



The power of design thinking



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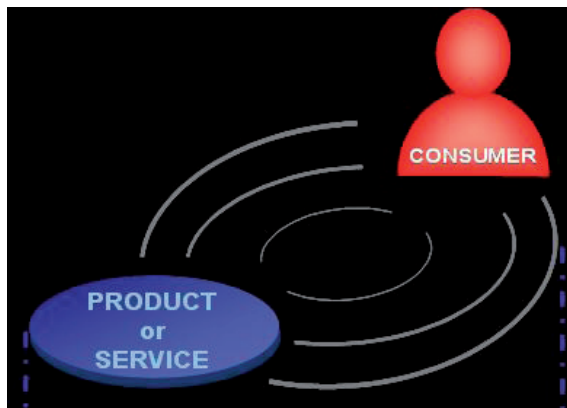


FACING NEW CHALLENGES

We live in challenging times for everyone; individuals, small and large businesses alike. The global financial crisis and recession that followed. Climate change and its impact on consumption. The demographic changes showing the increase in the older population, with all the effects this has, demonstrate the magnitude of the issues we face.

You might think that 'design' would not be the highest priority amongst these global topics. But some in the design community are exactly the people best placed to look creatively at how some of our challenges can be tackled. I say some, because 'design' covers such a wide variety of perceptions that we need to be clear about who we are talking about

I refer to the design thinkers - those professional designers who have the capacity to look at problems from a wider perspective and have the methods and processes to create new scenarios to solve these big issues.



It always seems strange to me that long standing professions like accountancy and law are often the backgrounds of our business leaders. The trait of these professions is to focus on historical analysis which in turn means spending most of the time looking back – not forward. Decision making is based on historic fact often limited solely by short term financial considerations which severely restricts new ideas and progress.

Designers have a completely different approach. Their whole life is dedicated to creating new things. So it's not difficult to see why designers are beginning to have a greater influence in our everyday lives.

Creating new scenarios and systems as well as products requires a variety of tools to enable the essential 'what if' questions to be answered without the need to build expensive prototypes, whether products or systems. Networking, social media and collaborative working are all new tools that allow designers to work with consumers to address some of these mega issues.

This paper is a further exploration of the role of industrial and service design and how design thinking is becoming a powerful tool in driving governments and businesses towards creating new products, services and environments for the future.



Isambard Kingdom Brunel

WHAT IS DESIGN THINKING?

This is a big topic and already the books are appearing! Simply put it's a holistic approach to solving problems from a consumer perspective. We talk about designing the consumer experience whether it's a product, service or an organisational system.

The blogs are generating new thoughts and material about how designers are penetrating new space. Despite the recession more clients are asking designers to think about a wider range of issues. It might be considered as newer but there is a shining example from the great days of the Industrial Revolution.

If we need a case study then consider Isambard Kingdom Brunel. Always described as one of Britain's great engineers, he was much more. He had a vision – to create a seamless journey between London to New York. This resulted in a railway, (needing bridges, tunnels, trains), a steam ship, (needing a harbour) and he needed the funds to support the venture. Probably the first design thinker, a true entrepreneur with a vision, joined up thinking and a 'can do' attitude.

We face similar huge challenges today and need to understand how designers can help. IDEO are doing pioneering work in both the public and private sector to encourage organisations to think differently about their business and to introduce the change necessary to embrace new ways of working and thinking – creating an environment where innovation is allowed to prosper to benefit the business as a whole. The focus of attention is always the consumer – the individual using your products or services.

The last big change agent was the IT revolution of the 80's. It forced companies to evaluate the way they did business and what they needed to change to really encompass the digital age. Design is the equivalent in 2010– the vehicle for change.

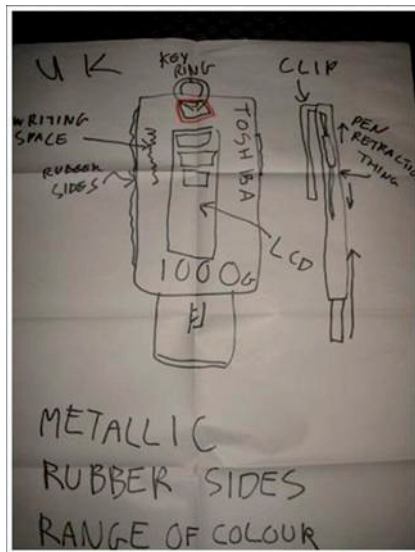
It still amazes me that many companies have no idea about their consumers!

Still more dangerous is the research that seeks to determine the characteristics of a consumer group. We are different types of consumer at different times during our day depending on what we are doing and who we are with.

What is required is real insight which is best achieved by working with your consumer to better understand their issues. As Richard Seymour of Seymour Powell says, 'Anthropology before Technology'.

If you understand the needs of your consumers (perceived or real) there's a good chance you can create solutions to satisfy them. One of the ways of eliciting needs is to involve your consumers through the media of social networks and collaborative engagement.

For example, we were asked by Toshiba to investigate the next generation of memory sticks. With increased memory and added inbuilt intelligence we were asked to propose new designs.



WHY DESIGN THINKING?

Consumer insight discovers those apparently tiny pieces of information that suddenly become the platform for great innovative opportunities. Experience led innovation creates competitive advantage and consumer satisfaction.

Design thinking is a state of mind and needs to percolate through the whole organisation.

Organisational structures often result in silos of knowledge and communications between them is frequently poor.

A design approach works horizontally across the organisation providing an ideal opportunity to break down barriers and bringing with it huge business benefits.

Technology already works laterally in the product design and development arena. Dassault Systemes have invested heavily in both development and acquisition to provide an end to end platform from conceptual thinking, consumer engagement, virtual prototyping, virtual testing and right through to total manufacturing simulation. The key is that all the individual modules that make up the vast library of capabilities work from a common platform.

It's a great pity that many organisations are not able to adjust their thinking to embrace the power of this platform. The serial approach (over the wall) marketing to design, design to product development, product engineering to manufacturing is history. Collaborative working is the only sensible way forward.



Consumers now use the web as a primary means of communication and knowledge transfer. Make a bad product or provide a bad service and everyone knows about it in minutes!

Strange that the same approach is not always adopted within an organisation.

It's never been easier to collect information but collecting and collating information is not the point. The point is what do you do with the information and how is it translated into meaningful solutions?

The 'design' step (note verb not noun) is the translation and interpretation of these data. Solutions that provide the consumer with a great experience are the winners – whether it's using your iPhone or getting your car serviced. It's how you have identified and dealt with all the touchpoints in the consumer journey.

Touchpoints not only log all the interactions but also provide the signposting for the brand positioning. Brand might be thought of as another topic dealt with by a different team but today your product and service is your brand. It's what people say about you, not what you want to tell them.

So design thinking is a state of mind that runs laterally across a business and should be part of that business's culture. It's not about hiring a design thinker to do a project!



WHAT DOES THIS MEAN FOR DESIGNERS?

It means a shift in responsibility. The continued improvement in technology means that visualising scenarios, and engaging the consumer in the process can rapidly identify opportunities and allow exploration of many more ideas.

However, you need to recognise that with these great tools comes a greater responsibility. The relationship between marketers, designers and engineers changes as do the competences. Marketers gain a greater insight into the design process, designers think more about manufacture, engineers understand more about the consumer.

User centred design is good design, design for assembly is good design, design for manufacture is good design. Sustainability is good design

Consumer electronics are now firmly embedded as part of everyday life. Entertainment, communication, leisure pursuits have been revolutionised by digital technology. Now, design is less about the hardware and more about the content and the interaction with it. Designing the consumer experience!

Design tools that enable a full simulation of a product and give a true representation of how it works and how the user interacts with it, will be in demand. We are already seeing the benefits of this in the design of healthcare equipment. Dealing with diseases like obesity and diabetes, encouraging a better understanding of vital signs as well as providing reliable tools to measure performance, are all useful ways that consumers can improve their understanding of their health and wellbeing.



Homedics Limited, the European division of Homedics Inc commissioned Quadro to design a vital signs monitoring system with a PC interface that enables simple tracking of vital signs measurements.

Our consumer research identified three groups: those that want to engage in physical activity; those that need to and those that have to. In other words, the fit and healthy who enjoy exercise and want to know how well they are doing, those that are probably over weight and have a poor lifestyle and those that are on medication and need to monitor their vital signs.

Visualisation of concepts both for The resulting product is an easy to use and easy to understand tool for enthusiasts and older patients alike.

This example represents a traditional design project but with a much higher degree of responsibility and involvement to ensure all design details are effectively resolved with the Far Eastern manufacturer.



MANAGING RISK

Greater responsibility for the designer means giving greater confidence by ensuring there is a clear understanding of all the issues in the design. So tools and techniques that allow clear communications with all parties are essential. For example, creating complete digital models, exploded assemblies, building the BOM, FEA, forecasting plastics flow in a mould and many other engineering modules provides a shared visual understanding of potential issues and gives greater confidence to the whole project team in managing risk

We can now do more investigation to explore the consumer experience in a virtual world. For example testing the product design and packaging in a shop setting can now be part of the design process. A consumer can enter a virtual super market and shop for goods, parameters can be changed and information collected about how the consumer reacts to these changes. Early days but potentially another useful tool in the designers toolbox.

Such approaches enables you to be able to make changes that would be far too expensive and time consuming to implement in a real world but can give quick guidance to the design team. It is more about reducing risk by avoiding silly errors than creating the perfect solution.

Concept design will always be a combination of sketch pad and computer. Although the concept work can be easily done on screen there is still a healthy resistance from designers to move away from using pen on paper.

This resistance comes from the idea that a CAD package is too precise and during the early free thinking stage a designer does not want to be put under pressure to be precise at such an early stage of thinking.

Often this is due to the way CAD packages are marketed – with many systems developing from an engineering platform. The sales techniques are usually driven from an engineering perspective. It's very easy to have many ideas and to save them (just as you do on your sketch pad), then return to them as design ideas begin to mature during concept thinking.

Demonstrating the flexibility and ease with which ideas can be explored, stored and retrieved is very easy, it's just not done very often!

This way of working needs to be exposed to consumers so that early thinking can be shared and collaboration online becomes a much more natural experience. Sharing conceptual ideas with consumers will become more frequent as we search for better business solutions. This will also mean greater engagement across a business.

The question is not what is possible? The question is when will organisations recognise they need to change their culture to really benefit from these possibilities.



WHERE ARE WE HEADED?

If business is to be successful then the adoption of design thinking will become mandatory. A customer driven approach that cuts across the silos of a business/organisation and forges a path towards a sustainable future is the way forward.

Having the tools to create different scenarios, test them and develop them will become the preferred way of working. Prototyping design ideas with consumers involved in the process on line and making their contributions will become the norm.

However, it won't be the only way of working. Designers will always want to use whatever tools best fit the task. Many will only use the technology on an occasional basis. This will lead to pressure to provide these sophisticated tools on a 'pay as you go' basis.

Whilst this new business model will be challenging to the CAD industry, it will encourage much greater usage by design departments and design consultants. This will give much greater exposure to these valuable tools and extend their usage. It will lead to re-branding CAD into a more meaningful descriptor – IDT, integrated design thinking.

Ultimately this will improve the speed of new product development through better and more informed decision making. Designers orchestrating the convergence of the consumer with the provider of products and services will, in my view, be the future



This will be uncomfortable for many as paradigms shift. But as innovative thinkers we need to look at new ways of working, new ways of doing business and new ways of using the technologies on offer. Small businesses can handle this as they are nimble and flexible but large organisations will find it much more difficult. This is where great leadership from CAD vendors is required to make the changes that are essential in this decade.

The change is not about procuring new technology. It's about changing hearts and minds to recognise new ways of working and maximizing technology that's already there.



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