



Managing Innovation and Entrepreneurship

Design Thinking and Innovation

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Design Thinking and Innovation

What is design thinking? How can it be used to create significant innovation? Are there steps that can be followed to implement design thinking on an individual or company basis? Are there good examples of the successful use of design thinking in an organization?

Scenario: IKEA

Ingvar Kamprad was born in southern Sweden on March 30, 1926, and was raised on a farm called Elmtaryd near the small village of Agunnaryd. Even as a young boy, Kamprad had an entrepreneurial spirit. At the age of 5, he discovered a good profit could be made by buying matches cheaply in bulk in Stockholm and then individually reselling the matches to his neighbors in the country. He started by selling matches to his closest neighbors, but by the time he was 7, Kamprad put his growing match business on wheels, using his bicycle to sell matches to customers farther and farther from Elmtaryd. Gradually, Kamprad expanded his business offerings from selling only matches to also selling flower seeds, greeting cards, holiday decorations, pencils, and ballpoint pens.

In 1943, when Ingvar Kamprad completed school at the age of 17, his father gave him some money as a reward for doing well. Kamprad, the eternal entrepreneur, used this money to establish IKEA. The name IKEA was formed from his initials (*I* and *K*) and the first letters of Elmtaryd and Agunnaryd, the farm and village where he grew up. Initially, IKEA focused on the products Kamprad was already selling, but gradually the company expanded the product offerings to include wallets, watches, and jewelry. Within 2 short years, IKEA grew to such an extent that Kamprad could no longer make individual sales calls, and he launched a mail order service to continue meeting the growing customer demands for his products.

In 1948—just 5 years after starting IKEA—Kamprad introduced his first line of furniture using local manufacturers in the forests close to his home to supply the finished goods. The furniture line was a huge success, and Kamprad believed IKEA could become a large-scale furniture provider. In 1951, Kamprad decided to discontinue all other product lines in order to focus the company's attention solely on producing furniture. He launched the IKEA catalog strategy, which today remains one of IKEA's major advertising strategies. However, around this same time, IKEA became embroiled in a pricing war with its main competitor. As the two companies continued lowering prices, Kamprad became concerned about the quality of the furniture and the image customers would have of their quality. To address these concerns, in 1953 IKEA opened its initial furniture showroom to demonstrate the function and quality of IKEA's low-priced products. Located in Älmhult, Sweden, this first showroom was well received by customers because, for the first time, they could see the products in real life before purchasing them. The showroom concept worked, and it became a competitive differentiator with customers choosing IKEA over its competitors, leading to greater sales volumes.

In 1956, IKEA embarked on another mission that would change the company forever. In response to a supplier boycott organized by their competitors, IKEA began the process of vertically integrating their company by designing their own furniture. Coincidentally, around this same time, a local draughtsman realized that if he took the legs off an IKEA table, he could fit the table into the trunk of his car. Kamprad recognized the advantages of shipping furniture in such a way, and almost overnight, IKEA launched the flat pack model and revolutionized the company and the furniture industry. Going forward, IKEA designed furniture that could be shipped in flat packaging and assembled by customers after purchase, leading to easier transportation of furniture to customer homes as well as lower prices.

Throughout the next decade, IKEA expanded its stores from Sweden to neighboring countries including Denmark, Germany, and Switzerland. As increasing numbers of people showed up at IKEA showrooms, Kamprad decided to change the layout of the stores from that of a showroom to a self-service warehouse model that allowed customers to select and load their own furniture. This helped IKEA to further improve the customer

experience and drive costs down even further. Wherever IKEA expanded to, it was successful in creating a cult-like following from its customers. IKEA opened its first store in the United States in 1985 and has grown today to be a global retail brand with over 131,000 employees. As of August 2011, the IKEA group operated 287 stores in 26 countries.

Kamprad's vision has been the driving force behind IKEA's continued success. In 1976, Kamprad wrote and published *The Testament of a Furniture Dealer*, documenting IKEA's vision and business idea, which had a strong influence on the development and vitality of IKEA's corporate culture. From inception, IKEA has been dedicated to meeting customer demands and providing them with high quality, well-functioning products at low prices. IKEA in its design thinking has intentionally kept product lines simple to minimize the potential for damage during transport and make it easier for customers to take their furniture home themselves. Kamprad believes his company exists not just to improve people's lives but to improve the people themselves ("Famous Entrepreneur Advice," n.d.). By allowing customers to select their furniture from the self-service warehouse store and to easily assemble their furniture at home, Kamprad believes he is improving customers' self-sufficiency and self-confidence. The vision of IKEA helping people to improve themselves is reinforced in IKEA's advertising and catalog.

Despite being one of the richest people in the world, Ingvar Kamprad also has a legendary reputation for thriftiness. He has always tried to set a good example for his employees by working hard and cutting costs wherever he can. He is the personification of the company he created and inherently understands that his workers look to him for direction. Kamprad's level of frugality is matched only by his desire to make the most of his time. One of his most important maxims that he outlines in his *The Testament of a Furniture Dealer* is that "most things still remain to be done." It is with the goals of efficiency and persistent work that the corporate philosophy of IKEA is built upon. An example of this is IKEA's focus on strictly maintaining a flat management structure within the organization.

Kamprad has repeatedly refused to take IKEA public, stating that it would slow the quick decision-making processes that allowed for IKEA's phenomenal growth. In 1982, Kamprad established IKEA Group and gave his shares to Stitching INGKA Foundation, a charity supporting "innovation in the field of architecture and interior" ("IKEA: Flat-Pack Accounting," 2006). Kamprad made this move for the express objective of avoiding high taxes in Sweden and to ensure the company he worked so hard to build could not be ruined or sold by future members of the Kamprad family. In 1986, Kamprad retired from the CEO position and has since taken up an advisory role to the holding company.

Through working hard, having a keen ability to turn obstacles into competitive advantages, and encouraging what is now labeled as Design Thinking, Kamprad successfully built one of the largest and most profitable companies in history and distinguished himself as one of the most savvy and successful entrepreneurs of our time. Although his career has not been without its share of controversy, Kamprad has always owned up to his mistakes and is famous for saying, "Only those who are asleep make no mistakes" ("SUCCESS Quotes by Legendary Billionaires," n.d.).

Definition of Design Thinking

Design thinking is a new approach to create breakthrough innovation and promote high-performance collaboration. It is quite different from analytical thinking and is a process for action. It is a method for discovering new opportunities and solving problems. While there are a variety of techniques and tools that can be used, the core process is somewhat universal.

Aspects of Design Thinking

It is generally understood that there are five key elements in design thinking: (1) defining the problem, (2) developing the options, (3) determining the direction, (4) selecting the best solution, and (5) executing. The steps have some degree of similarity to those in the scientific process. Each of these will be discussed in turn.

Defining the Problem

This first step, correctly defining the problem, while sounding simple is often the most difficult of design thinking. If the right problem is not defined, then of course the solution, if obtained, is for something else. Defining the problem is usually a team effort with a significant amount of participation by each team member.

Defining the problem usually involves observation—discerning what individuals actually do versus what they may say they do. It also involves cross-functional thinking trying to find the real issues involved. Any preconceived notions or judgments need to be abandoned so that the right problem can be defined in such a way that creative solutions can occur. If the problem is a sitting apparatus, the problem is not to design a chair but to design something to suspend a person from the floor.

Developing the Options

Once the problem is defined, the second element—developing the options—takes place. Care should be taken not to take the same approach as has been used in the past. Design thinking requires the creation of several solutions to the problem for consideration even when one solution seems obvious. For this to occur, multiple perspectives and team involvement are important. Multiple people involved develop a far richer range of solutions.

Determining the Direction

This third stage—determining the direction—requires that the most promising solutions are carefully nurtured. An environment in the organization needs to be created so that each solution can be allowed to develop and grow. This environment of experimentation and testing allows the best solution to emerge. Often during this stage, ideas are combined to form an even better solution.

Selecting the Best Solution

From the many solutions maturing from the previous stage, the best solution can be selected. Prototypes of this solution are created and tested. This vigorous testing helps to ensure that the final solution is the best possible one.

Executing

Once the optimal form of the solution to the problem is found, the solution needs to be implemented. This execution element may prove difficult particularly when significant change is involved. Design thinking involves the acceptance of change and risk, which is often not easily embraced both by individuals and organizations. Execution also involves implementing design thinking on a continual basis as it is a repeatable process that will result in creative solutions to problems defined.

Organizational Barriers

Even when the best methodology and techniques are employed, for design thinking to succeed, there is a need for organizational commitment. When first understanding design thinking, an organization should be prepared to fail at the beginning. Most people find it difficult to use their imaginations and react to distractions. In design thinking, failure is not necessarily bad as it can often lead to success. Design thinking focuses on and nurtures a number of alternatives until the best solution emerges. Some common organization issues develop the following barriers to the successful implementation of design thinking.

Lack of Management Commitment

This barrier is a significant one that occurs in organizations. Top-level management must openly endorse and practice design thinking. Without this, employees at lower levels of the organization will not embrace and practice it themselves. In many cases, there is resistance at some level in the organization. This *permafrost* or resistance to using design thinking needs to be unfrozen through training and education. In some cases, the only method of removal is eliminating or reassigning the source of the permafrost.

Lack of Performance Indicators

Another barrier to the successful use of design thinking is due to the lack of measureable indicators of success. The lack of a quantifiable framework to measure the output of design thinking makes it difficult for some organizations to accept and implement it as a problem solving methodology. In some organizations, it is important to begin design thinking by focusing on a small problem with a significant upside potential.

Resistance to Change

As with anything new, people and organizations are resistant to change even when they think it is a good thing. This is particularly the case when it causes discomfort and a change in behavior. The more radical the change in behavior that is required in an organization to adopt design thinking, the more the resistance to this change will occur. When this is the case, it is often easier to start the first design thinking process on a problem that is totally outside the usual domain. Once individuals become familiar with the technique, it can then be used to focus on solutions to problems in their usual domain. Three companies will be discussed that have overcome these and other organizational barriers and successfully implemented design thinking: (1) IDEO, (2) Redbox Automated Retail LLC, and (3) IKEA.

Table 6.1 Characteristics of a Design-Thinking Organization

- Supports people
- Protects people
- Tolerates mistakes
- Advises people
- Takes risks
- Shares a vision
- Delegates to those closest to the problem
- Tolerates internal competition
- Stimulates creativity
- Actively searches for ideas

- Tolerates disorder
- Encourages experimentation and tests
- Trusts people
- Tolerates ambiguity
- Does not interfere

Overall Culture

The overall culture of the organization can either support or inhibit design thinking. An organizational culture that is guided by a vision, encourages freedom, and has such characteristics as trust, belief in people, expandability, people growth, and job ownership allows more creativity to occur and increases the quality and output of design thinking versus a more traditional organizational culture. This type of organization provides an environment for employees to want to own their jobs and do everything possible to make the organization and the results of their position world class. A list of the characteristics of this type of organization is found in [Table 6.1](#). The overall cultural climate is one of sharing, trying something new, suggesting and experimenting, and feeling responsible.

IDEO

The company that is probably most well known for successfully implementing design thinking to solve problems in a variety of company situations is IDEO. These applications include designing the Pilates Allegro 2 Reformer, building the ultimate utility bicycle, designing Walgreens' community pharmacy, designing the Steelcase node chair, developing Gannett Company's bold italic, designing Changi General Hospital's orthopedic clinic patient experience, and designing the ideal home for the Wounded Warriors.

In one project for Bank of America, IDEO worked with a team from the bank focused on the consumer behavior of putting their change received in a jar at home. Once the jar is full, it is either spent on something special or else deposited in a bank account. To mirror this behavior, in 2005, Bank of America launched a new savings account service called "Keep the Change." Customers who apply for and use their new debit card to make purchases can round up the purchase to the nearest dollar and have the difference deposited directly in their savings account. While this design thinking output encourages people to save, appealing to each individual's instinctive desire to put money aside in a painless way, the real payoff is an emotional one—seeing an increase in the monthly savings account statement without much effort.

IDEO also used design thinking with a team from Kaiser Permanente, a large health care provider. Kaiser wanted all of its administrators, doctors, and nurses to use design thinking in providing solutions to problems encountered and inspire new ideas. One project was to reengineer nursing shift changes at several Kaiser hospitals. The team from IDEO and the hospital working with frontline practitioners from each hospital first identified the problems occurring during shift changes. Potential solutions were explored through brainstorming and service prototyping. The options were evaluated to determine the best solution to shift changing, which was then implemented.

Besides services, IDEO has worked on a variety of products in the health care area. When a group of surgeons were describing the ideal product for sinus surgery and all its characteristics and features, the team from IDEO created some initial designs and prototypes. These were then tested and evaluated and a final prototype was developed, which was followed by the final product for sinus surgery. These examples of IDEO

using design thinking show the one basic rule for success: Keep as many options in play as long as possible so that the best possible solution can emerge.

Redbox Automated Retail, LLC

Redbox Automated Retail, LLC, a wholly owned subsidiary of Coinstar, Inc., provides Blu-ray discs, newly released DVDs, and/or video games for rent through conveniently located kiosks. The over 35,400 kiosks, designed with the assistance of IDEO, are located in places where individuals shop, making renting and returning a convenient, simple, timely process. The new self-service kiosk, developed through the design thinking process, enhances the consumer experience in making an average \$2 rental by moving them through stages in the decision process: attract, educate, and engage. The layered signage attracts the consumers to the red box where they can browse (educate) through the changing titles and easily make the purchase decision (engage).

The new kiosks are in locations throughout the United States inside and outside of leading grocery, drug, and convenience stores such as Walgreens and Walmart as well as fast-food franchises such as McDonald's. Redbox contributed to the increased market share in this rental market from kiosks and achieved its 2 billionth rental at a McDonald's restaurant in Philomath, Oregon. The company feels the new kiosk created through the design thinking process contributed significantly to its success and growth.

IKEA

The company appropriately featured as the scenario to this chapter, IKEA, is a great example of the design thinking process. As stated earlier, IKEA was founded in 1943 in a small village (Agunnaryd) in Sweden; their vision is to create a better everyday life through modern yet not trendy home furnishings. The vision transferred into a wide range of uniquely designed home furnishing products that are very functional in nature. Each product reflects the Swedish approach to design thinking. Each is attractive yet functional, human-oriented, and environmentally friendly. The unique design thinking apparent in each home furnishing product represents the healthy, fresh Swedish lifestyle. The carefully chosen colors and materials are part of this design thinking allowing IKEA to be a major retail player in over 45 countries. By maximizing the functionality, use of raw materials, and efficient production, IKEA can meet the needs and desires of the market at a low cost. This low cost and resulting lower retail price allows the home furnishings to appeal to a broad market.

IKEA's vision is evident in its outreach and promotional efforts. In 2011, the company launched Share Space—a community photo-sharing website where individuals can share photos using IKEA products in their own living spaces. Customers are encouraged to share their own design thinking by sharing their personal solutions to design challenges in their living rooms, kitchens, or other areas in the home. One room will be selected by IKEA design experts as the “Pick of the Week” and is then featured on the Share Space homepage and in the company's blog.

Another unique project is the Life Improvement Project (LIP) to inspire consumers to create a better life for themselves. This program communicates the brand and the vision of the company. One feature of the LIP is the Life Improvement Sabbatical contest. The winner receives one year off from work and \$100,000 to advance any project that improves the lives of others.

Future

As is evident in each of these examples as well as in many organizations around the world, design thinking has provided many benefits and interesting results. Through this new process format, design thinking allowed organizations to expand their ideas and offerings resulting in many successes but also many failures. Some organizations turned the process into a linear step-by-step methodology that often delivered nothing creative and at best incremental change and innovation. While design thinking will of course continue to be used with mixed results in the future, two other approaches also offer a way to switch between multiple perspectives and institute creativity—(1) futures thinking and creative intelligence (CQ).

Futures Thinking

Futures thinking combines data, trend analysis, intuition, and imagination to develop sustainable paths of action. It is a set of practices and principles for solving problems regardless of their degree of complexity. It consists basically of four aspects: (1) asking the question, (2) scanning the world, (3) mapping the possibilities, and (4) asking the next question. Like design thinking, futures thinking is an iterative process to consider a range of possibilities and outcomes. This new way of thinking is based on practical research and analysis in challenging assumptions about the problem and its most favorable solution.

Creative Intelligence

Since one of the major objectives of design thinking was to stimulate creativity, this is the prime focus of CQ, framing problems in new ways in order to develop original solutions. It is more of a sociological approach with creativity emerging from group activity. CQ is a hybrid of design thinking, scenario planning, systems thinking, and gaming.

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Suggested Readings

Fraser, H. (2006, Spring/Summer). Turning design thinking into design doing. *Rotman Magazine*, 24–28.

In this article, Heather Fraser, director of Business Design Initiatives in the Desautels Centre for Integrative Thinking at the Rotman School, exposes the different lessons on how best to transform “inspiration into implementation.” If design is now considered a business necessity for competitive edge, it is crucial for business leaders to understand how to truly convert design into “an accessible, doable program.” The author argues that design thinking is far from being “an attribute”; it is fundamentally about action.

Mootee, I. (2011, March). Strategic innovation and the fuzzy front end. *Ivey Business Journal*, 21, 38–42.

The author presents the design thinking process under a new light that he refers to as “the fuzzy front end.” Idris Mootee advocates this new approach as a critical and systematic process that companies should incor-

porate to their management mind-set for getting a better picture of the future and identifying opportunities that otherwise would be missed. Throughout the article, the author presents the fuzzy front-end approach as an “insight-driven, prototype-powered and foresight-inspired search for new ideas that can be applied to products, services, experiences, business strategies, and business models” (p. 38).

Tischler, L. (2011, October). The United States of design. *Fast Company*, 159, 77–88.

Linda Tischler presents a series of new and existing U.S. businesses that successfully combine innovation, design, and technology in their management and product offerings. The article posits that now that American firms have made customers their pivotal point of focus, American design is having a global impact in everything from fashion to human/machine interface, system design, and health care devices. Design worldwide is also discussed as more and more countries are also investing in design and integrating it into their business models.

- furniture
- innovation
- customers
- permafrost
- retailing
- furnishings
- prototypes

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