics of the market

By doing this you will be beginning the process of analysing and that is a high order skill.

Cash Flow Learning Trail

Part 1: Introduction to Cash Flow

It is often said that in business "Cash is King", this is said because cash is all important to businesses. Without cash employees cannot be paid, suppliers cannot be paid, and therefore the business will grind to a halt. Cash is the oil in the machine of business, and a Cash Flow Statement tells us how much cash is or will be available within the business or how much cash will be needed to keep the business running.

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Cash Flow Learning Trail

Why Prepare and Examine Cash Flow Statements?

When we prepare and examine Cash Flow Statements we do it for one of two reasons:

1. Because a **business should always compare its actual cash flow with its predicted cash flow**. This comparison will demonstrate if things have worked out as expected, or not. If they have not worked out as expected, then the reasons for this difference should be examined. This will help a business plan for the future more effectively, and may help prevent a shortage of cash. We can only do this comparison if we have both sets of figures, actual and predicted.
2. We can look at a forecast cash flow statement on its own, (this is also known as a predicted cash flow statement). This is used **to tell us if the business is likely to have enough money coming into the firm to pay all of its expenses**. If the forecast cash flow tells us that it does not have enough money coming in, then the business must arrange to obtain the required amount of money. This can be done internally or externally. Perhaps the most popular method of funding a shortage of cash is to borrow from a bank (external) and this borrowing can take the form of loan or an overdraft, but there are other methods of funding, each of which have an important part to play. We will examine these later in this section.

Very Important: A cash flow statement **does not** show the profitability of a company, only a Profit and Loss Account shows how much profit a business is making. We will see exactly why this is later.

Cash Flow Learning Trail

Part 5: Why Cash Flows Statements and Profit and Loss Accounts Differ

As we stated in [Part 1](#), Cash Flow Statements do not show the profitability of a business, they show either an historic view, or a prediction of the flows of cash into and out of the business. It is only a Profit and Loss Account that tells us about profitability of a business.

But why is this? After all, many if not most of the features are the same. They both show income, they both show expenses. So why is not the bottom line on the Profit and Loss Account the same thing as the Net Cash Flow? The

answer is quite simple, the figures included in each are similar but they are not identical. The table below gives details of the main differences between the two, showing how the main differences arise, and why profit and loss accounts and cash flows are in fact quite different financial animals.

| | Cash Flow | Profit And Loss Account |
|------------------------|--|---|
| Sales | Income from sales is entered as it is received, not before. If a credit sale is made, the income is only entered when the actual bill is paid. | Sales are applied to the accounting period in which the sale occurs. So a good sold in one period on credit, is entered as a sale for that period, even though the payment may not be due until the next accounting period. |
| Expenses | Entered as paid. | Provision is made in accounts for expenses incurred but not yet paid, these are known as accruals. |
| Depreciation | As depreciation is a paper accounting transaction, not involving actual expenditure, this is not shown. | Depreciation is shown as a business expense. |
| Capital Inflows | If a business receives a further injection of capital that has not arisen from its trading activities then this is shown as a type of income. | This account will only show an inflow of capital that has arisen as a result of trading activity. |

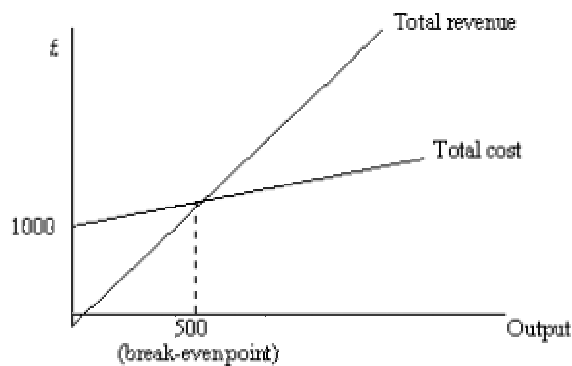
Break-Even Analysis and Contribution

As we have seen the figure for cost of goods sold is taken off the [sales revenue](#) to give the level of gross profit. The cost of goods sold is made up of the direct costs of production - that is the costs that can be directly attributed to the production of that particular good. These direct costs will be very similar to variable costs - costs that vary with the level of production.

They will tend to be things like raw materials, labour, packaging and so on. The level of these costs can be very important to a business. They have to be sure that they can cover both these costs and their indirect (fixed costs) if they are to make a profit. A useful technique for doing this is **break-even analysis**. To find the break-even point the firm needs to know the **contribution** that each product makes to their fixed costs. Let's look at an example.

- Direct costs = £5 per unit
- Indirect costs = £1000 in total
- Selling price = £7 per unit

With these figures we can see that each time the firm sells one of its products it is making a **contribution** to its indirect costs of £2. So once it has sold 500 of the product it will have paid all its indirect costs. After 500 units the contribution goes to profit. Therefore if they sell 501 units they make £2 profit, 502 and they make £4 profit and so on. We can show this on a graph.



Beyond 500 units we can see the gap between total revenue and total cost opening up rapidly. In other words the level of profit is growing fast. Once the fixed costs have been paid off, units sold are contributing directly to profit.

For some businesses this is very important as they have very high fixed costs. The next time you go to the cinema, think about the nature of their costs. How much do their costs change between having you on your own sitting watching the film, and a full cinema. You may prefer having a private viewing, but how much profit will they make? They've still got to pay for the rental of the film, the ushers, the popcorn sellers, the managers and so on just for you!!! However, if the film is full they will still probably have the same number of employees there, but they will be making a totally different level of profit.

Price Elasticity and Pricing Policy (Penetration or Skimming)

The most obvious thing about the level of sales revenue to a firm is that they want more and more of it! The problem that most firms therefore come up against is then how do you get more of it? The crass answer at this point is to sell more of your product, and that is absolutely right - but how do you?

Price Elasticity of Demand

Obviously marketing has a key role to play in this process, but a vital part of a firm's market strategy has to be the price they charge for their product. Will it be best for them to cut their price to get more revenue, or to increase their price??? The answer to this lies with the **price elasticity of demand**.

$$\text{PRICE ELASTICITY OF DEMAND} = \frac{\% \text{ change in demand}}{\% \text{ change in price}}$$

If the firm cuts its price by 10%, and the demand for their product increases by 20%, then the price elasticity of demand will be 2. We call the demand for this product **ELASTIC**. This figure literally means that the increase in demand was double the decrease in price. In this situation you would clearly want to cut your price as cutting it has generated a lot more business, and so although you're getting less money for each one you sell, you're selling plenty more to make up for it.

However, say that when the firm cut its price the same amount (10%), the demand for their product only went up by 5%. This would mean that the price elasticity of demand was only ½. We call the demand for this product **INELASTIC**. The figure this time means that the increase in demand was only half the change in price. Here the firm would not choose to cut price (unless their competitors had) as they would lose out. They would be selling a few more, but not enough to make up for the fall in price and their sales revenue would go down.

Market Skimming / Penetration

However, the firm also need to consider other aspects of their pricing - do they want to aim for a large market share with a low price? In this case they would want to consider **market penetration** as a pricing strategy. This would mean setting a low price (and correspondingly lower profit margin on each unit), but selling a higher volume. This depends considerably on whether the product is **elastic** in demand (see above). Alternatively they may want to remain as a niche market product and set a high price (with a higher profit margin on each one sold) - this is known as **market skimming**. Both of these will have major implications for both their sales revenue and their level of profit. Remember that high sales revenue does not necessarily mean high profit.

Stock Control Methods

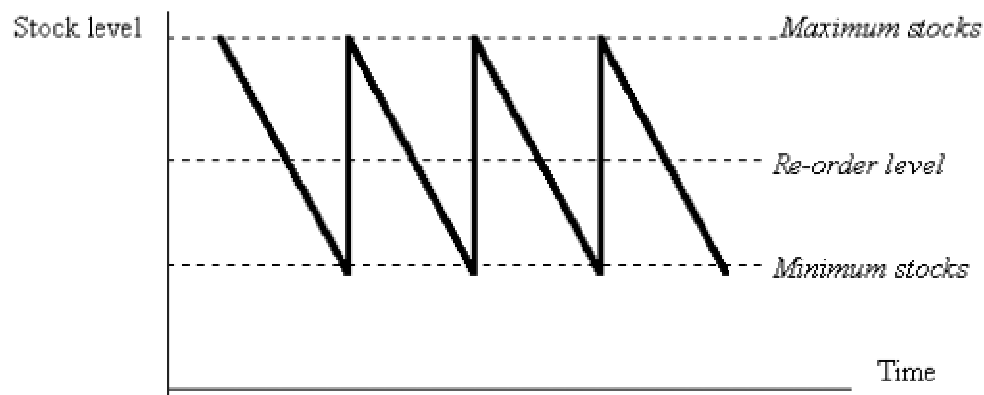
Stocks may be held for a variety of reasons. They may be stocks of raw materials ready for production, they may be work-in-progress (production part way through the production process) or they may be stocks of finished goods. Whichever they are it is vital for the firm to control the level of stocks very carefully. Too little and they may run into production problems, but too much and they have tied up money unnecessarily.

The main theories about stocks then are to do with **stock control**. There are various different ways to approach stock control:-

- *Fixed re-order stock level*
- *Fixed time re-ordering*
- *Economic order quantity*
- *Just-in-time*

FIXED RE-ORDER STOCK LEVEL

This method of stock control is where a business decides the minimum level of stocks it can tolerate, and then re-orders before the stocks reach this level. The exact timing will depend how long the stocks take to arrive. This can be illustrated as follows:-



The distance between the re-order line and the minimum stocks level depends how long it may take for the order to arrive - this time is known as the **lead time**.

Fixed time re-ordering

This method is exactly as its title suggests. The firm re-orders stocks at a fixed time each month or week. It can offer a good solution as it represents a routine for the firm and ensures that stocks are regularly supplemented. However, it may well mean the level of stocks fluctuating quite a bit depending on the rate they are used up. It is a little inflexible as a system as well unless used very carefully.

Economic order quantity

For any company there is an optimum level of stocks. The precise level of this will vary in different firms and industries. They have to balance the costs of holding stocks (the space taken, the money tied up etc.) with the costs of ordering stock. The more firms order at once, the better the deal they will usually get.

The level of stocks that strikes the balance between these two things is known as the Economic order quantity. If this is taken to be the optimum level of stocks it should help to minimise the firm's costs - an important pre-requisite to maximising profit.

Just-in-time production

Because stocks cost so much to keep, another method of stock-control was developed in Japan and has now become much more common in the UK. The just-in-time method involves keeping stocks to an absolute minimum, and the raw materials are ordered only when they are needed. In other words **just-in-time**. This time period in some cases has been reduced to minutes or hours, and the raw materials arrive on site moments before they are needed.

This can be wonderful for helping to reduce the need for [working capital](#), but requires a very high level of organisational skill and a very close relationship with suppliers.

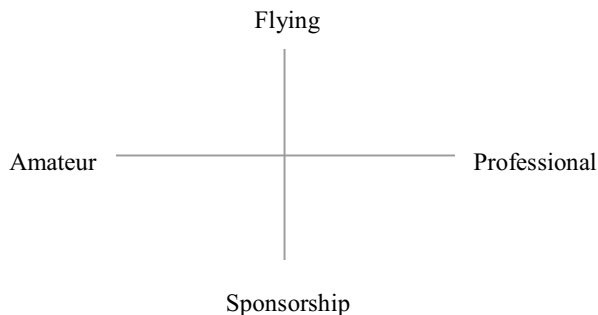
Market Segmentation

There are various ways to segment your market. These may include:

- **Demographically** - according to the age structure of the population
- **Geographically** - by country or region or area
- **Behaviouristically** - according to the nature of the purchase, the use the product is put to, the loyalty to the brand and so on
- **Benefit** - according to the use and satisfaction gained by the consumer
- **Socio-economically** - according to social class and income levels

Clearly some of these are more relevant than others to Cameron Balloons. For a further analysis of this, why not look at the [worksheet on market segmentation?](#)

The firm can then use this information to draw up a **segmentation map**. This is a tool for analysing the market and helping to identify market opportunities. Any one of the criteria above could be used to draw up a map. For example, Cameron's may want to look at the behaviouristic split of their market. They could draw up a segmentation map:



On this map they could plot where their various groups of customers tend to be. The amateur balloonists who buy balloons just for the enjoyment of flying would appear in the top left-hand segment of the map. Professional operators who take fare-paying passengers would be opposite them in the top right-hand segment. For more details on the nature of the customers and their different demands, have a look at the [marketing explanation](#).

The Marketing Mix

The marketing mix is the balance of marketing techniques required for selling the product. It's components are often known as the four Ps:

- **Price** - the price of the product - particularly the price compared to your competitors - is a vital part of marketing. There are two possible pricing techniques:
 1. **Market skimming** - pricing high but selling fewer
 2. **Market penetration** - pricing lower to secure a higher volume of sales
- **Product** - targeting the market and making the product appropriate to the market segment you are trying to sell into
- **Promotion** - this may take the form of point of sale promotion, advertising, sponsorship or other promotions.
- **Place** - this part of the marketing mix is all about how the product is distributed. Current trends are towards shortening the chain of distribution.

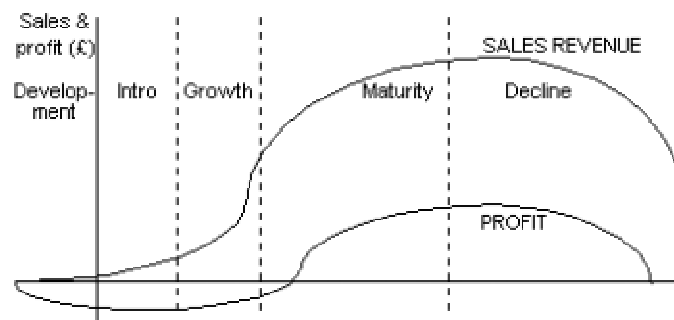
In the past many firms have been what could have been described as **product-oriented**. They produced a product and spent their energies marketing this product. There was little flexibility for individual customers or segments of the market. Firms now tend to be **market-oriented**. This means that they are flexible and adaptable to the demands of the market. They aim to change the product as necessary to satisfy their customers.

Product Life Cycle

To be able to market its product properly, a firm must be aware of the product life cycle of its product. The standard product life cycle tends to have five or six phases:

1. **Development**
2. **Introduction**
3. **Growth**
4. **Maturity**
5. **Decline**

It can also be shown graphically. The graph often has two lines - one to show the level of profit, and one to show the level of sales:



Firms will often try to use **extension strategies**. These are techniques to try to delay the decline stage of the product life cycle. The maturity stage is a good stage for the company in terms of generating cash. The costs of developing the product and establishing it in the market are paid and it tends to then be at a profitable stage. The longer the company can extend this stage the better it will be for them.

Job / Batch / Flow Production

Job production - this is a method of production where companies use all their factors of production to complete one job at a time. This will usually happen where products are all unique or they are being produced on a very small scale.

Batch production - this is a method of production where one operation is completed on a number of units of the product, before they are then passed on to the next stage of the process.

Flow production - this is where production takes place as a continuous process. The product flows from one process onto the next. This will usually happen where the product is standardised, and can be made using a production line method.

Labour / Capital Intensive

Labour intensive - this is where the proportion of labour used in producing the product is relatively high. Labour will usually be used instead of capital.

Capital intensive - this is where techniques are used to produce that use relatively more capital than labour. Many industries are now like this including the car and steel industries.

The technique that a company uses depends on several things:

- **the size of the company** - small companies are often not in a position to afford expensive capital equipment. Even if they could they are often not able to use it enough to justify the cost.
- **the cost of the factors of production** - even though a machine may be available to do the job, it may not be worthwhile if the amount of labour required costs less. Firms therefore look carefully at the cost of labour and capital before deciding how much to use.
- **the product** - some products lend themselves better to being produced by capital than others. Mass-produced everyday items are far more likely to be produced in a capital-intensive way, whereas services and products with a more individual slant are more likely to be produced using a large proportion of labour.

Costs

The firm incurs a variety of costs when it produces and we split these in various ways. One way is to split them into **fixed costs** and **variable costs**:

- **Fixed costs** - these are costs that do not vary as the level of production varies. These include such things as rent, business rates and security costs.
- **Variable costs** - these are costs that do vary as output varies and so will include things like raw materials, labour costs, energy costs and so on.

Another very similar way to split costs is into **direct costs** and **indirect costs**:

- **Direct costs** - these are similar to variable costs, and are costs that can be directly attributed to the production of each unit of the good. This will therefore be things like the cost of the raw materials, the packaging, the labour time that went into the production (if that can be clearly identified) and so on.
- **Indirect costs** - these are more commonly known in practice as **overheads**, and are general costs that are not specifically related to the product. They may be things like marketing and distribution costs, the cost of secretarial staff, the cost of the premises (rent and so on) and general bills like phone bills.

Efficiency

It is vital to a company to ensure they are efficient. Although Cameron Balloons is the clear leader in the hot-air balloons market, it is nevertheless a very competitive market and has suffered in the past from 'over capacity'. They therefore have to keep a careful eye on how their costs compare. One of the ways they may do this is to look at the level of **average costs**. The average cost is calculated as follows:

$$\text{AVERAGE COST} = \frac{\text{TOTAL COST}}{\text{OUTPUT}}$$

This gives the cost per unit of production, and so one measure of efficiency. Another measure would be to look at how much each particular factor of production (labour / capital / land) manages to produce. In this way we can measure productivity. For example to calculate labour productivity:

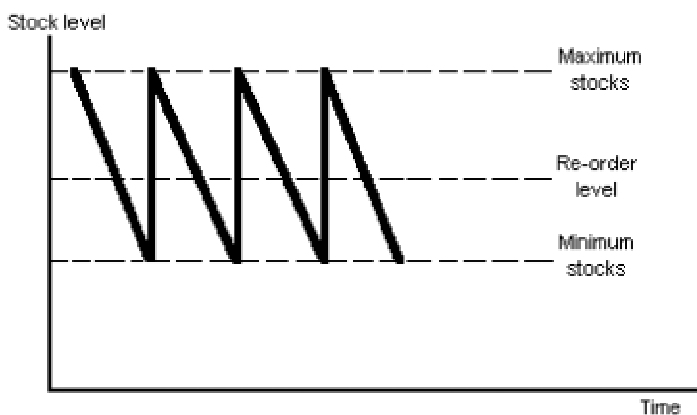
$$\text{LABOUR PRODUCTIVITY} = \frac{\text{OUTPUT (in a certain time)}}{\text{NUMBER OF EMPLOYEES (during the same time)}}$$

This can be a useful measure but does need careful interpretation. For example, who exactly do you include - all employees, or just those directly involved in production? You also have to ensure that you always calculate it consistently or it will be very difficult to draw useful conclusions.

Stock Control Systems

1. Fixed re-order stock level

This method of stock control is where a business decides the minimum level of stocks it can tolerate, and then re-orders before the stocks reach this level. The exact timing will depend how long the stocks take to arrive. This can be illustrated as follows:



The distance between the re-order line and the minimum stocks level depends how long it may take for the order to arrive - this time is known as the lead time.

2. Fixed time re-ordering

This method is exactly as its title suggests. The firm re-orders stocks at a fixed time each month or week. It can offer a good solution as it represents a routine for the firm and ensures that stocks are regularly supplemented. However, it may well mean the level of stocks fluctuating quite a bit depending on the rate they are used up. It is a little inflexible as a system as well unless used very carefully.

3. Economic order quantity

For any company there is an optimum level of stocks. The precise level of this will vary in different firms and industries. They have to balance the costs of holding stocks (the space taken, the money tied up, etc...) with the costs of ordering stock. The more firms order at once, the better the deal they will usually get.

The level of stocks that strikes the balance between these two things is known as the economic order quantity. If this is taken to be the optimum level of stocks it should help to minimise the firm's costs - an important pre-requisite to maximising profit.

4. Just-in-time production

Because stocks cost so much to keep, another method of stock-control was developed in Japan and has now become much more common in the UK. The just-in-time method involves keeping stocks to an absolute minimum, and the raw materials are ordered only when they are needed. In other words just-in-time. This time period in some cases has been reduced to minutes or hours, and the raw materials arrive on site moments before they are needed.

This can be wonderful for helping to reduce the need for working capital, but requires a very high level of organisational skill and a very close relationship with suppliers.

Purchasing

The aims of the purchasing department are:

- to ensure the firm has the quantity and quality of goods required for efficient production
- to buy at prices as competitive as possible
- to get delivery as fast as possible to ensure stocks are available as required
- to build a good relationship with suppliers
- to ensure suppliers are prompt and reliable

There is a trade-off in purchasing. The buyer will often be able to negotiate better prices if the quantity ordered is larger, but a larger quantity of stocks may mean an opportunity cost - money tied up. There are therefore various costs from stocks.

Costs Of Holding Stocks

If too high a level of stocks is held, there may be various costs:

1. Storage requires space, and factory space costs money. The total can be quite substantial for bulky products.
2. Suppliers like to be paid, and so if a company is holding a high level of stocks they have to pay for them. This ties up capital which could be used for other more productive purposes.

3. There may also be costs associated with keeping the stocks well to ensure they don't deteriorate.
4. Cash flow may be damaged, because (as in no.2) money is tied up in stocks