

DESIGN THINKING AS A TOOL TO CREATE A BUSINESS OPPORTUNITY

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ABSTRACT

This paper aim to prove that design thinking can be used as a tool to create business opportunities. Informants used in this study are footwear craftsmen who have followed the training of design thinking. Data collection was done by observation and unfocused group. Stages of analysis are performed by observation, brainstorming, making a prototype, test of market and product strength and execution. The results of this paper is proving that the design thinking process can be used as a tool to create business opportunities.

Keywords: Business Opportunity, Observation, Brainstorming, Prototype, Test of Market and Product Strength, and Execution

INTRODUCTION

Ministry of Trade of Indonesia in the book of Development Plan of creative economy of Indonesia 2025 (2009) stated creative industry contribute only 5.67% of Gross Domestic Product (GDP) in 2006. But ten years later in 2016, creative economic contribution to GDP reached 7.55 percent or 922.58 trillion (Septyaningsih, 2018). This is an expected reality, given that creative industries will become the foundation of the nation's progress amid the depletion of natural resources.

In this creative or conceptual era is dominated by the role of the creator. The process of educating people is based on an understanding to appear the uniqueness of themselves through creative works.

Creative industry is as an Industry that exploits creativity, skill and individual talents to create welfare and employment opportunity through creativity. This understanding, emphasizes the individual creative power is as a source of added value in the economy.

At the corporate level included in the creative industry, decision issues are increasingly complex. Starting from the determination of the design of footwear, brand determination, footwear packaging, footwear sale price determination and distribution channel determination to market footwear and choosing the form of footwear innovation that needs to be developed is a hard decisions to be taken company.

Decision-making is a science that focuses on alternative evaluation processes for alternative selection processes and finding the best solution. Design is a tool for solving unpredictable problems. In such conditions, the design can be used to find a solution. Does not stop just to improve the current state. The design process can generate the latest solution leap and create new circumstances. The purpose of research to prove design thinking as a tool to create a business opportunities.

LITERATURE REVIEW

THE DEVELOPMENT OF DESIGN THINKING

Design thinking emerges from the exploration of theory and practice in various disciplines and sciences to address the needs of innovation, technology and strategy. Initial views and references on design thinking date from the 1950s and 1960s, although in architectural and engineering contexts. The new approach to solving complex problems is rooted in the thinking that was applied to World War II. This event has a profound effect on strategic thinking in the modern world and fundamentally changing the way it applies to management, production and industrial design.

1960s: Efforts Towards Scientist Design

Understanding every aspect of the design and development of science beyond the design field was influenced by the process and methodology of the 1960s related to how the design functions. Nigel Cross (2001) seeks to create scientist design and bring the field of design into the goal of rational science. Cross highlights the statement of the radical technology expert Buckminster Fuller which refers to the decade of design science. Fuller called it a revolution of design science based on science, technology and rationalism to address human and environmental problems that are believed to be unresolved with politics and economics.

Horst Ritter a design theorist incorporates the term Wicked Problems in the design. Wicked problems are very complex and multi-dimensional problems in the mid-1960s. Ritter writes and talks widely about problem-solving subjects in design. In particular, Rittel focuses on applying design methodologies to address wicked problem issues and how to influence the work of many current design and academic practitioners. Wicked problem is at the heart of design thinking because it is this problem that requires a collaborative methodology that involves a deep understanding of humans.

The Developments in the 1970s

Herbert A. Simon (1969) who first mentions design as a science or way of thinking. This idea was also raised by Robert H. McKim (1973).

Simon has contributed many ideas that are now regarded as design thinking principles i.e. rapid prototyping and testing through observation as a concept that forms the core of many designs and entrepreneurial processes. This stage is also one of the main phases of a typical design thinking process. To understand it, the system must be built and its behavior observed. Much of his work is focused on the development of artificial intelligence and what forms of human thought can be synthesized.

McKim focuses more of its energy on the impact of visual thinking on the understanding of things and the ability to solve problems. Kim also explains various aspects of visual thinking and design methods to solve problems by emphasizing the incorporation of left-brain and right-brain thinking to produce more holistic solutions.

The Developments in the 1980s

In 1982, Nigel Cross discussed about the nature of problem solving of the designer. Cross (1982) compares the problem solving of designers with non-designers related to its problem solution developed in everyday life.

Professor Bryan Lawson studied the insights collected from a series of tests with comparative methods used by scientists and architects when trying to solve the same ambiguous problem. The tests conducted at the graduate students of architecture (designers) and science (scientists). Each group was given a problem related to the arrangement of colored blocks. Students must adhere to a set of rules and some of them are unknown to students.

Lawson realized that scientists tend to systematically explore every possible combination of blocks to formulate hypotheses about the basic rules that must be followed to produce the optimal block arrangement. In other words, scientists are problem-solver that focus on the problem. On the other hand, designers tend to quickly create multiple colored blocks arrangements, then tested to see if the arrangements have matched the requirements of the problem. Designers are problem-solver that focus on solution, generating a large number of solutions and eliminating unsuccessful ones. A problem-solving method that focuses on solutions that found by Cross as a core concept of how designers solve the problems.

According to Cross, the main feature of design activity is its reliance on producing a satisfactory solution that is fast enough rather than prolonged problem analysis. Simon calls it as a satisfying process rather than optimizing and produce one of what might be satisfying solutions rather than generating one hypothetically optimal solution. This strategy has been observed in other design behavior studies, including architects, urban designers and engineers.

The Developments in the 1987

Peter Rowe (1987) focuses more on the way of architectural designers approach their tasks through inquiry lenses. Rowe explains the basic structure and focus of inquiry that is directly related to the somewhat personal moment from looking for part of the designer for the purpose of creating or build the urban buildings and artifacts.

As seen, the development of Design thinking as a subject makes travel through various areas of specialization from time to time. Thinkers in this field explore the cognitive process in their own field and then becomes something that moves into their own scope.

The Development of The 1990s to The Present

In 1991, IDEO was formed and show a design process that was modeled on a work developed at Stanford Design School. IDEO is widely accepted as one of the companies that brings design thinking to the mainstream, developing terminology, stages and toolkits that customers can understand for years. This method keeps those who are not educated in the design methodology to quickly and easily become process-oriented.

In 1992, Richard Buchanan discussed the origins of Design Thinking. In this article was discussed how science develop over time began Renaissance and formalized in specialization. The process they use becomes disconnected from each other. Furthermore, Buchanan explains that Design Thinking has been formed as a means to integrate this very specialized field of knowledge, so that they can apply together for new problems encountered from a holistic perspective.

In 2005, Design Thinking was taught at Stanford School of Design or d.school. D.school is known as Hasso Plattner Institute of Design. It has made development, teaching and implementing it as one of the main goals.

Today, design thinking moves faster, with pioneers like IDEO and d.school who formalize for others to follow. Other prestigious universities, business schools and forward-thinking companies have adopted this methodology to varying degrees. Sometimes it is necessary to reinterpret it to fit a particular context or their brand values. IDEO sees design thinking as a creative problem solving process.

It is seen that the design principles contribute significantly in increasing the success rate of innovation. Even design-oriented companies like Apple, IBM and Coca-Cola have delivered outstanding performance in the last 10 years by reaching 219% in the S & P 500 (Pal, Prince, 2016).

With a design perspective as a problem solving process, the discussion begins with looking at the early model problem solving from John D. Sterman using an event-oriented or result oriented approach in Figure 1.

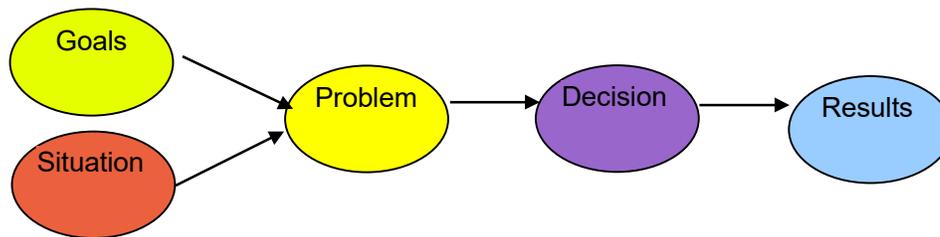


Figure 1. Event Oriented Problem Solving

Figure 1 shows that the problem arises because there is a gap between the desired goals with the situation encountered. The problem occurs because the desired is solving the right problem right. For example, in developing the product concept, the problem is expressed in the product opportunity gap (POG).

This POG is an opportunity that every innovator must look for. POG is a concept independent and has not explained what kind of product will be produced. The next challenge is the process of finding alternative solutions, choosing the best solutions, and implementations that will ultimately provide results. Techniques that can be used to generate creative thinking include: brainstorming, creative wordplay, multi-media sketching and fantasy director.

This process is not easy. When, faced with a problem, people are often lazy to find alternative solutions. They make only one alternative that is claimed to be the best solution. Making hasty decisions in ambiguity at the decision-making stage will cause to a crude solution. This is where ambiguity landscape can be misleading (Febransyah, 2005).

This is a traditional model of the design process that is viewed as an open loop process. In fact, the interpretation of a problem may vary. Depending on the designer's point of view. Donald Schon said that design is a "reshaping process" and the situation that comes up "talk back" constantly. Thus, the problem will conical and the solution sharpen. This thinking leads to a closed loop problem solving process.

RESEARCH METHODS

The type of research is a case study. The informants are a footwear craftsman who have attended the training by using purposive random sampling as a sampling technique.

The data collection techniques are used as following. First, BEHAVIORAL MAPPING is photographing people in space like waiting room in the mall with duration of two or three days. Second, CONSUMER TRIPS is to track all interactions with consumers until they have a product, service or space. Third, JURNAL CAMERA is asking consumers to keep a visual diary of their activities and impressions relating to the use of the product. Fourth, INTERVIEW EXTREME USERS is talking to people who really know or do not know anything about a product or service and evaluate the experience when they use it. The storytelling method is a common method used by persuading people to tell personal stories about their experiences using the product. Fifth, UNFOCUS GROUPS is an interview with various groups of people to explore ideas such as about sandals. For that, collected artists, bodybuilders, podiatrists and a shoe fetishist.

Stages of the design thinking process follows:

- a. Observation stage
- b. The brainstorming stage
- c. Prototyping stage
- d. Testing stage
- e. Execution stage

RESULTS AND DISCUSSION

This footwear model development program aims to produce new products in potential market segments as business opportunities. Another goal is to learn the process of making footwear that fits the target market of adolescents to early adulthood (ages 15 - 30 years). Given this market potential reaches 50 percent of the total national market. This footwear model development program follows the design thinking model.

a. Observation Stage

The observation stage starts from the SMEs study to the modern market to view the consumer profile, design trends, view the image of people when using the product, shop and when they hit the numbers on handphone in some shopping centers in Surabaya such as Surabaya Plaza, Tunjungan Plaza and Ciputra World Mall. Surabaya Plaza is used to get an idea of the trend of footwear design favored by middle class consumers. Tunjungan Plaza is used to get an idea of the footwear design trends favored by upper-middle-class consumers and at Ciputra World Mall to get a picture of the trend of footwear design favored by upper-class consumers.

b. The Brainstorming Stage

After getting the customer insight and trend of footwear design from the observation stage, they started to design the footwear design concept. The brainstorming stage to generate many ideas through throwing one idea and followed by throwing other ideas. This stage lasts no more than an hour.

The rules are tight with glued to the wall. First, put off judging others' ideas and do not underestimate the idea. Second, build any idea, not "but," or just "add". Third, encourage the wild idea that most out of the box because the it can be the key to the solution. Fourth, go for quantity so the new idea can appear as much as possible. A good session can generate ideas up to 100 ideas in 60 minutes. Fifth, be visual using yellow, red and blue markers to write on large paper with size as 30 inch and Post it as 25 inch that placed on the wall. Sixth, keep focus on the topic by always keeping the discussion in line with the goals. Seventh, one speaker at a time, unobtrusive, no disregard, no respect and no rudeness.

c. Prototyping Stage

At this stage, they work to help everyone visualize possible solutions models, quick to make decisions and innovate. Before making a prototype, they are invited to select the materials needed in PT. Karya Mitra. After selecting some materials then the prototype is made.



Prototipe High Fidelity



Figure 2. Footwear Prototype

The resulting prototype has distinctive features with the design of vest shoes using materials or accessories such as leather, TPR soles and Zipper. After the prototype is completed, the next stage is the testing process. The testing process is done by first identifying the key questions to be answered through the prototype test to save time and get many ideas simultaneously.

d. Testing Stage

The prototype test stage is performed by inviting the expert. The input from the expert as following.



Figure 3. Testing Stage

Its suggestions of improvement is no need to use the ribbon and zipper is not death bolted. Color of zipper is preferably gold. For the stick should be reversed. Line and upper back should be pulled so as not to make a bend so that the foot does not hurt. The trick, line should be smaller than the upper. The bottom should be torn.

To get an overview of the market response then do the market test and test of the power against the design of the prototype. The results of strength tests conducted by the Indonesian Footwear Industry and Development Center showed from the standard pass the strength test of 3, the strength of this prototype is only 1.35.

Test market done twice. First at the Leather and Fashion Shoe Exhibition (SKF) in Jakarta, Local Innovation Product Exhibition (PPUD Expo) in Surabaya and second at Crafina Exhibition. The first market test results in SKF and PPUD Expo showed good and excellent comments as much as 47.73 percent. The input of expert and first market test were used to improve the design and strength of the second phase prototype.

The second market test result at Crafina Exhibition shows good or excellent comments on all aspects of the model by 55, 88 percent. Some suggestions to consider are the model of footwear marketing channels, improvement of skills to serve buyers, product displays and "do & do not" at the exhibition.

The iterative prototype process and its improvement is a trial and error cycle that must be skipped in searching for the best product concept. The process is not linear as a sequential step. It means every step can be repeated, can return at an early stage, before going into the final stage.

A successful prototype through testing stage will enter at the implementation stage. After the production phase, the design team will design the marketing strategy. The use of an innovative design work requires changes in behavior. Therefore, innovative design marketing becomes an important key.

e. Execution Stage

Execution ability is needed to realize a design becomes truly materialized into a product or service. This ability will be better if hiring workers from various countries. Disciplines should be diverse. Expertise in engineering consists of: mechanics consists of: electricity, biomedical, software, aerospace, and manufacturing. Many experts in materials science, computer aided design, robotics, computer science, special effects films, prints, industrial interactions, graphics and Web information, fashion and automotive design, business, communications, linguistics, sociology, ergonomics, cognitive psychology, biomechanics, art, ethnology, management consulting, statistics, medicine, and zoology.

6. CONCLUSION

Design thinking will give birth to business opportunities by directing SME actors to optimize every potential into innovation. Human-centered innovation, based on technological and organizational capacity as well as on financial capacity. Innovation becomes easy, practical and can be done over and over through the process of observation, brainstorming, prototyping, testing and execution.

REFERENCES

- Avital, M. dan R.J. Boland. 2008. Managing as Designing with a Positive Lens. Dalam Avital, M, Copperider D., Boland, RJ .2008. *Advanced in Appreciative Inquiry* Volume 2: Designing Information and Organizations with a Positive Lens. Elsevier Ltd.
- Brown, T. 2008. Design Thinking, *Harvard Business Review*, Juni.
- Brown, T. 2009. *Change by Design*. New York. Harper Collins
- Dam Rikke dan Teo Siang. 2018. Design Thinking: Get a Quick Overview of the History. Interaction Design Foundation. <https://www.interaction-design.org/literature/article/design-thinking-get-a-quick-overview-of-the-history> didownload pada 23 Mei 2018.
- Febransyah, A. 2005. Managing The Fuzzy Fornt End Process In New Product Development: A Case of Evaluating Concept Alternative, *Jurnal Manajemen Prasetiya Mulya* Vol. 10 No. 1: 1 – 12.
- Hero Image: Author/Copyright holder: Teo Yu Siang and Interaction Design Foundation. Copyright terms and licence: CC BY-NC-SA 3.0
- Kelompok Kerja Indonesia Design Power – Departemen Perdagangan RI. 2008. *Pengembangan ekonomi kreatif 2025: Rencana pengembangan ekonomi kreatif 2009 – 2015*. Jakarta: Departemen Perdagangan RI.
- Lockwood, Thomas. 2010. *Design Thinking: Integrating Innovation, Customer Experience and Brand Value*. New York: Allworth Press Nigel Cross, 1982. *Designerly ways of knowing*. http://www.makinggood.ac.nz/media/1255/cross_1982_designerlywaysofknowing.pdf
- Nigel Cross, 2001. *Designerly ways of knowing: design discipline versus design science*. [http://oro.open.ac.uk/3281/1/Designerly- DisciplineScience.pdf](http://oro.open.ac.uk/3281/1/Designerly-DisciplineScience.pdf)

- Pal, Prince. 2016. What Is Design Thinking and Design Thinking Process?
<https://think360studio.com/what-is-design-thinking-and-design-thinking-process/>
- Peter Rowe, 1987. *Design Thinking*. <https://mitpress.mit.edu/books/design-thinking>
- Pink, D.H. 2005. *A Whole New Mind: berpindah dari jaman informasi menuju jaman konseptual*. Jakarta. Penerbit Dinastindo
- Richard Buchanan, 1992. *Wicked Problems in Design Thinking*.
http://web.mit.edu/jrankin/www/engin_as_lib_art/Design_thinking.pdf
- Septyaningsih, 2018. Kontribusi Ekonomi Kreatif, Republik. Jakarta. 11 Januari 2018.
- Simon H. A. 1955. A Behavioral Model of Rational Choice. *Quarterly Journal of Economics* 69: 99 – 118.
- _____. 1957. Rational Choice and the Structure of the Environment, in Simon, H.A. (Ed). *Models of Man*. New York: John Wiley & Sons