

UNIT – II

PROCESS IN DESIGN THINKING

DESIGN THINKING PROCESS:

Design thinking is a non-linear, iterative process that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test. Involving five phases

- Empathize,
- Define,
- Ideate,
- Prototype and
- Test

It is most useful to tackle problems that are ill-defined or unknown.

DESIGN THINKING:

5 Steps of the Design Thinking Process: A Step-by-Step Guide

The five steps that make up the design thinking process:

Empathize, Define, Ideate, Prototype, and Test.

By now, you've probably heard about design thinking. More industries than ever are taking a human-centric approach to evolve their existing products and generating new ideas to serve their customers better. Let's take a closer look at what design thinking is and how to apply it to your organization.

According to statistics, 79% of companies agree that design thinking improves the ideation process, and 71% have enjoyed a significant shift in their work culture after adopting design thinking.

What is the Design Thinking Process?

Design thinking is a process for creative problem-solving. Rather than a one-shoe-fits-all mindset, it encourages a holistic view where uncertainty and ambiguity are welcomed and embraced as to consider all sides of a problem. A design mindset can be applied to any life situation, and it aids in considering the bigger picture and informatively acting accordingly.

The method is steeped in a deep belief that the end-user should be at the heart of all decision-making. The benefit of design thinking is that, through empathy for your customer, consumer, or client, you are able to create products and experiences that truly help people and even change lives.

In this article, we'll explore the five-step process that enables teams to come up with impactful solutions to real problems that are vetted by the people they intend to serve before they've even been built.

The 5-Step Design Thinking Process

1. Empathize

The first stage of the design process is to understand the perspective of the target audience/customer/consumer to identify and address the problem at hand. To do this, design thinkers are encouraged to cast aside all assumptions (because assumptions can stifle innovation!) about the problem, the consumers, and the world at large. This allows them to objectively consider any and all possibilities about the customers and their needs.

Typical activities:

Observations:

You'll go where your users go and see what they care about.

Qualitative Interviews:

You'll hold one-on-one interviews with a handful of your users to understand their attitudes on the topic you are exploring. Asking someone to tell a story about the last time they experienced the problem you're investigating provides a rich description that highlights details you might not have otherwise considered.

2. Define

Putting together all of the information gathered in the first stage, the next step is to define the problem statement clearly. The resulting problem statement should be captured in human-centered terms rather than focused on business goals. For example, instead of setting a goal to increase signups by 5%, a human-centered target would be to help busy moms provide healthy food for their families.

Based on the frustrations you observed or heard about, come up with questions for how you might solve them.

Typical Activities

Clustering and Themes:

There are a lot of different ways to go about the Define phase, but it's safe to say you'll need a wall of sticky notes; these will be filled with the quotes, observations, and ideas you heard throughout your research. Group and cluster ideas together until you find the prevailing or most prominent themes.

As you explore the empathy data, focus on identifying patterns and problems across a diverse group of people. Gathering information on how people are currently solving the

problem provides clues on how to give a more innovative solution. You can't solve all of your users' problems. Know the most significant or most impactful issues that you want to consider as you move forward.

Define your problem statement clearly: group and cluster ideas together until you find the prevailing or most prominent themes.

3. Ideate

Now that the problem is apparent, it's time to brainstorm ways to address those unmet needs. You collect as many ideas as possible at the start, so your team can investigate and test them by the end.

The ideation stage marks the transition from identifying problems to exploring solutions. It flows between idea generation and evaluation, but it's important that each process remains separate from the other. When it's time to generate ideas, do so quickly without focusing on the quality or feasibility of the idea for now, after ideas are collected, move into the evaluation phase. This is where you can go around the room and discuss the ideas presented to get clarification if needed.

The ideation phase is usually a very creative and freeing phase for a team because they have permission to think of out-of-the-box ideas before deciding what they are going to prototype.

Explore solutions and think out-of-the-box in the ideation phase of the design thinking process.

4. Prototype

It's time to experiment! Through trial and error, your team identifies which of the possible solutions can best solve the identified problem(s). This typically will include scaled-down versions of the products or systems in question so you can present and get feedback from the people they are intended to serve.

The goal is to start with a low-fidelity version of the intended solution and improve it over time based on feedback. Beginning with a paper prototype can help you learn quickly with minimal effort. The prototype should be a realistic representation of the solution that allows you to gain an understanding of what works and doesn't work. It is changed and updated based on feedback from the Test phase in an iterative cycle. The low-cost, lightweight nature of prototyping also allows you to develop multiple solutions to test in tandem to identify the best possible solution for meeting those unmet user needs.

Prototype example drawing

UX Sketch

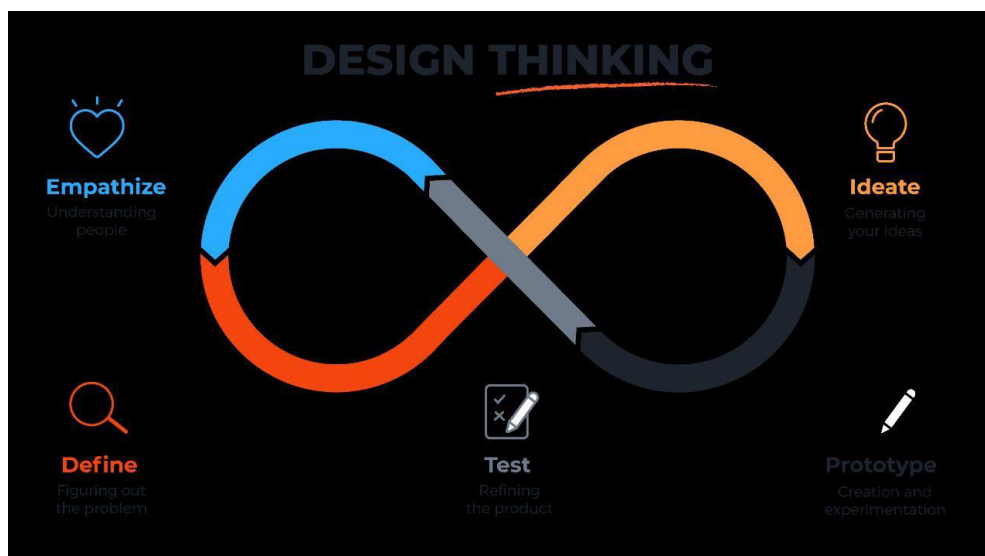
In prototyping, you create a quick version of your solution so you can get feedback from users.

5. Test

All of the work and information come together to test the product in the final stage. It's important to note that this is still an interactive stage. You will want to hear from your users again just as you did in the Empathize phase. The difference is that you are showing them your prototype to get feedback on whether or not it solves their problem.

Testing is essential because everything should ultimately be about the people who will use your products. Now's the time to revisit the problem statement and make sure the end solution is meeting those needs and resolving frustrations.

You want to see what real people think about your idea. This stage allows for all details to be flushed out and refined to create the best solution possible.



EMPATHY:

Empathy is the ability to recognize, understand, and share the thoughts and feelings of another person, animal, or fictional character. Developing empathy is crucial for establishing relationships and behaving compassionately. It involves experiencing another person's point of view, rather than just one's own, and enables prosocial or helping behaviors that come from within, rather than being forced.

Some surveys indicate that empathy is on the decline in the United States and elsewhere, findings that motivate parents, schools, and communities to support programs that help people of all ages enhance and maintain their ability to walk in each other's shoes.

UNCOVERING AND INVESTIGATING CONCERNS:

Design thinking is a formal method for practical, creative resolution of problems and creation of solutions, with the intent of an improved future result. In this regard it is a form of solution-based, or solution-focused thinking – starting with a goal (a better future situation)

instead of solving a specific problem. By considering both present and future conditions and parameters of the problem, alternative solutions may be explored simultaneously.”

At this point you are probably thinking, “Isn’t that basically what business process improvement is all about?” For me, that answer would be “pretty much.” If that is the case, then why is design thinking trending right now among C-level leadership teams? To be honest, I believe it is because the promises of business process improvement have fallen short--not because the frameworks are flawed, but because organizations just have convoluted the process, making them ineffective. Many CEOs feel that frameworks like Six Sigma and operational excellence have not delivered on a wide enough scale to warrant the investments made. Enter design theory, the new (yet old) kid in town.

Assuming that design theory will have its day on the main stage, the challenge facing PMs, IT and other solution delivery groups within organizations is how to adapt to its process, terminology, etc. The intent of this article is to help you get started.

To begin with, design thinking subscribes to a set of principles or rules as follows,

- ✓ The human rule – all design activity is ultimately social in nature
- ✓ The ambiguity rule – design thinkers must preserve ambiguity
- ✓ The re-design rule – all design is re-design
- ✓ The tangibility rule – making ideas tangible always facilitates communication
- ❖ Determine the problem.
- ❖ Think of several possible solutions to the problem.
- ❖ Consider the consequences for each of their solutions.
- ❖ Pick the solution they think will work the best.
- ❖ Present their solution to the class.

DEFINE:

EXAMINE AND RELECT ON THE PROBLEM:

The field experience in this course has been a real learning experience for me. Nothing prepares you for the real world except firsthand experience. I thought that all students who entered the classroom would have a natural love of learning. Boy was I wrong! Some seem only to be in school because it’s required. Education is not even on their priority list.

Many of you may agree with the sentiments of this prospective teacher who discovered during a field experience that teaching was not what she had expected. Both inexperienced and experienced teachers often report that they are overwhelmed by the educational problems that they face in classrooms.

These problems range from students who are unmotivated and disconnected from the learning process to students who are years behind in their skills to students who are bored, angry, and disruptive in the classroom. With large numbers of students and pressure to cover an

RECONSIDER AND ARRIVE AT THE RIGHT PROBLEM TO SOLVE:

Being effective requires a deeper understanding of the problem we're attempting to solve. This is referred to as understanding the "problem space", and stands in contrast to the "solution space" where we design and implement solutions to solve the problem. The problem space is where Einstein would spend 55 of his precious minutes, with only 5 minutes in the solution space.

Differentiating between the problem and solution space helps us be conscious of where we are focusing our efforts. It is tempting to begin our journey in the solution space, solving a perceived problem by first creating a solution and then releasing it to customers. We find only too late what we have created is an undesirable solution to an insubstantial customer problem.

The Design Thinking (and related) tools we often deploy include:

Objectives and Key Results (OKRs): a set of measurable goals that define direction without dictating how a problem is solved, e.g.: reduce current account customer attrition by 10%

Customer Personas: a canvas that captures our shared understanding of our customer and their unmet needs

Outcome-based Roadmap: a high-level plan indicating the order in which we will tackle the problem, and the outcomes (success measures) we expect to see

Lean Canvas: a method to ensure the solution is compatible with wider business needs

RESEARCH WITH THE USER AND CONTEXT:

The dynamic of interviews and group discussion is more familiar to participants, who take a more passive role, sitting back and waiting to answer a researcher's questions. In contrast, a contextual inquiry requires participants to take the position of a subject matter expert, leading the session by demonstrating and talking about their tasks. For those who are used to taking a more passive role during interviews, this turned table can be difficult. Without intending to, participants often slip back into the traditional role.

Because contextual inquiry is so different, clients usually don't understand it or the need for it. Even if the client or the one who has requested the research understands contextual inquiry, it is difficult for them to explain it to others connected to the research. This often leads to poor expectation setting and management. Again, if the design research company isn't the one briefing the participants, the participants may not have a complete idea of what contextual inquiry involves and end up signing up for something that they are not comfortable with. This can be resolved if a write up explaining what exactly will happen during the contextual inquiry is provided to the client and further sent to the participants. Additionally, a description of what exactly is expected from the participants will also help the process.

Contextual inquiry is usually performed with one participant at a time and in an environment where the participant usually performs their tasks. Rather than recruiting one participant to perform all tasks, the tasks can also be split up among different participants to observe and understand all tasks in depth and not exhaust or tire down one participant.

Advantages of Contextual inquiry:

1. Detailed information gathering

Contextual inquiry produces highly detailed information as opposed to many other qualitative methods, which produce more high-level information.

2. User centered

As contextual inquiry is led by the participants, it takes whatever course the user wants to give it as well as flexible from their point of view.

3. Accuracy

As the participant is comfortable and authentic in their environment, the quality of information gathered is highly accurate.

4. Real Insights

Contextual inquiry is performed in the participant's natural environment so the insights are closely connected to the participants and their tasks.

QUESTION FRAMING AND CONDUCTING RESEARCH:

The primary importance of framing the research question is that it narrows down a broad topic of interest into a specific area of study (Creswell, 2014). Research questions, along with hypotheses, also serve as a guiding framework for research.



Steps to developing a research question:

- Choose an interesting general topic.
- Most professional researchers focus on topics they are genuinely interested in studying.
- Do some preliminary research on your general topic.
- Consider your audience.
- Start asking questions.
- Evaluate your question.

With that in mind there are three common types of quantitative research questions:

- Descriptive research questions.
- Comparative research questions.
- Relationship-based research questions.

USER STORIES AND DESIGN STRATEGY:

At its core, a user story describes something that the user wants to accomplish by using the software product. They originated as part of the Agile and Scrum development strategies, but for designers they mainly serve as reminders of user goals and a way to organize and prioritize how each screen is designed.

User stories are short statements about a feature, written from a user’s perspective. A well-defined user story does not spell out the exact feature, but rather what the user aims to achieve, to give agile teams the freedom to identify the best possible way to implement the feature. User stories are commonly used in agile teams to facilitate planning. Each story should be small enough to fit into one sprint.

The best stories are ones that lead to measurable outcomes. Examples of good outcomes are an X% increase in profile completion rates or an N% drop in payment flow errors. Outcomes that are tied to users or business goals free up the team to think about solutions to problems instead of churning out features for the sake of shipping something.

