



SUGGESTED PROCESS & TOOLS

We recommend using some design thinking tools to develop the material for the three milestones of the IoW idea challenge. In this document we provide you with some tools that we hope may be beneficial for your team but feel completely free to use your own internal methodology to develop the Milestones within your team!

Here are some resources:

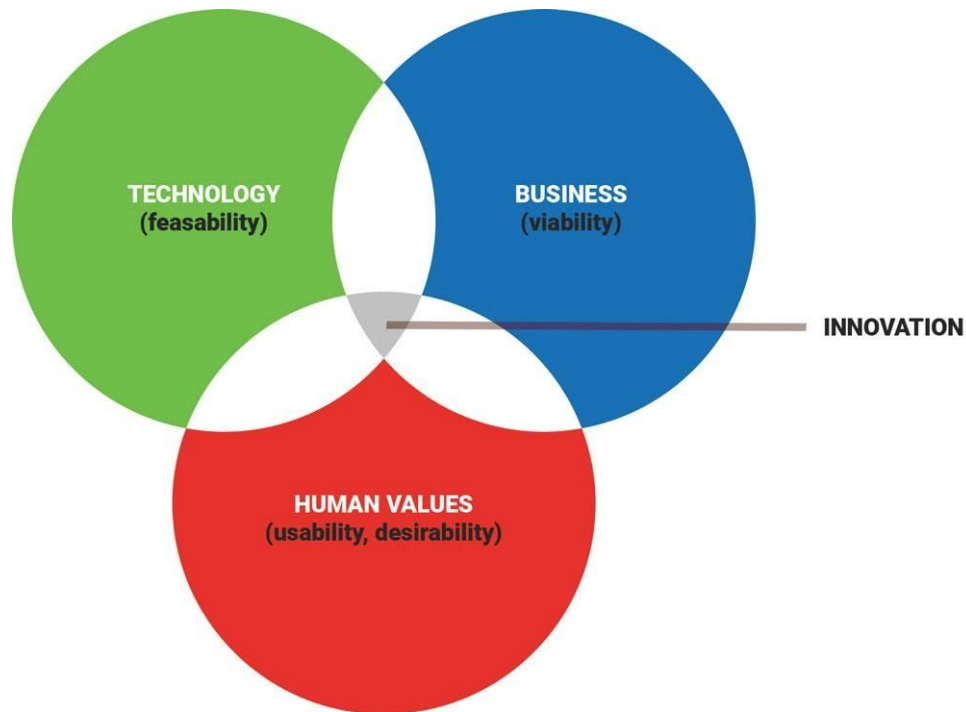
- <https://www.boardofinnovation.com/tools/>
- <https://diyt toolkit.org/>

The suggestion is to use these tools within the team and get support from the mentor when you realize you need to verify some assumptions, or you lack some information about the water industry or De Nora's current value proposition.

Introduction

Innovation only arises when these ideas have an impact and can be effectively applicable. **Design thinking** is a collection of methods/approaches to support ideation and maximize the chances of successful innovation.

Design Thinking is particularly useful for solving "wicked problems", i.e. not well-defined problems. It is based on the acceptance of competing constraints: **feasibility**, what is technologically possible, **viability**, what is likely to become part of a business, **desirability**, what makes sense for the people. When the right balance of them is reached, innovation is truly possible!



The starting point of the whole process is the **brief**, that it given by loW challenge:

"How might we leverage digital technology to create value for De Nora's customers, the community and the environment?"

From this, the design thinking process follows two subsequent stages:

- a. The exploration of the **problem space**, whose outcome you will summarize in the Milestone 1 – PROBLEM DISCOVERY
- b. The **solution space**, whose outcome you will report in the Milestone 2 – IDEA PROPOSITION

Each stage contains a divergent phase, where many potential problems/solutions are generated, and a convergent phase, where out of the possible problems/solutions only one is selected.

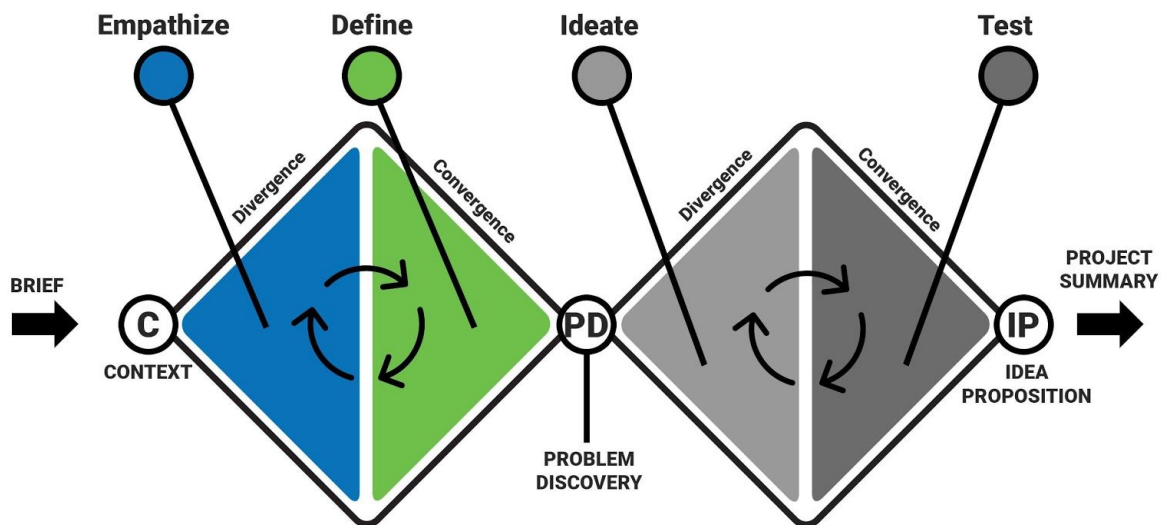
Exploring the problem space

*"If I had only one hour to save the world,
I would spend fifty-five minutes defining the problem,
and only five minutes finding the solution"*
[Albert Einstein]

The scope of this stage is to explore the problem space from the ill-defined initial problem (the "brief") to the true nailed problem. Essentially, it is all about "designing the right thing".

The stage can be divided into two phases:

1. **Empathize:** understand what problems exist by analyzing the context and the customers' point of view.
2. **Define:** identify what problems actually need to be solved and customers' pain points and frustration related to it.



Empathize

The first phase is *divergent* since many possible problems from different stakeholders' perspectives may arise. For the "empathize" phase, we suggest you to explore the material provided, as well as any other resources you may find online, and pick the **context** ("C") of your registered idea or any other context(s) you would like to investigate in more detail.

Some examples of context may be: "groundwater contamination of wells (e.g., arsenic)"; "disinfection by-products in drinking water"; "water reuse in agriculture"; "water operator managing a downtime in water treatment equipment"; "energy consumption in water or wastewater treatment plant".

Once you select a context, you may use a design thinking tool to empathize with the point of view of various stakeholders. The expected outcome of this first phase is the identification of the impacted stakeholders and their point of view. De Nora shall be one of the stakeholders.

The most suitable tool to be used depends on the context chosen. The following ones may have general applicability, but feel free to find other ones!

- [VALUE MAPPING TOOL](#)
- [CUSTOMER JOURNEY MAP](#)

Miro template: <https://miro.com/templates/customer-journey-map/>

Define

The second phase is *convergent* and brings you to the selection of one or few problems you would like to solve. The tools typically force you to focus on a few potential customers (i.e., impacted stakeholders) and their real pain points and frustration. By sketching a possible solution to them, you should be able to understand if you can address the highlighted pain points.

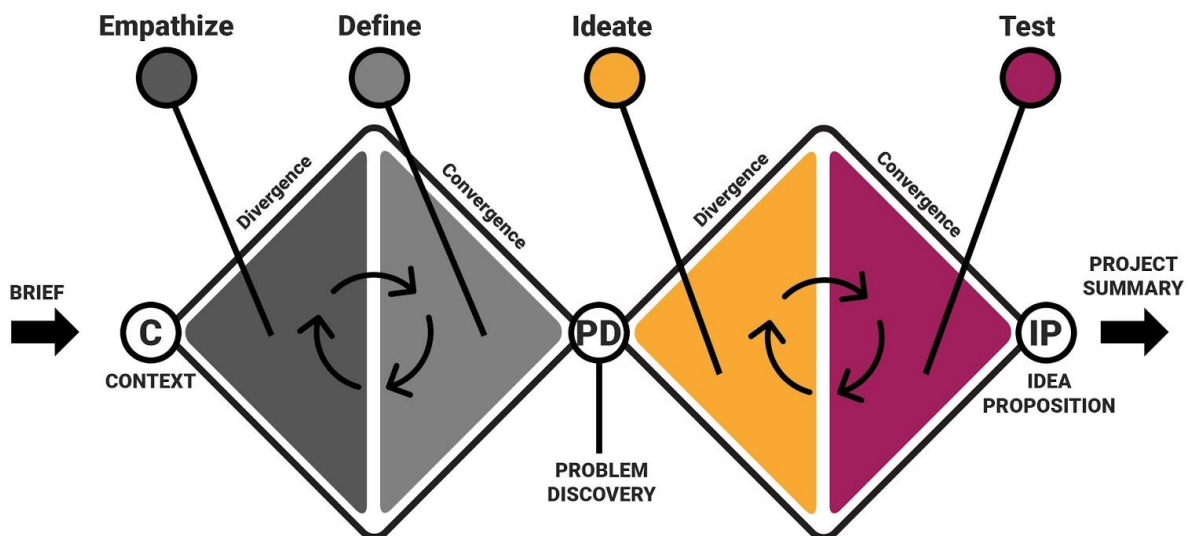
For this stage, we suggest the following tool:

- [VALUE PROPOSITION DESIGNER](#)

At the end of this stage, you should have all the necessary information to fill in Milestone 1.

Exploring the solution space

The scope of this stage is to explore the solution space to consider all the potential solutions of the identified problem. In this case, it is all about “designing the things right”.



Ideate

When you clearly identified the problem, you can brainstorm all the possible features of your digital-based solutions. In this phase, you will be tempted to start designing a specific feature in detail immediately. However, it is more convenient to run reiteration cycles of features evaluation, keeping in mind your customers and their pain points while analyzing all incoming suggestions. Also, be sure to get all your teammates on the same page about the initial idea, customer problems, and other essential information coming from the “problem space”. You may identify blind spots in your knowledge about your customers and need to go back and do some more research!

A suggested tool for this stage is the following:

- **FEATURE CANVAS**

Miro template: <https://miro.com/templates/feature-canvas/>

Analyze and Validate (Test)

Once you find an idea that addresses your stakeholders' problem and is technically feasible, it is time to assess what resources are needed to make it a reality and how economically viable it is. In other words, you need to define what value proposition you are offering (i.e., will the customers be willing to pay for this solution?), through what channels you are going to deliver your solution, and how De Nora can receive any advantage from the implemented idea.

The suggested tool for this task is the following:

- **BUSINESS MODEL CANVAS**

Miro template: <https://miro.com/templates/business-model-canvas/>

At the end of this stage, you should have all the necessary information to fill in Milestone 2.