What is Design Thinking and why is it so popular?

Design Thinking is an iterative process in which we seek to understand the user, challenge assumptions, and redefine problems in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. At the same time, Design Thinking provides a solution-based approach to solving problems. It is a way of thinking and working as well as a collection of hands-on methods.

Design Thinking revolves around a deep interest in developing an understanding of the people for whom we're designing the products or services. It helps us observe and develop empathy with the target user. Design Thinking helps us in the process of questioning: questioning the problem, questioning the assumptions, and implications. Design Thinking is extremely useful in tackling problems that are ill defined or unknown, by re-framing the problem in human-centric ways, creating many ideas in brainstorming sessions, and adopting a hands-on approach in prototyping and testing. Design Thinking also involves ongoing experimentation: sketching, prototyping, testing, and trying out concepts and ideas.

The five phases of Design Thinking:
Empathise – with your users
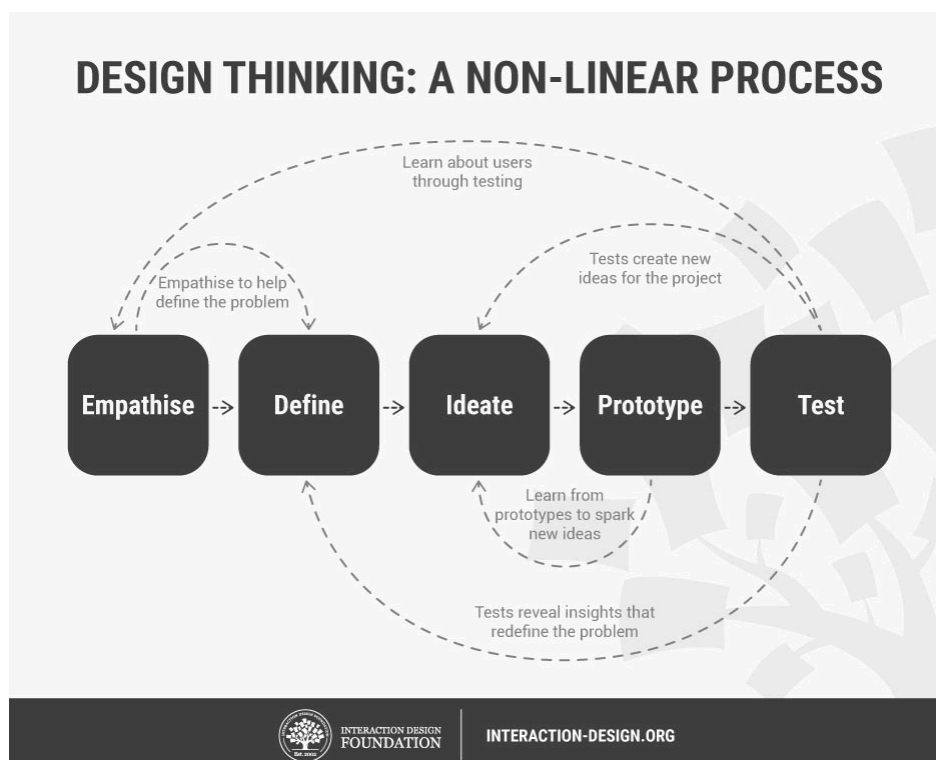Define – your users' needs, their problem, and your insights
Ideate – by challenging assumptions and creating ideas for innovative solutions
Prototype – to start creating solutions
Test – solutions

It is important to note that the five phases, stages, or modes are not always sequential. They do not have to follow any specific order and can often occur in parallel and repeat iteratively. As such, you should not understand the phases as a hierarchal or step-by-step process. Instead, you should look at it as an overview of the modes or phases that contribute to an innovative project, rather than sequential steps.

Design Thinking is an iterative and non-linear process

DESIGN THINKING: A NON-LINEAR PROCESS

Learn about users through testing

Empathise to help define the problem

Tests create new ideas for the project

Empathise → Define → Ideate → Prototype → Test

Learn from prototypes to spark new ideas

Tests reveal insights that redefine the problem

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Design Thinking is essentially a problem-solving approach specific to design, which involves assessing known aspects of a problem and identifying the more ambiguous or peripheral factors that contribute to the conditions of a problem. This contrasts with a more scientific approach where the concrete and known aspects are tested in order to arrive at a solution. Design Thinking is an iterative process in which knowledge is constantly being questioned and acquired so it can help us redefine a problem in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. Design Thinking is often referred to as 'outside the box thinking', as designers are attempting to develop new ways of thinking that do not abide by the dominant or more common problem-solving methods – just like artists do. At the heart of Design Thinking is the intention to improve products by analysing how users interact with products and investigating the conditions in which they operate. Design Thinking offers us a means of digging that bit deeper to uncover ways of improving user experiences.

New Innovative Thinking for New Problems

Creating the right mindsets, selecting the appropriate team, and setting up environments which encourage innovation to take place are three of the essential aspects of fostering successful innovation within companies, organisations, and society at large.

The challenges organisations and countries face today are much more complex and tricky than the ones we faced a few decades ago. Part of the reason is globalisation, which brought together different agents across the globe into an interconnected web of systems that affect one another. To solve these new, complex problems, Design Thinking steps in with a bold and newly systematised, non-linear human-centred approach. Design Thinking allows us to adopt a human-centred perspective in creating innovative solutions while also integrating logic and research. In order to embrace Design Thinking and innovation, we need to ensure that we have the right mindsets, collaborative teams, and conducive environments. When we align our mindsets, skills and environments, we are able to create innovations that allow us to survive the disruptions we might face in the near future. Keep in mind a deep desire to create a better situation for the world around us, and start creating a better world for yourself and the world.

Obstacles to Problem Solving and Innovation in Design Thinking

Before we take on a Design Thinking project, it is important, firstly, to take note of the various obstacles that can prevent us from reaching a solution that really works. From our impulsive tendencies to react to problems quickly and solve them just as fast, to the threat of egos and groupthink (We all agree, so it must be right... right? Wrong!), there are many potential pitfalls that teams should learn to avoid. Developing a holistic understanding of the problems that the target users face is a key element of Design Thinking, which is typically adopted to solve complex, wicked problems where multiple spheres and fields collide.

In order to solve a complex, wicked problem, you and your team need to resist the urge to react impulsively and learn to dive deep and develop a holistic understanding of the problem, before starting to ideate the possible solutions to it.

The most successful problem-solving spaces provide room for each player or actor to present his/her views, thoughts, feelings and experiences, thereby allowing a more holistic approach to solving the problem. There should be no room for egos in an innovative design project.

Obstacles to Problem Solving

The following list of factors, though not exhaustive, represents some of the obstacles to achieving innovative solutions to the challenges we face. The more obstacles we encounter within a problem space, the more difficult the path to innovation. Our goal should always be to create a space where obstacles are understood and removed or neutralised while exploring solutions.

Individual people   Egos   Knowledge   Perception   Mindsets   Beliefs   Impulsive reactions   Groupthink   Education   Language   Skills   Man with a hammer syndrome   Team construction   Power structures   Organisational constraints and power structures   Culture   Location   Environment Economics   Politics   Trends   Technology   Sustainability Law   Time   Money

If the list above seems long and broad, that's the whole point. Hundreds of factors can influence how conducive a team can be when solving problems, so it is extremely important to be cognisant of how small and seemingly unimportant factors can adversely affect your team's progress. While it is not efficient to consider and analyse each and every factor in full, you should nevertheless put them at the back of your mind when working on a project.

Wicked Problems: 5 Steps to Help You Tackle Wicked Problems by Combining Systems Thinking with Agile Methodology

10 Characteristics of Wicked Problems

- There is no definitive formula for a wicked problem.
- Wicked problems have no stopping rule, as in there's no way to know your solution is final.
- Solutions to wicked problems are not true-or-false, they can only be good-or-bad.
- There is no immediate test of a solution to a wicked problem.
- Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.
- Wicked problems do not have a set number of potential solutions.
- Every wicked problem is essentially unique.
- Every wicked problem can be considered to be a symptom of another problem.
- There is always more than one explanation for a wicked problem because the explanations vary greatly depending on the individual perspective.
- The planner/designer has no right to be wrong and must be fully responsible for their actions.

How to Tackle a Wicked Problem using Systems Thinking and Agile Methodology

Design thinkers of the past had already begun the discussion on how to work with wicked problems by utilizing systems design, but why not take it a step further? We know **systems thinking** helps us understand the components and relationships of a problem. We also know that **agile methodology** helps with improving solutions through collaboration. Together, the two ways of thinking can be combined to lead us to a better solution at each iteration as they both evolve with the wicked problem.

Agile methodology is an iterative approach to product development. An agile, collaborative environment breeds the ability to be efficient and effectively meet the stakeholders' changing requirements. On the other hand, **systems thinking** is the process of understanding how components of a system influence each other as well as influence other systems.

5 Steps: How You Can Apply Systems Thinking and Agile Methodology in Your Work

Anyone who's been faced with wicked problems have experienced frustration from not knowing where or how to begin when it comes to issues that are difficult and nearly impossible to solve. Next time, you'll have 5 handy steps and methods to use and share with your team when tackling wicked problems in design.

Break down information into nodes (chunks of information – that can for example be objects, people or concepts) and links (the connections and relationships between the nodes) hence utilizing systems thinking when faced with a wicked problem. Doing so makes our private mental models (our representations of the external reality) visible to the outside world.

Visualize the information. Sketching and placing information into a physical space helps both you and your team take in and understand the systems at hand as well as the relationships within and between them.

Be collaborative and include stakeholders in the process. Sharing your mental model helps other people build on your ideas and vice versa. Creating physical drawings and grouping notes to produce different systems models allows the team to synthesize several points of view.

Release solutions quickly to gather continuous feedback. Feedback of success helps with solving problems we don't have one right answer for. The more feedback you gather from your users and stakeholders, the more guidance there is to get to the next step.

Iterate. With each iteration, you and your team have the chance to utilize feedback and determine what changes are needed to further improve the solution for your wicked problem.

We as UX designers have the responsibility to come up with the best solution possible even when the problem itself is indeterminate and the best solution does not yet exist. Knowing that systems thinking and agile methodology can help us begin on tackling any wicked problem, we should utilize these practices and share them with others so that we can, together, get to the next iteration of the design. Remember the 5 Step process: Break down information into nodes (chunks of information: objects, people or concepts) and links (the connections and relationships between the nodes). Visualize the information. Be collaborative and include stakeholders in the process. Release solutions quickly and gather continuous feedback. Iterate.

Essential Design Thinking Videos and Methods
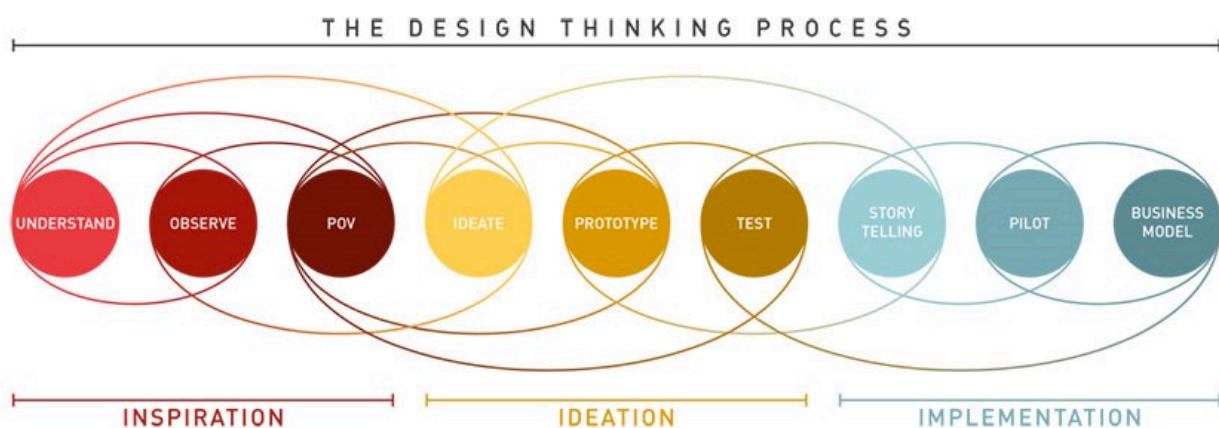
Holistic: incorporating the concept of holism, or the idea that the whole is more than merely the sum of its parts, in theory or practice:

The Design Thinking Process

5 Stages in the Design Thinking Process

In essence, the Design Thinking process is iterative, flexible and focused on collaboration between designers and users, with an emphasis on bringing ideas to life based on how real users think, feel and behave.

Design thinking tackles complex problem by:

1. Empathising: Understanding the human needs involved.
2. Defining: Re-framing and defining the problem in human-centric ways.
3. Ideating: Creating many ideas in ideation sessions.
4. Prototyping: Adopting a hands-on approach in prototyping.
5. Testing: Developing a prototype/solution to the problem.

ATTRIBUTES OF DESIGN THINKING

ATTRIBUTE	WHAT IT MEANS	NOTES
Ambiguity	Accepting that things can be unclear or ill-defined when working on a problem, and that answers might not be obvious or known.	Design Thinking is often applied to what are called "wicked" problems: i.e., those without a fixed solution and which are complex and filled with uncertainty.
Collaborative	Working together with colleagues and experts from different disciplines at almost every stage of the process.	In order to solve complex, tricky problems, a multi-disciplinary approach is needed, where the combined wisdom of different fields is used to gain a deep understanding of those problems.
Constructive	Standing on the shoulders of giants, or building upon the ideas of others during ideation. Rather than put down or argue against an idea, build upon it and suggest tweaks and improvements.	In Design Thinking, constructive criticism is important. It's an approach that focuses on building solutions, and thus involves a lot of ideation and building on other ideas.
Curiosity	Being naturally motivated to ask questions, even when you think you know the answers. Being curious also entails having a fresh, beginner's mindset.	The starting point of a Design Thinking process usually involves deeply understanding the problem — and that requires a lot of curiosity to dig deeper. Often, actionable insights come not from superficial observation but deep probing.
Empathy	Being able to understand things from the user's point of view.	Design Thinking is a human-centred approach to solving problems. It starts with a deep understanding of the users' perspective as well as their emotions and behaviours.
Holistic	Being able to see the larger picture, and looking at a situation or problem from multiple angles.	Complex problems require holistic, whole-of-picture perspectives. Thus, design thinkers focus not only on the problem, but on the users, too, as well as on the whole value chain and distribution channel — because every small part adds up to define the experience of the solution.
Iterative	A cycle of feedback loops where new information is used to improve ideas throughout the process.	The stages in Design Thinking are not linear sequences, but instead modes of thinking that can be used in a project. As such, new information from one stage often leads to a feedback loop in other stages, and this iterative process helps the team progress towards the optimal solution.
Non-judgemental	Being able to hold discussions about ideas without any judgement shown towards the ideas or people.	In ideation phases of a Design Thinking project, it is essential not to make discussions turn personal, or feel personal. No idea should be thrown out, because even non-feasible ideas can inspire more ideas and might eventually lead to a solution.
Open mindset	Embrace wild ideas; do not	Wild ideas are not taboo in Design

DESIGN THINKING METHODS

STAGE	DESIGN THINKING METHODS	TRADITIONAL HCI METHODS
Empathise	• Assume a beginner's mindset • What-How-Why • Conduct interviews with empathy • Build empathy with analogies • Photo and video user-based studies • Personal photo and video journals • Engage with extreme users • Story share-and-capture • Bodystorm • Journey map	• Problem statement definition • User observation • User interviews and questionnaires • Site visits
Define	• Share inspiring user stories • Affinity diagrams • Empathy map • Personas • Point of view (POV) or Problem Statement • Point of View (POV) mad-lib • "How might we?" Questions	• Personas and user roles • Use cases, user stories and scenarios • Affinity diagrams
Ideate	• Point of View (POV) • Point of View (POV) mad-lib • "How might we?" Questions • Brainstorm • Braindump • Brainwrite • Brainwalk • Challenge assumptions • SCAMPER • Mindmap • Sketch • Storyboard • Analogies • Provocation • Movement • Bodystorm • Gamestorm • Cheatstorm • Crowdstorm • Co-creation workshops • Prototype • Creative pause • Worst possible idea • Post-it voting • Four categories method • Bingo selection • Now Wow How matrix • Six thinking hats	• Brainstorm • Focus group discussions with users
Prototype	• Prototype for empathy • Prototype to decide • Storytelling • Bodystorm	• Create prototypes (wireframes, functional prototypes, etc.)
Test	• Prototype to test • Feedback capture grid • I like, I wish, what if	• User testing • Usability testing • Remote tests

# Empathise with the People you Design for

The following are our favourite Empathise methods:

- Assume a beginner's mindset
- Ask What-How-Why
- Ask the 5 whys
- Conduct interviews with empathy
- Build empathy with analogies
- Use photo and video user-based studies
- Use personal photo and video journals
- Engage with extreme users
- Story share-and-capture
- Bodystorm
- Create journey maps

Empathy is important for us as designers and particularly for design thinkers because it allows us to truly understand and uncover the latent needs and emotions of the people we are designing for. As such, we can design solutions that meet the three parameters of a successful product or service: desirability, feasibility and viability. In Design Thinking, we call this "the Empathise stage". Designing with empathy is what separates a human-centred product like The Embrace Warmer from another, such as Google's Glass. The good news is that everybody can master empathy and become a great design thinker: we are all innately empathic.

How to build empathy:

Empathy is innate in everyone, and focusing on some key traits of an empathic observer can help you unlock and augment your empathic skills so you can gain a greater understanding of the latent needs of users. At the same time, learning about what people's body language tells us (above and beyond what they say verbally) is a skill that we can hone with practice. Immersing yourself in your users' shoes is the best way to learn about them, and, on top of that, there are a couple of useful methods you can employ — the What-How-Why method, interviewing, and using analogies to build empathy — so as to gain a deep and holistic understanding of your users.
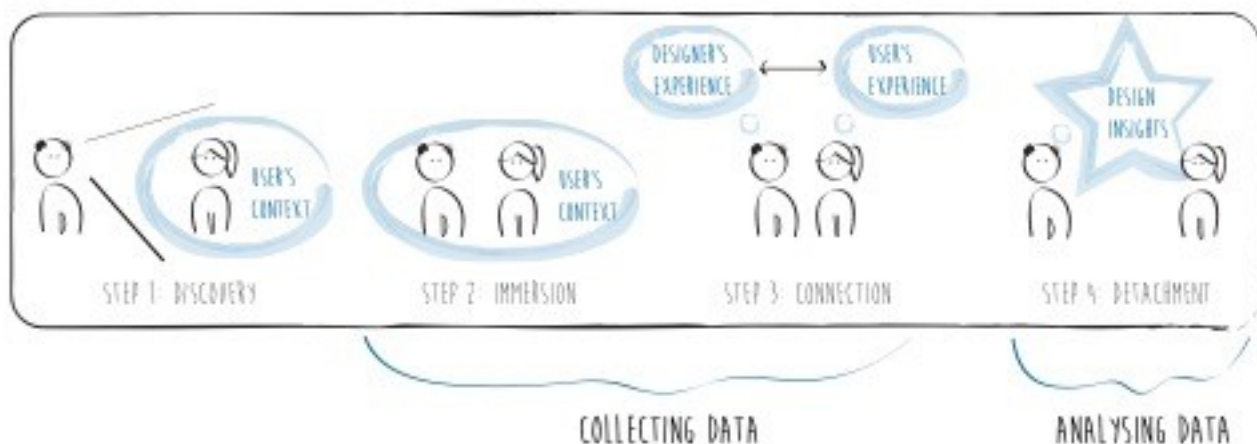
The Four Steps in Developing Empathy for your Target Group

As we mentioned before, there are three approaches to collecting the subjective information that you need so as to gain empathy for your target group. Each approach involves four general steps. According to

Froukje Sleeswijk-Visser, design researcher and co-creator of the context mapping method (a method that allows you to gather deep insights into what people feel and dream), these steps are:

- **Discovery:** enter the user's world and make contact with the user. This will help you get into the right mind-set to understand the user. Let's say you're designing a new workflow for employees working at a self-service food court to improve their efficiency. Maybe you have never exchanged more than a few words with the people behind the counters of a self-service food court. You don't know them. Walking around behind the scenes and getting a glimpse of the hours they put in and the limited space they have to move around in helps you get into the right mind-set. It triggers your designer's curiosity.
- **Immersion**: wander around in the user's world to collect qualitative data. This helps you take the user's point of reference. When you start to collect data actively by participating as a member of the food court team, talking to them during coffee breaks and taking pictures of things that stand out to you, you start to experience the context from your users' point of view.
- **Connection:** resonate with the user, and recall your own experiences to connect and create meaning. This step may occur naturally while collecting the data. For example, when you find out how irritated the employees are by the lack of communication about changing menus and special offers, you might recall how it felt when you were in design school and teachers forgot to communicate clearly about changing mandatory literature for the next exam! Not having the right information to do your job properly may lead to a feeling of helplessness. You remember how it feels. You understand and identify with their context and feelings. You have empathic insights.
- **Detachment:** step back into the role of designer, reflect and create ideas. While it may seem sufficient to get the empathic insights by following the previous steps, you need to look at your subjective data with a designer's mind so as to translate the empathic insights into ideas. A feeling of frustration about the lack of communication may seem solvable by actions directed at the team manager at first. Even so, after creating an overview of the insights and reflecting on it more objectively, you can use the informal communication that is already used between team members to create solutions that will give them a stronger feeling of control.

In order to design great experiences, you need empathic insights. It is important to balance the steps of collecting subjective insights with objective reasoning and analysis. The best way to collect the subjective information is to embed yourself in the context of your target group and gain personal insights into the experiences they have. Three different approaches are available to you. Together, they enable you to get empathic on an affective and a cognitive level: observing people, asking them to express themselves and experiencing things yourself. You should take four steps in each approach: discovery, immersion, connection and detachment. When analysing the collected data, you can borrow techniques from traditional qualitative research and apply them so as to find opportunities for design. If you're especially attentive and careful throughout these processes, you may access powerful insights into your target group's way of seeing the world.

The Three Stages in the Context Mapping Process and how to develop the Best Probes to Fit into it
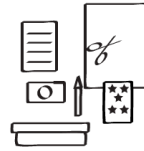
The context mapping procedure involves three stages:

- **Preparing and developing the probes:** We will share the essential three steps, which will help you get started in the best possible way, and you will learn which three types of probes usually work well.
- **Collecting:** The main stage is where you collect the insights from your users, who will have your probes kit with small exercises and live with it for a few days. You will then use the results as input for the generative session where your goal is to get to a deeper understanding of what your users know, feel and dream through the ideas they generate.
- **Communicating:** Analysing and sharing the insights with the design team or other stakeholders in the project concludes the context mapping process and ensures the design process to continue in the right direction.

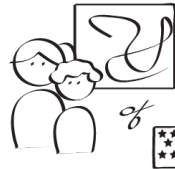STAGE 1: PREPARING — DETERMINING THE GOALS | DEVELOPING THE PROBES | PLANNING THE FOLLOW-UP

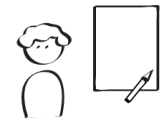STAGE 2: COLLECTING — SENSITIZING | MAKING | DISCUSSING

STAGE 3: COMMUNICATING — ANALYZING | SHARING | CONCEPTUALIZING

The context mapping technique:

- Allows designers to get to the latent needs, dreams and aspirations of a target group.
- Includes probes that enable users to show you their world, their reflections on it and their dreams about its future, all in an active way.

The context mapping procedure involves three stages: preparing, collecting and communicating. Preparing the right kind of probes kit is essential for gathering rich insights into your target group that will inspire the early stages of design. Three key steps you should consider when preparing and designing a probes kit are:

Always start by clearly stating the goal of the cultural probe and selecting probe types that match your users.

Create the kit in a way that slowly sensitises your users and takes them along in your line of thinking.

Design for the ending of the probes: decide how to follow up after collecting the probes kit.

As designing a probes kit is like any other small design task, you should try out your probes kit and adapt the set of exercises when it doesn't fit your design problem or target group as anticipated. Through the rich data they provide in the probes kits, your users will actively give you inspiration for the design process. Finally, you need to communicate the insights to other design team members or stakeholders—to ensure that the design process takes the right direction.

Ethnographic research can add huge value to User Experience design and Design Thinking processes because it is essentially Human-centred. It's important to focus on and empathise with the people you design for, and truly listen to and understand them, rather than concentrating on your expected process outcomes.

You need to be aware of potential sources of bias and take care to eliminate them. You will also need as diverse a team as possible in order to obtain the best insights. Keeping the seven ways of enhancing your ethnographic research in mind will enable you to maximise what you can learn from your users.

- Diversity matters
- Consider your subjects
- Give people a reason to help you

- Let people explain why they feel or do something
- Keep an eye on the physical context
- Don't start with solution in mind
- map insights and check for objectivity

How to Conduct User Interviews
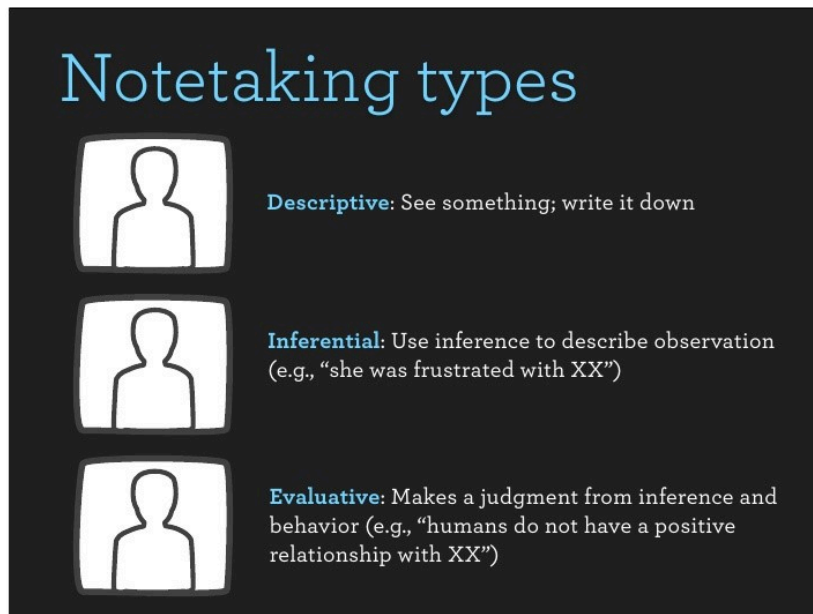
User interviews are a cheap and easy way to get data "straight from the horse's mouth". However, it's important to bear in mind that there are limitations to this technique and you may discover what people say they do rather than what they actually do. Conducting interviews is simple. Write a script and go through it with the user. Make sure to keep the user informed and comfortable as you do.

Question everything:

Most of what we can see at the first glance about a problem is only what's on the surface. In order to create solutions that truly impact our users, however, we need to dig deep into the root of the problem, and the drivers, needs, and motivations of our users. In other words, we should question everything. We should gather information — both quantitative and qualitative — and use what we have learnt to inform our problem-solving process. Lastly, the Five Whys method is a simple but extremely useful way to get to the root of a problem or issue.

The Power of Stories in Building Empathy

Stories play a significant role in the Design Thinking process. A story constructs a narrative so that we can gain a deep and emotional understanding of our users. It allows us to pay attention to various aspects of the users, including their environment, their needs, desires and problems, and allows us to design Human-centred solutions that meet their needs. Aristotle's seven elements of good storytelling should always be applied to the Design Thinking process; doing so, we can have a holistic and well-rounded comprehension of our users. These seven elements will help us to observe and tell the essential stories—and there are also several methods, such **as story share-and-capture** and **journey mapping**, which enable us as design thinkers to take advantage of the power of storytelling so as to build empathy with our users.

Define the Design Challenge

Analysis and synthesis are equally important. Each of them play an essential role in the process of creating options, making choices and guiding you in defining your design challenge in a problem statement. Analysis involves researching and breaking down complex concepts and problems into smaller, easier-to-

understand constituents. You will analyse, research, and gain empathy for the person you are designing for in the Empathise mode. Synthesis involves creatively putting your analysis and research pieces together in order to form whole ideas. You synthesise in the Define phase: You organise, interpret, discover connections and patterns and make sense of the data that you have gathered. Your goal in the Define phase is to create a problem statement, also known as a Point Of view. Your Point Of View will be your transit into crystallising inspirational How Might We questions, which will lead you into the Ideation sessions, which follows as the next and third phase of Design Thinking process.

You can tell significant and surprising **user stories**. You will often want to bring all of your data out into the open and visualise it during **mapping** sessions with team members. You can, for example, develop **empathy maps and personas** based on your research about your users. It often makes sense to immerse your personas in stories and flesh out the scenarios they find themselves in. Once you understand the full scope of your users' worlds, you can then form a problem statement which is also known as a Point Of View. You then proceed to crystallising your problem statement into inspirational How Might We questions. The How Might We questions will lead the way into the Ideation sessions, which follow in the next and third phase of Design Thinking process.

Mapping helps plot **experiences, customer journeys, thought processes, a series of activities or actions** and other related behaviour, as well as **feelings,** in one place. It would be useless having reams of data and not be able to understand the essence of it by extracting significant meaning from the data. This is a well-known issue in the business sector and synthesing methods can help you solve that problem.

Affinity Diagrams and Space Saturate and Group – Clustering and Bundling Ideas and Facts

The "space saturate and group" method's goal is **to get all of your observations and findings into one place**: Immerse yourself in the chaos of information you've gathered during your research Empathise phase. Get all of the information out into the open and get visual. Create a collage of all of your observations, data, experiences, interviews, thoughts, insights, and stories. Write on post-its, draw your insights, **tell stories, and share artifacts**.

In the second phase of the Design Thinking process, there are a variety of methods you can use to help you and your team define, synthesise, organise, and theme your research from the **Empathise mode**, the first phase in the Design Thinking process. These Define methods will help you tell the right stories, map and understand user insights and needs, construct personas and immerse them into scenarios and stories. These Define methods will help you create a comprehensive view of your design challenge. Once you have an overview of the design challenge, you're ready to construct your **essential problem statement**, also known as **the Point Of View**. In your Point Of View, you define your core design challenge, your user's essential needs and your insights about them. Your Point of View allows you to open up for **How Might We** questions, which will guide your Ideation sessions during which you start to look for various design solutions to your design challenge.

Affinity Diagrams can help you bundle and cluster large bodies of information, facts, ethnographic research, ideas from brainstorms, user opinions, user needs, insights, design issues, etc. This method will help you name, rank and understand relations between groups of information. For this reason, this method is also known as "Space Saturate and Group" by d.school. This is a great method which can, if you follow the step-by-step process which we've described, surprisingly and straightforwardly create an overview and synthesise your findings. It's important that you remember to sum up the major insights, user needs, pain points, gaps, etc. Once you've done that you can focus on translating what you've organised and understood and put it into practice.

Needs: **Needs are verbs**, i.e. activities and desires. Needs are not nouns, which will instead lead you to define solutions.

An Empathy Map consists of four quadrants. The four quadrants reflect four key traits, which the user demonstrated/possessed during the observation/research stage. The four quadrants refer to what the user: **Said, Did, Thought, and Felt**. It's fairly easy to determine what the user said and did. However, determining what they thought and felt should be based on careful observations and analysis as to how they behaved and responded to certain activities, suggestions, conversations, etc.

Best practice

Step 1: Fill out the Empathy Map

Lay the four quadrants out on a table, draw them on paper or on a whiteboard.

Step 2: Synthesise NEEDS

Synthesise the user's needs based on your Empathy Map. This will help you to define your design challenge.

Step 3: Synthesise INSIGHTS

An "Insight" is your remarkable realization that can help you to solve the current design challenge you're facing.

Look to synthesise major insights, especially from contradictions between two user attributes. It can be found within one quadrant or in two different quadrants. You can also synthesise insights by asking yourself: "Why?" when you notice strange, tense, or surprising behaviour.

Write down your insights.

Personas are fictional characters. You create personas based on your research to help you understand your users' needs, experiences, behaviours and goals. Creating personas will help you identify with and understand the user you're designing for. Personas make the design task at hand less complex, they will guide your ideation processes, and they will help you to achieve the goal of creating a good user experience for your target user group. Engaging personas emphasise how stories can engage and bring the personas to life. The 10-step process covers the entire process from the preliminary data collection, through active use, to continued development of personas.

4.8 pas fait

Ideate

Ideation Will Help You:

- Ask the right questions and innovate with a strong focus on your users, their needs, and your insights about them.
- Step beyond the obvious solutions and therefore increase the innovation potential of your solution.
- Bring together perspectives and strengths of your team members.
- Uncover unexpected areas of innovation.
- Create volume and variety in your innovation options.
- Get obvious solutions out of your heads, and drive your team beyond them.

Unlike the all too familiar designer's nightmare of staring at a blank page unable to conjure up ideas from the creative ether, Design Thinking's first two modes, Empathise and Define, gives you a solid base to launch relevant and well-informed ideas, which hit the mark in surprising and delightful ways, no voodoo required. Sometimes it will make sense to visibly display personas, stories, scenarios and other maps from which you have derived insights and the Point Of View to keep the ship steering in the appropriate direction during your ideation session. Most of all, your Point Of View should be centre stage.

When you've got your Point Of View, you'll start asking "How Might We?" questions and you might feel as if you've already walked a long hard road to get there. Keep calm and ideate! Everything you've been doing up until this point is really about to come to life. Shake up the ranks and make some space for unleashing your ideas, all of them, however weird and wonderful they may be. Be prepared to throw it all out there.

Prototype and Test

Six Common Pitfalls:

- Diving into the First Good Idea: Solution: Explore a Range of Different Approaches First
- Falling in Love with Your Prototypes: Solution: Start with Cheap and Fast Prototypes
- Wasting Time Explaining and Pitching: Solution: Have a Bias Towards Action
- Prototyping Without a Purpose: Solution: Have a Question in Mind
- The Failure Roadblock: Feeling Discouraged by Failed Prototypes: Solution: Reframe the Idea of Failure
- Seeing Prototypes as a Waste of Time: Solution: Adopt a Long-Term View

Fidelity of a Prototype

The fidelity of a prototype refers to its level of completeness and detail. The degree of completeness of the prototypes you build depends on the stage of progress; these include the following:

- Low fidelity – low cost, rough and quick to build (paper)
- Medium fidelity – slightly more detailed, still rough but closer to the solution (Balsamiq)
- High fidelity – much closer to final, very detailed and much more time-consuming

When to Use Low-Fidelity Prototypes

Use low-fidelity prototypes when you need to test rapidly and cheaply and explore a wide range of options in order to figure out the best ways of executing your ideas. Use them as a proof of concept model to test out and rapidly present ideas in tangible form.

When to Use Medium-Fidelity Prototypes

Use medium-fidelity prototypes when you need to give people a better sense of what the solution or part of the solution might look like — and when you have already tested and validated some early assumptions.

Medium-fidelity prototypes are great for refining the execution of solutions, while still providing room for changing direction and testing out options.

When to Use High-Fidelity Prototypes

Use high-fidelity prototypes when you need to test the full spectrum of dynamics of the completed solution as well as analyse it for functional, visual and experience purposes. It provides a much more realistic picture of what the end product may be like and allows for final-stage refinements and experience tests. High-fidelity prototypes are excellent for the final selling of ideas when funding decisions need to be made, or when potential markets are being approached for feedback.

When prototyping, pay attention to four key considerations: people, objects, location, and interactions. These factors will affect how your prototype will work — and what to observe in testing sessions. With these factors in mind, you can build prototypes based on any of the eight methods we've just covered: sketches, paper interfaces, storyboards, Lego prototypes, role-playing, physical models, Wizard of Oz prototypes, and user-driven prototypes. Finally, if you are unsure of what prototype to build, you can use IDEO's four-step process to help you to start making prototypes. The range of choices is wide and clear enough for you to latch — sooner rather than later — with the right prototype for you and hence take a large step towards ultimately realising your ideas in the form of a serviceable, user-friendly design.

Six Best Practice Tips for Gathering Feedback on Your Prototypes

- Ways to Solicit Feedback
- Test Your Prototypes on the Right People
- Ask the Right Questions
- Be Neutral When Presenting Your Ideas
- Adapt While Testing
- Let the User Contribute Ideas

Pros and Cons of Heuristic Evaluation

Like any suggested method in research and design, there are both pros and cons in the usability inspection method of heuristic evaluation. Let's examine a few of them:

Pros of Heuristic Evaluation

- Heuristics can help the evaluators focus their attention on certain issues
- Heuristic evaluation does not carry the ethical and practical issues/problems associated with inspection methods involving real users.
- Evaluating designs using a set of heuristics can help identify usability problems with individual elements and how they impact the overall user experience.

Cons of Heuristic Evaluation

- Choosing appropriate heuristics is extremely important; if the wrong set of heuristics is employed, certain usability problems may be overlooked.
- Heuristic evaluation might be relatively time-consuming when compared to other 'quick and dirty' inspection methods, such as simple walkthroughs with a small sample of users. Training evaluators takes about a week on average, not including the time it takes to conduct the evaluations and debriefing sessions.
- Unlike cognitive walkthroughs, heuristic evaluation is based on preconceived notions of what makes 'good' usability. However, this need not be seen as a negative point, as heuristics are often based on the experiences of real users with hundreds of designs.
- Problems identified by evaluators can often be false alarms. For example, in the article 'Usability testing vs. heuristic evaluation: A head-to-head comparison' by Bailey et al., it was stated that 43% of 'problems' identified in three heuristic evaluations were not actually problems. Furthermore, of the usability problems recorded by the evaluators, only 33% could be classified as genuinely problematic characteristics of the designs. In addition, only 21% of genuine usability problems were identified; calling into question the strength and usefulness of findings from heuristic evaluations.