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Design Thinking

By Olivier Serrat

The need for 21st-century mindsets and protocols has sparked interest in design thinking. That is a human-centered, prototype-driven process for the exploration of new ideas that can be applied to operations, products, services, strategies, and even management.

A Design for Life

In a world of continuous flux, where markets mature faster and everyone is affected by information overload, organizations regard innovation, including management innovation, as the prime driver of sustainable competitive advantage. To unlock opportunities, some of them use mindsets and protocols from the field of design to make out unarticulated wants and deliberately imagine, envision, and spawn futures.

Design is more important when function is taken for granted and no longer helps stakeholders differentiate. In the last five years, design thinking has emerged as the quickest organizational path to innovation and high-performance, changing the way creativity and commerce interact.[1] In the past, design was a downstream step in the product development process, aiming to enhance the appeal of an existing product. Today, however, organizations ask designers to imagine solutions that meet explicit or latent needs and to build upstream entire systems that optimize customer experience and satisfaction.

Therefore, although the term "design" is commonly understood to describe an object (or end result), it is in its latest and most effective form a process, an action, and a verb, not a noun: essentially, it is a protocol to see, shape, and build. Lately, design approaches are also being applied to infuse insight into the heart of campaigns and address social and other concerns.[2]

> *The proper study of mankind is the science of design.*
>
> — Herbert Simon

[1] In truth, companies such as Apple in particular, but also General Electric, Levi Strauss, Nike, and Procter & Gamble, to name a few, pioneered the notion some time ago.

[2] See, for instance, Tim Brown and Jocelyn Wyatt. 2010. Design Thinking for Social Innovation. *Stanford Social Innovation Review*. Winter. Available: www.ssireview.org/articles/entry/design_thinking_for_social_innovation/. In 2007, Oxfam approached IDEO, a global design consultancy, with a brief. How might the charity better educate people to understand climate change? How might Oxfam translate that understanding into a better relationship with donors?

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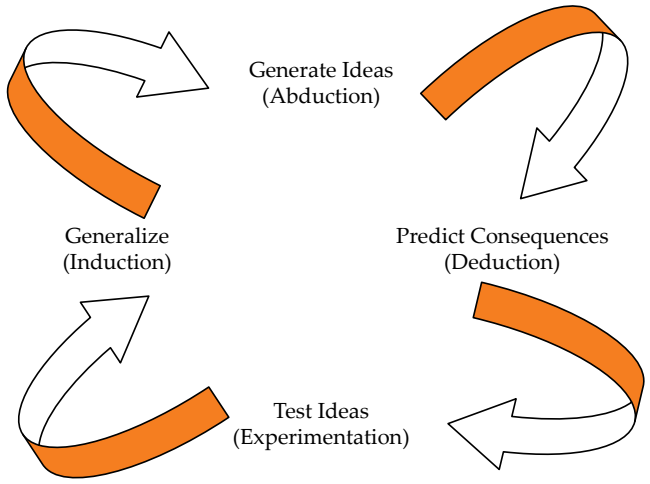
Defining Design

Herbert Simon[3] defined design as the changing of existing conditions into preferred ones.[4] Design thinking, then, is about using the sensibilities and methodologies that characterize designers to create new ideas, new alternatives, new choices, and new viabilities that satisfy stakeholder desires. It is fundamentally abductive,[5] even if designers still induce patterns and deduce answers.

Stemming from abductive reasoning, design thinking is empathic, personal, subjective, interpretive, integrative, experimental, synthetic, pictorial, dialectical, opportunistic, and optimistic. It is a frame of mind for problem solving that can balance legitimate needs for stability, efficiency, and predictability with the requirement for spontaneity, experimentation, and serendipity. In the conceptual age,[6] it is a "people first" approach to the full spectrum and minutiae of innovation activities that has applications in operations, products, services, strategies, and even management.[7]

Figure 1: The Cycle of Design Thinking



Source: Adapted from David Dunne and Roger Martin. 2006. Design Thinking and How It Will Change Management Education: An Interview and Discussion. *Academy of Management Learning and Education*. Vol. 5, No. 4, pp. 512–523.

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3 Herbert Simon (1916–2001) was an American political scientist, economist, and psychologist whose research ranged across the fields of cognitive psychology, computer science, public administration, economics, management, philosophy of science, sociology, and political science. See Herbert Simon. 1969. *The Sciences of the Artificial*. Massachusetts Institute of Technology Press.

4 Herbert Simon saw that the rationality of individuals is limited by the information they have, the cognitive limitations of their minds, and the finite amount of time they have to make decisions. "Bounded rationality" leads them to "satisfice", that is, choose what might not be optimal but will make them sufficiently happy.

5 Abduction is the process of inference to most likely, or best, explanations from accepted facts. Deduction means determining the conclusion. For example: "When it rains, the grass gets wet. It rains. Thus, the grass is wet." Induction means determining the rule. To illustrate: "The grass has been wet every time it has rained. Thus, when it rains, the grass gets wet." Abduction means determining the precondition. For instance: "When it rains, the grass gets wet. The grass is wet, it must have rained." Abductive thinking is very close to the concept of lateral thinking, for which numerous tools exist.

6 Daniel Pink has identified six high-concept, high-touch abilities that have become crucial in the conceptual age. (The term "conceptual economy" describes the contribution of creativity, innovation, and design skills to economic competitiveness, especially in the global context.) The six abilities are design, story, symphony, empathy, play, and meaning. By high-concept, he means the ability to detect patterns and opportunities, to shape artistic and emotional beauty, to craft satisfying narratives, to fuse apparently unrelated ideas into an invention. By high-touch, he connotes the ability to understand the subtleties of human interaction, empathize and find happiness in the pursuit of purpose and meaning. Design is one profession that relies on all six abilities. Daniel Pink. 2005. *A Whole New Mind: Why Right-Brainers Will Rule the Future*. Penguin Books Ltd.

7 It can, for instance, be used to develop and drive strategy, open new markets, fashion new offerings, formulate new business models, identify new applications for technology, articulate new ways of connecting to customers, and forge new partnerships.

Inside the Design Thinking Process

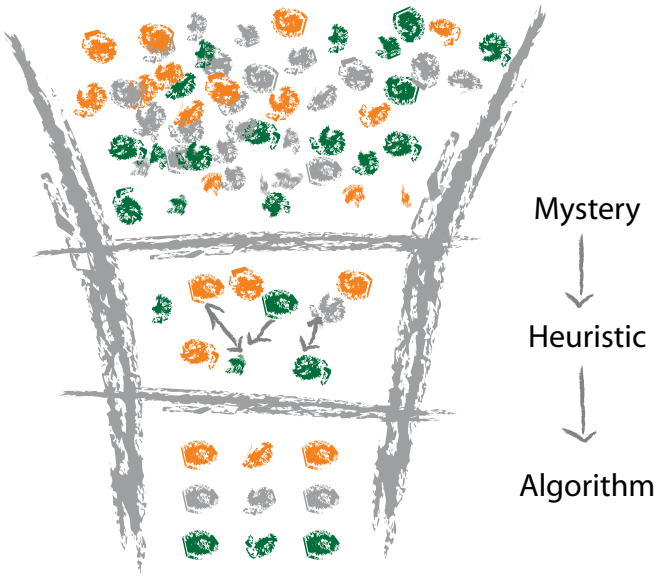
> *If I'd asked my customers what they wanted, they'd have said "a faster horse".*
>
> —Henry Ford

Design thinking revolves around three key phases: inspiration, ideation, and implementation.[8] During these phases, problems are framed, questions—also about questions—are asked, ideas are generated, and answers are obtained. The phases are not linear; they can take place concurrently and can also be repeated to build up ideas along the continuum of innovation. The design thinking process allows information and ideas to be organized, choices to be made, situations to be improved, and knowledge to be gained as depicted in Roger Martin's three-stage funnel.[9]

Design thinking is, inherently, a prototyping process powering deep understanding of what people want in their lives as well as what they like (or not) about the way that is made, packaged, marketed, sold, and supported. To this end, multidisciplinary teams of T-shaped individuals[10] are encouraged to fail often to succeed sooner through trial and error: innovations do not arise from incremental tweaks.

By the same token, design is never done: a market is always changing, least of all because good ideas are copied, and design must change with it. Design success is the integration of design thinking into an organization: at that level, it becomes a powerful tool to solve unpredictable problems.

Figure 2: The Knowledge Funnel



Source: Roger Martin. 2009. *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Harvard Business School Publishing. Rotman Designworks. 2010. Available: www.rotmandesignworks.ca/business_design.html

[8] Some articulate these further into seven: define, research, ideate, prototype, choose, implement, and learn.

[9] The first stage of the knowledge funnel is the investigation of a mystery (that may have several forms). The second is the delineation of a heuristic, viz., an educated guess, intuitive judgment, rule of thumb, or simple common sense, that narrows the area of inquiry so that it may be managed. The third is the creation of an algorithm, viz., a formula. As one moves down the funnel, one creates efficiency but must necessarily leave things out. See Roger Martin. 2009. *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Harvard Business School Publishing.

[10] T-shaped individuals possess deep knowledge in a core area of expertise as well as broad knowledge in disciplines such as management, finance, and business operations. Tom Kelley of IDEO has also observed a number of roles that people can play in an organization to foster innovation and new ideas and offer an effective counterpoint to naysayers. They are the anthropologist, the experimenter, the cross-pollinator, the hurdler, the collaborator, the director, the experience architect, the set designer, the caregiver, and the storyteller. See Tom Kelley. 2008. *The Ten Faces of Innovation*. Profile Books Ltd.

Table: Design Shops and Traditional Organizations

Feature	Design Shop	Traditional Organization
Goal	• Requisite reliability and validity to maintain competitive advantage	• Reliability, viz., the production of consistent replicable outcomes
Flow of Work Life	• Projects • Defined Terms	• Ongoing tasks • Permanent assignments
Style of Work	• Collaborative • Iterative	• Defined roles • Wait until the conditions are "right"
Mode of Thinking	• Deductive • Inductive • Abductive	• Deductive • Inductive
Source of Status	• Solving "wicked" problems	• Managing big budgets and large staffs
Dominant Attitude	• Nothing is impossible • Constraints magnify the challenge and increase excitement	• What can be done is what budgets allow • Constraints are the enemy
Problem-Solving Approach	• Iterative • Relies on a "build to think" process dependent on trial and error • Intuitive thinking seeks 100% validity through knowing without reasoning; design thinking attempts to bridge the predilection gap between intuitive and analytical thinking though generative reasoning	• Definitive • Relies on equations for "proof" that declare truths and certainties about the world • Analytical thinking seeks 100% reliability through induction and deduction
Validation Through	• Validation though what customers do, typically by means of direct observation and usability testing	• Validation though what customers say, typically by means of qualitative and quantitative research
Informed By	• Direct customer observation • Abductive reasoning and an interest in what might be • Reframing views as a creative challenge	• Market analysis • Aggregate customer behavior
Completed	• Design thinking continually evolves with customers	• The completion of the strategy phase marks the start of the product development phase
Focused On	• An understanding of customer activities	• An understanding of the results of customer activities
Tools Used to Communicate Strategic Vision	• Prototypes, films, and scenarios.	• Spreadsheets and PowerPoint decks
Described Through	• Pictorial representations and direct experiences with prototypes	• Words (that are often open to interpretation)
Team Members	• "T-shaped" expertise comprising a principal vertical skill and a horizontal set of secondary skills • Collaborative responsibilities • Emphasis on empathizing with team members on the extemes	• Vertical expertise • Individual responsibilities
Work Patterns	• Temporary projects with associated tasks and flexible hours	• Permanent jobs, on-going tasks, and fixed hours
Reward Structure	• Peer recognition based on the quality of solutions	• Corporate recognition based on the bottom line

Source: Compiled and adapted from David Dunne and Roger Martin. 2006. Design Thinking and How It Will Change Management Education: An Interview and Discussion. *Academy of Management Learning and Education*. Vol. 5, No. 4, pp. 512–523; and LukeW Ideation + Design. 2010. Available: www.lukew.com/

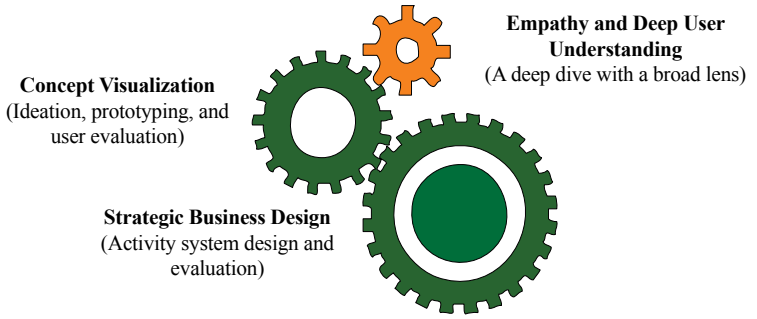
Designing Business

> *Design is not just what it looks like and feels like. Design is how it works.*
>
> —Steve Jobs

To Heather Fraser, the greatest payout of design thinking lies in the design of strategies and business models for organizational performance that creates both economic and human value. Broadening the definition of design, she argues that it can be the path to understanding stakeholder needs, the tool for visualizing new solutions, and the process for translating cutting-edge ideas into effective strategies.[11] Heather Fraser, from whose work the following draws, sees three iterative gears in business design. Anchored in the needs of stakeholders, they apply deep user understanding to stimulate high-value conceptual visualizations and extract from these the strategic intent needed to reform business models.

- **Gear One: Deep User Understanding.** The first step is to turn the telescope around to reframe the organization and view its business entirely through the eyes of the customer (and, of course, other critical stakeholders). It is necessary to look beyond the direct use of an organization's products or services to the contexts in which they are located, in terms of the activities surrounding their utilization, to gain deeper insight and broader behavioral and psychographic perspectives. It is also critical to understand the ''whole person'' engaged in any given activity—not just what they do, but how they feel and how their needs surrounding their activities link to other parts of their lives.
- **Gear Two: Concept Visualization.** With renewed empathy and a broader set of criteria for innovation serving as springboard, creativity can be unleashed and move through multiple-prototyping and concept enrichment, ideally with users. It is vital to look beyond what is to what could be, using imagination to generate altogether new-to-the-world solutions. At this stage, there are no constraints, only possibilities. Engaging all functions and disciplines on the team infuses ideas into the process, fortifies team alignment, and prepares the traction that will lock down strategies and activate them later.
- **Gear Three: Strategic Business Design.** With well-defined, user-inspired solutions at hand the third gear aligns broad concepts with future reality. This entails prototyping business models to integrate their parts and assess the impact of the activity system as a whole. It is imperative to identify what will drive the success of the solutions; prioritize what activities an organization must undertake to deliver related strategies; define relationships strategically, operationally, and economically; and determine what net impacts the new business models will have.

Figure 3: The Gears of Business Design



Source: Heather Fraser. 2009. Designing Business: New Models for Success. *Design Management Review*. Vol. 20, No. 2, pp. 55–65.

[11] Heather Fraser. 2009. Designing Business: New Models for Success. *Design Management Review*. Vol. 20; No. 2; pp. 55–65.

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Further Reading

ADB. 2009. *Harnessing Creativity and Innovation in the Workplace*. Manila. Available: www.adb.org/documents/information/knowledge-solutions/harnessing-creativity-and-innovation-in-the-workplace.pdf

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Heather Fraser. 2009. Designing Business: New Models for Success. *Design Management Review*. Vol. 20; No. 2; pp. 55–65.

Roger Martin. 2009. *The Design of Business: Why Design Thinking is the Next Competitive Advantage*. Harvard Business School Publishing. Rotman Designworks. 2010. Available: www.rotmandesignworks.ca/business_design.html

For further information

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Asian Development Bank

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