

Designing to meet needs, wants or values

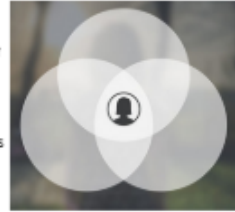
Effective user-centred design requires a thorough understanding of your end-user and their needs so that you can tailor your product or service to meet those requirements.

To have the best chance of creating and selling an innovative and commercially successful service or product, you need to have an in-depth understanding of end-users' requirements. End-users are customers or whoever your product or service is aimed at.

User-centred design involves engaging directly with consumers in the early stages of any new product development (NPD) process and keeping them involved throughout. This gives everyone who needs to be involved - such as research, engineering or marketing teams - a clear picture of how their expertise will be called on to benefit the project. Such a unified strategy will reduce the risk of conflicting initiatives wasting your business' time and money.

Traditionally, market testing and user research are done towards the end of the NPD process, but by then significant design changes are not always viable. You will have a much better chance of business success if you actively involve your end-users in the design process.

We should consider people's needs and values because people are more likely to want to use our products if our products meet their needs and match their values. We can find information about a person's needs and values by carrying out research.



Investigations to inform the use of primary and secondary data

Market research

Interviews

Human factors

Identifying physical needs of a specific target group

The physical needs of a target group refers to the size and strengths of the people who will use your product. The needs of babies and infants will be very different from the needs of teenagers and those of pensioners. The needs of physically able people will be different from the needs of people who are physically disabled in some way such as those that are wheel-chair bound or are blind.

Identifying emotional needs of a specific target group

The emotional needs of people includes their likes and dislikes, their ambitions and the way that they would like people to perceive them. So for example, a teenager may want the best roller blades not only because they perform well but also because people will see that he/she is the sort of person that only uses the best and can handle the best.

Identifying intellectual needs of a specific target group

Identifying the intellectual needs of a specific target group means that we should look at the age and the thinking capability of the people that we are designing for. An infant may need simple products to play with but an infant learns quickly and is usually very curious so products designed for infants are usually colourful and are designed to stimulate imagination, learning and play. Products designed for teenagers and adults on the other hand should be more challenging and suited to a more sophisticated level of thinking.

Identifying sociological needs of a specific target group

The sociology of a specific group refers to the behaviour of the people in the group, e.g. members of a particular club like the Scouts, a swimming club, a gang, computer boffins, etc. The needs, likes, dislikes and dress code, hairstyles etc. of the group need to be researched and taken into account when designing.

Using the information in design proposals

When designing for a particular group of people, known as our "target group", we need to use appropriate research methods to find out what the target group likes, dislikes and needs in as much detail as possible. We can then use the information to write a precise design specification for a product that, when manufactured to the specifications, should meet the requirements of the target group.



Focus groups

A focus group is used in usability and user research to collect the opinions of a group of users. It consists of a carefully selected group of participants (between 5 and 10), in a comfortable environment with a skilled moderator (facilitator) who uses a script to ask questions of the group, the answers are recorded and then analysed and reported to enable further decision making.

Product analysis and evaluation

Every product is designed in a particular way - product analysis enables us to understand the important materials, processing, economic and aesthetic decisions which are required before any product can be manufactured. An understanding of these decisions can help us in designing and making for ourselves.

What does it do? How does it do it? What does it look like? All these questions, and more, need to be asked before a product can be analysed. As well as considering the obvious mechanical (and possibly electrical) requirements, it is also important to consider the ergonomics, how the design has been made user-friendly and any marketing issues - these all have an impact on the later design decisions.

Companies analyse competitor products in order to understand their products, their material choices and manufacturing methods, amongst others.

The use of anthropometric data and percentiles

Anthropometrics is the use of body measurements to determine the optimum size for products for comfortable and efficient use. Examples of anthropometric data include:

- How far people can reach;
- How much space people need;
- How much force they can exert;
- Height of a person;
- Length of arms/legs etc.

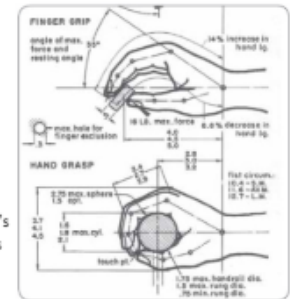
Many production companies use anthropometric data when designing. The designer's aim is to achieve as good an anthropometric match for as many potential consumers as possible.

British Standards Institute (BSI) (www.bsi.org.uk/education) provide data charts relating to measurements for men, women and children.

Statistical data supplied by the BSI is associated with average heights. In this data, 5% of people are below average height and 5% are above average height. Therefore, this anthropometric data covers 90% of the population, for example, if a chair is designed and bought by 100 people, statistically, it will be anthropometrically suited to 90 of the people who purchased it.

This principle is adhered to in the designing of most products.

Biomechanical and anthropometrical data are closely linked when designing products. A number of areas and factors must be considered when planning size and shape of products, especially those related to posture and movement.



Year 12 Knowledge organiser 1.9 Health & Safety

Health and Safety

Safe Working Practices

You should be aware of, and able to explain, health and safety procedures related to products and manufacturing.

Health and Safety at Work Act (1974)

The Health and Safety at Work Act 1974 (HASAWA) lays down wide-ranging duties on employers. Employers must protect the 'health, safety and welfare' at work of all their employees, as well as others on their premises, including temps, casual workers, the self-employed, clients, visitors and the general public. However, these duties are qualified with the words 'so far as is reasonably practicable'. This means that employers can argue that the costs of a particular safety measure are not justified by the reduction in risk that the measure would produce. But it does not mean they can avoid their responsibilities simply by claiming that they cannot afford improvements.

The Health and Safety Executive (HSE) was set up under HASAWA.

The Act contains powers for the HSE to enforce these employer duties and penalties for non-compliance. HASAWA ensures people involved in the manufacture of products can work safely within limited risk.

Control of Substances Hazardous to Health (COSHH)

COSHH is the law that requires employers to control substances that are hazardous to health. Employers can prevent or reduce workers exposure to hazardous substances by:

- finding out what the health hazards are;
- deciding how to prevent harm to health (risk assessment);
- providing control measures to reduce harm to health;
- making sure they are used;
- keeping all control measures in good working order;
- providing information, instruction and training for employees and others;
- providing monitoring and health surveillance in appropriate cases;
- planning for emergencies.



Most businesses use substances, or products that are mixtures of substances. Some processes create substances. These could cause harm to employees, contractors and other people.

Sometimes substances are easily recognised as harmful. Common substances such as paint, bleach or dust from natural materials may also be harmful.

Safe Working Practices

Companies should establish Safe Work Practices for addressing significant hazards or for dealing with circumstances that may present other significant risks/liabilities for the company. They should reflect your company's approach to controlling hazards.

Some regulations require employers to have written procedures/instructions for specific activities/conditions. The number of practices/procedures and the degree of detail will depend on the range of work activities your company performs. It is important that management and supervision are involved in the development of safe work practices and that they provide adequate training for workers likely to follow these practices.

Safe working practices should be written as a result of conducting a risk assessment.

Safety Precautions

Some manufacturing processes require specific health and safety actions, for example, the use of a respirator during the lay up process, or using adequate extraction when laser cutting materials.

Risk Assessment

A risk assessment is an important step in protecting workers and business, as well as complying with the law. It helps focus on the risks that really matter in the workplace – the ones with the potential to cause real harm. In many instances, straightforward measures can readily control risks, for example ensuring spillages are cleaned up promptly so people do not slip, or cupboard drawers are kept closed to ensure people do not trip.

Risk assessment is the process of assessing the risks to workers' safety and health from workplace hazards. It is an examination of all aspects of work that considers:

- what could cause injury or harm
- whether the hazards could be eliminated and if not
- what control measures are, or should be, in place to control the risks

A hazard can be anything that has the potential to cause harm.

A risk is the chance, high or low, that somebody may be harmed by the hazard.

Safety in Products and Services to the Customer

You should be aware of, and able to explain, how designers and manufacturers ensure products are safe for consumers to use.

Consumer Rights Act (2015)

The Consumer Rights Act came into force on 1 October 2015 which meant from that date new consumer rights became law covering:

- what should happen when goods are faulty;
- what should happen when digital content is faulty;
- how services should match up to what has been agreed, and what should happen when they do not, or when they are not provided with reasonable care and skill;
- unfair terms in a contract;
- what happens when a business is acting in a way which isn't competitive;
- written notice for routine inspections by public enforcers, such as Trading Standards; and
- greater flexibility for public enforcers, such as Trading Standards, to respond to breaches of consumer law, such as seeking redress for consumers who have suffered harm.

Most of these changes were important updates to existing laws. But two new areas of law were also introduced.

- For the first time rights on digital content have been set out in legislation. The Act gives consumers a clear right to the repair or replacement of faulty digital content, such as online film and games, music downloads and e-books. The law here had been unclear and this change has brought us up to date with how digital products have evolved.
- There are now also new, clear rules for what should happen if a service is not provided with reasonable care and skill or as agreed. For example, the business that provided the service must bring it into line with what was agreed with the customer or, if this is not practical, must give some money back.

The Consumer Rights Act 2015 stands alongside Regulations to create a greatly simplified body of consumer law. Taken together, they set out the basic rules which govern how consumers buy and businesses sell to them in the UK.

Sales of Goods Act (1979)

The Sales of Goods Act 1979 is an Act that regulates the sale of goods that are bought and sold in the UK and the binding contract between both parties. The contract of sale states that the transfer of property from a seller to a buyer is completed through a money transaction, known as the price.

Goods must determine a level of satisfactory quality for the price that the consumer is willing to pay, and meeting the description and relevant factors at time of purchase. These factors might include the level of expectation that an item may conjure, for example, second hand goods will provide much less expectation than that of a brand new product which will have a much higher expectation with regards to its quality and will cause concern about expectation if it has a defect.

Goods should be fit for purpose, i.e that they are capable of carrying out the purpose for what they were designed to do. A seller should express the purpose of their goods and has a responsibility to make sure that they attain that state.

The Sale of Goods Act amendment in March 2012 states that if a fault occurs with a product within the first 6 months of purchase, the consumer is entitled to assume that it was sold to them with the defect present. This means that the goods were not of a reasonable standard at the time of purchase and the vendor is in breach of their statutory and contractual obligations, whereby the Act protecting customers through their statutory consumer rights.

Referring back to the original Act of 1979, these consumer rights covers anyone who purchases faulty goods becomes entitled to a free refund (either in full or in part), replacement or repair service, and the onus falls on the retailer to provide this.

British Standards Institute (BSI)

BSI Group, also known as the British Standards Institution, is the national standards body of the United Kingdom. BSI produces technical standards on a wide range of products and services, and also supplies certification and standards-related services to businesses.

Examples might include the testing of PPE including safety goggles and impact testing.

Lion Mark

The Lion Mark was developed in 1988 by the BTHA to perform a function not covered by the CE Mark, namely, to act as a recognisable consumer symbol denoting safety and quality.

The Lion Mark indicates that the toy has been made by a member of the British Toy & Hobby Association and therefore denotes the member's commitment to adhere to the BTHA Code of Practice which includes rules covering ethical and safe manufacture of toys, a ban on any counterfeit goods, an assurance to market responsibly, a commitment to improving sustainability and a desire to promote the value of all play. Unlike the CE Mark, therefore, the Lion Mark is truly a consumer symbol. It means that consumers can be assured that a toy which bears the Lion Mark has been made by a member who believes in making good quality, safe toys.

Manufacturers can offer advice to consumers when they purchase a product; such as:

- manufacturer's instructions
- safety warnings
- aftercare advice

A Level Design and Technology: Product Design

Protecting Designs and Intellectual Property

You should be aware of, and able to explain, the importance of the following to the designer:

Copyright

Copyright is legal right that protects the use of your work once your idea has been physically expressed. The current copyright legislation in the UK is the Copyright, Designs and Patents Act 1988. You can find out more about copyright legislation by visiting the Intellectual Property Office.

Copyright law lays out a framework of rules around how that work can be used. It sets out the rights of the owner, as well as the responsibilities of other people who want to use the work. You can do many things with your copyright work including for example copy, change or sell it, share it online or rent it to someone as well as prevent other people from doing those things.

The UK has one of the strongest creative sectors in the world. According to government statistics published in January 2014, the creative industry generates an average of £8million every hour. Every time you watch an online clip, listen to music, read your favourite blog, or enjoy something creative, you are interacting with copyright in some way. Copyright protects most creative things you create, too.

The period your copyright work is protected for depends on a number of factors such as the type of work you have created and when it was made. For example, when you write a poem your work will be protected until 70 years after your death. But if you act in a play, any rights in your performance are protected for a period of 50 years.

Examples of the different works protected by copyright are:

- Literary works such as books, blogs, articles, poems
- Underlying Musical score, composition, lyrics
- Commercial music
- Photographs
- Artworks
- Film footage



Design Rights

Designs may be subject to three types of protection, copyright, unregistered design rights and may also be registered nationally as registered designs. The actual details of design rights will vary depending on national law. Please see your national patent office for specific details.

What is a design?

The appearance of a product, in particular, the shape, texture, colour, materials used, contours and ornamentation. To qualify as a new design, the overall impression should be different from any existing design.

Who owns the design right?

Typically the creator of the design owns any rights in it, except where the work was commissioned or created during the course of employment, in which case the rights belong to the employer or party that commissioned the work.

Unregistered design rights protect the shape or configuration of a marketable (or potentially marketable) product, and are used to prevent unauthorised copying of an original design. Design rights can also be bought, sold or licensed in a similar manner to copyright. Design rights exist independently of copyright, while copyright may protect documents detailing the design as well as any artistic or literary work incorporated within the finished product, the design right focuses more on the shape, configuration and construction of a product.

In the UK, unregistered design rights have been available since 1989, and have been available since March 2002 throughout the European Community.

Unregistered design rights are automatic and are treated in the similar manner as copyright. For this reason they may be registered with the UK Copyright Service in the same manner as copyright work in order to establish proof of the date and content of the work in case of any later dispute or legal claims.

A **registered design** may be applied for to provide additional cover over and above any design right or copyright protection that may exist in the design. Registered designs are administered by the Office for Harmonization in the Internal Market (Trade Marks and Designs) in the EU, and the Intellectual Property Office in the UK.



In the US designs may be registered as part of the standard patent system via the United States Patent and Trademark Office, where they are treated as 'design patents', (as opposed to 'utility patents').

The benefit of a registered design is that the design may enjoy prolonged protection from copying, although this protection would only be available in countries or territories where the application was made, up to 25 years protection is available in the UK and EC.

Patents

A patent is a legal right granted by the UK Intellectual Property Office for a new invention. It allows the owner of the patent (the patentee) to take legal action against others who use her invention without his permission. The right has a maximum life-time of 20 years in most countries, from the date of the patent application. What a patent does not do is give the owner an automatic right to use the invention. He still needs to take care to avoid infringing other people's rights.

A patent belongs to the inventor, unless he has given the rights to someone else.

Normally, if the inventor is an employee and he makes the invention in the course of his work, the rights belong to the employer.

The owner of the patent may license it, allowing others to use his invention. Alternatively, he can sell it to someone else.

To be patentable, your invention must meet the following conditions:

- It must be new. That is, the invention must never have been made public IN ANY WAY before you apply to the UK Intellectual Property Office, this means that your invention must not have been published by someone else before you.
- It also means that if you want a patent, you MUST NOT tell anyone about your invention, except in confidence, until your application is filed with the UK Intellectual Property Office.
- It must involve an inventive step. This means that the invention must not simply be an obvious development of something that is already known.
- It must be capable of being made or used in any kind of industry, including agriculture. Most inventions satisfy this requirement.
- An invention is typically an apparatus, a product, a manufacturing process etc.

Trademarks

Trademarks are badges of origin. They distinguish the goods or services of one trader from another and can take many forms; for example words, slogans, logos, shapes, colours and sounds. Trademarks are registered for specific goods or services within individual subjects, known as classes.

Logos

The most powerful company logos instantly capture their target audience. Consider the strength of logos as trademarks on restaurant row. A consumer can easily recognize the golden arches and Colonel Sanders. The golden arches obviously refer to McDonald's capital "M" logo. The logo is actually yellow, but the company has trademarked the logo as the "Golden Arches." Kentucky Fried Chicken uses its monogram, KFC, as its trademark name and logo. Another popular logo used to identify KFC's restaurant chain is the image of Colonel Sanders. Each of these logos serves as a company trademark.



Open Design

You should be aware of, and able to explain, the concept of 'open design'.

Specifically referring to the development of products for the common good of society, including potential use.

You should be able to give examples of this in practice, e.g. humanitarian projects and file sharing for 3D printing.

The open-design movement involves the development of physical products, machines and systems through use of publicly shared design information. This includes the making of both free and open-source software (FOSS) as well as open-source hardware. The process is generally facilitated by the Internet and often performed without monetary compensation. The goals and philosophy of the movement are identical to that of the open-source movement, but are implemented for the development of physical products rather than software. Open design is a form of co-creation, where the final product is designed by the users, rather than an external stakeholder such as a private company.

Typically, when a crisis group or organization is faced with a humanitarian emergency, they tend to focus on what has worked in the past because new solutions need to be tested prior to an emergency. We also see that volunteers for these groups/organizations are usually the first to bring an open source tool or project to the table as a potential solution. With a greater influx of open source tools being used in crisis situations, organizations are realizing the power of open source to allow them to adapt technology quickly in a changing environment and to work together across organizations.

Many initiatives are changing the nature of how open source and open data become priorities for humanitarians, such as the UNICEF Innovation Fund, World Bank's Global Facility for Disaster Reduction and Recovery, UN OCHA Humanitarian Data Exchange, Missing Maps and the Grand Bargain.

Websites such as thingiverse and grabCAD allow users to share 3D print files for others to download for free.

Year 12 Knowledge organiser 1.12 Feasibility

A Level Design and Technology: Product Design

Manufacture, Repair, Maintenance and Disposal

You should be aware of, and able to explain, the need to modify designs to make them more efficient to manufacture.

Inventory
Excess products and materials not being processed.

Waiting
Wasted time waiting for the next step in a process.

Motion
Unnecessary movements by people (e.g. walking).

Defects
Efforts caused by rework, scrap, and incorrect information.

Transportation
Unnecessary movements of products & materials.

Overprocessing
More work or higher quality than is required by the customer.

Overproduction
Production that is more than needed or before it is needed.

Manufacturers can reduce waste in many ways, some of these are shown on the left.

They can also reduce the number of manufacturing processes—for example combining different parts.

The choice of materials affects the use, care and disposal of products:

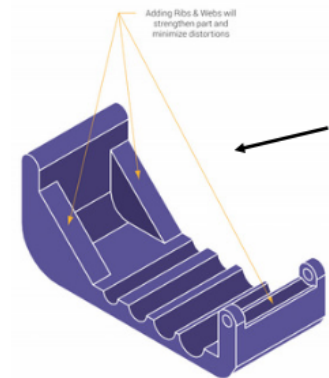
- labelling of materials to aid separation for recycling—manufacturers can ensure that labels are clear. A good example is the use of resin identification labels on polymers.
- Products could be made easier to disassemble or separate, this assists in the repair, maintenance and disposal of products.

Six R's:

- Manufacturers can reduce the quantity of materials, of toxic materials, of damaging materials and associated energy use, this can then reduce the manufacturer's environmental impact.
- Manufacturers can reuse components and parts.
- They can rethink by using eco friendly alternative materials.
- They recycle materials and/or components into new products, a closed loop system is a good example of this, e.g. blow moulding where flash is removed and sent to the beginning of the process.

Maintenance:

- Manufacturers can include temporary and integral fixings into their products.
- They can use standardised parts, meaning they are readily available for consumers to replace if required.
- They could offer a service for repair/ replacement of parts
- They can offer the ability to upgrade with software downloads.



Ease of Manufacture

You should be aware of, and able to explain, the different ways in which a product can be designed to allow for more efficient manufacture.

Ribs and webbing can be introduced to products to reduce material thicknesses, this reduces the amount of polymer required to manufacture the product.

Snap fittings can be added to remove the need for fixings/ adhesives, making them easier to manufacture and disassembly at the end of the product's life.

Internal moulded screw posts can be included for use with self tapping screws, this reduces the amount of operations required to manufacture the parts. Screw ports can also be included in extrusions.



Pre made components can be used to make manufacture easier, standardised patterns and sizes make the acquisition of components easier.



As many polymers are self-finishing, textures can be added in moulding to reduce number of manufacturing processes.



Disassembly



You should be aware of, and able to explain, how a product can be designed and manufactured with disassembly in mind, including integral fixings and active disassembly using smart materials such as SMA and biodegradable parts.

Design for disassembly is the process of designing products so that they can be easily, cost-effectively and rapidly taken apart at the end of the product's life so that components can be reused and/or recycled.

The example above is a dental floss product. It embodies the essence of design for disassembly—simple to assemble and disassembled. It's easy to open, free of glues, screws, or heat sinks. The main component's material

is clearly labelled, and the parts are quickly separated.

Designing for disassembly involves, for example:

- The fewer parts you use, the fewer parts there are to take apart.
- As with parts, the fewer fasteners (e.g. glue, screws, etc.) used, the better.
- Common and similar fasteners that require only a few standard tools will help to simplify and speed disassembly.
- Screws are faster to unfasten than nuts and bolts.
- Glues should be avoided.
- Building disassembly instructions into the product will help users understand how to take it apart.

Active disassembly is a developing technology which is associated with the term Active Disassembly using Smart Materials (ADSM). Smart materials such as shape memory alloys (SMA) are now offering the possibility of allowing complex items to be disassembled easily and in a potentially cost-effective manner. Other smart materials employed by AD include, shape memory polymers (SMP), smart layers, sprays, engineering polymers etc. The development of this technology could make recycling of consumer products more common and thus serve to be environmentally friendly.

Screws, rivets, ribbons, bars and clips, specially designed to facilitate AD, can be manufactured from smart materials such as SMAs and SMPs. These will trigger at a pre-determined temperature, depending on the specific application.

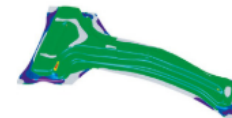
Feasibility Studies

You should be aware of, and able to explain, the use of feasibility studies to assess the practicality for production of proposed designs, including the testing of prototypes with potential consumers.

An example of a feasibility study is in press forming.

A feasibility study enables the quick and easy evaluation of part and process feasibility. Even with the first design of a part geometry, fundamental process capability should be checked for future series production, regardless of whether the CAD model has already been rounded.

At this point in time, there are often preliminary questions regarding whether the part can be manufactured as a single or double part, where exactly the part separation is planned, and whether the required material strength is achievable. Another issue which must be addressed at this stage is the later behaviour of the part in terms of crash, strength, stiffness or durability.



The feasibility analysis allows early feedback on key quality criteria of the forming process.

Feasibility studies can be completed with potential consumers to check the feasibility of the product being successful on the market. If it was found that the product would not be successful, it may not be feasible to continue with the design process.

Maths/Science Link:

Interpret statistical analyses to determine user needs and preferences.

Use data related to human scale and proportion to determine product scale and dimensions.

Year 12 Knowledge organiser 1.13 Enterprise

A Level Design and Technology: Product Design

Enterprise and Marketing in the Development of Products

You should be aware of, and able to explain, the importance of marketing and brand identity.

Customer Identification

Target market identification, by definition, is the method used to sort potential clients for sales and marketing campaigns, advertising and promotions using income, demographic, and lifestyle characteristics of a market and census information. This method is managed in several ways depending on the products and/or services that are the main focus of a business.

Target market identification begins with a study of where sales and marketing efforts produce the maximum results. For example, a law firm mainly offers legal services. However, many law firms specialise in certain types of legal issues. It presents the best picture of target market identification because it specifies where potential clients exist. It is also true for products that are sold to the public. Another example of this is a major food producer of food and beverages. Although the business may have several products, its sales and marketing planning focuses on particular target markets for each product.

Once businesses know the definition of target market identification, the job of market research opens a wider window of opportunity.

Thus, they may study target markets for each product to finely hone the scope of their target market identification



Labelling

Packaging is essential as it is used for the identification of the products in marketing. It enhances the appearance of the label for promoting the product. This is the major importance of labelling in marketing. In addition, labelling also helps to provide the information about a product to the prospective customer. This function fulfils informative purpose of using a tag.

Importance of labelling in marketing:

Marketers use labelling to their products to bring identification. This kind of labelling helps a viewer to differentiate the product from the rest in the shelves of the market. There are several uses of the label for the products in the market.

Labelling is used for packaging the product. In marketing, a marketer can also use a sticker on edible products to impart knowledge of the ingredients of the food items. This helps to spread awareness among the customers about the item they are consuming and labelling also helps to mention ingredients.

Packaging

Packaging is important in the marketing of a product.

It differentiates a brand from others

There are thousands of products on the market vying for customers' attention. According to The Paper Worker, one-third of a consumer's decision making is based solely on product packaging. To succeed, brand packaging has to stand out and look different from competitors. For example, one of Captain Morgan's most recent products, Cannon Blast, comes in a not-so-standard container. The bottle is actually shaped like a cannon ball. Not only is the design relevant to the name of the product, it's also eye-catching and highly different from what many of its competitors offer.

Packaging colour sways consumer purchase habits

The colours used in product packaging play a key role in consumer buying decisions. The brain reacts to colours in different ways, so packaging colour choice is important. For example, products with white packaging convey simplicity, safety and purity. Colour experts cite that the more colour added to a product's package, the less sophisticated the product is. Other colours, like blue, convey many different meanings. A light sky blue colour is considered more playful, while a dark navy is considered much more professional. Worldwide, blue is the most liked colour, but that doesn't mean you should automatically choose the likable colour. It's important to study the target demographic before deciding on a colour scheme for product packaging.

Product packaging is a marketing tool

A product's packaging can be a helpful marketing tool through in-store advertising. Branded products are easily recognised, so designing packaging with a logo front and centre helps consumers remember a product next time they are shopping.

Packaging creates brand recognition

Brands are memorable. Over the decades, brands like Coke have made minor changes to their packaging and stayed true to their original look. Recognizable brands should not change a thing because many successful brands that changed their logo, colours or packaging have seen a sort of backlash from shoppers after making a big change.

Maths/Science Link:
Interpretation of market research data,
calculating costs and profit.



Corporate Identification

Corporate identity is what makes up the physical look of a brand. It usually includes a logo and the supporting devices such as a website, letterhead and business card as well as social media platforms and the 'tone of voice' of a business.

Maintaining a consistent corporate identity is vital if a business wishes to be shown in a professional light. Sticking to a particular palette of colours and fonts, consistent logo positioning and using the same tone of voice throughout printed and online communications will all help to enhance a professional stance.

- A company that invests in corporate identity indicates that it is here to stay. It sends a message that the company is serious about being successful. It gives the customer a sense of trust.
- Corporate identity gives a sense of the culture or personality of the business.
- In creating a consistent identity, a company is ensuring that they will be recognised and remembered.
- A uniform corporate identity becomes instantly recognisable amongst its target audience.
- A strong corporate identity can improve customer awareness and can increase a company's competitive edge.

Global Marketing: the promotion and advertisement of products including the use of new technologies, eg social media, viral marketing

Global marketing is "marketing on a worldwide scale reconciling or taking commercial advantage of global operational differences, similarities and opportunities in order to meet global objectives".

Social Media Marketing can be a powerful branding vehicle when it's part of a comprehensive marketing strategy. It serves as a valuable tool to link prospects to a website, where they can start a conversation with a business. It can also help establish a company as a thought leader by promoting events, articles written, board affiliations, etc.



Many people think of social media marketing as Facebook, LinkedIn, and Twitter but that is the tip of the iceberg.

Social media marketing involves any web platform that prompts dialogue between users. There are numerous industry-specific web platforms where dialogue occurs.

Viral Marketing

Viral marketing is based on natural behaviour, uses pre-existing social networks, and produces increased brand awareness through self-replicating processes similar to the spread of a virus.

Product costing and profit

Product costing is the process of tracking and studying all the various expenses that are accrued in the production and sale of a product, from raw materials purchases to expenses associated with transporting the final product to retail establishments. It is widely regarded as an extremely important component in evaluating and planning overall business strategies.

Awareness of the role of entrepreneurs

An entrepreneur is an individual who sets up and grows a business. They combine different factors of production (such as – land, labour and capital) to try and create a new profitable business venture. Entrepreneurs are themselves an important 'factor of production.' and an essential aspect of a functioning free market economy.

Motives of entrepreneurs

- Profit. Profit is the biggest incentive. If the business is successful, the entrepreneur can pay themselves a large dividend or sell the product
- Income. Unemployed may feel self-employment is best opportunity to gain an income.
- Overcome a particular need. Sometimes, entrepreneurs set up a business to deal with a missing market. For example, Louis Braille was completely blind – this led him to invent the braille system to communicate and read.
- Non-financial motives. Mixed up with profit motive may be other objectives
 - Ethical stance. An entrepreneur may wish to do a different type of business, e.g. an organic farm which doesn't harm the environment.
 - Independence. An entrepreneur may also be motivated by non-financial factors, such as independence to work for themselves or to choose the hours and not have to listen to another boss.
 - Social entrepreneurship. Entrepreneurs don't always act alone. They may form partnerships with other entrepreneurs to create a stronger business or develop a social enterprise which aims at serving the community.

You should be aware of, and able to explain, the collaborative working of designers in the development of new and innovative products, including virtual and face-to-face collaborative working systems.