

**You are encouraged to read the whole book, and please make a proper citation if needed.**

Ambrose, G., & Harris, P. (2009). *Design Thinking*. AVA Publishing.

Design is a process that turns a brief or requirement into a finished product or design solution. The design process can be said to comprise seven stages: define, research, ideate, prototype, select, implement and learn. Each of these requires design thinking.

The design process engages a high degree of creativity but in a way that is controlled and directed by the process so that it is channelled towards producing a viable, practical solution to the design problem, meeting or excelling the stated aims of the brief.

### Stage 1 – Define

Establishing what the problem is.

A design brief presents the client's requirements for a job. These may be verbal or written, simple or complex. A brief contains a specific goal that is to be met by the design but it may also be couched in terms that have varying interpretations.

This ensures that both parties have shared expectations. This may involve questioning the validity of the brief's elements.

A brief needs to include anything that will allow the design team to initiate the design process. However, if it is not robust enough, it may need to be rewritten and reworked with the client.

Do you understand what the client is asking for?

Does the client understand what they are asking for?

Do you agree on the definition of terms?

Does the brief have any flaws?

Can you manage client expectations?

### Objectives

Objectives are simply what the client hopes to achieve through commissioning a design job, and it is important that these are fully understood and 'mapped' to your design thinking.

Objectives need to be specified so that the design team knows what it has to achieve. Asking the client simple questions gets to the heart of the matter and focuses on what the client expects, what the project boundaries are and what deliverables are required.

'The Five Ws' (borrowed from news writing), refers to five words beginning with 'w', which, when asked, elicit factual answers that are necessary to adequately define a design job. They are: who, what, when, where and why ('how' is often tacked on to the end too). Asking questions such as these provides detail that the design team can use throughout the design process and identifies key restraints that they have to work to.

1 Who is the client and target audience?

2 What design solution is the client thinking of?

3 When will the design be needed and for and how long?

4 Where will the design be used?

5 Why does the client think a design solution is required?

+ How will the solution be implemented?

The proposition

Definition of the design brief and its objectives should enable the design team to establish the general proposition of a design. The proposition can be used to describe the general ideas and values that a design intends to present to, and be internalised by, the target audience. Once the proposition has been determined it can be more precisely defined and articulated to the audience.

Stage 2 – Research

Collecting background information.

Once the brief has been defined and agreed, a designer starts to search for information that can be fed into the creative process at the ideate stage. This research can be either quantitative, with hard statistical numbers about the size and composition of target user groups, or qualitative, with information about what that user group buys or consumes and what their lifestyle is like. It may be pertinent to build a mental model of a typical user in order to enable the design team to obtain a good feel for what would appeal to them. This includes factors such as education, career, holiday destinations, musical tastes, aspirations and so on.

Primary research

A primary source of research is the feedback generated during the learning phase of projects previously undertaken with the same or similar clients. Such feedback provides a starting point with regard to what worked and what did not work with a specific target group.

Secondary research

Secondary research is the information obtained from general secondary sources such as consumer market research reports. These provide the demographic breakdown and historic performance of given markets and market segments, and provide a clear view of how a market is structured.

Do you have feedback from previous projects?

Do you have a statistical composition of the user group?

Do you understand the target market?

What is the education level of the user group?

What is the typical lifestyle of the user group?

What are the aspirations of the user group?

### Stage 3 – Ideate

Creating potential solutions.

During the ideate stage, the design team draws on the research gathered and the constraints established during the define stage. This information is used to create ideas with which to tackle the design brief.

Designers use different methods to ideate, some of which will be discussed

in more detail in chapter 3, 'Idea generation'. Ideation methods include brainstorming, sketching ideas, adapting a tried-and-tested design that already exists, taking a top-down analytical approach that focuses on the product, service or company or a bottom-up approach that focuses on the customer or user (both are further explained on page 56). Each method involves a varying degree of creativity and choosing which method to use will depend on factors such as how much money is available and how original the design needs to be.

As the ideate stage progresses, it will become clear whether there are any misunderstandings or shortcomings in the definition stage and whether sufficient levels of research were carried out. Feedback can be sought throughout the design process to clarify points of doubt with the client and to address aspects that were ill-defined during the definition stage.

Do you understand the brief?

Do you have sufficient research information?

Which methods will be used for idea generation?

### Stage 4 – Prototype

Resolving solutions.

The ideate stage generates a variety of potential solutions to the design brief. Prior to selection, it may be necessary to further work up the most promising of these solutions. This will allow particular aspects to be tested and will provide a better basis for comparison at the selection stage. In such cases a prototype can be created.

A prototype can be used to test the technical feasibility of a design idea to see if it works as a physical object. Novel packaging or presentation ideas normally require the development of a prototype. A prototype can also test the visual aspects of the design by presenting them as they would be produced. This also provides the opportunity to test, where pertinent, a design in three dimensions.

A prototype gives the design team and client the ability to visualise and handle a design concept, to get an idea of its physical presence and tactile qualities.

As a prototype aims to test particular aspects of a design solution, it must

be made so that those aspects are present and can be effectively evaluated. To convey the idea of what it will look like, a prototype does not need to be made with the final materials.

Do all potential solutions require prototyping?

What elements will the prototype test?

What functionality will the prototype have?

## Stage 5 – Select

Making choices.

The select stage is the point at which one of the proposed design solutions

is chosen for development. The key decision criterion is fitness for purpose: does the design meet the needs and goals of the brief, and will it effectively communicate to the target audience to achieve those aims? The winning design is typically that which most closely meets the design brief, or a significant part of it. It may not be possible or desirable to meet all the requirements of a brief within a single design. For example, market segmentation increasingly calls for different marketing and design solutions for different segments.

Other factors, such as cost and time, are relevant in the selection process, but these may change as the process develops. The budget available may not provide for the preferred solution and so a more humble option may be selected. However, budget and time constraints should be identified during the definition stage and must be considered throughout the design process.

Does the design meet the defined needs of the brief?

Does the design resonate with the target audience?

Can the design be produced on time and on budget?

Are there other factors to take into account?

Has the client signed off the design?

## Stage 6 – Implement

Delivering the solution to the design brief.

During this stage, the designer passes the design artwork and format specifications to those who will be supplying the final product.

The design team typically provides project management during this stage, in order to ensure that the end results meet design expectations, and to keep the project on budget and on time.

Has the client signed off the designs?

Have printers or other production professionals been booked?

Has the artwork been delivered to production professionals?

Has the job been proofed against the design?

Has the finished job been delivered?

## Stage 7 – Learn

### Obtaining feedback.

The final stage in the process involves learning from what has happened throughout the design process. This is a feedback stage during which the client and design agency might seek to identify what worked well and where there is room for improvement.

Following the implementation, the client may begin to look for or receive feedback on how the product has been received by the target audience and how beneficial its effects on the target audience have been. Thus, a design firm can find out how the audience responded to the design.

The feedback generated at the end of the process becomes a learning opportunity for future projects. It forms one of the sources of information for the define and research stages. Any problems with the design may have been because of inadequacies in the brief or lack of understanding of key points. Through the feedback process, designers and clients build up a shared understanding over time. This serves to facilitate the production of increasingly optimal solutions in the future.

Although the learn stage appears to be the last of the seven that we've identified, it actually occurs throughout the design process. At each stage you should take stock of where you are, where you are heading, what's working and what's not. The ability to learn from each stage will enhance the development of design thinking, and will help to generate radical and successful designs.

Has dialogue with the client about the success of implementation taken place?

How successful was the implementation?

What feedback has the client received or commissioned?

What aspects can be improved?

## Research

Once a brief has been defined and agreed the research stage can begin. The research stage is when the design team investigates the subject matter of the brief in order to accumulate relevant information that will be used to inform design decisions.

Various data gathering methods exist to generate quantitative and qualitative information. This information will, in turn, provide different ways of identifying, determining and dissecting the attitudes and behaviours of the target audience. It will also help to provide an understanding of the design approach taken by competing products, brands and organisations.

Research into the target group is necessary in order for the design to contain the information hooks or drivers required for effective communication with that group. It also enables the design to avoid containing information hooks or drivers that might alienate or disenfranchise the target group.

## Identifying drivers

The research stage aims to identify the drivers that stimulate the target group to act on a design and the barriers that could impede the success of a design.

## Drivers

Drivers are the knowledge and conditions that initiate and support activities for which the design was created. Knowledge and conditions can include such terms of reference as market forces, fashions and musical trends of the day.

## Barriers

Barriers need to be identified during the research stage in order to prevent work from being undertaken in a direction that has little chance of being implemented for technical, legal or market reasons. Barriers can be rules and laws about what product packaging can and cannot show, for example. Technical barriers might include systems of standards that exist in different countries. The size of envelopes that postal companies prefer to use, for example, might affect the format of mass mailers. Market barriers include the purchasing and distribution power of key competitors, is something that might restrict access to outlets.

Drivers can also act as barriers. By not following the driver, for example, the designer could be creating an obstacle that reduces the chance of success for a design. For example, launching a new newspaper at a time when consumers are moving to online content sources appears to be counter-intuitive.

## Information gathering

When conducting research, information can be classified into two categories:

quantitative and qualitative. These help define the size of a target market and its characteristics.

## Quantitative

Quantitative information is numerical or statistical information that enables a design team to put physical dimensions to a target market.

### Qualitative

Qualitative information allows the design team to understand why things are as they are; the reasons that people respond to certain stimuli or not. Qualitative information is typically obtained via face-to-face interviews where participants talk about their experience and preferences for a given topic. This is usually undertaken via a group discussion or focus group, or an in-depth interview with carefully selected individuals.

### Diagram techniques

Diagrams can provide an excellent means of organising the relationships between different pieces of information and ideas. By creating diagrams, a design team can quickly obtain an understanding of how a target group is structured and what some of the key relationships within that group may be. Diagrams also provide a means to help communicate the results of the research stage. They might be used, for example, to present the design team's understanding of the composition of the market to the client.

Diagrams are used to show the results of quantitative or qualitative information in a readily accessible, visual way to aid comprehension and understanding. A range of different diagrams with increasing levels of complexity have been developed to be able to present detailed information in such a way that key trends or elements of interest can be identified. The diagrammatic methods used need to be appropriate for the data set under investigation and several methods that present other related data are often used in order to construct a model of the subject being analysed.

### Target groups

The research stage identifies and provides rudimentary classification to the different groups of consumers or users in a sector and their characteristics.

Once target groups have been identified, they can be further researched to acquire a greater level of detail about their composition and habits, providing both qualitative and quantitative information. For example, the sex, education and income level profile (quantitative information) and the motivations, likes, dislikes and aspirations (qualitative information) of the groups.

Detailed research allows the design team to construct a target user profile and create a fictional 'typical user' to add colour to the profile. This provides a basis for creating design solutions at the ideate stage.

### Character profiles

A character profile is a tool developed during the research stage, containing written and graphic information about a particular group of people. It is used in the design process to stimulate idea formation and help with decision making.

A character profile is built by looking for key words and characteristics that define the target group. These can then be augmented with visual clues such as magazine cuttings and may be used to construct an image of the life led by a fictional representative character of the group. This might include the cars they drive, where they take holidays, the technology they use, their

aspirations and any peculiarities. This is a mental model construction, put together through research of the group's habits and buying patterns, brainstorming and other processes to identify and define the key characteristics of the group. Remembering that it is dangerous to make assumptions, character profiles should also be made for the outliers of the group; the more extreme people that may not exhibit typical behaviour, yet share many of the same qualities.

### Secondary research

Secondary research sees the collection and use of existing published information about customers, competitors and relevant trends of interest such as social and economic trends. Secondary research can be used to feed general information about the target group, the market and underlying trends into the design process.

### Resources

Various secondary data resources are available at public reference libraries and online. These may allow you to automatically repeat a search every day or to subscribe to web feeds. Secondary data sources include newspapers and trade periodicals, blogs, conference papers, market research reports, trade association and official statistics, commercial business reports (KeyNote, Euromonitor, Mintel, Datamonitor and EIU), university research papers and think tanks.