



# Change by Design

How Design Thinking Transforms Organizations and Inspires Innovation

by Tim Brown

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Published by arrangement with HarperBusiness, an imprint of HarperCollins Publishers  
272 pages

## Focus

### Leadership & Management

Strategy  
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## Take-Aways

- You don't have to be a designer to benefit from using "design thinking."
- Design thinking involves creating choices and then making choices.
- Design thinking depends upon observing how people actually use products.
- It means "doing more with less."
- Design thinking develops through three stages: "inspiration," in which you identify an opportunity; "ideation," in which you conceive general solutions; and "implementation."
- This mode of thinking shifts among four mental states: "divergent and convergent thinking," and "analysis and synthesis."
- Drawing, prototyping and storytelling all accelerate innovation.
- Companies need a "human-centered" design approach to navigate the blurring of lines between product and service, producer and consumer.
- Contemporary innovation should focus on designing the user's emotional experience.
- A designer now must take the needs of the entire world, including the environment, into account.

## Rating (10 is best)

Overall

8

Applicability

8

Innovation

8

Style

8

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## Relevance

### What You Will Learn

In this Abstract, you will learn: 1) What “design thinking” is, 2) How you can practice it and 3) How design thinking will benefit your organization.

### Recommendation

Tim Brown’s understated, exciting take on innovation draws its inspiration from design; he calls the process “design thinking.” Brown is CEO and president of IDEO, an influential U.S. design and innovation firm. This book conveys that innovation is the norm at IDEO. The company expects employees to come up with not just fresh ideas but new solutions to real-world problems. Brown’s and IDEO’s expectations of changing the world are realistic because they’ve done it more than once; their excitement about creation never seems giddy or off-balance. IDEO has accomplished so much that many of Brown’s suggestions might seem familiar to those in the field, where IDEO’s techniques are already widely known. Even so, this methodical, socially aware approach proves engaging and useful. *getAbstract* recommends this guide to designers, to those who work with designers and to anyone interested in innovation and creativity.

## Abstract

### Understanding Design Thinking

World-altering technological advances have lifted humanity to a new standard of living and produced wonders that few people imagined possible. They’ve also created societies defined by waste and pollution. People must innovate to resolve this situation, but technological innovation won’t be enough. Society needs a new approach to innovation that aligns the needs of human beings and the natural world. “Design thinking,” which builds on the ways designers conceptualize their work, can provide that approach, and it is not limited to designers. Those who use design thinking access their nascent creative capacities.

Designers once focused on product development and little else. They often considered design concepts in isolation. More recently, designers have begun applying design principles not just to physical products, but also to consumer experiences, to production and interaction processes, and to improvements that make existing products more appealing or functional. They use design thinking in all disciplines and markets.

When the Japanese bicycle company Shimano set out in 2004 to address market challenges, it cooperated with IDEO to figure out why only 10% of American adults rode bikes, though 90% of them had ridden as kids. They analyzed consumers’ positive biking experiences as children, their negative associations as adults and what was needed to align the two gestalts. New bicycle designs emerged from this “human-centered exploration,” the products of observation and interaction, not technological breakthroughs.

### Stages of Innovation

It would be nice to follow a checklist and innovate successfully, but that’s not possible. Traveling into new territory means never being able to map your route fully beforehand. Innovators use design thinking to move through three general phases:

*“Design thinking has its origins in the training and the professional practice of designers, but these are principles that can be practiced by everyone and extended to every field of activity.”*

*“The transformation of a business-as-usual culture into one focused on innovation and driven by design involves activities, decisions and attitudes.”*

*“The willing and even enthusiastic acceptance of competing constraints is the foundation of design thinking.”*

*“One way to help design thinking...is for designers to make their clients part of the experience.”*

*“We are in the midst of a significant change in how we think about the role of consumers in the process of design and development.”*

*“Linear thinking is about sequences; mind maps are about connections.”*

During “inspiration,” they experience a “problem or opportunity” that sets them in motion; during “ideation,” they generate and test ideas; and during “implementation,” they move their innovation “from the project room to the market.” Products may cycle through these steps more than once.

While moving through these three stages, design thinking functions within a framework of three intersecting “constraints.” They are “feasibility,” which is what can be done; “viability,” what you can do successfully within a business; and “desirability,” what people want or will come to want. The Nintendo Wii is a good example of working successfully with these constraints. Before the Wii, video game innovators focused mainly on making their components (graphics, consoles, etc.) better. Nintendo designers stepped back and asked how they could make video games more appealing to a wider market. This illustrates the difference between design and design thinking.

As design thinkers find ways to navigate these constraints creatively, they shift from solving a specific “problem” to working on a “project.” The project starts with writing a brief, which states the problem and goals for resolving it. Briefs should focus but not limit your thinking. Next, assemble an interdisciplinary “project team” to work collaboratively. Analyze how your group interacts. Choose the makeup and methods that best promote individual design thinking, rather than groupthink. Assemble a team that fosters multiple perspectives, quick production and fluid communication. Such teams are more likely to thrive in organizations like Google and Pixar, which nurture “cultures of innovation.” These firms reward risk taking, encourage designers to mix with the rest of the company, support play and new ideas, don’t demonize failure, and don’t overemphasize regulations or efficiency.

Insight into how people actually use things is central to design thinking. This insight comes not from crunching numbers, but rather from observing what people actually do, noting what they don’t do, and understanding what they don’t or can’t explain about what they do. Design thinking borrows ethnographic observational techniques from anthropology and reapplies them to generating practical solutions. This requires empathy, because feeling alongside others allows you to move past seeing them as subjects or consumers and really experience things as they do. For example, when Kristian Simsarian of IDEO needed to identify problem areas in the hospital experience, he checked in as a patient and monitored the delays, frustrations and confusions of the process. He learned that the “patient journey” sick people experience is radically different from the beliefs medical professionals hold about how things work. Design thinking observes how people interact as groups and cultures.

### **Design Thinking’s Thought Process**

When you practice design thinking, you move through “four mental states.” “Divergent thinking” can generate alternatives to the present reality and provide more choices. Next, employ “convergent thinking” to sort your options and decide which is best. Then apply “analysis and synthesis”. Analysis breaks patterns down, and synthesis “identifies meaningful patterns” as you reassemble them. Shift cyclically back and forth among these states, generating the new, analyzing it, sifting and selecting, and then examining it in practice – and, often, starting the whole process over again. Evaluate ideas based on their own merits, not on who thought of them. For this to work, your organization must embrace “an attitude of experimentation” and be open to risk. Follow the ideas that excite people.

*“Rapid change is forcing us to look not just to new ways of solving problems but to new problems to solve.”*

*“The obvious counterpart to an attitude of experimentation is a climate of optimism.”*

*“Although it might seem as though frittering away valuable time on sketches and models and simulations will slow work down, prototyping generates results faster.”*

*“Prototyping is always inspirational – not in the sense of a perfected artwork but just the opposite: because it inspires new ideas.”*

Everyone in the organization should understand the goals as your leaders guide the creation process. Participants are more likely to generate good new ideas when they’re exposed to outside conditions and people in other departments. One potentially useful approach is the “design challenge”: Invite people to solve a specific problem within a set of constraints, so they can win recognition and financial reward.

Don’t try to create ideas in isolation, in the abstract or by using words alone. Use multiple methods. Draw – whether or not you have drawing talent. Visual representations create new insights in the form of “mind maps” that show multidirectional connections that linear verbal descriptions could obscure. Prototypes and drawings help develop ideas faster. Prototypes don’t have to be expensive or time-consuming. In fact, the opposite is better: Put as little time and effort into prototypes as you can and still “generate useful feedback and drive an idea forward.” Early in the process, prototypes can be very basic – just enough to see if something is viable. Imaging software can help, but, for example, researchers first conceived “insulin injection devices” with tools as rudimentary as Legos. Role-playing can be useful. Acting out scenarios using an imagined device can bring its possibilities to life. “Virtual worlds” like Second Life allow you to observe people interacting with a virtual version of a new service, such as a specialized hotel, with no actual construction at all. You can make prototypes of concepts or abstractions, like organizational structures, as IDEO did when it had to reorganize following the 2000 dot-com industry crash. Its staffers used computer games, workshops, small group discussions, formal speeches and even dance to produce a company culture better suited to new market realities.

Today a successful innovation must address a user’s experience and emotional response. Create “an experience blueprint” to guide construction of a user’s emotional journey. You cannot connect to someone’s emotion in the abstract or from the outside; instead, you must inhabit the user’s perspective and feel what that person feels.

Closely related to the experience blueprint is the ancient practice of storytelling. Stories put “ideas into context and give them meaning,” and are essential to design thinking. Physical design works with space; stories have the advantage of working in time. Focus your stories on how your organization fulfills some core human need. Narratives help “create multiple touchpoints” along the user’s experiential timeline. Consumers should experience the desired emotions at the following stages: when they search for your service or product, when they purchase it and when they use it. Particularly attractive stories become infectious, passing from person to person like a virus – or “meme,” as Richard Dawkins named these “self-propagating” ideas. Employ engaging, focused stories to communicate your innovation’s value, to help it survive the development process within the company, and to boost its value in the marketplace.

To improve your organization’s design thinking, evaluate the kind of thinkers you have, and hire others; add designers or engineers to your team. Screen applicants for innovative impulses and diverse experiences. Train your staff in the tools of design thinking, encouraging them always to observe the user’s experience, to strategize, tell stories and form partnerships with clients. Hold workshops to inspire innovation and introduce specific tools. Rework your incentive system, and develop criteria for measuring the innovation you want to produce. If you don’t have the resources in-house for training, work with outside firms that specialize in innovation. Listen to customers, and approach your company from their perspective.

*“Designing with time is a little different from designing in space. The design thinker has to be comfortable moving along both of these axes.”*

*“More good ideas die because they fail to navigate the treacherous waters of the organization where they originate than because the market rejects them.”*

*“An organization that commits itself to the human-centered tenets of design thinking is practicing enlightened self-interest.”*

## Applying Design Thinking

In the decades since World War II, corporations have poured money into research departments. Now, more than a million people in the United States alone work in corporate research and development facilities. While this has produced tremendous success, corporations are finding that investment in science or technology alone doesn't bring the returns it once did. Instead, companies need to use design thinking to explore new ways of envisioning their products. For example, Nokia successfully sold cellphones from the early 1990s on, but its leaders saw that neither its market share nor its technology would be enough to maintain its dominance. Instead, in 2006, Nokia started analyzing “alternatives to its existing hardware-driven approach.” Its researchers watched people use cellphones and saw that customers wanted to be able to do more than talk: They wanted to connect, and to share their lives. This meant incorporating cameras and internet access.

Rather than look at a single example of successful innovation, muster “design thinking to manage an innovation portfolio.” Consider an innovation from the perspective of a new or existing user faced with new or existing offerings. You can “adapt” current products for novices, or bring fresh offerings to experienced users; both are evolutionary strategies. Or, focus on creating offerings to new users in a “revolutionary” approach. Recognize that different types of innovations require different management strategies and investments, and carry different levels of risk.

Embracing design thinking helps create new products that adapt to changing market conditions. It's also realistic: All businesses must become more service-oriented and offer a stronger “customer experience.” As the distinction between products and services blurs, so does the distinction between consumer and producer. Massive, successful products like Wikipedia demonstrate this fact: People use it, but they also take part in creating it.

The context of innovation is changing. You now have the opportunity to design not only for local customers and profit, but to meet the needs of communities, and to make the world a better place. Dr. G. Venkataswamy founded Aravind Eye Hospital to bring affordable, accessible medical care to India's poor. He surmounted complex design challenges to offer quality treatment as inexpensively as possible and to operate on a level of “scale and efficiency” that he compared to McDonald's. To address such issues, socially oriented design thinkers may work through nongovernmental organizations or as the partners of charitable foundations.

As you create new possibilities, address environmental realities. You might focus on a smaller scale, as Pangea Organics does with its environmentally friendly soap. You might try to transform an entire industry, as Amory Lovins and the Rocky Mountain Institute are attempting with the auto industry. No matter where you focus design thinking, a constant inspiring constraint is “doing more with less” and recognizing the interwoven nature of the economy and the environment.

## About the Author

**Tim Brown** is president and CEO of IDEO, an award-winning design and innovation firm. He advises senior executives and members of the boards of *Fortune* 100 companies.