

## Designing Your Way to Innovation

For most of us, innovation is hard. But it is not a mystery. Superstar innovators like Apple, Toyota and Google show a depth of thought and openness of attitude that the rest of us could learn from. They approach innovation as designers do.

Research suggests that the design profession, those who dream up new products, new stores, new cities, offers important lessons for business.

Designers approach problems differently from typical business people. In contrast to the analytical perspective taken in business where issues are narrowed and key variables isolated from each other, designers think broadly about problems and generate new possibilities.

Specifically, designers excel in framing and reframing problems and in collaborating with others to develop solutions. When we look at the approaches of designers and of consistently innovative companies, we find striking parallels.

Problems presented to designers are rarely what they appear to be, and a large part of the design effort lies in understanding the underlying nature of the innovation problem. To frame problems, designers use *systems thinking* - approaching the problem to be solved as part of a broader context, a whole that is more than the sum of its parts. As an example, the Danish insulin manufacturer Novo Nordisk developed a delivery system for its insulin in the form of a “pen” that replaced inconvenient syringes. The pen was more comfortable and easier for diabetics to use, but to market it successfully, Novo Nordisk had to engage with diabetes educators, family physicians and specialists: all part of the diabetic’s “system”.

Design is often a process of trial and error, so the innovation problem is constantly reframed and updated as the project progresses. Designers need to be prepared to learn from their failures, and to achieve this at low risk they develop *prototypes* as they go. These prototypes may be rough mock-ups of a product or hands-on demonstrations of an experience. At one Kaiser Permanente hospital in the US, staff developed prototypes in the form of role-plays in which “mothers” were walked through new tools and processes in the maternity unit. With many iterations and refinements, the team developed a rich understanding of problems in the system and redesigned it to improve the patient experience.

Many companies make the mistake of being too internally focused and, as a result, miss opportunities for innovation. By contrast, designers actively invite outsiders into the innovation process and collaborate with them. In particular, designers regularly conduct *ethnographic research* in which they observe users

“in the wild” - as they use products and services in the real world - and learn to empathize with their problems. Further still, some designers invite users into co-designing products with them: when LEGO wanted to produce a new generation of its Mindstorms robotics kit, it invited lead users into the design team. Each of these users had been using the toy since its launch in 1998 and had found ways of extending the original product.

To collaborate with others is to invite ideas from those who are different from oneself. Innovative designers and businesses are open to ideas from both inside and outside the company - and *diversity* within the company can provide a wealth of different ideas to develop. Automotive powerhouse Toyota is renowned for its policy of encouraging diversity in its workforce, a quality it shares with the design firm Ideo, which includes MBA's, physicians, anthropologists and engineers in its project teams.

To solve difficult design problems, designers use a variety of techniques to stimulate creative thinking. *Imagination*, the ability to envisage new possibilities, permeates the entire design process. In framing the problem, observing customers and working with the design team, designers are constantly on the lookout for new ideas. They use structured brainstorming methods - with strict rules of engagement - to develop ideas within the design team. Yet successful innovations are rarely completely original, but are often developed by integrating existing elements, as Apple's iPod combined off-the-shelf parts with an easily used control system and iTunes software.

All design problems have *constraints*, and to most business people, constraints are barriers, something that must be overcome. For designers, constraints provide a focus to the project and a springboard to creativity. This is the philosophy at Google, where clear technical and time constraints allow software engineers to focus on what is really essential to users; however, constraints are balanced with a vision of optimism and possibility.

These six components - systems thinking, prototyping, ethnography, diversity, imagination and constraints - are the essence of the design process.

It is tempting to think that merely adopting a process is enough to innovate successfully. But design is about attitude too. Great designers, and innovative companies, are optimistic, curious, empathetic, open to new ideas and responsible.

Yes, innovation is hard; yet innovation in today's fast-moving business world is essential to survival. By freeing their people to be designers, great innovators are showing how easy it can be.