Chapter Three
PRODUCT DESIGN

Everything that we use has been designed by someone. Product designers focus on the way that an article looks, feels, works, etc., so that it meets the needs of the end user. There's a more detailed explanation of this discipline in Chapter 2.

In February 2009, über-trendy magazine *Wallpaper* announced its fifth anniversary design awards: 'our annual pat on the back to the people and places that have made our year that extra bit special'.

The eclectic range of products that were celebrated give some indication of the wide influences that product designers have on every aspect of our lives. From airline accessories to floor lamps, ceramics to side tables, designers across the world are creating new products to enhance our lives both practically and aesthetically.

Product designers decide how the items that we use in our daily lives look and work. Most of them aim to make products easy to use, efficient, cost-effective to produce and good to look at. However, as with fashion, the great product designers can create pretty much anything they want to.

Product designers usually specialise in a particular area that reflects their training or experience. Some product designers know what they want to focus on before they go to college or university and look for specialist education courses, such as automotive design. Others discover their metier when they are studying and make that the focus of their work.

Because the range of products that demand design input is so great, it's hard to generalise about careers in this discipline. There are product

Furniture design, industrial design, product design, 3D design, critical design – are all part of a broader definition that is Design Products. Furniture, cameras, fly swats, telephones, clothes pegs, test tubes, cradles, cigarette lighters, fire extinguishers, knives, spoons, teapots and computers are all products of design; the fruit of some sort of a design process (be it methodical, research-led, scientific, inspirational, accidental or whatever). We will by no means attempt to narrow down or isolate a definition, for if we were to attempt to do so by saying that to design is to impose one's will on materials (extract, mould, form, assemble), what would this definition include? Or rather, is anything excluded?

(Source: www.rca.ac.uk)

designers working in huge engineering company with teams of other people, designing new tools, processes or machines; equally, there are ceramics experts working in small studios in the rural wilderness, handcrafting vases and plates.

Consequently, in this chapter we've focused on two very different areas: an industrial product designer who works for a large organisation, and a designer who specialises in handmade ceramics and is just starting out on her career.

THE IMPORTANCE OF PRODUCT DESIGN

According to Design Council research, manufacturing is the sector most positive about design in the UK. Fifty per cent of manufacturers feel design has an either integral or significant role to play in their business, compared with a UK average of 37%.

Seventy-nine per cent of manufacturers believe that design is integral to our future economic performance, and 77% recognise the link between design and profitability.

These statistics are important because these attitudes are mirrored by investment. Until the economic bloodbath of 2008–09, investment in design by manufacturers was rising significantly. There were more dedicated design departments in manufacturing businesses than there were in most other businesses,

and external agencies were also getting more work from this sector than from others. This was creating a lot of new opportunities for product, digital and multimedia designers. When the recovery takes place, the manufacturing industry may be leaner but it will still need good design.

Research suggests that design is a significant source of competitive advantage for UK companies because it allows them to compete in their market on more than price. Good design that leads to the creation of innovative products and services can open up new income streams. It can stimulate exports and attract new investors. The Design Council cites two examples of this in its briefing paper, 'The impact of design on business'.

- SmartSensor Telemed (SSt) used design to turn advanced bioscience into a user-centred home-testing kit for diabetes. It has since opened markets in the US, and the NHS is awaiting the arrival of the new kit.

- Axon Automotive, a manufacturer of fuel-efficient cars, identified new markets for its carbon-fibre technology and designed a new brand – leading to £650,000 from the Energy Saving Trust and a Rushlight Award for innovative environmental technology in 2007.

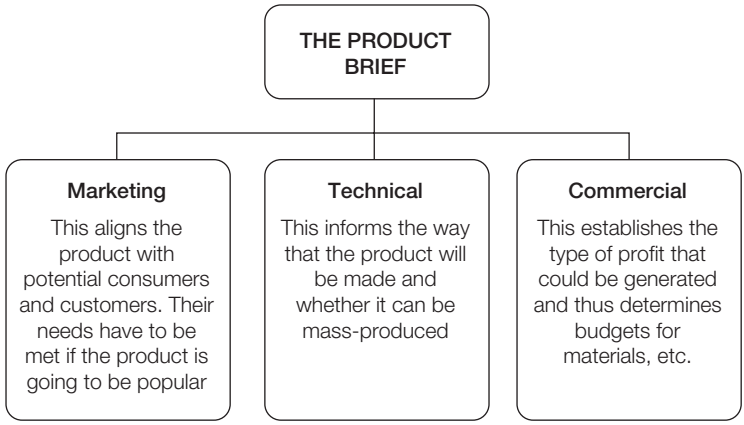
INDUSTRIAL PRODUCT DESIGN

As one example of the importance of industrial product design, let's consider the work of automotive designers. This is a specific area of activity that is closely linked to industry: students have to merge their creative talent with a host of limiting factors that determine what our cars can do. At the same time, they have to recognise that car design is massively important to everyone who drives. Not only is our car one of the biggest purchases we make during our lifetimes, it's also frequently used as an expression of our personality. We define ourselves by giving brands of cars personalities. Most of us would accept that we expect huge differences in the character of a Porsche driver and of a Nissan Micra driver. And most of us recognise the term 'white-van man' and know to what it refers!

The industrial product design process is fairly similar, regardless of the industry. Designers will often work with researchers who have determined what the public want their products to look and feel like, and how they want them to perform. Sometimes, however, designers themselves come up with an idea that they need to sell to potential manufacturers.

A key part of product development is creating the brief. This can take a long time and the product may move through many manifestations before a final design is agreed upon.

The brief has to combine three very distinct areas.



Obviously these interests don't always coincide – and it may be the designer's job to come up with a solution that is acceptable to everyone.

Once the designer has taken a brief, he or she will develop ideas and prepare initial sketches, decide on appropriate materials and produce more detailed drawings using computer design software. These will be followed by samples, or working models that can be tested to see how they work, and costed to see if they meet budget restraints. Again, this can be a slow process – there may be numerous versions of the product that get through to prototype before a final version is agreed upon. Inevitably, at this stage designers will liaise closely with production managers, who influence the manufacturing process.

There may be problems that have to be ironed out in conjunction with engineers and model-makers during each phase of development. As well as designing products, designers may also take part in meetings and presentations, and put together bids and proposals for new work.

Manufacturing may take place within the company – in which case the designer can maintain a hands-on approach and help to guide the process – or be contracted overseas.

Some industrial product designers work as freelances or with small agencies that specialise in a particular type of product, but product design is a discipline in which many designers are employed by large companies.

case STUDY

I work as a design team leader within a government organisation that specialises in communications technology. I completed a degree course in electronic engineering, joined as a graduate engineer and followed a structured training programme leading to a job as a design engineer. After two years I was promoted to senior design engineer and became more involved in the management and design of specialist communication systems.

Recently I was promoted to team leader. I'm enjoying the increased managerial responsibility for planning and progressing the design of new communication systems. I estimate, plan and progress design projects and supervise designers and support staff. I also liaise with support services, co-ordinate equipment trials, meet with customers and write technical documents.

To do this job you need a comprehensive grounding in electronic engineering and design expertise. We use computer-aided design and simulation tools, so computer literacy is essential, and you have to be able to communicate ideas both

verbally and in writing. Project and people management skills are important, too, because you're acting as a team leader and a team-builder.

I love the technical challenges of a project, taking a design concept from prototype to production, and I like the interaction with customers and other staff. There's a lot of variety in my work and no two days are the same. The organisation employs hundreds of graduates in a wide range of disciplines, including mechanical engineering, manufacturing, chemical engineering and materials science, and a number of them are working in design roles.

If you join on a graduate training programme, you get a development plan tailored to meet your individual needs and a series of three-month placements in different parts of the organisation. You have a mentor throughout your training to guide and advise you, and at the end of each placement there's a formal appraisal to help identify the direction your career will take.

This type of design career wouldn't appeal to everyone but I like working in a structured environment and knowing the shape that my career will take. The organisation recognises the importance of training and invests heavily to provide good development opportunities, so we have extensive training facilities.

When you complete the graduate training programme, there are opportunities to move directly into a junior management or senior technical role. You're encouraged to qualify for membership of professional institutions related to your discipline, such as IChemE, IMechE and IEE.

(Because of the nature of her work, this interviewee asked to remain anonymous.)

SMALL-SCALE CREATIVE PRODUCT DESIGN

Not every product designer works on mass-production or large-scale projects. There are thousands of individuals whose interest in art and design has led them into their own businesses producing one-off or limited edition products.

Here we profile Rosie Palmer, a ceramicist who is just embarking on her career.

case STUDY

Rosie Palmer's interest in contemporary crafts started at school. After A-levels, she completed a foundation course at Leeds College of Art and Design.

'In the first term, we worked on drawing, then went into one of four disciplines: fashion and textiles, 3D design, visual communications and fine art. I specialised in textiles, and when the course finished I started a degree course in fashion and textiles at Leeds University, but it wasn't right for me. I worked for a while and did some evening classes, then eventually went on to study contemporary crafts at University College Falmouth. You could choose the medium that you preferred and I worked a lot in ceramics – I liked the flat surfaces that you could build on, and the fact that you can do almost anything with clay before it's fired.

'We had a final show when we graduated so I got a chance to showcase my work at the Business Design Centre in London. I'd been working on a theme about bacteria and the fact that we're all overly clean – I wanted to portray friendly bacteria through a series of jugs and tiles, and I was making my products using recycled materials that connected with my theme. I sold a few

pieces and it was a good opportunity to publicise what I can do. The show attracts a lot of different people – though many of them are trying to sell you something, like space on their websites through which you can market your products.

'Once you leave university, it's hard to get started. You need to keep in the loop and find out about jobs and residencies and that's difficult if you're also working to earn a living. In the long term, I'd like to make ceramics and have my own shop where I sell them and other people's products, too. Short term, I'm exploring selling through websites like Etsy and Folksy – you can have your own online shops on these websites as long as you're selling original craft items, so it's one way to get started.

'Ultimately, making a success of original product design of this type is as much about being out there and getting noticed as it is about doing the designs.'

Etsy (www.etsy.com) is an American website that provides an online marketplace for artists and crafters to sell handmade goods. Launched in 2005, by the end of 2008 it had more than 1.3 million members. When you sign up as a seller, you'll get your own online shop that you can customise with a banner and set policies for. It's an ideal sales opportunity for novice web users, since you don't need any technical know-how to get up and running. There are small fees for listing items and you pay a commission to Etsy on every sale.

Folksy champions cool crafts and design talent. We marry up designers and crafters with buyers who want individual, quality stuff that's made with love. Plus, we run design competitions and other fun stuff.

(Source: www.folksy.com)

An equivalent British website launched a couple of years ago is www.folksy.com

This also supports original craft and design talent by showcasing work and providing a cost-effective platform

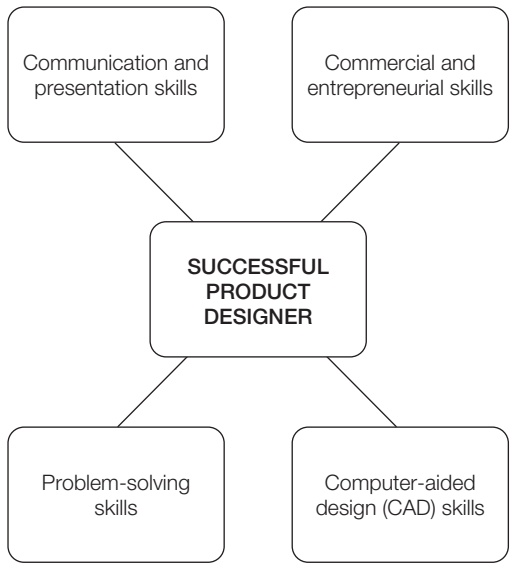
to sell 'stuff'. Again, you can open your own online 'shop' and pay commission on sales.

WHAT DOES IT TAKE TO SUCCEED?

If you're planning to go into product design, particularly on the industrial or manufacturing side, you'll need a range of skills. Not only do you need creative talent, you'll also need technical or engineering knowledge that is pertinent to your chosen field.

The other skills that employers value highly are those that relate to business. Manufacturers exist to make a profit; when they decide to produce something, they will look at the costs involved and the possible price at which they can sell their product. They want designers who can understand a budget and work within it, and who don't get precious about their designs.

See the diagram below for the skills you'll need to be a successful product designer.



GETTING STARTED

There are various ways to get into product design, but most involve some degree of higher education. You could choose a qualification in product design, or a more general design qualification that offers product design as an option. You could also focus more on the technical and engineering aspects of design, or on specific areas, such as furniture, automotive or consumer goods.

We've included details of some different types of courses to give you an idea of the varied fields of study that are available. This is only a taster, but it will help you to appreciate the breadth of opportunities that you could access.

Aston University has no fewer than 18 product design courses, ranging from medical product design through to engineering production design. Many of these courses have a strong engineering focus and would appeal to students who have already decided that they want a technical or engineering career.

For students who want a more broad-based degree, Aston offers a BSc in Product Design and Management.

Course info

To reach the market any product must go through the essential product phase. This is central to the success of the product cycle and requires an understanding of each part of the process – market need, specification, design, manufacture, marketing, operation, distribution, maintenance and eventual disposal. This programme provides the basis of business management in addition to the underpinning Product Design modules. It will suit those designers who wish to operate across a broad range of business functions.

(Source: www.aston.ac.uk)

Course info

The evolution of existing and emergence of new technologies has profound implications for products, the people who use them and the cultures in which they are placed. This is both an exciting and daunting proposition. Innovative Product Design aims to educate hybrid designers who have the ability to evaluate and creatively use technology in a design context. Through sensitively and critically assessing the needs of people we hope our graduates can design products that have a positive impact on our changing society.

(Source: www.dundee.ac.uk)

An interesting contrast is the BSc in Product Design and Innovation at the University of Strathclyde. This combines an introduction to design with courses in marketing, business and entrepreneurship. In Year 4, students undertake an individual project in which they design a product. Recent projects include: a redesign of a nineteenth-century musical instrument, the glass armonica; a product which helps people to find items easily in their handbags; and an inclusive kitchen appliance designed to help elderly and disabled people who have impairments that prevent them from preparing meals.

Duncan of Jordanstone College of Art & Design is ranked as one of the top three art schools in the UK and offers an undergraduate BSc programme in Innovative Product Design (IPD).

The course combines elements of design with technology, commerce, people and contexts so that students get a broad appreciation of what contributes to effective product design. As well as project-based studio activity, students work closely with industry and get involved with 'live client projects' where the brief is set by industry. The aim of these projects is for students to design solutions for a real-world brief and to work directly with clients. Briefs have included working on a packaging project for a local manufacturer, and taking part in an international design challenge where Microsoft set the brief.

As with most high-profile design courses, competition for places is fierce and applicants will not only need to meet the usual academic standards for a university place, but might also be called for interview and to present a portfolio.

One of the great sources of product design training is the Royal College of Art in London (www.rca.ac.uk), the world's only postgraduate art and design school. There are 20 departments in the college, offering courses that cover the full range of design disciplines. In terms of product design, these include ceramics and glass, design products, innovation design engineering and vehicle design. Innovations such as the Ford Ka and Jaguar XK8, the PS furniture range for Ikea, Concrete Canvas – a shelter that will revolutionise disaster relief – and the Eglu chicken coop, are all the work of recent alumni. Vacuum cleaner king Sir James Dyson trained here, too.

During the two-year Design Products MA course, first- and second-year students work together in small study groups called platforms. These platforms focus strongly on the design experience and ethos.

The range and concepts are complex, so if you're interested in this field you should visit the college website and the dedicated platform websites; these will give you a much clearer idea of the type of work students are involved in.

Course info

For Platform 10 design is about making future change a part of the present. The design approach is characterised by a thoughtful exploration combining imagination with anticipation. With a strong social bias, curiosity for technology, and an appreciation of cultural insights the platform supports designers that are interested in extrapolating from their personal world into the universal. The key interest of the platform is in designs that challenge paradigms and offer new typologies.

(Source: www.rca.ac.uk)

The Vehicle Design Department encourages its students to understand the broader issues of vehicle design and to become aware of a range of issues that affect mobility, including: accessibility, aerodynamics, environmental impact, ergonomics, legislation, materials, production, safety and technology, and aesthetic principles. Since its foundation in 1967, the department has strongly influenced this field of product design. Early graduates went on to devise cars such as the Audi Quattro (Martin Smith), the Aston Martin DB7 (Ian Callum, Head of Design at Jaguar) and the Porsche 911 (Tony Hatter).

Candidates are selected on merit for acceptance by the Royal College of Art. They have to show proven design talent, together with the commitment and the ambition to succeed. Applicants will normally be aged over 21 years and have a high-level, relevant undergraduate degree and a substantial portfolio of work. Individual departments may have specific criteria that they expect you to meet, and you'll be competing against some of the finest graduates from both UK and overseas universities. On the plus side, a postgraduate qualification from the RCA is reliable currency within the design world – this is the home of the design superstars. Also, the college holds annual graduate summer shows where students display their work; these attract many of the movers and shakers in the design and manufacturing worlds who are keen to find new talent.

We've looked at a range of product design courses in some detail to highlight their diversity. If you are interested in this discipline, you'll need to plan your career path carefully and decide at an early stage whether you want broad-based study or more targeted training that will help you get into a particular type of work. You'll also need to research the available courses thoroughly to make sure you find one that is appropriate to your skills and interests.

Take action

- If you're planning to produce your own bespoke goods, or to go into small-scale manufacture, explore some of the websites we've referred to in this chapter, such as Etsy and Folksy.
- Keep designing and making – your portfolio needs to be up to date.
- Think carefully about the type of career structure you want. If you're thinking about industrial product design, you'll need to choose a relevant course that gives you a grounding in the field of expertise you want to focus on. Check out different courses by visiting university websites.
- If you're already at university/college, look at graduate recruitment programmes. Some of these have been hit badly by the recession, but there are still opportunities that could lead to a career in design. Start by looking at large organisations and multinationals that work in areas that interest you.