

Management of NPD - Assessment B Developing the Design Brief

Author: David Holman – September 22nd 2023

Overview to the Design Brief Project Team:

We have a great opportunity to move the business forward to achieve however this will need to be done in systematic, managed in a disciplined manner.

Please ensure anything associated with the project as managed as private and confidential.

Do not circulate outside of the initial working group until we have revised and agreed any actions.

At the initial stages do not discuss with potential suppliers or co working opportunities until any actions are agreed by the project team and if required a nondisclosure agreement is in place.

This process we will be going through is the Product Design Specification (PDS). The PDS is not all about one single part of the business or individual, not the boss, commercial, engineering or production. We need input from the whole team to make this a success, if I have missed anyone / team off the initial project group, please let me know I will make contact as required (*Additional members will be added for specific tasks*)

Feel free to think outside of the box and not constrained by current business restraints, advise of any red flags or blockers (*if you wish to submit these anonymously to the project team without reference to you or a specific department, just let me know we can always grab a coffee*)

Take this opportunity to help shape the future of the business, be part of the next chapter; ask the questions give your thoughts now and not what should have been done retrospectively.

Synopsis:

What do we intend to do? Use our existing production facilities, expertise, and knowledge to extend our product range to create a completely new product, a portable Virus Detection Device.

This device is initially targeted at the Coronavirus but has great potential to detect other airborne viruses.

The prototypes have successfully passed laboratory trials fulfilling the initial clinical and personal trials and as such the project can move towards the final stages with full company support from the CEO, board of directors and the senior management team.

Sales: Year 1 @ 750,000 units subsequent years @ 3 million units per annum.

The proposal is to use the existing strategy for production which will include sourcing the electronics and mechanical elements of the product from third parties with final assembly, testing, packing, and shipping at the existing premises.

The PDS is a controlled document with the purposes to identify what we want to achieve, and the steps required. It should remain user friendly document with a realistic scope to achieve the product within the agreed specification. It will also be used to sense check or challenge existing or proposed practices.

The PDS is fluid working document but will be managed as a controlled document with any changes will be reviewed and agreed by the project team and new revision issued. As an agenda item weekly meetings (*TBC*) will confirm the current PDS version and date; please check you are working with the current version and archive any earlier versions.

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1. Aesthetics:

How do we think the finished product should look; The surface, the lines are a thing of beauty, what makes it appealing to the customer?

- a. Shape, ease of handling, reduced impact damage with no sharp corners
- b. Colour
- c. Texture
- d. Finish / Pattern
- e. Materials
- f. Partially sighted
- g. Child friendly variants, with softer colours or favourite current / topical characters (*system to allow updating / current*)
- h. Easy to use, straight forward
- i. Decoration / adornment
- j. Inscription / personalise
- k. Inscription purchasers company name
- l. Branding ours
- m. Branding in purchasers' company, their choice of colours
- n. Aesthetics – continued
- o. Legal
- p. Trademarks
- q. Company Logo
- r. Intellectual Property Rights (*IP*)
- s. IP specialist required
- t. Accreditation
- u. ISO compliance schemes needed or impact on existing schemes and accreditation
- v. British standards accreditation for unit
- w. European standard approval
- x. Approved markings such as BS kite which should be displayed
- y. Any copy right issues with using other brand marks
- z. Brand identity new or to match current product / business
- aa. Variation of designs, finish and quality of materials which reflect additional costs and enhanced profit, customer purchasing habits, consumer attitudes

2. Brand:

Branding is important because not only is it what makes a memorable impression on consumers, but it allows your customers and clients to know what to expect from your company. It is a way of distinguishing yourself from the competitors and clarifying what it is you offer that makes you the better choice. Your brand is built to be a true representation of who you are as a business, and how you wish to be perceived. Branding is the perpetual process of identifying, creating, and managing the cumulative assets and actions that shape the perception of a brand in stakeholders' minds.

- a. Brand identity new or to match current product / business
- b. Customer loyalty
- c. Company / service / or celebrity ambassadors who can be used
- d. Advertising, customer service, social responsibility, reputation, visuals
- e. Case studies
- f. Independent reports or press coverage (*positive*)

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- g. Legal
- h. Trademarks
- i. Intellectual Property Rights (*IP*)
- j. IP specialist required
- k. Register design
- l. Check no IP conflict.
- m. Accreditation
- n. ISO compliance schemes needed or impact on existing schemes and accreditation
- o. British standards accreditation for unit
- p. European standard approval
- q. Approved markings such as BS kite which should be displayed
- r. Any copy right issues with using other brand marks
- s. Learning from others, what does or does not work
- t. Endorsements
- u. Company Logo
- v. Brand image
- w. Brand to identify as new product, match existing branding or opportunity to rebrand the business
- x. Classical conditioning
- y. Consumer attitudes
- z. Brand reliability, equity & loyalty, faith in our brand, are they willing to pay a higher price for our brand
- aa. Strong brand & product name
- bb. How do we get customers to recommend our brand
- cc. Control of branding & IP if we sell to third parties using our product with their branding
- dd. Well place high profile / celebrities brand advertising
- ee. Company / services ie. paramedics / celebrity ambassadors who can be used
- ff. Seen as Environmentally friendly and working within the Circular economy

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3. Company Constraints:

Workforce, support functions, sales the whole team / business etc – current adequate or increase in head count required, sick and holiday cover.

- a. Staff retention, maintaining business flow
- b. Additional training
- c. Shift patterns – options? improvement in production
- d. Maintenance and preventive maintenance schedules
- e. Existing welfare facilities – adequate?
- f. Current management structure
- g. Automation – opportunity to review production improvements for overall business
- h. New equipment
- i. IT
- j. Credit control
- k. New accounts
- l. Invoicing increased sales
- m. Associated issues how to deal with increased returns
- n. Source of raw materials
- o. Agreements and financial arrangements currently in place with suppliers, increase in
- p. Stocking of raw products
- q. Stocking of finished product
- r. Security
- s. Procurement, source materials
- t. Are agreements in place and supply materials available, any potential concerns, contingency suppliers
- u. Production team
- v. Pinch points with the business, bottle necks, restrictions
- w. Any blockers or red flags – everyone flag now
- x. Epi / Pandemic how will production the business function
- y. Cyber-attack what are the contingencies – how will they be managed
- z. Equipment maintenance and scheduling
- aa. Marketing
- bb. Existing accreditation schemes will we comply or any planned changes required
- cc. Any cultural or step changes required within the business to make this successful
- dd. Blockers, individuals, department, company restrictions, need one team approach and all in the right direction
- ee. Loading of wagons, loading bay area, will existing methods be suitable for the new product range
- ff. Existing transport arrangements
- gg. Existing communications are these adequate – future proof
- hh. Existing assets and new assets required
- ii. Financial support available
- jj. Lead in times for new equipment and availability in the market
- kk. Company property – owned or leased do this need reviewing to ensure longer term plan is understood
- ll. Insurance policy, any changes or additional cover necessary
- mm. Security, is sufficient adequate any improvements required

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Competition:

Who is active the market with similar products, who is in the design stage who could disrupt our business?

- a. Who, what and where are they
- b. On the market and those likely to be a quick follower
- c. Who is the largest threat, how do we qualify the risk
- d. How do we compare (*all aspects*) product and business comparison, what is produced
- e. Opportunity to buy a business, any benefits, or make ours attractive for a buy out
- f. What can we learn the good and bad
- g. What do the other units look like any limitations
- h. Purchase examples and investigate what it can do, how its made, it good and bad points
- i. Do we know can we find out idea of costs and potential profit, speed of the device, analysis, accuracy of test results Do the customers like the product, the reasons why / why not
- j. What makes them a brand of choice
- k. Any potential IP conflicts
- l. Any IP protection? If not, can we exploit their lack of IP protection in our favour
- m. Key personal – do we need to consider head hunting
- n. Competition, manufacturing facilities, location, capacity constraints
- o. Business performance current and predicated longer term, are they in a strong position
- p. Background information any predicted sales or business developments planned
- q. Who / where to they get their source / component materials
- r. How do their logistics work, are they efficient, can we utilise

4. Customers: *Who are they?*

- a. Individuals, companies and their employees or resales outlets
- b. What is the sales platform, online, direct
- c. Demographic statistics
- d. What can we offer to make our product more appealing, mobile App option, and data logging
- e. Can App data be passed via the App to an employer, travel company etc as proof test result
- f. Mobile, desktop, laptop, I pads etc all compatible
- g. Do we need to offer a print option, mobile for units or connect via device
- h. Peak sales opportunities, seasonal demand
- i. Pop up shops at large events, or pre seasonal trends ie such as flue and Covid booster jabs
- j. Specific area of interest and deadline which would be an initial boost to sales and marketing, such Olympics, Commonwealth Games, World Cup, Glastonbury, London Marathon. Timing & Planning
- k. Peak holiday times
- l. Consumer attitudes, what influences their spend of their hard-earned cash
- m. Price - market pricing product, volume discounts,
- n. Brand reliability, equity & loyalty
- o. Strong brand & product name
- p. How do we get customers to recommend our brand
- q. Consumer attitudes
- r. Brand reliability, equity & loyalty, faith in our brand, are they willing to pay a higher price for our brand
- s. Strong brand & product name

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- t. How do we get customers to recommend our brand
 - u. Keeping the customer aware of new products and updates
 - v. Advertising, product placement, social media
 - w. Take back schemes
5. **Circular Economy (CE):** *The simpler interpretation of the circular economy is a solution for industry and business of all scales to reduce, reuse and recycle waste. The circular economy aims to turn all wastes into a resource by reintroducing them into the production cycle instead of product disposal at the end of their useful life*
- a. Can we engage with our suppliers to support the CE
 - b. Do any of our suppliers / procured materials / components have a recycled content
 - c. Are our suppliers working within the CE
 - d. End of life options
 - e. Disposal
 - f. Documentation, standards, schemes compliance
 - g. Environment
 - h. Ergonomics
 - i. Installation
 - j. Intellectual Property
 - k. Legal, us, our suppliers, anyone involved in the process. What constraints can we legally enforce
 - l. Anticipated service / lifespan of unit
 - m. Design:
 - n. Can the product be future proofed, how and for what
 - o. Industry working groups we are members of
 - p. Independent accreditation showing us as a green company
 - q. Sustainable: *In 1987, the United Nations Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”*
6. **Design:**
The big question what do we want it to look and feel like, what will make it a best seller, a market leading product?
- a. A design is a general plan or intention that someone has in their mind when they are doing something.
 - b. When someone designs they plan, prepare, and decide on all the details of it.
 - c. If something is designed for a particular purpose, it is intended for that purpose.
 - d. What's in the box, what do we offer as standard or a kit with additional items
 - e. Weight, to be confirmed, estimated to be circa 600 grams
 - f. Size, to be confirmed estimated @ 15cm x 9cm x 4cm
 - g. Aesthetics – a number of options
 - h. Performance
 - i. Reliability
 - j. One handed operation, not to be left or right-handed with key functions
 - k. If the model is to be a “handed” version, should we offer both options

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- l. Will it fit in a pocket
- m. Clip for belt or pocket
- n. Can it be locked
- o. Will it work in low / poor light
- p. Is it functional or a show piece – range of options
- q. Product Life span:
- r. Outsource initial agreements and contingency arrangements, pandemic, business crash, supply chain issues
- s. Nonslip
- t. Easy grip
- u. Finish
- v. Appearance
- w. Touch
- x. Smell
- y. Vegan option
- z. Easily cleaned and maintained
- aa. Protection to device
- bb. Protection against the elements
- cc. Influenced by extremes weathers
- dd. Robustness
- ee. Recyclability of materials used
- ff. Recycled content of materials used
- gg. Is its disposable item – life span
- hh. Circular Economy and Environmental compliance
- ii. Battery type
- jj. Battery options
- kk. Charge type, mains only, USB or only USC type?
- ll. Opportunity to reduce operation buy only producing USC charging
- mm. Charges sold as an extra item not included
- nn. Robust design or possibly protective cases
- oo. EU / Brexit any pitfalls we need to be aware of

7. Materials:

How do we want our products to look and feel, what's needed; what would be a nice to have, extra cost?

- a. Outsource initial agreements and contingency arrangements, pandemic, business crash, supply chain issues
- b. Nonslip
- c. Easy grip
- d. Finish
- e. Appearance
- f. Touch / feel
- g. Smell
- h. Easily cleaned and maintained
- i. Protection to device
- j. Protection against the elements

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- k. Influenced by extremes weathers
- l. Vegan options
- m. Robustness
- n. Recyclability of materials used
- o. Recycled content of components and materials used
- p. Circular Economy
- q. Any materials we should not consider

8. Manufacturing facilities:

Where should the products be manufactured, any options and benefits which should be considered?

- a. Existing, current
- b. Pinch points, limitations current envisaged in the future as production increase
- c. Future proofing, what should be considered
- d. Outsource initial agreements and contingency arrangements, pandemic, business crash, supply chain issues

9. Market:

What and where is our market, preferred market routes, SWOT, market influencers

- a. Competition, current & short - med term impact
- b. Market knowledge, potential market share available
- c. Considering NHS, Paramedics, Blue Light Services, and military (*data volumes covered in links separate app 1*)
- d. Constraints, UK, EU, Worldwide
- e. Use email and SMS to generate leads
- f. Live website conversations & sales
- g. Improve order values
- h. Existing customers on data base and other products
- i. Returning customers, repeat business
- j. Upselling
- k. Be creative any thoughts questions or suggestions just throw them out there ie do we offering personalised cases, engraved, embossed with user name?
- l. Customers, new customers, accounts, existing customers increase in credit limits, increase in credit purchases.
- m. Direct sales, at the offices, do we need to consider selling from one office? If so, card only or cash as well
- n. Access to products and invoicing, who will managed and be responsible
- o. Customer stock requirements, how much do they wish to hold ie government, services in case of pandemic, how many units time scale to be held on stock.
- p. Do we offer a dedicated stock to customer as stocking and distribution centre
- q. Marketing, advertising, any charitable donations, press coverage
- r. Product or company ambassadors
- s. Amazon
- t. Ebay
- u. Other market platforms
- v. Supermarkets online
- w. Use of high street supermarkets, shelf stock item
- x. Supermarkets top 5, Tesco, Sainsburys, Asda, Morrisons & Aldi

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- y. Working group with end users / test panels
- z. Do we offer a deposit scheme to guarantee return of products for CE

10. Repair & Maintenance:

What can be offered for R&M and how?

- a. In house resources
- b. Outsource
- c. Stock of known ware parts high replacement risk areas
- d. Items which are on backorder or long lead times from suppliers
- e. Items covered by the warranty
- f. Agreed turnaround times
- g. Cost effective repairs or device replacement
- h. If the device needs to be replaced what happens with the device
- i. Customer returns if the device is beyond economic repair; FOC, a postage / handling cost, disposal, or recycling
- j. Calibration requirements & checks
- k. Software updates when device is in the workshop
- l. Procurement and supply agreements
- m. Legal – what is required
- n. Handling, recycling & waste Management
- o. Technical & H&S to be involved
- p. Circular economy, Environmental, waste management obligations
- q. Compare against the competition / products and report when placed

11. Patents & Intellectual property:

How we will protect the new product range to prevent it being copied

- a. Legal
- b. IP
- c. Involve IP & legal specialist
- d. Non-disclosure agreements
- e. Select working team
- f. Compare against the competition / products and report when placed

12. Packaging:

How the products are packaged, transported, considerations? Environmentally friendly options

- a. Compare against the competition / products and report when placed
- b. Warehousing, storage, equipment forklift as example, racking
- c. Pallets, number on a pallet, method packing, bound, shrink wrap
- d. Pending or future legislation (guesstimate if needed) we need to be made aware of ie, batteries or certain metals becoming an environmental issue
- e. CE / recycling
- f. Supplying materials containing recyclates / recycled content
- g. Any carbon credits which can be claimed as producing a reusable product
- h. Any branding or logos to be used
- i. If not using branded or logos on packing consider as a positive environmental less chemicals, easier to recycle

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- j. Try to avoid single use plastics
- k. Recycled carboards

- l. Consider packaging design which may offer maximum protection, customer impact, but cost efficient
- m. Shape of box square, oblong, round, any impact with regards to handling storage, number on a pallet, stacking
- n. Any differences, special requirements if shipped by road, rail, air or sea, pros or cons, costs, benefits

13. Performance:

What is the specification for performance, how is measured and judged. Is there a specification / standard to comply with? Is cost effective to surpass the standard or just achieve the basic requirements

- a. How should the device perform, what are the consumers expectations
- b. Life span, useability, robustness
- c. Compare / benchmark against the competition / products and report when placed
- d. Technical and design should be involved

14. Politics:

Are there be any opportunities or areas we need to consider?

- a. Do we stay in the same area, existing premises, location?
- b. Is there any significant funding, grants available to relocate or improve the business
- c. Reduced cost of production, operational, logistical, greater availability of transportation links including reduced costs using backloads or other cost benefits to be gained
- d. Kudos gained for political parties for developing for new and emerging technologies
- e. Bribery and corruption considerations
- f. Government procurement, bulk purchasing, sole procurement rights any opportunities

15. Processes:

Existing, those requiring amendment, new procedures and processes which may be required?

- a. Operation procedures and production requirements
- b. Account facilities and order taking
- c. Logistic
- d. Legal, finance & tax
- e. Do we offer user account facilities
- f. Do we offer data storage at an additional
- g. Can data be shared from the App to an end user, employer ravel service provider
- h. Can the product be future proofed, how and for what
- i. Additional uses, other viruses (see previous note DMH)

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16. Project team: *Who is in the team*

- a. Steering / Executive committee who the project will report to who are they
- b. Reporting structure
- c. Guidelines and expenditure limits
- d. Meeting frequencies, location
- e. Meeting minutes / notes to be detailed
- f. Separate meeting between project manager and Exc team, with other team members by invitation
- g. Specialist disciplines such as IP, IT, Logistics etc invitation as required

17. Prototyping:

Review and give your honest feedback on the product, what's bad, what's good what should be changed before it goes into production.

- a. The Prototype has passed lab trials
- b. Prototypes are available to view / handle / test.
- c. The prototypes are not the refined finished model for production and should not limit the new design thought process
- d. Give your feedback on how they appear and feel as an end user, would you spend your own money it
- e. Are they still working as they should
- f. Check how they perform under real life conditions, does the screen get scratched easily, do charging points collect dust and pocket lint, case looked damaged
- g. Feel robust and offers value for money
- h. Compare against the competition / products and report back
- i. Working group with end users / test panels
- j. Legal
- k. IP considerations
- l. Protect the prototype IP as well

18. Product Cost:

Any areas which can influence production costs, these could be positive or negative. Where can we make any savings or see an increase in a cost which has not been accounted for.

- a. Material & component costs
- b. Battery type
- c. Battery options
- d. Charge type, mains only, USB or only USC type?
- e. Opportunity to reduce operation buy only producing USC charging
- f. Charges sold as an extra item
- g. Production, fixed and overhead costs
- h. Location
- i. Building unit restrictions
- j. Margin per unit
- k. Cost forecasting, any known or anticipated increases
- l. Can we obtain fixed or capped pricing on major items which could impact the production costs

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- m. Review of existing production costs, any costs benefit to the overall business
- n. Any increase as a result of pending legislation changes, tax, material costs
- o. Any funding available
- p. Initial investment
- q. Pay back of investment over which period
- r. Compare against the competition / products and report when placed
- s. Finance
- t. Legal
- u. Tax
- v. Waste
- w. Disposal
- x. Do we manufacture / sell or should we consider allow others to use our design or manufacture our products

19. Technical:

Cover any aspects of the device, current or future demands of the business. What is required to make it work what is a nice to have and what would make it a market leader and worthy of our brand. Everything needs to work including backroom operations and next steps for future proofing. Consider aspects the end user may require making the device safe operationally, functional and their first choice.

- a. Do we have adequate resources in house, use external, recruit outsource to tech specialist
- b. Existing systems and future proofing
- c. Involved in the design process
- d. Levels of detection, can this vary for different diseases
- e. Tolerances on test data and repeatable test or different units
- f. Legal, what happens if there is a claim against the business form illness or death as a result of an alleged defective equipment or false reading
- g. What is the sales platform, online, direct
- h. What can we offer to make our product more appealing, mobile App option, and data logging
- i. Can App data be passed via the App to an employer, travel company etc as proof test result
- j. Mobile, desktop, laptop, IOS, Android, Windows etc all compatible
- k. Working group with end users / test panels
- l. Customer reminded when calibration or expiry date is approaching
- m. Do we offer calibration service, can this be subcontracted to a third party - options
- n. Does it need blue tooth, WiFi capability
- o. On security measures and GDPR compliance
- p. Other opportunities for the device other diseases such as
- q. Date and time stamping, world clock, location or user settings
- r. Product Life span:
- s. Product data sheet and overview of how to use
- t. Anticipated number of uses, discharge / recharge, battery life
- u. How long standby before recharge is required, is there a minimum to keep to battery cell live
- v. Battery type
- w. End of service life, recycling and disposal options guidance to customers and the business
- x. Battery options
- y. Charge type, mains only, USB or only USC type?

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- z. Number of uses on a full charge
- aa. Mouth pieces
- bb. Does product have any effect on any other medical condition such as pacemaker, hearing aids, asthma
- cc. Drop height test
- dd. Protective cases
- ee. Storage temperatures Maximum / minimum what is the optimum
- ff. Operating temperature Maximum / minimum what is the optimum
- gg. Water resistant / proof
- hh. Technical Support to end users
- ii. Additional uses, other viruses (see previous note DMH)
- jj. Legal
- kk. Working group with end users / test panels
- ll. Controlled trials
- mm. Anticipated working life
- nn. Can the batterie(s) be replaced if needed

20. **Quality:** Covered in design

21. **Quantity:**

- a. Year 1: 750 thousand units per annum
- b. Year 2 onwards: 3 million units per annum

22. **Reliability:**

- a. Compare with competition
- b. What can we expect
- c. What guarantee / warranty can be offered
- d. Do we considered outsourcing an insurance all risks package, if we can make an extra £1.00 per unit
- e. Legal

23. **Health Safety:**

- a. Any dangerous substances, hazardous properties
- b. Change in production process, change in risks & hazards, operating procedures and associated Risk Assessments
- c. Storage and handling of new components, materials
- d. Any reactions chemical between components we should consider
- e. Does product have any effect on any other medical condition such as pacemaker, hearing aids, asthma
- f. Charging units and risk of fire or explosion
- g. Calibration or units
- h. Return / repair goods, passing of "any" diseases to workforce
- i. Cross contamination to clean goods, do we need a clean and dirty side facility if required
- j. Warehouse operations
- k. Lighting

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- l. Mobile equipment
- m. Racking safe working loads
- n. Stacking and safe working areas to be defined
- o. Fire Risk assessment
- p. Material hazard sheet / COSHH data
- q. Pending or future legislation (guesstimate if needed) we need to be made aware of ie , batteries or certain metals becoming an environmental issues

24. **Size:** Covered in design estimated @ 15cm x 9cm x 4cm

- a. Shelf Life & Storage
- b. Battery / number of use Off, Standby, Passive, and Active in use

25. Shipping:

- a. Logistic
- b. How to ship product to end user
- c. End user collects
- d. Contract fleet
- e. Hired fleet
- f. Purchase fleet
- g. Franchisee fleet options
- h. Transport support functions
- i. Specialist skill set and recognised qualification for running own company fleet
- j. Fleet associated running costs
- k. Parking, operator's licences, maintenance, inspections, driver compliance and sourcing
- l. Legal compliance
- m. Warehousing, storage, equipment forklift as example, racking
- n. Pallets, number on a pallet, method packing, bound, shrink wrap
- o. No pallet, grab loader maximise pay loads
- p. Shape of box square, oblong, round, any impact with regards to handling storage, number on a pallet, stacking or transporting benefits
- q. Type of packaging
- r. Any differences, special requirements if shipped by road, rail, air or sea, pros or cons, costs, benefits
- s. Any seasonal / routing benefits with using backhaul routes
- t. Environmental impact, what benefits can we show

26. Social & Cultural: *Where will this product sit in the market?*

- a. Who are the customers, demographic statistics
- b. Consider individual tastes, gender identity, cultures or religions can all influence what an individual wants from a product, company, or brand
- c. It may not just be the product it could be the company positions of political stances
- d. What the brand represents, is it seen as a green, does it offer vegan options, is it neutral or shows a strong stance
- e. Social media coverage
- f. Are the products open to all
- g. Is there UK government "example" bulk buying and preventing the producing Country from have access

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27. Standards & Specifications: *What do we need to comply with ?*

- a. Any pending changes which may require changes to the current design, increase costs
- b. Include pending specifications changes in the design now, is that a risk or a selling feature
- c. Legal
- d. Existing production will the new units be classed as the same
- e. With a new production line will any existing standards or accreditation need to be reviewed or amended
- f. Will any new product lines force changes to existing standard
- g. What do the competition show compliance with
- h. Display any required logos, dates
- i. ISO compliance schemes needed or impact on existing schemes and accreditation
- j. British standards accreditation for unit
- k. European standard approval
- l. Brand markings date of manufacture,
- m. Use by dates

28. Testing: *What do we need to do?*

- a. Quality control checks, frequencies
- b. Acceptable tolerances
- c. Compare against the competition / products and report when placed
- d. Action plan for recalls or faulty product issues
- e. Compliance with accreditation bodies
- f. Timescale:

29. Weight:

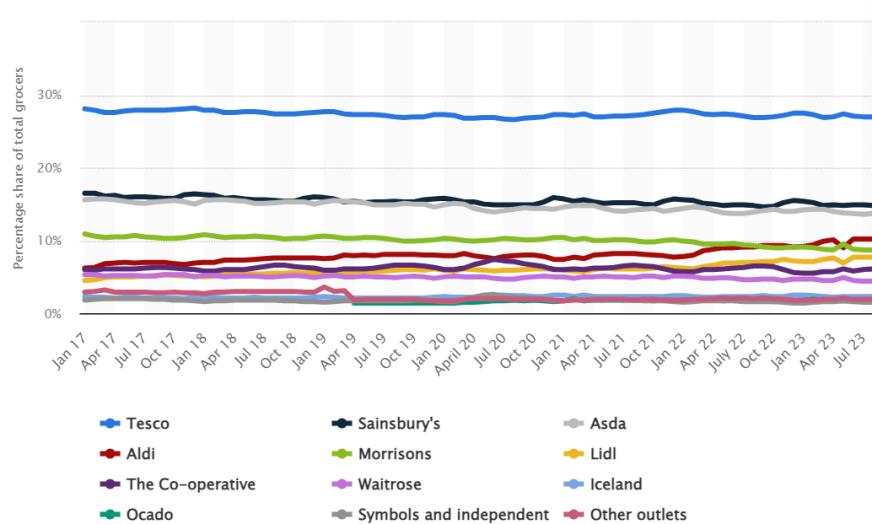
- a. Covered in design, to be confirmed, estimated to be circa 600 grams

[illegible]

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1. <https://www.gov.uk/intellectual-property-an-overview>
2. <https://www.investopedia.com/terms/d/demographics.asp>
3. The third step in Jeanne Liedtka's 15-step *Design Thinking* methodology is drafting your *design brief*. This seven-minute video considers why do you do a *design brief*? What are the benefits of a *design brief*? Also included in this step is a discussion of metrics: How will you know if you succeed or fail? This is one of 22 videos that comprise the *Design Thinking* course developed at Darden. It is meant to accompany any one of three cases (Arena Industries [UVA-S-0240], Trenton State College [UVA-S-0241], or Great Lakes [UVA-S-0248]) that explore the *design thinking* approach to innovative problem solving.
4. [Design thinking. Step three : draft your design brief - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](https://www.uwtsd.ac.uk/design-thinking/step-three-draft-your-design-brief)
5. *Creating the perfect design brief : how to manage design for strategic advantage* Peter L. Phillips Second edition.; 2012; Allworth Press
6. [Creating the perfect design brief : how to manage design for strategic advantage - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](https://www.uwtsd.ac.uk/creating-the-perfect-design-brief)
7. *Winning by design : technology, product design and international competitiveness* Vivien Walsh ...[et al.].1992; Blackwell
8. [Winning by design : technology, product design and international competitiveness - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](https://www.uwtsd.ac.uk/winning-by-design)
9. *Customer-based brand equity, equity drivers, and customer loyalty in the supermarket industry*
10. Allaway, Arthur W; Huddleston, Patricia; Whipple, Judith; Ellinger, Alexander E. *The Journal of Product and Brand Management*; Santa Barbara Vol. 20, Iss. 3, (2011): 190-204. DOI:10.1108/10610421111134923
11. Nowhere is the merging of these research streams more evident than in retailing. Customer loyalty is a critical goal for retailers because of an increasingly competitive retail environment and low customer switching costs ([19] Wallace et al. , 2004). The rise of the retailer as a brand is one of the most important trends in retailing ([7] Grewal et al. , 2004). Successful retail branding can be extremely important in helping influence consumer perceptions and drive store choice and loyalty ([1] Ailawadi and Keller, 2004)
12. [Customer-based brand equity, equity drivers, and customer loyalty in the supermarket industry - ProQuest](https://www.proquest.com/marketing/customer-based-brand-equity-equity-drivers-and-customer-loyalty-in-the-supermarket-industry/docview/238444444)
13. *Brand Alliance and Customer-Based Brand-Equity Effects* Washburn, Judith H; Till, Brian D; Priluck, Randi. *Psychology & Marketing*; Hoboken Vol. 21, Iss. 7, (Jul 2004):
14. [Brand Alliance and Customer-Based Brand-Equity Effects - ProQuest](https://www.proquest.com/marketing/brand-alliance-and-customer-based-brand-equity-effects/docview/238444444)
15. *Classical conditioning and celebrity endorsers: An examination of belongingness and resistance to extinction* Till, Brian D; Stanley, Sarah M; Priluck, Randi. *Psychology & Marketing*; Hoboken Vol. 25, Iss. 2, (Feb 2008): 179
16. [Classical conditioning and celebrity endorsers: An examination of belongingness and resistance to extinction - ProQuest](https://www.proquest.com/marketing/classical-conditioning-and-celebrity-endorsers-an-examination-of-belongingness-and-resistance-to-extinction/docview/238444444)
17. *Attitudes and Brand Trust Amongst Gen-Z Consumers*
18. [Green Advertising: Attitudes and Brand Trust Amongst Gen-Z Consumers - ProQuest](https://www.proquest.com/marketing/green-advertising-attitudes-and-brand-trust-amongst-gen-z-consumers/docview/238444444)
19. *Building customer-based brand equity* Kevin Lane Keller. *Marketing Management*; Chicago Vol. 10, Iss. 2, (Jul/Aug 2001):
20. *Building a strong brand with great equity provides a host of possible benefits to a firm, such as greater customer loyalty and less vulnerability to competitive marketing actions or marketing crises; larger margins; more favourable customer response to price increases and decreases; greater trade or intermediary cooperation and support; increased marketing communication effectiveness; and licensing and brand extension opportunities. A comprehensive new approach, the customer-based brand equity (CBBE) model, lays out a series of steps for building a strong brand: 1. establish the proper brand identity, 2. create the appropriate brand meaning, 3. elicit the right brand responses, and 4. forge appropriate brand relationships with customers.*
21. [Building customer-based brand equity - ProQuest](https://www.proquest.com/marketing/building-customer-based-brand-equity/docview/238444444)
22. *For retail sales*
23. [Top 10 Supermarket Retail Chains In The UK | ESM Magazine](https://www.esm-magazine.com/top-10-supermarket-retail-chains-in-the-uk/)
24. [Great Britain: Grocery market share 2023 | Statista](https://www.statista.com/statistics/1111111/grocery-market-share-2023/)

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- 25.
26. *Managing innovation: integrating technological, market and organizational change* by Joe Tidd and John Bessant. Sixth Edition.; 2018; Wiley
27. https://librarysearch.uwtsd.ac.uk/discovery/search?query=any,contains,9780273736561&t&search_scope=MyInst_and_CI&vid=44WHELF_UWTSD:44WHELF_UWTSD_VU1&offset=0
28. *Innovation management and new product development* Paul Trott. 5th ed.; ©2012; Financial Times/Prentice Hall
29. [Innovation management and new product development - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
30. *The business environment : challenges and changes* by Ian Brooks and Jamie Weatherston. 2nd ed.; 2000; FT Prentice Hall
31. [The business environment : challenges and changes - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
32. *Managing innovation : integrating technological, market and organizational change* Joe Tidd and John Bessant. 5th ed.; 2013; Wiley
33. [Managing innovation : integrating technological, market and organizational change - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
34. *Innovation management and new product development* Paul Trott. 5th ed.; ©2012; Financial Times/Prentice Hall
35. [Innovation management and new product development - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
36. *New Business Models for the Reuse of Secondary Resources from WEEEs The FENIX Project 2021*; Springer International Publishing AG
37. [New Business Models for the Reuse of Secondary Resources from WEEEs \(oapen.org\)](#)
38. *Understanding industrial and corporate change* edited by Giovanni Dosi, David Teece and Josef Chytrý. 2005; Oxford University Press
39. [Understanding industrial and corporate change | WorldCat.org](#)
40. *Wellness programs in times of COVID-19, perceived organizational support and affective commitment: effects on employee innovative behavior* Rosa M. Muñoz, Silvia M. Andrade, Isidro Peña, Mario J. Donate *European Journal of Innovation Management* ISSN: 1460-1060 Open Access. Article publication date: 13 June 2022
41. [Wellness programs in times of COVID-19, perceived organizational support and affective commitment: effects on employee innovative behavior | Emerald Insight \(uwtsd.ac.uk\)](#)
42. [Managing knowledge in open innovation processes: an intellectual property perspective | Emerald Insight \(uwtsd.ac.uk\)](#)
43. *Managing knowledge in open innovation processes: an intellectual property perspective*
44. Peter M. Bican, Carsten C. Guderian, Anne Ringbeck
45. *Journal of Knowledge Management* ISSN: 1367-3270 Article publication date: 9 October 2017
46. [Chapter 1 Introduction | Emerald Insight \(uwtsd.ac.uk\)](#)
47. *Chapter 7 Intellectual Property Rights and Competition Policy* Mattias Ganslandt *Intellectual Property, Growth and Trade*
48. Kotler, P., & Keller, K. L. (2016). *Marketing management* (15th ed.). Pearson.
49. Armstrong, G., & Kotler, P. (2015). *Marketing: An introduction* (12th ed.). Pearson.
50. Trott, P. (2012). *Innovation management and new product development* (5th ed.). Pearson Education Limited.

Management of NPD – Referencing Summary

Assessment B Developing the Design Brief

Author: David Holman – September 22nd 2023

51. A significant shift in resources (Paul Trott)
52. Abderrahman, B. (2021) How a breath biopsy test could change the face of early cancer detection, *The Pharmaceutical Journal*. Available at: <https://pharmaceutical-journal.com/article/opinion/how-a-breath-biopsy-test-could-change-the-face-of-early-cancer-detection> (Accessed: 17 July 2023).
53. Beeston, A. (2022) Rapid tests for flu reduce spread of disease in hospital, NIHR Evidence. Available at: <https://evidence.nihr.ac.uk/alert/rapid-tests-flu-meant-earlier-treatment-isolation-less-serious-illness/> (Accessed: 17 July 2023)
54. Miracle, A.A. and Adaobi, C.C. (2023) 'Advancement in the Healthcare Field of Wearable Technology and Future Perspective', *Journal of Material Sciences & Applied Engineering* [Preprint]. Available at: https://www.mkscienceset.com/articles_file/378-_article1687598914.pdf (Accessed: 17 July 2023).
55. Mordor Intelligence (2023) *Breathalyzers Market Size & Share Analysis - Industry Research Report - Growth Trends*. Available at: <https://www.mordorintelligence.com/industry-reports/breathalyzers-market> (Accessed: 17 July 2023).
56. NHS (2020) Understanding how we test samples for infection in our laboratories, NHS choices. Available at: <https://www.gosh.nhs.uk/conditions-and-treatments/procedures-and-treatments/understanding-how-we-test-samples-infection-our-laboratories/> (Accessed: 17 July 2023).
57. NHS (2023) Virology Samples, NHS choices. Available at: <https://www.leedsth.nhs.uk/a-z-of-services/pathology/microbiology-2/sample-requirements-and-advice/virology-samples/> (Accessed: 17 July 2023).
58. Pikul, C. (2021) The breathalyzer that transforms how we test for covid-19, *World Economic Forum*. Available at: <https://www.weforum.org/agenda/2021/12/bubbler-breathalyzer-improve-sars-cov-2-testing/> (Accessed: 17 July 2023).
59. Eggert et al., 2020
60. Palmer, A. (2004), *Introduction to Marketing: Theory and Practice*, Oxford University Press
61. Donald Rumsfield, 2002
62. Le Meunier-FitzHugh, Kenneth & Piercy, Nigel. (2007). *Exploring Collaboration Between Sales and Marketing*. *European Journal of Marketing*. 41. 939-955. 10.1108/03090560710752465.
63. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4281544/>
64. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8576132/>
65. <https://news.mit.edu/2020/covid-19-cough-cellphone-detection-1029>
66. [MIT developed a wireless box that can detect COVID-19 patients' movement and breathing at home | TechCrunch](https://www.thelancet.com/journals/eleclin/article/PIIS2589-5370(20)30353-9/fulltext)
67. [https://www.thelancet.com/journals/eleclin/article/PIIS2589-5370\(20\)30353-9/fulltext](https://www.thelancet.com/journals/eleclin/article/PIIS2589-5370(20)30353-9/fulltext)
68. <https://www.biopharma-reporter.com/Article/2022/04/14/pfizer-set-to-acquire-covid-19-smartphone-detection-app-for-100m>
69. [Pfizer set to acquire COVID-19 smartphone detection app for \\$100m \(biopharma-reporter.com\)](https://www.biopharma-reporter.com/Article/2022/04/14/pfizer-set-to-acquire-covid-19-smartphone-detection-app-for-100m)
70. UK defence personnel statistics - House of Commons Library (parliament.uk)
71. Families and households in the UK - Office for National Statistics (ons.gov.uk)
72. *Managing New Product Development*, A Mumby Sept 2023
73. [Evaluating prototyping technologies for product design / by Matthew B. Wall, Karl T. Ulrich, Woodie C. Flowers \(mit.edu\)](#)
74. [Writing a Synopsis | Academic Skills Kit | Newcastle University \(ncl.ac.uk\)](#)
75. [Design thinking. Step three : draft your design brief - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
76. The third step in Jeanne Liedtka's 15-step Design Thinking methodology is drafting your design brief. This seven-minute video considers why do you do a design brief? What are the benefits of a design brief? Also included in this step is a discussion of metrics: How will you know if you succeed or fail? This is one of 22 videos that comprise the Design Thinking course developed at Darden. It is meant to accompany any one of three cases (Arena Industries [UVA-S-0240], Trenton State College [UVA-S-0241], or Great Lakes [UVA-S-0248]) that explore the design thinking approach to innovative problem solving.
77. [Creating the perfect design brief : how to manage design for strategic advantage - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
78. [Creating the perfect design brief : how to manage design for strategic advantage - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
79. *Total design: integrated methods for successful product engineering*. Stuart Pugh.1990; Addison-Wesley
80. [Total design : integrated methods for successful product engineering - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
81. [Total design : integrated methods for successful product engineering - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
82. *Total design : integrated methods for successful product engineering*
83. Stuart Pugh. 1990; Addison-Wesley
84. [Product design and development - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
85. *Product design and development* Karl T. Ulrich, Steven D. Eppinger.5th ed., International ed.; 2012; McGraw-Hill
86. [Management : an introduction - University of Wales Trinity Saint David \(uwtsd.ac.uk\)](#)
87. *Management : an introduction* David Boddy. Seventh edition.; 2017; Pearson
88. [SAE MOBILUS \(uwtsd.ac.uk\)](#)
89. *Knowledge System Based Design-for-Reliability for Developing Connected Intelligent Products*. Venkatesh AgaramWorks by Venkatesh Agaram - CIMdata Inc.

Management of NPD – Referencing Summary
Assessment B Developing the Design Brief
Author: David Holman – September 22nd 2023

90. [The role of new product development briefs in implementing sustainability: A case study - ScienceDirect \(uwtsd.ac.uk\)](#)
91. [Sustainability | United Nations](#)
92. In 1987, the United Nations Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” Today, there are almost 140 developing countries in the world seeking ways of meeting their development needs
93. [content \(dspacedirect.org\)](#) World Commission SPECIAL WORKING SESSION WCED/87/6 Berlin (West) January 29 - 31, 1987
94. [Eco-innovation and new product development: understanding the influences on market performance - ScienceDirect \(uwtsd.ac.uk\)](#)
95. Eco-innovation and new product development: understanding the influences on market performance Pujari et al., 2003, 2004; Foster and Green, 2002; Azzone and Noci, 1996; Hart, 1997; Conway and Steward, 1998).
96. [Alakeson and Sherwin \(2004\)](#) distinguish four stages of integrating sustainable development into innovation:
97. (1)The single issue approach, where companies address specific sustainability issues but have no systematic way of addressing the full range of economic, environmental and social impacts.
98. (2)The ad hoc approach, where companies take sustainable development under consideration but have no formal tools or processes to ensure the consistency of approach.
99. (3)Sustainability tools, where companies develop tools to integrate social, environment and economic issues in a consistent manner.
100. (4)The strategic integration, where sustainable development itself provides a framework for innovation.
101. A similar classification is proposed by Tien et al. (2005). They classify the environmental strategies that the companies follow, using the approach of Winsemius and Guntram (1990).
102. The “triple bottom line” (Elkington, 1998) The role of new product development briefs in implementing sustainability:
103. Journal of Engineering and Technology Management
104. [The role of new product development briefs in implementing sustainability: A case study - ScienceDirect \(uwtsd.ac.uk\)](#)
105. [What is a Product Brief? | Definition, Template, and Overview \(productplan.com\)](#)
106. Emerging trends in innovative companies
107. ‘THE DESIGN MATURITY LADDER’ - the four degrees of intensity of design use in companies. Developed by the Danish Design Centre and was subsequently adopted in Sweden (The Association of Swedish Engineering Industries and Swedish Industrial Design Foundation) Design as a tool for Innovation (Pierre Bitard, Julie Basset) from Global Review of Innovation Intelligence and Policy Studies
108. Design as a tool for Innovation (Pierre Bitard, Julie Basset) from Global Review of Innovation Intelligence and Policy Studies
109. Total Design: Integrated Methods for Successful Product Engineering by S. Pugh, 1991 Creating Innovative Products Using Total Design by S. Pugh, 1996 (Tidd J., Bessant J (2021) Managing Innovation
110. Product Development Decisions: A Review of the Literature V. Krishnan Karl T. Ulrich The University of Texas at Austin, CBA 4.202, Austin, Texas 78712 The Wharton School, 1317 Steinberg Hall-Dietrich Hall, Philadelphia, Pennsylvania 19104
111. Kotler, P., & Keller, K. L. (2016). Marketing management (15th ed.). Pearson. Armstrong, G., & Kotler, P. (2015). Marketing: An introduction (12th ed.). Pearson. Trott, P. (2012). Innovation management and new product development (5th ed.). Pearson Education Limited.
112. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4281544/>
113. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8576132/>
114. <https://news.mit.edu/2020/covid-19-cough-cellphone-detection-1029>
115. https://techcrunch.com/2020/04/14/mit-developed-a-wireless-box-that-can-detect-covid-19-patients-movement-and-breathing-at-home/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xILmNvbS8&guce_referrer_sig=AQAAACfQJ5I0hsv0aQLeY0uidDGnldDcxpa_sAknYRXN_VPkZnBFvEZofSeS5mcTS06CYV9FWnnsq9CZko29yrvYehB9YN1ksmqvdV_D1StB_W7Ot0Y66Drs2oUpJocw1AFw50n0T2eEWRAPMGsqEa_weZ7kKua_9FiEUhSsu-8Gx5m
116. [https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370\(20\)30353-9/fulltext](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(20)30353-9/fulltext)
117. <https://www.biopharma-reporter.com/Article/2022/04/14/pfizer-set-to-acquire-covid-19-smartphone-detection-app-for-100m>
118. [What is the life expectancy of a breathalyzer sensor | UKDrugTesting](#)
119. [UK defence personnel statistics - House of Commons Library \(parliament.uk\)](#)
120. [Families and households in the UK - Office for National Statistics \(ons.gov.uk\)](#)
121. [Lion 500 Breathalyzer, Lion 500P, Lion 500 Alcolmeter, Lion 500 Alcometer, Lion 500P Alcolmeter, Lion 500P Alcometer, Lion Breathalyser, Lion Police Breathalyzer \(breathalyserdirect.co.uk\)](#)
122. [Lion 500 Breathalyzer, Lion 500P, Lion 500 Alcolmeter, Lion 500 Alcometer, Lion 500P Alcolmeter, Lion 500P Alcometer, Lion Breathalyser, Lion Police Breathalyzer \(breathalyserdirect.co.uk\)](#)
123. NHS 75 Digital, NHS workforce statistics – Jan 2022 – 28.04.2022

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124. *Geographic Coverage: England Geographical Granularity:*
125. *Ambulance Trusts, Care Trusts, Clinical Commissioning Groups, Hospital and Community Health Services, Hospital Trusts, Mental Health Trusts, NHS Trusts, Regions Date Range: 30 Sep 2009 to 31 Jan 2022*
126. *Predicting the future? "...prediction is very difficult, especially about the future" Niels Bohr 1885 – 1962 (Kozinets 2015) into the age of "network"*
127. [Difference between Sales and Marketing | Guide for Beginners - YouTube](#)
128. [The Big Difference Between Sales and Marketing \(2023\) - Shopify UK](#)
129. [Ending the War Between Sales and Marketing \(hbr.org\)](#)
130. <https://www.brandingmag.com/2015/10/14/what-is-branding-and-why-is-it-important-for-your-business/>
131. <https://www.collinsdictionary.com/dictionary/english/design>