Erasmus+
Capacity Building for Higher Education

Session 1: Design Thinking intro

WP3 Student Competition

'Wicked Problems'

- Wicked problems are difficult to define. There is no definite formulation.
- Wicked problems have no stopping rule.
- Solutions to wicked problems are not true or false, but good or bad.
- There is no immediate or ultimate test for solutions.
- These problems have no clear solution, and perhaps not even a set of possible solutions.
- Every wicked problem is essentially unique.
- Every wicked problem may be a symptom of another problem.
- There are multiple explanations for the wicked problem.

- **Climate change** and environmental degradation
- **Poverty** and **income inequality**
- **Global health crises**, such as pandemics and access to healthcare
- **Political polarization** and social division
- **Education inequality** and access to quality education
- **Urbanization and overpopulation**
- …

Foodwaste as a
'Wicked Problem'

What is the solution for wicked problems?

Too complex for one solution to be the answer

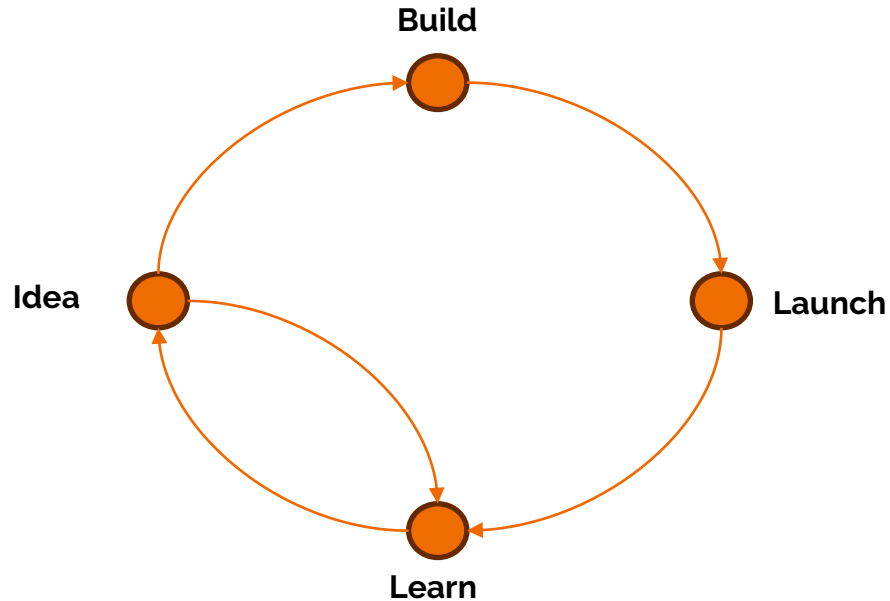**Complex problems require complex solutions**

- Multiple perspectives
- Cultural
- Social
- Political
- Economical
- Different disciplines

Shortcut in "New Product Developement"

Build

Idea

Launch

Learn

Design Thinking… not so clear…

Process for solving problems

Design thinking is a **process for solving problems** by prioritizing the **consumer's needs** above all else. It relies on **observing, with empathy, how people interact** with their environments, and employs an iterative, hands-on approach to **creating innovative solutions**.

Collaborative endeavor

Design thinking is an **extension of innovation** that allows you to design solutions for end users with a single problem statement in mind. It not only imparts valuable skills but can help advance your career. It's also a **collaborative endeavor that can only be mastered through practice with stakeholders**.

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.

Non-linear, iterative process

Design Thinking as a...

Method

Process

Mindset

Design Thinking as a method

Problem   Empathize   Define   Ideate   Prototype   Test   Solution

User Centered
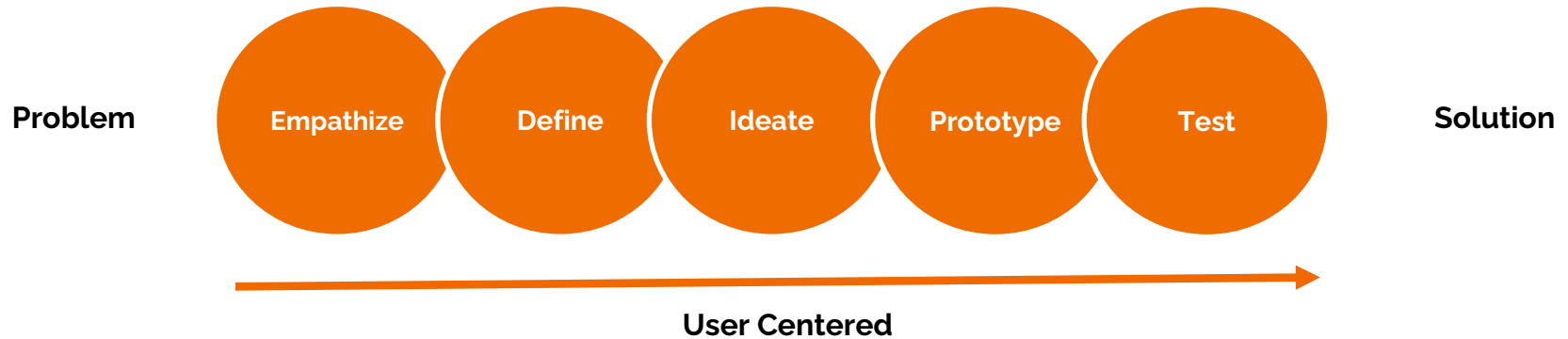
Design thinking as a method: Double diamond model

Problem/ Challenge

Understanding the problem

Focus on one problem

Variety of solutions

One solution to test

Divergence

Convergence

Divergence

Convergence

Testing/ Implementation

Emphatize

Define

Ideate

Prototype
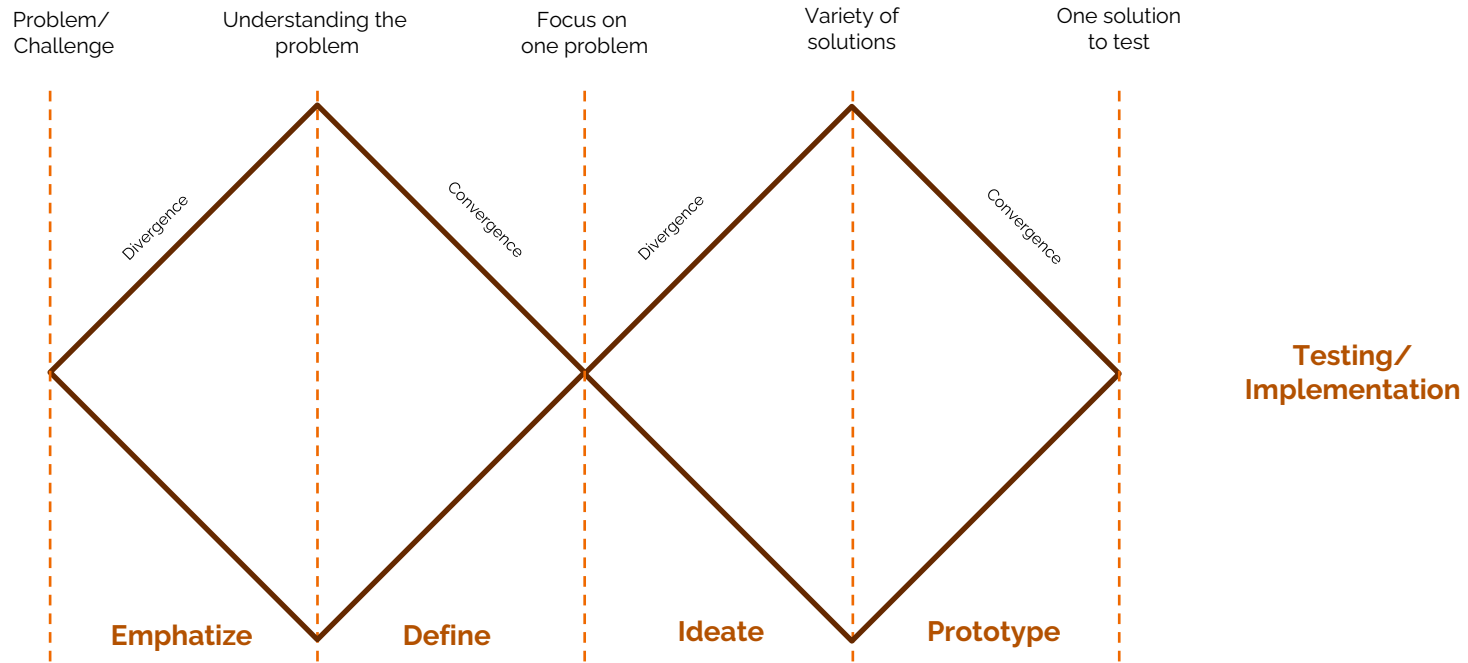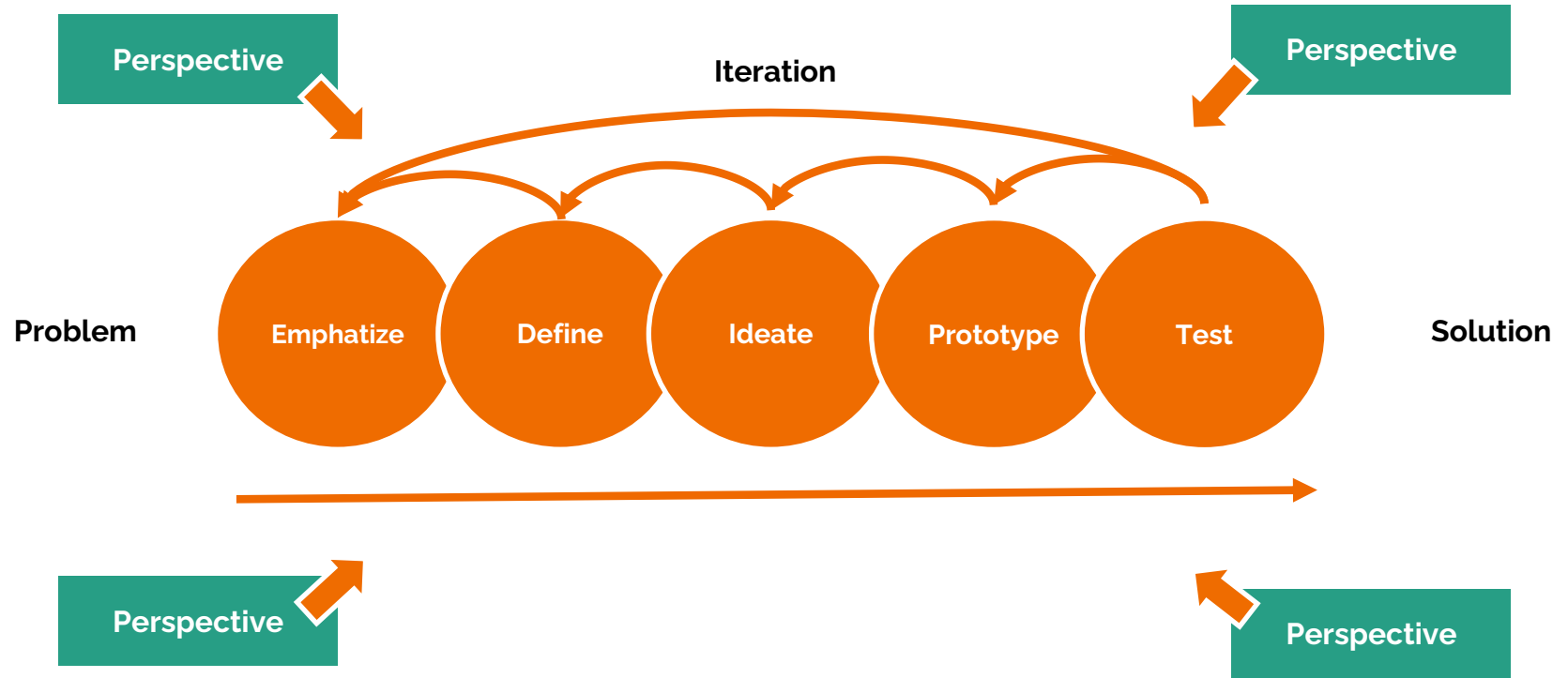
What iteration looks like...

Problem

Solution
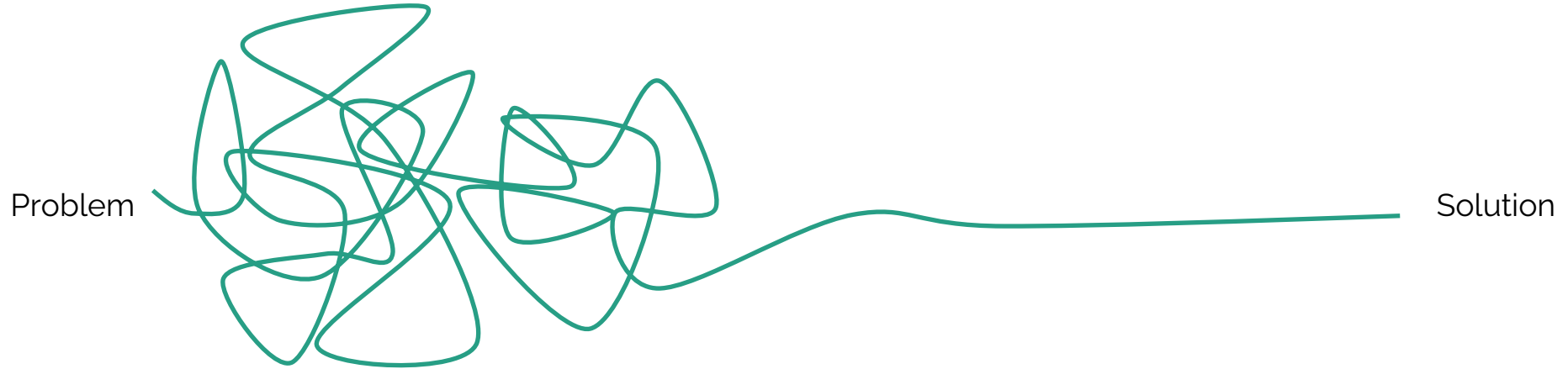
Design Thinking as a mindset
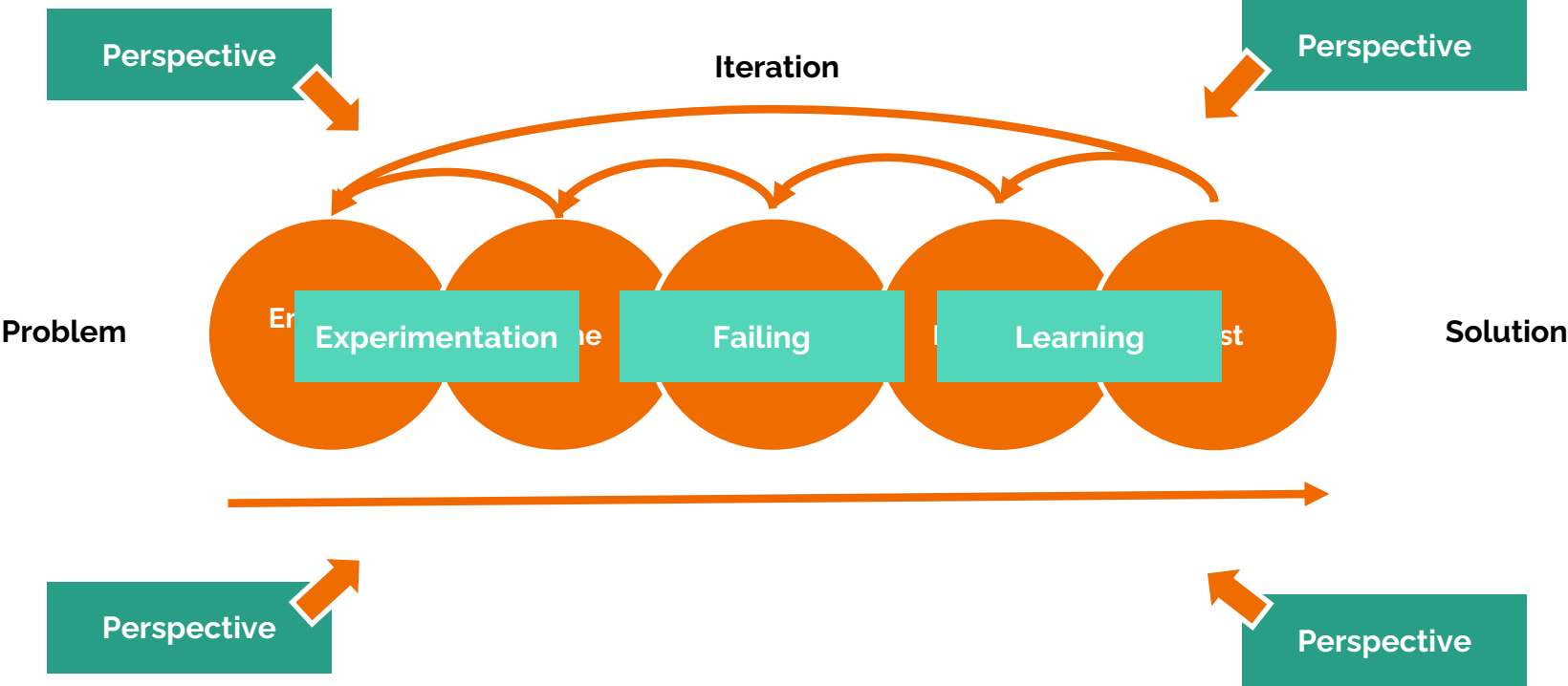
Most important elements of Design Thinking

Human centered

Multi disciplinary

Diverging and converging

Making things tangible

Rules of Design Thinking

- Unleash your empathy!
- Be optimistic!
- Embrace ambiguity
- TRUST THE PROCESS!!
- Make it tangible!
- Learn from failure
- Iterate, iterate and iterate…
- Be confident about your creativity!

Let's start 'Design Thinking'

User innovation tool

- A tool that guides your through the whole process of Design Thinking for this Summer Competition
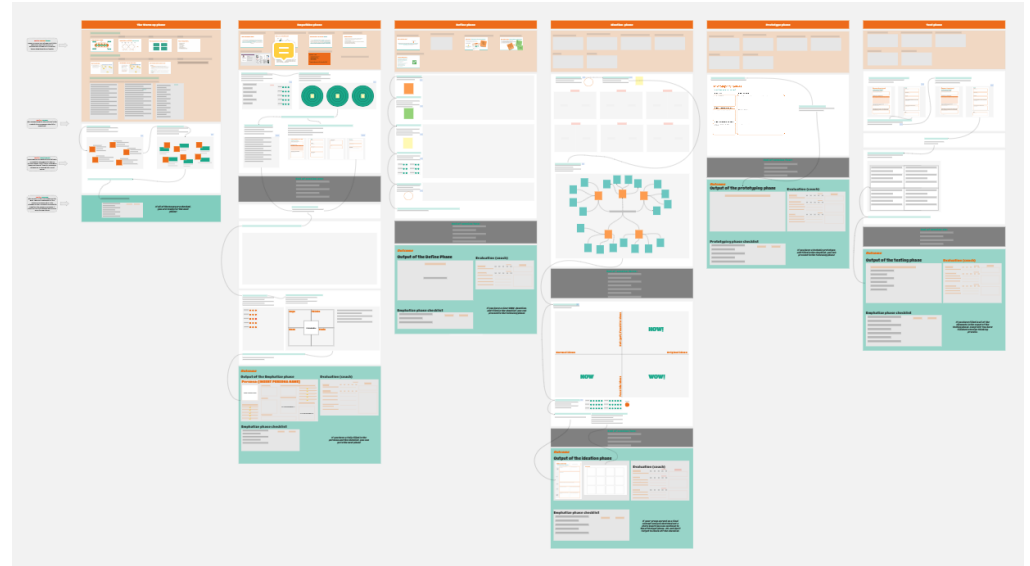
User innovation tool

- Every group gets a MIRO-board through e-mail (yes, you fill it it in!)

- Every group gets a coach that keeps track of your progress and aids you in the process

- Track 2 students also get a MIRO-link send through e-mail

Overview of coaches

- Group **one**: Arif/ Diana
- Group **two**: Reni/ Zita
- Group **three**: Tarra
- Group **four**: Reni/ Zita
- Group **five**: Tarra
- Group **six**: Stanley/ Permata
- Group **seven**: Stanley/ Permata
- Group **eight**: Vrames/ Theresia
- Group **nine**: Arif/ Diana
- Group **ten**: Vrames/ Theresia

- Track 2 students get guidance from Conny and Ben or Tim.

- Overview of the coaches expertise can be found here: https://www.foodwastetofinish.com/team

User innovation tool: how does it work?

- The tool guides your group through all of the phases from **left to right**
- To complete every phase succesfully, the desired methods and outcomes are filled in from **top to down**
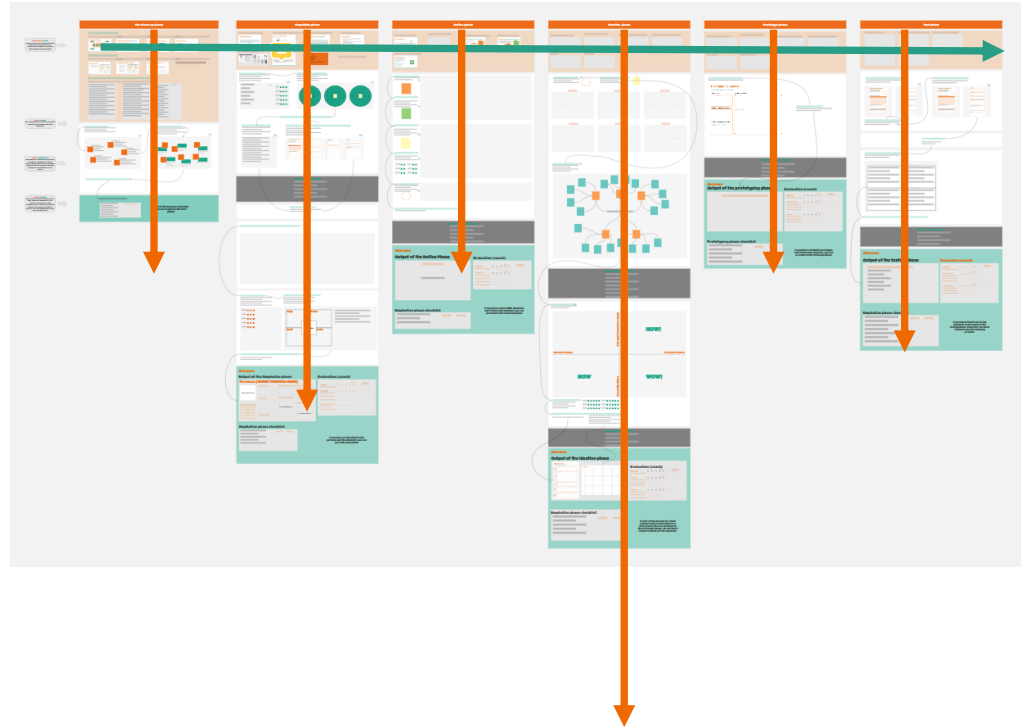
User innovation tool: how does it work?

Elements:

- **Orange boxes** are informational fields where you can find substantial information (e.g. about the design thinking process) and practical information on the Summer Competition (E.g. deadlines)
- **White boxes** provide your group with methods and templates in the form of assignments that help you reach the outcome of the design thinking phase
- **Green** are fields where you fill in the desired and asked outcome of the phases
- **Arrows:** These show the flow of the assignments that need to be fulfilled.

Orange boxes

- Overview of most important substansive information per design thinking phase
- Overview of deadlines or other practical information

White boxes

- Fullfill all of the assignments
- Follow the arrows
- Respect the time frames and deadlines

Green boxes

- Desired outcome of the respective design thinking phase
- These are the building blocks for your solution
- The outcome of a phase is the input for the next phase (Realy important!!!)
- Three elements:

  - Outcome template

  - Checklist of "What to achieve achieve in the phase?"

  - Evaluation of the outcome by the coach

Green boxes

Rules

- **TRUST THE PROCESS!**
- **DON'T THINK ABOUT SOLUTIONS TOO FAST!**
- **The MIRO-boards are filled in respecting all of the deadlines!!**
- **You can use analogue methods (e.g. paper, post-it's,...). But be sure to put pictures of your work on the MIRO-board.**

One more 'small detail'

Generative AI

Question!

Is it allowed to use **generative AI** in an innovation/ Design Thinking process?

"It's not AI that is going to take your job, but someone who knows how to use AI might"
- Prof. Richard Baldwin at the World Economic Forum

Problem Space **Solution Space**

Double Diamond

Problem Articulation | Problem Selection | Concept Generation | Concept Selection & Development

AI-Augmented Double Diamond
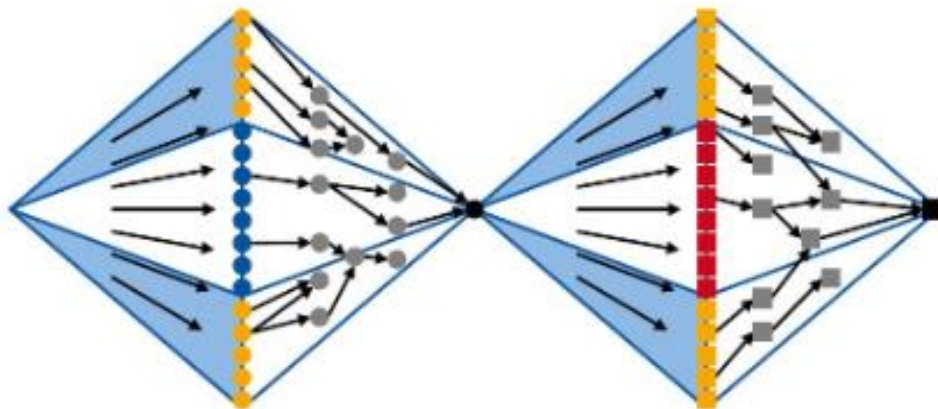
Expansion of the double diamond enabled by AI

Water-soluble films
Mailers, envelopes and garment bags that dissolve in water, leaving behind no residue or waste.

Innovative packaging through AI (Midjourney)

Mushroom packaging
Use mycelium, the root structure of mushrooms, to create eco-friendly and compostable packaging materials such as boxes.

3D-printed custom fit
3D printed custom-fit packaging that reduces the need for excess materials and space while ensuring optimal protection during transit.

For example...

- Charley.ai → Transform 3 words into 10.000
- Shortlyai.com → Enhance writing capabilities
- Trdrthis.com → Summarize written content
- Quillbot.com → Rephrasing, grammar, spelling
- Analogenie.com → Clarify topics using analogies
- ...

However...!

Be aware that...

- Generative AI still does have **limitations** (E.g. up-to-date untill 2021)
- You lead the generative AI, **it does not lead you**
- **Your prompt = your resulst**
- Results always need an **interpretation and assessment**
- Always **be sceptical and critical**
- Even if the result seems valid, **still do your own research**
- AI can make **hallucinations**
- We will provide some tricks and applications during the sessions

Chat GPT prompt:

☰ **Google** Scholar   [Sitorus, R., Kwasnicka, D., & Ittersum, K. V. (2019). Consumers' food waste t] 🔍

◆ Artikelen

Elke periode
Sinds 2023
Sinds 2022
Sinds 2019
Aangepast bereik...

Sorteren op relevantie
Sorteren op datum

Elke taal
Zoeken in pagina's in het Nederlands

Elk type
Reviewartikelen

☐ inclusief patenten
☑ inclusief citaten

✉ Melding maken

Je zoekopdracht - **Sitorus, R., Kwasnicka, D., & Ittersum, K. V. (2019). Consumers' food waste behavior in Indonesia: A focus on household interdependencies. Journal of Cleaner Production, 229, 484-494.** - heeft geen artikelen opgeleverd.

Suggesties:

Zorg ervoor dat alle woorden goed gespeld zijn.
Probeer andere zoektermen.
Maak de zoektermen algemener.
Gebruik minder zoekwoorden.
Probeer je vraag op het hele web

Generative AI

Food waste

You
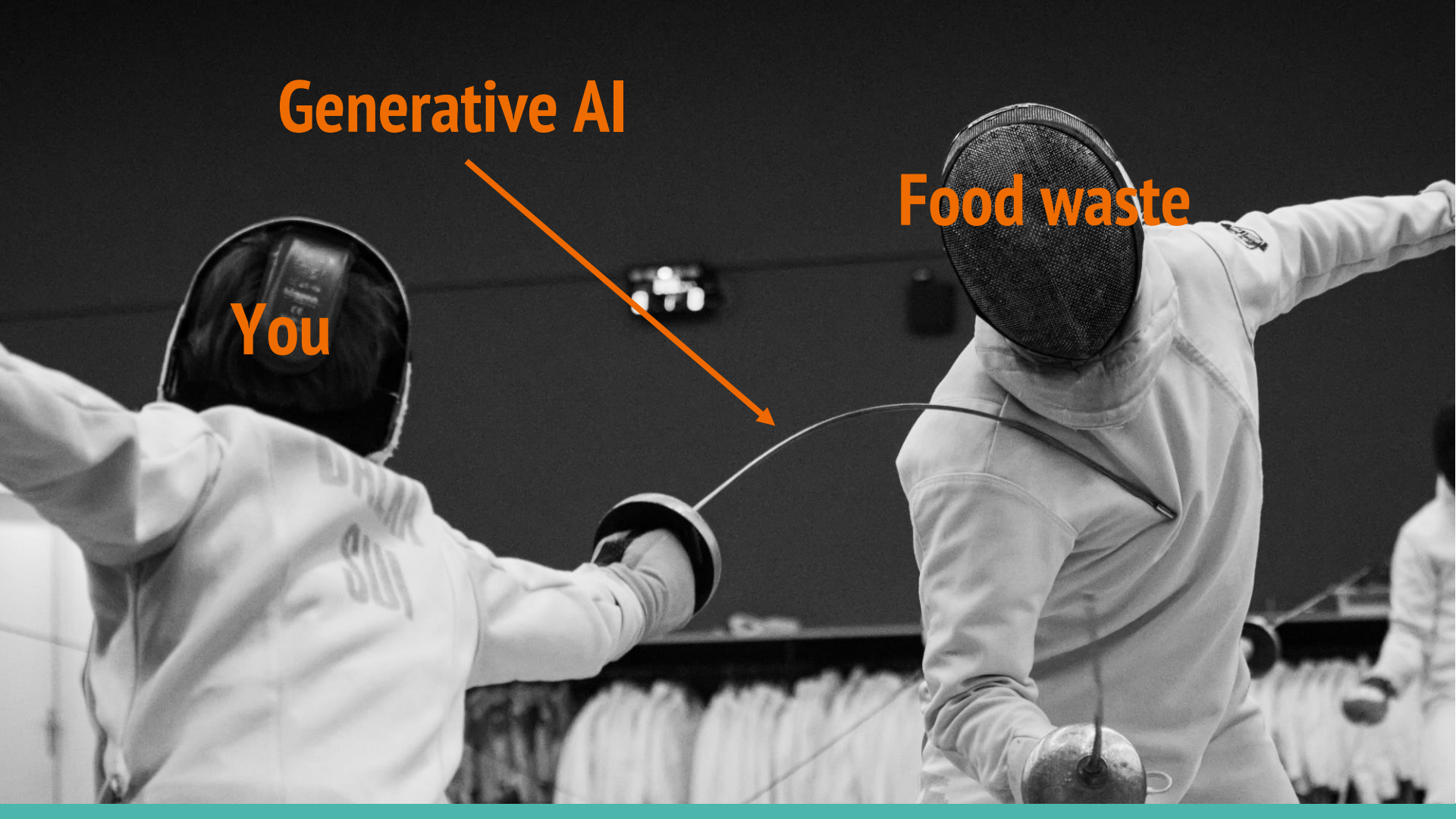
Now really start 'Design Thinking'

Start preparing!

To Do:
- **Go to your MIRO-boards**
- **Assignment 1: Who am IIIII? 10'**
- **Assignment 2: Devide the roles! 15'**
- **Assignment 3: Fill in the outcome of the warm-up phase 5'**
- **Outcome of the Warm-up phase**

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Empathize Phase

WP3 Student Competition

Where are we in the DD-model?
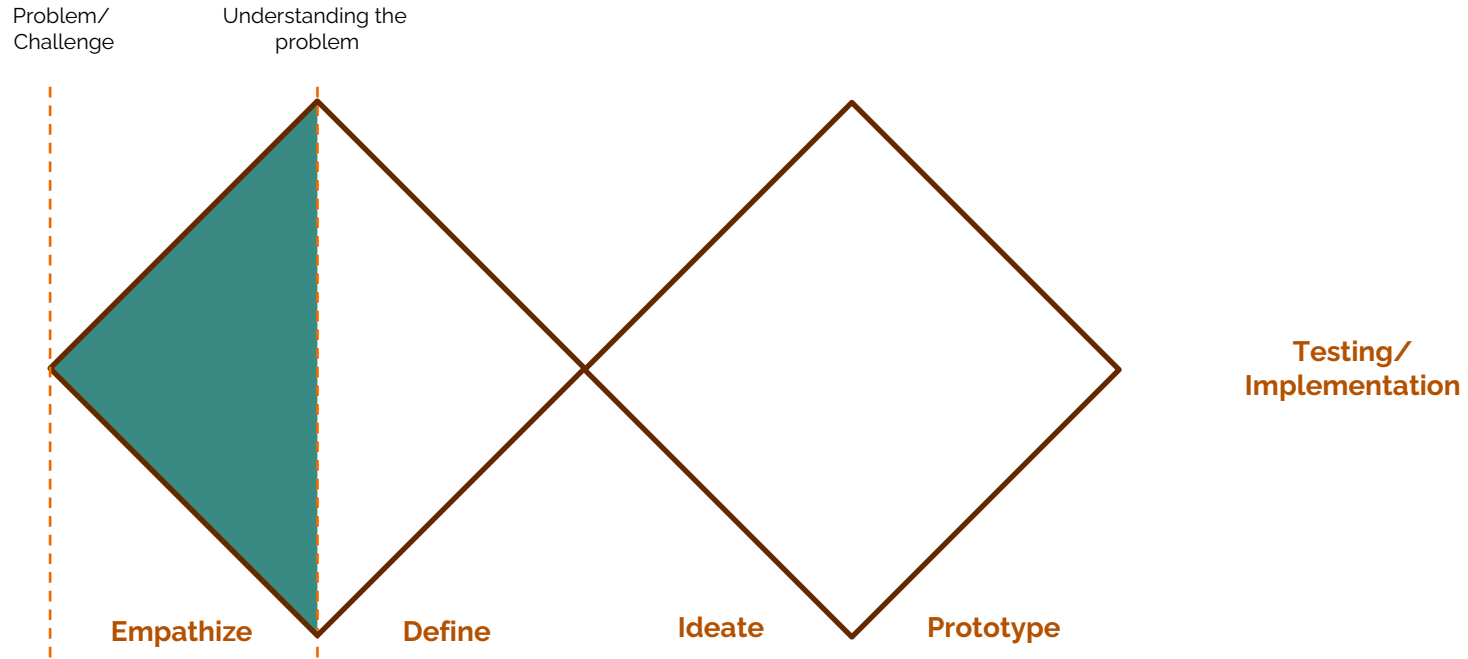
Problem/
Challenge

Understanding the
problem

Empathize

Define

Ideate

Prototype

Testing/
Implementation

'Empathize' Phase

What is the Empathize Phase?

The empathize phase in design thinking is the initial stage of the design process where designers **seek to understand the needs, perspectives, and experiences of the people they are designing for**. It involves developing **empathy and gaining deep insights** into the users' motivations, desires, and challenges.

Empathy is the ability to understand and share the feelings and perspectives of others.

EMPHATY!

Creating more meaningfull, supported solutions and effective solutions.

How do we empathize with end users?

- **User research:** Conducting interviews, surveys to gather data directly from the users. This helps in uncovering their behaviors, preferences, and needs.

- **Immersion:** Immerse yourself in the users' environment, whether it's their workplace, home, or any context relevant to the design challenge. This firsthand experience provides valuable insights into their daily lives and allows for a more empathetic understanding.

Structure the POV of the end user: 'persona'

A persona is a **fictional representation** or **archetype** of a specific user group or target audience. Personas are created **based on research and data** to embody the **characteristics, goals, needs, behaviors, and preferences** of real users.

Morgan

71 years old and living with her husband in their home in White Rock, British Columbia. She has learned to enjoy her retirement by filling her time with crafts and reading.

Goals

- Keeping her home clean and vibrant.
- Taking time to enjoy the beautiful things in life.

Needs

- She wants to buys flowers for her home on a weekly basis.
- She wants to send flowers to her doctor as a Thank You gift after her knee surgery.

Influences

- Shops online sometimes, but hesitant about the process
- Trusts certain websites only
- Wants to be involved in the shopping process
- Appreciates relationship with the supplier
- Prioritizes smells, colours
- Likes local culture, public markets (Pike Place, Granville Island)
- Her husband's preferences
- Has bad eyesight

Feelings

- Prefers buying from a trustworthy place (Somewhere local)
- Enjoys learning about flowers (cultural uses, variations, origin)
- Prefers interaction in the store to smell and touch the flowers
- Heard about bad experiences with online florists like Bloomex

Pain Points

- Her family lives far away.
- Feels disconnected from her daughter and grandchildren.
- Travelling far is inconvenient so she cannot always visit flower shops.
- She doesn't drive, so she would need to arrange for a ride or carry the flowers on transit.

Benefits of a 'persona'

- Personas help **structuring data** in specific and **tangible individuals**
- Refference point for **decision making in the design process**
- Used to **evaluate the end product**
- They provide a focus for **marketing**
- Used for **storytelling**
- Provide a **common focus** and allignment among **various stakeholders**
- They keep the **focus on the end-user**

Persona as output of the 'Empathize Phase'

Persona in 5 steps:

1. Identify the most relevant user groups
2. Data gathering and analysis
3. Develop the persona "Skeleton"
4. Flesh out the persona
5. Add extra information

Through assignments in the 'Innovation Tool'

Step one: Identify the most relevant user groups

Assignment 3: Stakeholder list

Start with a stakeholder mapping:
1. Think about all of the stakeholders that are active in your USE CASE Context who may be responsible for for wasting food, and write these down
2. Vote on the stakeholders your group wants to focus on using the following conditions:
   a. The stakeholders that have the biggest impact on food waste
   b. The stakeholders that can be observed or interviewed
3. In order to choose these stakeholders, place three dot-votes per member on the most interesting stakeholders

15'

Stakeholderlist:
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

VOTE HERE

Votes member 1:
Votes member 2:
Votes member 3:
Votes member 4:
Votes member 5:

Stakeholder list (E.g. Foodwaste on the freshmarket)

1. Family customers
2. **Restaurent owners**
3. Merchants
4. **Fish merchants**
5. Meat merchants
6. **Vegetable merchants**
7. Suppliers
8. …

Step one: Identify the relevant user groups

Assignment 4: Spheres of influence
Start to understand the context of the stakeholders:
1. Place the top-3 stakeholders which were chosen in assignment 3 in the centre of a sphere
2. Think about all of the interacting stakeholders surrounding the main stakeholder
3. Write the down in the spheres of influence
4. Ask in group, for each stakeholder, with whom they interact with in the use case context

20'
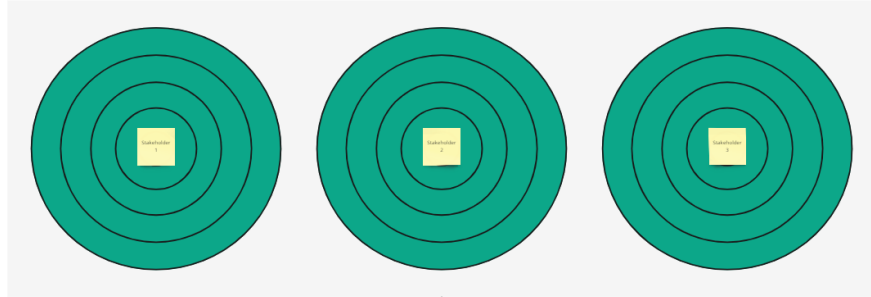
Understand influencing factors and stakeholders

Children
Family
Farmers
Customers
Suppliers
Wholesale
Fish merchant
Restaurant holders
Restaurant customers
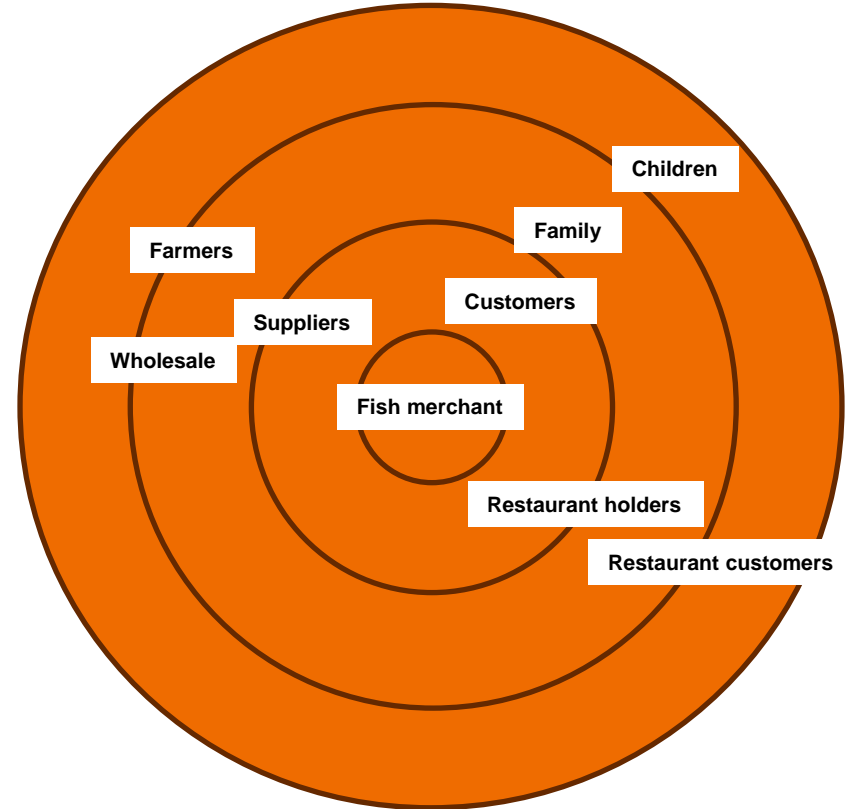
Step two: Data gathering and analysis

Deskresearch

Stakeholder interviews

Observations

Assignment 5a: Deskresearch

Do a quick scan online on the topic of foodwaste in the context of hotels
1. Search online for relevant literature and examples of food waste issues for your three selected target groups
2. Use your own knowledge, google, google scholar,...
3. Put your key-findings in the box underneath (try to summarize them in 1 sentence)

100'

Key Findings
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
21.
22.
23.

Assignment 5b: Topiclist for stakeholder interviews & observations

Create a topiclist that you will conduct during the Hotel visits:
1. Use the template to create a topiclist
2. Carefully consider what information your team has gathered in the former assignments
3. Think about what questions you want to ask to specific respondents (vary your questions accordingly)
4. Tip: be sure to check what information is needed in the persona template
5. Fill in the template and place pictures of your topiclists on this miro board

100'

Topic list Hotel case visits

Gain insight to form a persona

Step two: Data gathering 'Desk Research'

1. **Set research objective:** E.g. 'what are foodwaste problems on fresh markets?' Or 'what are innovative solutions to solve foodwaste on fresh markets?'
2. Decide upon relevant and trustworthy **data sources** (E.g. Google Scholar, international reports, web of science, google, Generative AI,...) ALWAYS be critical!
3. **Gather** the relevant information
4. Synthesize the data in **'one line findings'.**

Step two: Data gathering 'Stakeholder interviews'

- Use a **interview guide** consisting of:

  - Research goals

  - Overview of respondents

  - Research questions

  - Topiclist:

    - Introduction (what to say to the respondents)

    - Framing questions (general questions regarding the topic and how the respondents considers these questions)

    - Main questions (specific questions regarding the research questions)

    - Wrap-up (formulate an overview of the identified insights in the interview)

Topic list Hotel case visits

Gain insights to form a persona

1. Research goals: What is the general goal of this interview?

Write down the general goals of the interview here...

2. Respondents: Who are you interviewing?

pseudonym	respondent type	interview date	interview location

3. Research questions: What are the main research questions?

Fill in you research questions here...

Topiclist

Introduction:

Fill in the introduction...

Framing questions:

Fill in the framing questions...

Main questions target group one:

Fill in the main questions...

Main questions target group two:

Fill in the main questions...

Main questions target group three:

Fill in the main questions...

Wrap-up:

Fill in the wrap up...

Step two: Data gathering 'Stakeholder interviews'

- **Tips & Trics for interviews**

    - Use open questions

    - Listen activly

    - The five why's (find root causes)

    - Stay neutral and objective, don't judge the participant
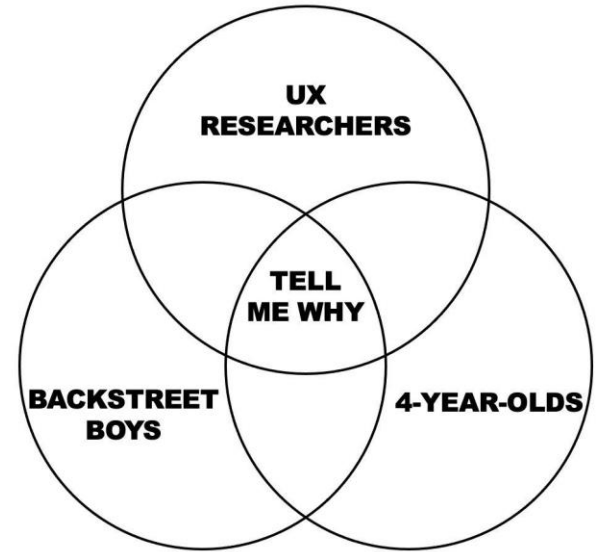
Step two: Data gathering 'observation'

Observations in research refer to the systematic **gathering** and recording of data by **observing and documenting** phenomena **or behaviors in their natural context**.

'Lense' to conduct observations:

- The **person**: who is experiencing a problem?
- The **context**: where is the problem experienced?
- The **thing**: what are the objects used, and what problems are experienced?

Observation

Obsevration (the person):

Who is having a problem?

Obsevration (the context):

Where is the problem observed?

Obsevration (the thing):

What are the objects used, and what problems do these problems have?

Step two: Data gathering 'Hotel case visits'

Step two: Data analysis 'important insights'

Assignment 8: Paste your most important notes in the box underneath

Step two: Data analysis 'empathy map'

Assignment 8: Empathy map/ points of pain

Try to get as much insight in the stakeholders based on your gathered data in the field interviews
1. Fill in the empathy map from the perspective of the chosen stakeholder
2. Start from the empirical data of what the says (interview content) and does (observations) during the hotel case visits.
3. Emphatize with the interviewed stakeholders and try to understand what they think and what they feel.
4. When done, fill in the overview of biggest points of pain per stakeholder.

SAYS	THINKS
Stakeholder	
DOES	FEELS
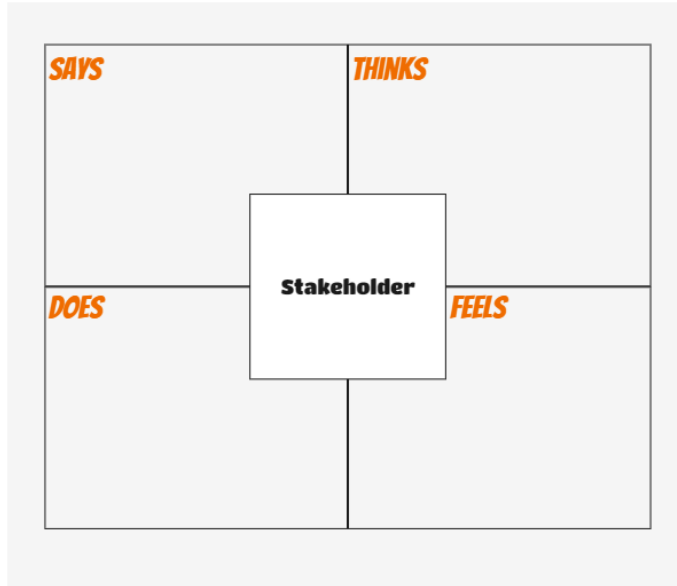
- Quotes and descriptions for credibility

Prince Charles

- Male
- Born in 1948
- Raised in the UK
- Married twice
- Lives in a castle
- Wealthy & famous

Ozzy Osbourne

- Male
- Born in 1948
- Raised in the UK
- Married twice
- Lives in a castle
- Wealthy & famous

It's not about the demographics, it's about the needs, desires and points of pain

Step three: Start making the 'persona'

Persona: [INSERT PERSONA NAME]

Insert a persona picture

Demografic details

4

Goals, needs and desires

1

Motivations

Time efficiency

Money

Health

Comfort

Ecology

6

Points of pain

Fill in after assignment 12

2

Personality

Introvert — Extravert

Analytic — Creative

Conservative — Liberal

Passive — Active

Individualist — Group oriented

5

Context of product use

3

Main HMW-question

Fill in after assignment 15

7

- Start with the most **fundamental information**! (1,2 and 3)

- **Flesh out** the persona with details (4,5 & 6)

- **Fill in the HMW-question,** this is done after the define phase.

Questions?

Now start preparing!

To Do:

- **Assignment 3: Stakeholder list**
- **Assignment 4: Spheres of influence**
- **Assignment 5: Prepare for Hotel Case visits**

  - **Assignment 5a: Desk Research**

  - **Assignment 5a: Topiclist for stakeholder interviews and observations**
- **Assignment 6: Hotel Case visits**

To Do (after visits):

- **Assignment 7: Find focus**
- **Assignment 8: Empathy map**
- **Fill in the outcome of the Empathize phase**

Feedback from experts!!

Elina Närvänen

Professor of Services and
Retailing, Tampere University

Elina Närvänen is Professor of Services and Retailing at
Tampere University, Finland. She leads the Wastebusters
research group, which focuses on the circular economy
from a social scientific perspective. Conducting research
to help solve wicked sustainability problems is her driving
force. Elina is a consumer researcher with a passion for
qualitative research methods. Her work has been
published in leading academic journals in the field of
marketing, and she has led several national and
international research projects.

Photo: Jonne Renvall, Tampere University

elina.narvanen@tuni.fi

Feedback from experts!!

Nina Mesiranta

Senior Research Fellow,
Tampere University

Nina Mesiranta is Senior Research Fellow at the Faculty of Management and Business, Tampere University, Finland. She is one of the founding members of the Wastebusters research group. Over the past few years, she has worked in several national and international research projects related to how change agents such as frontrunner households, social media influencers or circular startups engage in the transformation towards more sustainable practices in food waste reduction and sustainable fashion. Her scientific background is in marketing, especially in consumer research, and her research has been published in journals such as Journal of Public Policy and Marketing, International Journal of Consumer Studies, Industrial Marketing Management, and Journal of Cleaner Production. She is also co-editor for the book Food Waste Managemet: Solving the Wicked Problem (Palgrave Macmillan).

Photo: Jonne Renvall, Tampere University

nina.mesiranta@tuni.fi

	Teams: 4,5,7,9,10	
15.00-15.30	Team meeting with coach	
15.30-16.00	Q&A Nina&Elina	
16.00-16.30 *	Q&A Titus	Q&A Nina&Elina
16.30-17.00 *	Q&A Titus	Q&A Nina&Elina

	Teams: 1,2,3,6,8	
15.00-15.30	Q&A Nina&Elina	
15.30-16.00	Team meeting with coach	
16.00-16.30 *	Q&A Titus	Q&A Nina&Elina
16.30-17.00 *	Q&A Titus	Q&A Nina&Elina

*From 16.00-17.00 you can choose which teammembers go to Q&A Titus or to Q&A Nina&Elina

	in auditorium
	in Zoom channel (link in whatsapp group)
	in auditorium on screen

Feedback from experts!!

Now start preparing!

To Do:
- **Assignment 3: Stakeholder list**
- **Assignment 4: Spheres of influence**
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  - **Assignment 5a: Desk Research**

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- **Assignment 7: Find focus**
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- **Fill in the outcome of the Empathize phase**