



WHY DID THEY DESIGN IT LIKE THAT?

manufacturing

James Moultrie looks for universal appeal when beauty is in the eye of the beholder

WHAT do we mean by “good design”? Generally, we know it when we see it: something that is appealing and elegant, both useful and easy to use and, above all, appropriate or fit for purpose. A common misconception is that if something is ‘stylish’ it has been well designed. However, we know that beauty is in the eye of the beholder and that no product is inherently stylish.

A product that appeals to a British teen is unlikely to have the same affect on someone in their 30s or their 80s, or on someone living in China or Chile. Products which are going to be bought and

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used by a wide range of people and have a long life, therefore, need broad appeal – or, perhaps, to be disliked by no-one.

If, on the other hand, the intended audience is clearly defined and understood, a successful design will reflect its tastes. Whatever the case, a product must always marry form and function if it is to satisfy its customers' needs.

However, there is much more to successful product design. A good product not only looks great and works well, but can also be made and assembled efficiently – at a profit. Then there are other considerations, such as how much energy is used in the production process and what is its environmental impact? Perhaps most importantly, is this product going to be useful? Is it meeting a real need?

In short, product design, if it's done well, is complicated. There are, therefore, many ways in which it can go wrong. We see this all the time when, for example, you need a label to explain how to use something really simple. The rings on a cooker hob are typically arranged in two rows of two but the controls are often lined up in one row of four. This means you need instructions or a picture to tell you which control operates which ring. Door handles are often another simple example of how poor design decisions create frustration. If you approach a door which has a 'pull' handle you pull it. If it has a 'push plate' you will try and push it. It is amazing how often you encounter doors with the wrong fittings.

Why are these things so hard to get right? For good design you need to know what your customers or users want and how you are going to give it to them. This involves understanding human behaviour, psychology as well as physiology, and then getting all the details of the manufacturing and assembly processes spot on. The range of 'Good Grips' kitchen tools are an interesting example of ergonomics-led design. They look good, they work well and, because of that, they can sell at a premium.

When asked to suggest an example of good design, many people would say Apple. And there is no doubt Apple does lots of things really well. They have fundamentally changed how we interact with our devices – and what we now expect from consumer electronics. They have a modernist style which is loved by many and offends few. However, there are many who feel that despite the hype Apple is, arguably, not quite perfect. There are well documented issues around compatibility with other devices, and some quirks in the user interface. Their products are also symbolic of a disposable culture, where the continual release of slightly improved new product creates a cycle of consumerism and disposal.

The Institute for Manufacturing, through its knowledge transfer company, IFM Education and Consultancy Services, works with a range of organisations to help them manage the design of



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new products. Often these products will be used in a business rather than a consumer setting but that does not make design any less important. Machine tools and instruments play a vital part in a business and if they are well designed and fit for purpose they can increase productivity, minimise disruption and, potentially, transform the business model.

We have recently been working with the Linde Group to develop a new range of valves for its gas cylinders. By taking a very structured approach to thinking about the design, looking at the engineering solutions in tandem with the ergonomics and user requirements, Linde has launched an award-winning, genuinely pioneering gas valve, with a number of features that benefit both its employees and customers.

You can see at a glance if the new valve is open or closed, it has a gauge on it which shows how full or empty the cylinder is (which saves an unbelievable amount of handling time) and it is much safer because it cannot be opened accidentally. The valve's aesthetics also reinforce a message of precision, robustness and professionalism. It is a fantastic example of form and function working in harmony.

We have also worked with an Indian company which makes electricity meters. Initially, we were called in to look at how the meters were being assembled on the shop floor in order to improve productivity. We compared the company's processes with those of its competitors and industry leaders then used our design management tools to improve the assembly process.

By doing so we helped them to implement changes that seek to increase throughput by a factor of 10 without needing to increase staff numbers or invest in new kit. They achieved this by dramatically reducing the number of different components and improving the assembly flow – all by thinking about the design of the product itself.

This led to a second project in which we looked at next-generation electricity meters focusing on the user interface, using archetypal personas to develop a robust, easy-to-use meter that would work for consumers of all ages and lifestyles.

Too often design decisions are made by engineers, working to tight deadlines and under pressure to keep costs down. In such circumstances they may make decisions about user interfaces which do not always result in the best products. To get good design you need to involve the right expertise even if it takes a little longer and costs more. There are some fast-moving industries such as consumer electronics where time-to-market is critical but in most industrial settings taking the time to turn an acceptable product into a brilliant one will almost always result in better outcomes: more units sold, a longer product lifecycle and, ultimately, a better return on investment.

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The Centre for Design Management at the Institute for Manufacturing has developed a number of toolkits to help companies design better products – providing elegant solutions to real needs