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| Design Thinking Sprint  A LOOK INTO THE PROCESS OF DESIGN THINKING |
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# Executive Summary

Design thinking is an innovative problem-solving process rooted in a set of skills. It involves reframing the perceived problem or challenge at hand, and gaining perspectives, which allow a more holistic look at the path towards these preferred situations. Design Thinking starts with empathy, a deep human focus, to gain insights which may reveal new and unexplored ways of seeing, and courses of action to follow in bringing about preferred situations for business and society.

At a high level, the steps involved in the design thinking process are simple: first, fully understand the problem; second, explore a wide range of possible solutions; third, iterate extensively through prototyping and testing; and finally, implement through the customary deployment mechanisms. (Linke, 2017) Design thinking initially employs divergent styles of thinking to explore as many possibilities as possible, deferring judgment and creating an open ideations space to allow for the maximum number of ideas and points of view to surface. It later employs convergent styles of thinking to isolate potential solution streams, combining and refining insights and more mature ideas, which pave a path forward. Design thinking engages in early exploration of selected ideas, rapidly modelling potential solutions to encourage learning while doing, and allow for gaining additional insight into the viability of solutions before too much time or money has been spent. (Dam & Teo Yu Siang, 2021) This approach involves testing the prototypes which survive the processes further to remove any potential issues, and iterates through the various stages, revisiting empathetic frames of mind and then redefining the challenge as new knowledge and insight is gained along the way.

**Process Of Design Thinking (Rapp & Stroup, 2016):**

1. **Empathize with Users:** Understand people within the context of the design challenge by asking: How and why do they do things? What are their physical and emotional needs? What is meaningful to them? It is critical to move beyond traditional notions of value by supplementing user understanding with emotional resonance through observation, interviews, focus groups, etc.
2. **Define the Challenge**: Work to make sense of what is learned through observation to craft a meaningful and actionable problem statement. This step involves identifying patterns, synthesizing user needs, and continuing to ask “why” to understand the underlying meanings behind the observed behaviors.
3. **Idea Generation**: Address the problem statement by generating a large quantity of ideas. Move beyond typical organizational approaches to idea generation such as spreadsheets, specs, etc. to more fluid methods such as brainstorming, mind mapping, sketching, etc. During this process, it is critical to defer all judgements and withhold from any early evaluation of ideas.
4. **Build Prototypes:** Iterate the ideas in various forms -- physical, digital, diagrammatic, etc. -- to communicate and elaborate on the ideas broadly. It is key to emphasize the act of building, not getting too attached to any one idea, and always keeping the user in mind.
5. **Test:** Gather feedback on prototype(s) from users to gain an even greater understanding about the user and their needs. While testing with users, it is important to show rather than tell, create a full user experience, and ask for their opinions, thoughts, and reactions.

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# Introduction

Design Thinking is a term that is used broadly to describe a systemized process to collaboratively solve problems that customers or users experience. It is sometimes referred to as user or human-centered design, to emphasize the focus on the ‘human user’.

This report discusses the concept of Design Thinking and how it can be applied and used to help people apply creativity to effectively understand the human problem first and then solve real-world problems better than they otherwise would, along with a brief demonstration of the steps taken when solving a problem using Design Thinking. These principles have been discussed and broken down using the IDEO Design Thinking 5 step process which includes: Empathize, Define, Ideate, Prototype and Test.

# The 5-step process of Design Thinking

## Empathize

This stage is about conducting qualitative and some quantitative research to develop knowledge about what your users do, say, think and feel.

Empathy is at the core of the Design Thinking process. As a team you need to understand the user; you need to learn about their culture, knowledge, opinions, and worldview to understand their experiences of things deeply and meaningfully. Empathy is used to describe a wide range of experiences. Emotion researchers generally define empathy as the ability to sense other people’s emotions, coupled with the ability to imagine what someone else might be thinking or feeling.

**How to Empathize**

In order to empathize, you need to utilize certain processes or tools. Some of these are things like: initial research, interviews, user observations, questionnaires, empathy maps and focus groups.

This report discusses 3 tools of empathy:

1. Personas
2. Research questionnaire
3. User journey

**Personas**

User personas are an overview of what a typical user would look like. They are a fictitious person who you create that best represents a sub-sect of your user base. If you have multiple types of users, then you will have multiple types of personas.

The purpose of personas is to create reliable and realistic representations of your key audience segments. This then allows you to pinpoint who you need to interview. If you notice that 80% of your audience is male, then interviewing more males is better for data collection.

**Research questionnaire**

A research questionnaire is a form or document that a customer fills out on their own to give you feedback. This is different from an interview, where you ask the questions. The benefit of the questionnaire is you can get a large sample of people filling it out all at once. The downside is that you can't probe further when the user tells you something that might be useful to you. The types of questions you ask should be a combination of both closed and open-ended questions. The aim is to be getting both qualitative and quantitative data.

Closed questions are questions that require a yes and no response, these questions are precise and straightforward. Open-ended questions are ones that require more than one-word answers. The answers could come in the form of a list, a few sentences or something longer such as a speech, paragraph, or essay. These questions allow you to probe and go deeper because the questions are more profound and are about the client’s hopes, fears, and ambitions. The correct wording of your questions allows you to further explore your challenge and elaborate on certain topics that you want to discover during the conversation.

**User Journey**

A user journey is a path a user may take to reach their goal when using a particular service / product. User journeys are used in designing services / products to identify the different ways to enable the user to achieve their goal as quickly and easily as possible.

It’s a series of steps which represent a scenario in which a user might interact with the thing you are designing.

Graphical user interface, application

Description automatically generated

1User Journey

## Define

We now begin to brainstorm a range of crazy, creative ideas that address the problem/s the users face which we identified in the Define stage. Within this stage, it is important to give yourself and your team total freedom; no idea is too “far-fetched”, and quantity supersedes quality. You’ll need to refine ideas and choose one or two to take forward to prototype.

Here we combine all the research and observations from empathize in order to clarify where your users’ problems actually exist. This stage is about defining or redefining / clarifying the problem for which you are solving. In pinpointing your users’ problems, you’ll begin to highlight opportunities for innovation.

In Design Thinking, defining reforms to ensuring we’re solving the most important challenge our user faces. Empathize and define are part of the problem finding. Empathy gives us the information we need, while defining lets us interpret, understand, and synthesize that information to make some decisions off.

The most relevant experience the team decides on is called the Moment of Truth. We then take our prioritized experience to be addressed (Moment of Truth) and write 2 statements:

- How might we” (HMW) statement

- Problem statement

A HMW statement is a way to refrain the problem statement into a positive enquiry, and a problem statement is an exact expression of the problem the user faces. Using our design thinking sprint project as an example:

* The moment of truth is our persona successfully navigating an indoor premise using an Augmented reality application to direct him/her.
* The HMW statement is: “How might we Improve an already navigation system to help users navigate inside buildings and premises of organizations, for individuals who are new and unfamiliar with these places, to help them easily locate their desired venues and not waste time by getting lost and searching cluelessly for the places”.
* The problem statement is: “Jeff, a first-year student at the University of Johannesburg who missed orientation, needs a method of navigation that will help him navigate even indoors or inside premises of a place, because the current navigation system he uses only takes him as far as the entrance of the venue, requiring him to search and find the rest of his way on his own”

## Ideate

We have now moved from the problem finding part to the solution finding part.

During Ideation, the aim is to generate a large quantity of ideas that the team can then filter and cut down into the best, most practical or most innovative ones in order to inspire new and better design solutions and products. Ideation is often the most exciting stage in the Design Thinking process, as you are now out of the heavy detailed research and empathizing and are now free to explore ideas and really open up that right brain. The important part is to generate a bunch of different ideas. At the end of this process, you’ll come up with a few ideas with which to move forward. (Tuttle, 2021)

**The reason why we focus heavily on ideation is because:**

- It allows us to move away from obvious solutions, which allows us to explore more innovative ideas.

- Including the whole team allows for a mix of opinions, ideas, and perspective. The more varied viewpoints we have, the more chance there is for unique ideas to be generated.

- We generate an abundance of ideas, not limiting ourselves to a fixed number of solutions.

It discourages linear thinking that focuses on one idea.

## Prototype

Here we build real, tactile representations for your chosen ideas. The goal of this stage is to understand what components of your ideas work, and which do not. In this phase, you begin to weigh the impact vs feasibility of your ideas through feedback on your prototypes.

We want to learn if our users think our ideas are good before we build a product they don't like. Prototyping gives the user of the product a sense of what the product can do for them by creating scenarios where they can experience and imagine what that product may look and feel like. A prototype represents the products, but never the product itself. This is useful because it means we can get feedback from future users before you commit resources, effort, time, and money to the project. It’s also very important for the team to see, feel, discuss, and align on details of a project. The point of a prototype is to come out quickly with a concrete version of the idea to see how it is accepted by consumers. (Tuttle, 2021)

There are a couple of methods to five users an idea of the final product, this report will focus on Wireframing and High-fidelity prototyping.

* **Wireframing -** A wireframe is a quick representation, often just a hand sketch or bunch of lines, that notate what the interface of the app could look like.
* **High-fidelity prototype -** A high-fidelity prototype is similar to a wireframe, but with the details filled in. It fools you into thinking you're working on an app, when really, you're clicking through a fancy slideshow on your phone. There is no coding required, and there is no actual service or product. It's the full digital experience of the proposed product, without the product.

Graphical user interface, application

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2:High-fidelity prototype

## Test and Feedback

The final stage is called Test and is different to prototyping because now your product actually exists. You created a basic version of the tech and you've got service that users or customers can pay for and use. You’re out of the problem and solution finding phases and now into a LIVE product or service.

This phase is smartly named Test, as it reminds us that the world of businesses, products, services etc. is a messy and uncertain place. Product launch does not guarantee certain growth. It’s more about putting our product / service into the world and watching what happens. In this sense, we are always testing: testing different strategies, different marketing, different features. A product’s life cycle continues as it is constantly improved and retested. Continued evaluation is key to making progress.

The design-thinking process is an iterative, rather than linear, one. At the end of the fifth stage, you’ll likely have to go back to one or several of the other stages. Perhaps the testing has shown you need to develop another prototype, for which you’d return to the fourth stage. Or perhaps it’s shown that you’ve mis defined the consumer’s needs. If so, you would have to return to an earlier stage of the process. (Tuttle, 2021)

# Conclusion

After having discussed the 5 stages of Design Thinking to help define and tackle identified problems, it is clear that a design thinking approach that builds a true empathy of employees and then delivers tested solutions can create powerful organizational results. Through design thinking, HR teams can create more productive, meaningful solutions that are both useful and enjoyable to employees. Special considerations for how and when to measure impacts of design thinking is crucial to long term sustainability. Employing a design-thinking process makes it more likely a business will be innovative, creative, and ultimately more human. The skills associated with the stages in Design Thinking help people apply creativity to effectively solve real-world problems better than they otherwise would. Once one masters the skills central to the design thinking approach, they can be applied to solve problems in daily life and any industry.

# References

Dam, R. F., & Teo Yu Siang. (2021). *Design Thinking: A Quick Overview*. Retrieved from interaction-design.org: https://www.interaction-design.org/literature/article/design-thinking-a-quick-overview

Linke, R. (2017, September 14). *design-thinking-explained*. Retrieved from mitsloan: https://mitsloan.mit.edu/ideas-made-to-matter/design-thinking-explained

Rapp, K., & Stroup, C. (2016, November). *How\_Can\_Organizations\_Adopt\_and\_Measure\_Design\_Thinking\_Processes.* Retrieved from ecommons.cornell.edu: https://ecommons.cornell.edu/xmlui/bitstream/handle/1813/74405/How\_Can\_Organizations\_Adopt\_and\_Measure\_Design\_Thinking\_Processes.pdf?sequence=1

Tuttle, G. (2021, February 04). *What is design thinking and why is it important?* Retrieved from https://www.wework.com/: https://www.wework.com/ideas/professional-development/creativity-culture/what-is-design-thinking

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# Appendices

## Appendix 1: Persona

A screenshot of a computer

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## Appendix 2: Survey/Questionnaire results

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