## Getting the best from Product Design

For those not experienced in product design, working with product designers can be a step into the unknown. Here are tips for effective product design development and how to get the best from product designers. This product design article is written by Tony Wills, a leading designer, writer and speaker on the subject.

### Effective product design - first, how to engage product designers

In an age when everyone is reasonably well educated as a consumer, products are responding by becoming more sophisticated. However, any number of features, performance specifications or price incentives will not persuade potential buyers if they do not fundamentally like the product. When was the last time you happily purchased something you did not like? Certainly, price, performance and features are very big considerations, but a product will only get on the buyer's shortlist if it has that special 'I like it' factor.

It is easy to assume that increasing a product's 'I like it' factor is simply skin deep but this is to underestimate the power of good design. Designers can and should bring a lot more to the development of a product than aesthetics alone. I would go as far as saying that we would probably turn down a project late in the development cycle that was simply a 'skinning' job-to clean up a product after the in-house development team had done their best to make it work. For us, product design evolves from the inside and progresses towards the outside, by which time the look of the product has a sound and rational lineage-almost creating its own aesthetic values.

Even more exciting is when designers are used to help steer a company into uncharted territory, generating concepts for products that have no antecedents but instead exploit a new technology or process, or address a problem not answered by any other product on the market. Outside designers can be used to bring fresh thinking to a project, with the potential to challenge the traditional methods and processes of a particular industry and to contribute experience gathered across a wide variety of industries. The end results of such collaborations are frequently products with a unique identity and a strong market differentiation.

Design skills can be hard to accept, particularly by many FDs who have become MDs with their special skill of measuring everything that can be quantified. Design extends from the quantitative to embrace the qualitative. Some technical product manufacturers will say that their product is only about performance and price, but what happens when the competitor's product does all that yours can for the same price? Then the qualitative issues become the deciding factors in the sale. If you still think that qualitative issues are unimportant and that the only thing that matters is the quantifiable, ask yourself this simple question: 'do I love my spouse/parents/children, how much and in what units?'

### Once engaged, how to get the best out of product designers

As product designers, we have some clients that we would crawl over broken glass for (metaphorically speaking at least). These particular clients are not necessarily the richest or the biggest or even the nicest people we work for. So what is it that enables them to get the best out of us? What these clients share is their commitment to allowing and facilitating us to do the best possible work. They are also highly ambitious in what they want to achieve: the world's best product in their market sector.

Designers need to know that they have succeeded in ways other than their fee income. Individual designers will get different highs from the success of their product. Here are some of the highs designers strive to achieve:

- Win your business
- Identify the 'big idea' in the product
- Push the development through the 'mere competence' barrier to reach excellence
- Complete the work on time and in budget
- Win a relevant award
- See the positive effect of design on the client's profitability and market perception
- Be acknowledged in the product's publicity
- See the product out there

If you help designers get what they need and they will provide you with what you need.

**Design Management**

A design champion at the head of an organisation is almost essential to the profitable use of an outside design resource. Moving one step down the hierarchy and in support of the design champion, one of the most effective ways to get results from new product development is to have a good design manager in place. Surprisingly few companies have a design manager and even less have a design director on the company's board. If design management is not already in house it can be drafted in just like an external design team. The role of the design manager is primarily to make the most effective use of internal and external resources whilst using designer's skills for continuous improvement across a wide spectrum of activities. Because most businesses are reactive to customer's needs, activities like internal prototyping are often shunted into a siding in favour of production requirements. Designers need to be regularly fed information, enthusiasm and, not least, fees. The design manager sees to all of these issues and drives forward the agreed timetable making sure budgets are provided, briefs adhered to and expectations are met. Over the following sections, we look at some of the important considerations in the product development process and some of the potential pitfalls.

**The project brief**

Some clients approach us with a detailed brief stating exactly what they want the new product to do; others come with a business goal and are looking for product ideas to help them to achieve it. What are important are the vision and the clarity. One of the best project briefs we have ever received was simply six cartoons sketched on the back of an envelope. Put simply, the quality of the question defines the quality of the answer. In this case, the client got exactly what his six cartoons defined and the product was launched on schedule and in budget.

Don't be afraid to ask the designers to work with you to write the brief. Their experience from other projects might be inspirational to you. The earlier you can involve the designers in a project the better.

Once you've agreed the brief, try to stick to it. Few things de-motivate a design team more than moving the goalposts part way through a project, particularly towards the final stages. Having said that, you shouldn't be so rigid that the brief cannot evolve. Ideas raised in the early project stages may make you think differently about the original goals. Any experienced design team will be able to change course if they have to however, it may have several cost implications so the earlier this happens the cheaper it will be.

## The product design proposal

Business relationships (or any other kind of relationship for that matter) tend to fail when each side has different expectations of the relationship. When you invite a design company or several companies to pitch for your project they will typically respond with a proposal document addressing all the expectations on both sides. If you think they have misunderstood your ambitions, ask the designer to redraft the proposal so that you are all in harmony.

Don't expect any designs at this stage, just a description of the designer's approach and a clear plan of attack, with fees and likely expenses outlined. If you expect 'free pitching' from the competing designers, rather than making a selection based on merit, relevant experience and/or recommendations, you will almost certainly end up with weak ideas or a resentful design team.

## Design fees

A common myth is that designers do what they do just for pleasure. Completely wrong, we do it to eat, pay the mortgage and bring up the children just like everyone else. We enjoy our profession but it's hard work and we expect to be reimbursed with due respect to the benefits that accrue from all the experience and innovation we bring to a project. To put his fees in perspective, one designer I know tells his clients that he is cheaper per hour than his Volvo garage. Personally, when asked what my hourly or day rate is we usually say that we charge by the decade of experience. This is not being flippant, in terms of value, if a designer appears to solve a problem in five minutes what he or she is really doing is intensely focusing many years of hard won experience. So, the value is several orders of magnitude more than if it were based upon an hourly rate.

There are two common ways in which designers are reimbursed: on a fee basis or as a royalty based on the number or value of the products sold. Sometimes, a hybrid of the two is agreed or equity in the business is exchanged for design and invention. If you choose the straight fee option, the designers will usually break down the fees into a series of project stages with clearly defined objectives and deliverables. When writing the initial proposal, the designers may only be able to give an estimate for the later stages as there may be too many unknowns. For example, if the brief asks for 'blue sky' thinking on a new product, the implementation stages cannot be accurately priced until the concepts have been generated.

Day rates are a common method of charging for activities outside the scope of the proposal and can vary widely across our profession from £200 for a junior to £1000 for a senior designer, and a principal in a multinational consultancy can charge much more. Be aware that in some consultancies, a senior or principal designer will win and start off the project but juniors will do the ‘donkey work’ with proportionally less skill and more errors that need correcting. This is not necessarily a bad thing but it is worth asking how the practice works.

## Royalty contracts

The alternative to paying full fees during the design stages is to agree a royalty with the designers, rewarding them according to the sales of the product. This is a common method of reimbursement if the designers approach you with an idea they have already partially developed and that you are interested in taking to market. However it is a myth to assume that royalties mean designers work for free rather than for a fee. If someone gambles a significant portion of their income on a horse race then they want to win several times their stake in return for the risk taken. So it is with royalties and designers.

Expect to pay a minimum yearly amount if sales are below an agreed base level, and probably a

non-returnable advance too. As on fee-paying projects, you will have to bear the cost of all prototypes and tooling and take responsibility for testing and indemnifying the product. You may also have to pay for patents and design protection as part of the licence. Then there are the legal fees - unless your designers have a clear and fair agreement already and you are willing to accept it. This is something our practice has invested in to our benefit as well as our clients.

If the designers have approached you with a product idea, you should be aware that the territory for the licence should only extend as far as you are able to sell the product. The world really is a big place and the designers may be trying to strike a deal with other companies in other parts of the globe.

Royalty contracts (or licences) are a long subject in their own right and too long to discuss in depth in this article. But please note that they are nothing to do with trust. If you don't trust each other, then don't work together. Contracts are about clarity. In particular, they define what happens when the product sells like hot cakes or when the client goes to the wall or when one or both of the original parties leaves the stage. And on a final note, you should agree and sign the contract before you expect the designers to start work. Little demoralises a designer more than hassling a client for a signature after the work has already started.

**Product design confidentiality**

All designers should appreciate the commercial sensitivity of their work and know that secrecy is part of the job. If there is a conflict of interest with any of their other clients they should let you know before you even sit down to discuss the project in detail.

If you have a non-disclosure agreement (NDA), use one that is simple to understand. Although we appreciate detail, no one likes deciphering legal jargon. And, if someone signs the NDA without reading it, leave the table immediately as you can be sure they have not considered the full implications and have no real intention of adhering to them.

The NDA must have a clear definition of what information is covered by the agreement. It must also have a section clearly stating what information is not covered (for instance, information already known by the recipient or becomes generally available to the public) and a time limit of up to 5 years and not in perpetuity as this is impossible. Asking a designer to indemnify you against any breach is not reasonable and they will almost certainly not be insured if they agree to this.

**Intellectual property**

IP will be generated either before or during the engagement of a design team. From our experience, it is often better to engage the team and allow them to develop the product under a strict NDA before filing a patent – if a patent is needed. If it is done the other way around, and the designers are an inventive team, you will almost certainly need a second patent to cover their additions. IP is valuable but can be expensive to protect. Bearing in mind that IP lawyers' fees make designers fees look very reasonable indeed, this would seem to be an economical approach to patenting. Whilst, a patent covers novel functionality, a design registration covers the look of the product and is a much cheaper if less 'muscular' protection. If you are asking a designer to develop an invention it is wise to first make sure it really is novel by carrying out a patent search. Another form of defensible IP is 'know how'. Providing a process is known only to yourself and your close colleagues, you don't need a patent and some say that it would be ill advised since the process is declared in the patent. Sir Henry Bessemer used know how protection to make his fortune with his secret process for making gold paint.

Please visit the Patents Office web site to get in depth information on IP protection: www.patent.gov.uk

**Teamwork**

It is a common media (and Ikea) generated myth that designers flaunt big egos, demand that everything is done their way, are out to make shocking statements (usually in pink) and are interested in 'go faster stripes'. Maybe there are some designers like this out there, if you meet one please don't engage them. If you believe the myth you could have it dispelled by talking to a couple of good consultancies.

The success of a project is good teamwork by both the designer and the client. Outside designers can only go so far towards making the new product a success; there also needs to be a product champion within the client organisation to spread enthusiasm internally; see the paragraph on design management. By definition, design will cause change in the client organisation and inevitably there will be some staff that are resistant. Great new products come out of close collaboration between the designers and in-house engineering and production teams. Conversely, many great designs have been killed by the 'not invented here' syndrome or the triumph of a ‘product enemy’ over the product champion.

We use a simple golden rule to enhance collaboration: 'this or better'. In other words, if either a designer or someone within the client's company suggests a change in the design then, if it is better, then it will be used. The most productive team sessions happen when this rule is applied. Frequently, at the end of the day, great improvements have been made but no one can recall who was individually responsible. It is the context that produces the results.

**Good prototyping**

At some stage, all good design ideas need to be tested with physical prototypes and it is at this stage that things sometimes start to go wrong. However experienced the design team are, if the ideas are new, no one including the designers will know for sure that what has been designed and or invented will work as expected until a prototype is built. We often travel long distances to visit a factory in order to see a prototype that we have designed. All too frequently the prototype is not made to specification, possibly because a reluctant technician was pulled from his or her usual job to build it with the attitude: 'it's just a prototype'. Building a prototype to anything but the specification is a waste of everybody's time and the client's money. Prototypes may only have a useful life of an hour or two but the key word is 'useful'. If they are not made to specification they do not test the design, only the liberties the technician took whilst building it. On the other hand, a well executed prototype makes possible a huge advance in development cycle. It is important to be clear about the purposes of a prototype. Information is the primary goal with confidence building coming a close second. The simple rules of prototyping are:

- build a white block model if you want to focus on scale and proportion
- build a white-painted working prototype if you want to focus on function
- build a non-working prototype in final finishes to appreciate its image
- build a pre-production fully functioning prototype with final finishes to get reactions
- always build to specification - it is not 'just a prototype' it is high quality and expensive information tool that is being built
- if you can afford one, use a dedicated prototype technician.

**A rolling programme of new products**

Product development is sometimes not as profitable as it could be especially if it is treated as a one-off exercise. it is much more effective as a rolling programme. Many of our clients either start the next design project as soon as the last one is finished or run multiple projects in parallel. In this way they can guarantee a steady flow of new products to the market, and create plenty of opportunities for the sales teams to show something new to their customers. Being realistic, it takes an average product at least 12 months to go from the initial brief to a fully tooled, properly brochured item ready for sale. So, a stop-start approach to product development is an uneconomical activity. Pauses in a project also cause the designers to lose momentum, also a reduction in the profit from what is usually a considerable investment.

A rolling product design programme is also one of the best ways of protecting your design investment. It's far better to knock your own product from its sales pedestal with an innovative new successor than to wait for the competition to do it with a cheaper imitation.

**Product design isn't a precise science**

We always warn clients that if we are to be innovative and create something new there will be ‘concept casualties’ that don’t work alongside the successes. The rule of thumb is that for every 1000 ideas, only 100 are likely to be good ones, 10 of these will get to prototype stage and 1 will be a success. If an experienced design team are being truly innovative, most of what they propose will consist of widely educated guesses rather than proven, hard facts. Sometimes designers are on the cutting/bleeding edge of what is possible and expect to spill the odd drop of conceptual blood.

**Product design - the most important thing**

Product design is a relatively small but essential part of the success of a product and the business it aims to generate. A well briefed, professionally engaged, reasonably rewarded, good product design team will begin by making a client's vision real. The journey from a finished and well designed product to the top of the market may still be a long one but if you begin by doing things properly at the product design stage you significantly improve the likelihood of commercial success.

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Tony Wills and Brian Watson are leading product designers, writers and speakers on the subject of design. The contribution of this product design article is gratefully acknowledged. Please pursue specific questions or enquiries about product design via the wills-watson website.

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