Preparing a product design specification:
a practical guide

Introduction

Defining your product design specification could be the most important stage of your new product development project - simply because it will define whether or not the result will meet the needs of your market and customers.

Developing new products involves a large number of requirements, some of which will conflict with others. The product will need to be reliable, but inexpensive to make; it will need to be good to look at, but also very durable - and many other things as well...

Some of the issues will be obvious to you, but others won't, particularly if they are concerned with another area of your business, like marketing or technical development.

The following pages are divided into a number of sections that look at all the issues in different categories.

The first section deals with your team, and identifying who will be responsible for what.

The second section deals with the product idea and its place in the market. What will it do?, who will buy it?, who will you be competing with? etc.

The third section asks you to consider the risks that you might face so that you can put measures in place to deal with them if problems occur.

Section four looks at the technical requirements. This is a vital section, as it deals with issues that can take time to deal with and affect the performance and commercial viability of your product.

The fifth section deals with the relatively easy issue of appearance and brand values.

Finally, we ask you to consider how the product will be manufactured, including tooling investment and international regulations.

It is likely that you won't know the answers to many of the questions immediately, and that is **fine**. The whole purpose of this document is to alert you to the issues that need to be considered and enable you to find the answers at the beginning of the project, when you can use them to plan and budget.

We will be happy to help find some of the answers if you would like our assistance, and we can also point you at specialists (in drop testing, for example) who will be able to help you define the specific needs of your project.

If you have any questions or concerns, please call us on +44 1235 833785

Section 1: project management

2. Name of your company:

3. Title of the project:

Names and email addresses of staff responsible for the following:

Overall management

Marketing   ☐ Not applicable

Tech development   ☐ Not applicable

What type of design inputs are required?

☐ Appearance   ☐ User interface   ☐ Mechanical   ☐ Analysis (FEA, etc)   Not known ☐

☐ Electronics   ☐ Manufacture   ☐ Graphics   ☐ Packaging/point of sale

Section 2: the product and the market

What is the <u>primary</u> objective of the project? (reduce costs, increase sales, etc)

Please give us a brief description of the product (what does it do?):

Is the product 'stand alone' or part of an existing or anticipated range?

Not applicable ☐

What are the brand values that the product needs to embody (strength, durability, etc)?

Not applicable ☐

Who will <u>buy</u> your product (age range and occupation, etc)?

Not applicable ☐

Who will <u>use</u> your product?

Age and gender of typical users? ☐ Not known

Typical user environment? ☐ Not known

Details of user interface or ergonomic issues ☐ Not known

Details of any inclusive design issues ☐ Not applicable

Languages and graphics needed on product or instructions, etc? ☐ Not known

What is your nominal budget for design, prototyping and development?

☐ £5-10K ☐ £10-20k ☐ £20-30k ☐ £30k+ ☐ Not known

Which markets will your product be sold in?

☐ UK only ☐ UK and EU ☐ UK, EU and USA ☐ Global ☐ Not known

What will the target sales price be and how many will be sold annually?

☐ Not known

Please list your four major competitors, and their websites

On what basis will the product compete? (number in order of importance: 1 = most, 6 = least)

☐ Price ☐ Performance ☐ Ease of use

☐ Ease of maintenance ☐ Appearance ☐ Durability ☐ Not applicable

Is your product/concept protected by any of the following? ☐ Not applicable

☐ **Design registration** ☐ **Patent (UK/EU)** ☐ **Patent (worldwide)**

Critical dates or milestones (launch date, board meetings, exhibitions, etc)

☐ Not known

Section 3: risks and variables

What are the main risks in terms of:

Technical development?   Not known ☐

Resources (staff, etc)?   Not known ☐

Legal issues (patents, etc)?   Not known ☐

Market conditions/issues?   Not known ☐

Timescales?   Not known ☐

- -

How many prototype stages are anticipated?   Not known ☐

☐ 1-2   ☐ 3-5   ☐ 6-10   ☐ 10+

- -

How will the product be tested and validated prior to launch?

Not known ☐

- -

Does the anticipated timescale and budget allow for modifications?

Not known ☐

Section 4: technical requirements

Size and weight of the product?   Not known ☐
                                                       NA ☐

Details of the internal
components (samples or data sheets)   Not known ☐
                                                       NA ☐

Degree of sealing against dust and water?   Not known ☐
(Do you know the IP rating required?)   NA ☐

Operating temperature range (the   Not known ☐
environment in which it will be used)?   NA ☐

Flame retardency?   Not known ☐
(Do you know the UL rating required?)   NA ☐

Safety or other specialist mechanisms?   Not known ☐
                                                       NA ☐

Specific material constraints? (hypo   Not known ☐
allergenic, FDA approved, etc)   NA ☐

Specific electronic   Not known ☐
requirements? (EMC emissions, etc?)   NA ☐

Degree of physical abuse the product   Not known ☐
will be subjected to   NA ☐

Need for drop testing?   Not known ☐
(if yes, do you have the specification?)   NA ☐

Records required for regulatory   Not known ☐
requirements?   NA ☐

Will the product have any specific requirements in terms of installation and maintenance? (number of people needed for installation, special equipment, etc)

Not applicable ☐

Section 5: appearance

Will the product be branded with your name, your customers name or both?

Not known ☐

Details of any specific colours/fonts/graphics to be used

Not known ☐

Is there a need to maintain an existing product family look and feel?

Not known ☐

Are there any existing products that you particularly like - or dislike (in any sector)?

Not known ☐

Section 6: manufacture

What will the target production cost be?

Not known ☐

What batch sizes will you make your products in?

Not known ☐

Do you know what production facilities the product will need (moulding, casting, etc)?

Not known ☐

Where will the product be manufactured, assembled and packaged?

Not known ☐

Do you have any preferred production suppliers (moulders, etc)?

Not applicable ☐

Will you require production data in electronic form or as fully dimensioned drawings?

Not known ☐

What will your tooling budget be, and over how many units will it be amortised?

Not known ☐

How many years do you expect the product to be made for?

☐ 2-5   ☐ 5-10   ☐ 10+

Not known ☐

Which approvals will your product require?

☐ CE mark   ☐ ATEX   ☐ UL   ☐ IEEE   ☐ BSI

Not known ☐

How will recycling and waste issues (WEEE directive, ROHS etc) be handled?

Not known ☐