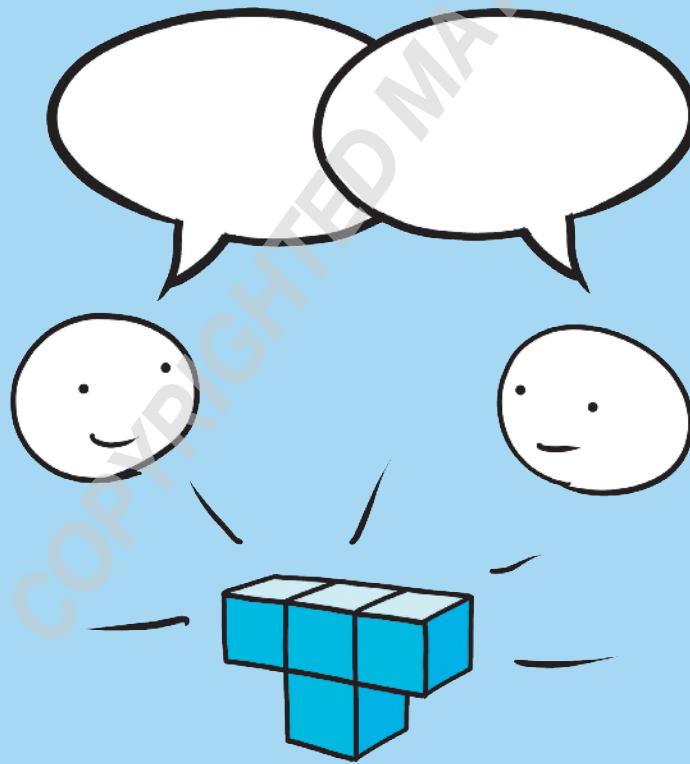


# Phase: Understand

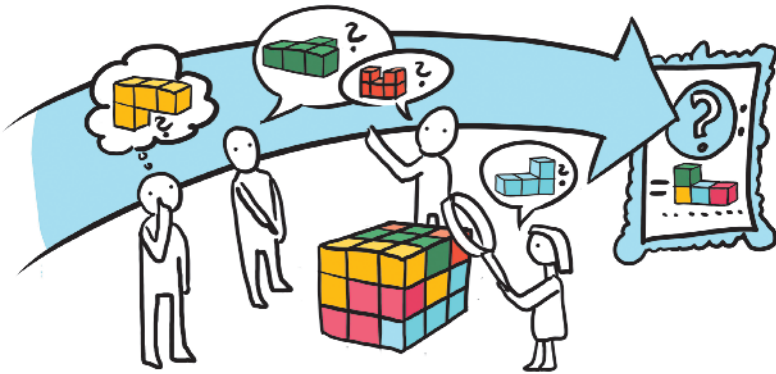


A good understanding of the problem is the be-all and end-all in design thinking. In the “understand” phase, we want to make ourselves familiar with the problem. In order to substantiate the design challenge, we formulate a question, also referred to as the “problem statement.” Through various techniques and tools, the problem statement can be broadened or narrowed down. Tools such as the 5W+H questions or Ask 5x why are quite helpful here. The aim is to learn as much as possible about the needs of a potential user. These findings in turn help us to sharpen the problem statement iteratively and come to a common understanding of the problem on the team.

# Problem statement

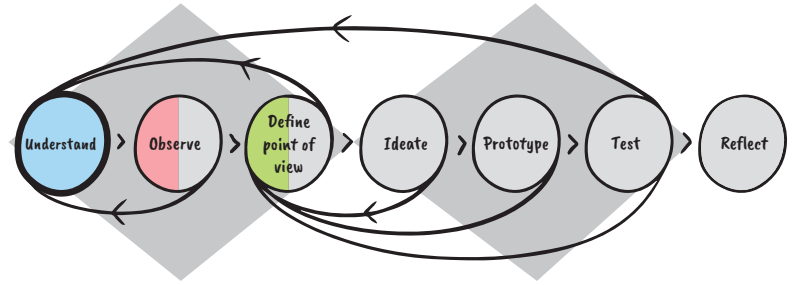
## I would like...

to define the key problem statement coherently and capture it in a simple sentence.



## What you can do with the tool:

- Develop common understanding of a problem with the clients and on the team.
- Formulate the collected findings from the problem analysis in a design challenge.
- Outline the direction and the framework for ideation.
- Create a basis for the formulation of targeted “How might we...” questions (HMW questions).
- Develop a reference value for the subsequent measurement of success.



## More information on the tool

- In design thinking, we always start with the problem, never with a solution.
- A design challenge starts with the understanding of the problem statement.
- Before we begin to solve a problem, we must first understand it correctly.
- The problem statement is a key tool for consolidating and capturing the analysis results.
- A problem statement (see also “point of view”) marks the starting point and the end of the relevant problem space and the transition to the “ideation” phase.

## What tools can be used as an alternative?

- Design brief (see page 29)
- Design principles (see page 53)

## Which methods support the creation of a problem statement?

- Context mapping helps to recognize contexts and patterns in the collected information (see page 133).
- Cause-effect diagrams help to differentiate the causes and the impact of problems.
- “How might we...” questions help to transfer the resulting problem definition into design opportunities (see page 125).
- 5W+H questions (see page 71)

## How much time and what materials do we need?

### Group size



3–5

- Ideally, in a group of 3–5 from the design team
- Optionally, 1–2 stakeholders or the client (if available)

### Typical duration



30–40 min.

- Formulating normally requires some time as well as blood, sweat, and tears.
- Short cycles of at least half an hour are useful.

### Materials needed



- Pens and Post-its
- Several sheets of A4 paper in portrait and A3 paper in landscape
- The structure of the question can be given as a fill-in-the-blank text

## Procedure: Problem statement

1

Why is it a problem?



Who has a need?



When does it occur?



How is it being solved today?



2

3

How might we...

(context: what?)

(Actor: for whom)

(Problem: What is the problem

to be solved?)

## How the tool is applied...

- Sketch the structural elements yourself on the sheets of paper or use the template.
- **Step 1:** The following questions (problem/actor/context) help with the formulation of the problem statement:
  - ✓ What is the problem? Why is it a problem?
  - ✓ Who has the problem? Who has a need?
  - ✓ When and where does the problem occur?
  - ✓ How is it solved today?
- Write down the questions on several A4 sheets (portrait) and leave enough space for answers underneath.
- Use different colors for the questions and answers and write legibly and as large as possible.
- Produce at least 10 of such problem definitions.
- **Step 2:** Attach these papers to the wall and put an A3 sheet in landscape layout underneath them. Then consolidate the problem definitions or select the most appropriate, for example, through dot voting (see page 159).
- **Step 3:** Start transferring the individual problem definitions systematically into an overarching problem, for example, in the form: “How might we redesign... [what?] ...[for whom?] ...so that...[his need]...is satisfied?”



### This is the favorite tool of Stefano Vannotti

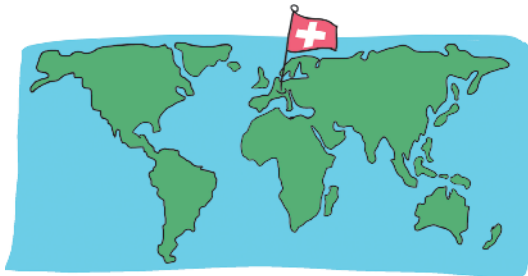
**Position:**

Director of Studies, MAS Strategic Design, at the Zurich University of the Arts (ZHdK)

"The felicitous synthesis of all the findings from the problem analysis is the most decisive moment in every project. Without knowing the key challenge, no problem can be solved successfully."

### Why is it his favorite tool?

*Outlining the specific design challenge clearly and comprehensibly is a prerequisite for a targeted generation of ideas. In many projects, the problem situation must first be correctly understood. The method of the problem statement can help define the right point of view and appropriate framework for the development of innovative solutions. In my opinion, here lies the true strength of good design thinking: creating a well-thought-out foundation for the successful development of creativity.*

**Country:**

Switzerland

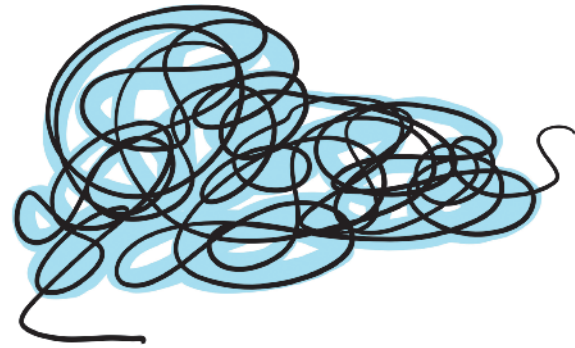
**Affiliation:**

Zurich University of the Arts (ZHdK)

**Checked by:**

**Martin Steinert**

Company/position: Norwegian University of Science and Technology (NTNU), Professor of Engineering Design and Innovation

**Expert tips:****Reframe the problem**

- It goes without saying that a well-formulated definition does not solve the problem. Nonetheless, the clear formulation of a problem provides a solid foundation for the later phases. Reframing sometimes requires a lot of persuasion with respect to the project sponsor, but it is certainly helpful for a better understanding. Many projects deal with challenging problem statements that must be considered from more than one perspective. In certain cases, it makes sense to formulate several problem statements from different user perspectives.

**Get it right**

- Often, problems, causes, and effects get all muddled together. Try to create structural clarity.
- Closely linked with the correct definition of the problem is an early vision of a desirable result. In this context, it is important to realize that the problem and the solution mutually influence and change each other over the course of a project.
- Problem statements are helpful to define the basic challenge precisely and to the point. For the following steps in the projects, appropriate design opportunities should be derived in the form of HMW questions, however.



### Description of the use case

- Lilly describes the problem. With their initial research, the teams supplement the problem. They analyze it by raising different W+H questions.
- Then the various problems are stated, and a specific actor as well as the context are described. These elements are integrated in a jointly formulated problem statement in reverse order.
- The discussion helps to develop a common language and get an understanding for the target group.

### Key learnings

- The development of a clear and concise problem definition frequently requires multiple rounds.
- The joy in precise formulation and choice of words is a crucial factor here.
- Create variants and discuss them in the group.

### Tool for download

**PROBLEM STATEMENT**

1

2

www.dt-toolbook.com/problem-statement-en

# Design principles

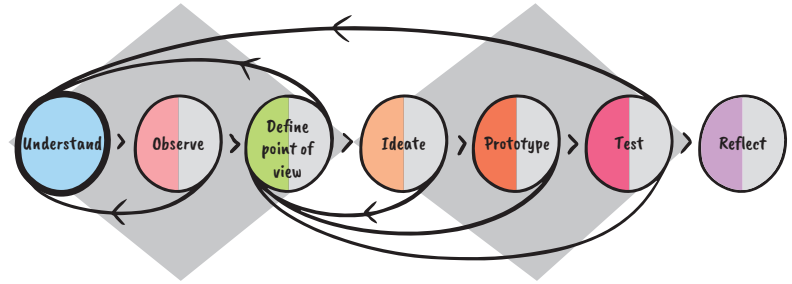
## I would like...

to define guidelines that constitute the framework for the team during a design thinking project.



## What you can do with the tool:

- Put a clear focus on a specific mindset or the requirements for the product/service as early as at the beginning of the project.
- Provide the team with a uniform understanding of the task so that everybody is on the same level.
- Provide guidance so that decisions of the design team can be made faster.
- Define general characteristics that should be treated with a higher priority.
- Develop a guideline that ensures that future design challenges are created on the same overarching principles.



## More information on the tool

- Across the entire design thinking cycle, design teams get into situations in which decisions must be made. At these critical points, design principles can support the team.
- Design principles range from broad and overarching concepts to project-specific requirements that support the decision on the design direction in each case.
- In addition, the most important features of a product can be communicated to other interest groups by means of design principles.
- Design principles are important even beyond the design thinking cycle since they give the teams in follow-up projects a better understanding of what the guiding ideas were in the design.
- In addition, design principles are like a knowledge base for teams since the principles are based on experiences with products, services, and functions.

## What tools can be used as an alternative?

- Define success (see page 137)

## Which tools support working with this tool?

- Stakeholder map (see page 83)
- List of project sponsors or other relevant interest groups, for example, decision makers and the steering committee
- Mission and vision of the organization that assigned the task
- Dot voting (see page 159)

## How much time and what materials do we need?

### Group size



5–12

- Depending on the design challenge, between 5 and 12 participants, consisting of the design team+selected stakeholders, and the client.
- Usually led by the facilitator or project manager.

### Typical duration



90–180 min.

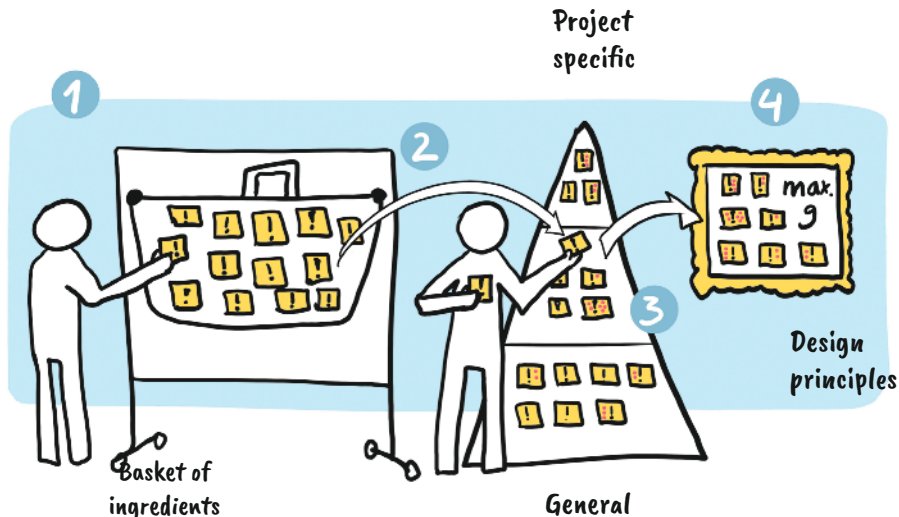
- The design principles constitute an important basis for the project.
- It can take up to several hours to come up with a definition. A clear definition helps the team to get quick support should uncertainties crop up over the course of a project.

### Materials needed



- Whiteboard, pens, Post-its,
- Colored dots for the vote (dot voting)
- History and documentation of other design challenges and experiences with design principles

## Procedure: Design principles



## How the tool is applied...

Invite the core team and the relevant stakeholders for a whiteboard session with the aim of defining the design principles for the task.

- **Step 1:** Sketch a “basket” and a pyramid on the whiteboard. Then invite all participants to write design principles on Post-its and place them on the “basket.” Whenever a team member puts a principle on the “basket,” he or she is requested to explain why it is a design principle.
- **Step 2:** As soon as the “basket” is full, sort the design principles on the pyramid, for example, by dividing them into three groups. The sorting is carried out according to the rule: the higher up on the pyramid, the more project-specific the principle is. General design principles are located at the bottom of the pyramid.
- **Step 3:** Once the assignment of the design principles is completed, a vote can be carried out (e.g. with glue dots). The aim is to reduce the design principles to a maximum of three per section, that is, a maximum of nine per pyramid.
- **Step 4:** It's best to put the selected and adopted design principles in a place where the team is often confronted with them and to which it has quick access.
- Inspirations for design principles can be found on websites such as: [www.designprinciplesftw.com](http://www.designprinciplesftw.com).

## This is the favorite tool of Slavo Tuleja



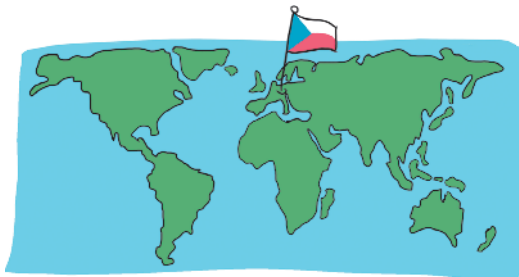
### Position:

Innovation Lead, ŠKODA AUTO DigiLab

“For me, design thinking is a great set of principles to follow, but ultimately we are all judged on execution. Think project launch, number of customers acquired, units sold, and lives changed.”

## Why is it his favorite tool?

*When applying design thinking, I often see that people are unable to cope with creative freedom: Team members sit there with an empty piece of paper in front of them that they can use as they wish but don't know what to do with it. Design principles is my favorite tool because it can be used in various phases of the development of services and products. I use them mainly on teams with little design thinking experience. Design principles act as guard rails across the entire design cycle; they help, for instance, in coming to a decision.*



### Country:

Czech Republic

### Affiliation:

ŠKODA AUTO  
DigiLab

## Checked by:

Tobias Lüpke

Company/Position: Ernst & Young | Director International Tax, Markets & BD



## Expert tips:

### Start with why

- Question: Why are we doing this project? Why now? Why in this scope?
- We let ourselves be inspired. Others have already taken this path or a similar one and developed design principles for various applications.
- We make sure that this activity is carried out with the entire core team and that everybody understands why it is important to define the design principles at the beginning of the project. This also applies to our stakeholders when we involve them in the definition of the design principles, and we want to maintain a good relationship with them.

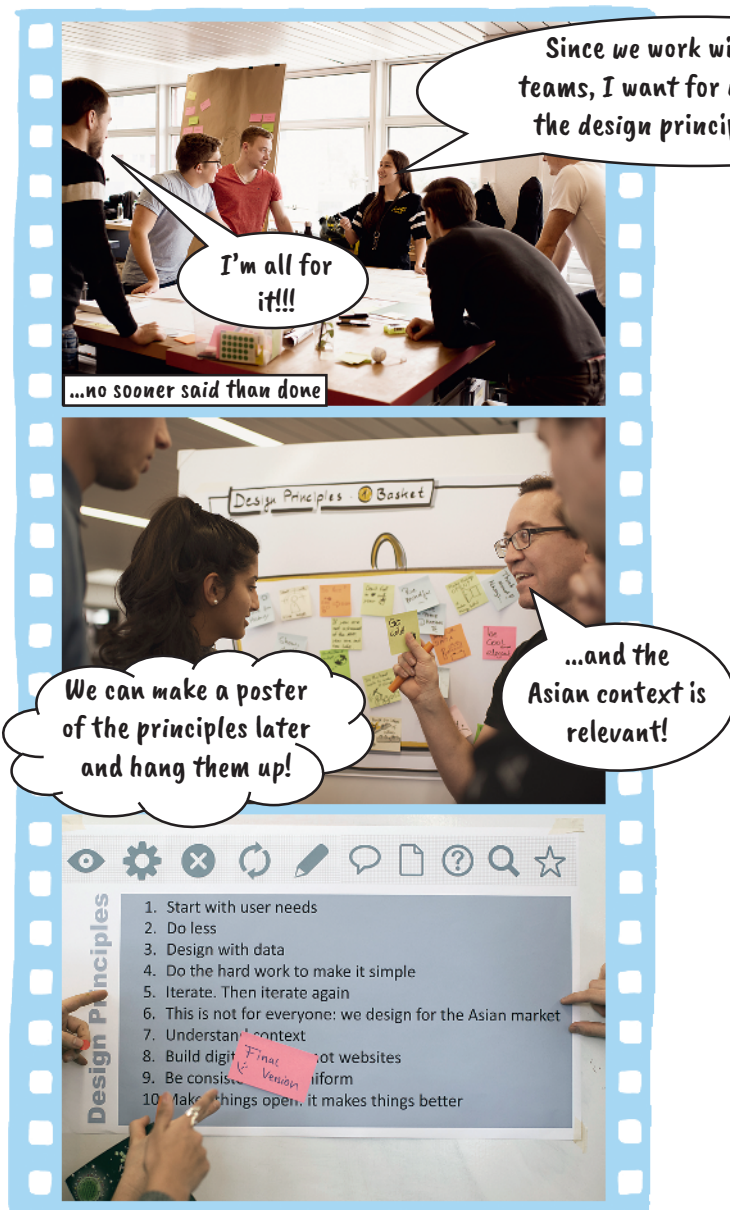
### Show it boldly

- We put the design principles in a place, for example, as a huge poster, where they can be seen by all team members.
- Design principles can also help us to communicate the most important characteristics of a solution.
- In addition, they are a good basis for the definition of a vision and help with the successful implementation of future projects.

### Show, don't tell

- Some stakeholders (e.g. decision makers) will be happy to see the design principles in action and not only perceive empty words
- In addition, the principles help us to defend our solutions that we developed as a team during the project.
- When creating design principles, we should not be too obsessed with details, though, because in the end it is more important to do something rather than just talk about it.





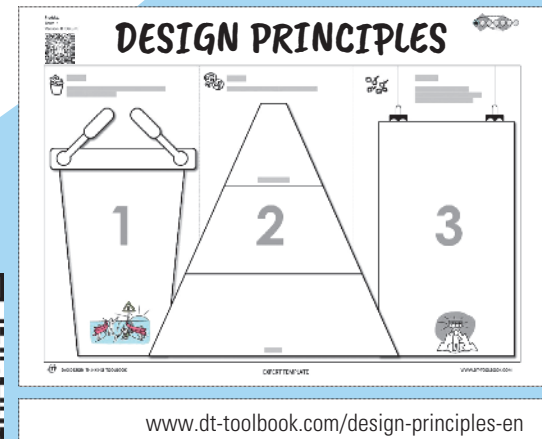
### Description of use case

- Lilly has a total of 5 teams with 4 to 5 members each. She has found that the ideas of the individual groups differ greatly.
- Therefore she wants to define the key design principles and values in the project.
- She ends up with a list of 10 defined design principles, which she hangs up on a poster in the design studio where they are clearly visible.

### Key learnings

- We develop the principles with the core team.
- We let ourselves be inspired by existing design principles.
- We see design principles as “instructions for use” in order to answer our questions more quickly as a team and remain capable of acting when making decisions.

### Tool for download

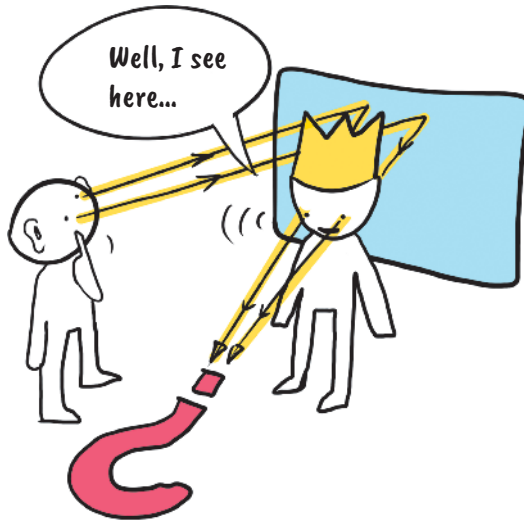


# Interview for empathy

Including variation as an in-depth interview with a question map and a journey map

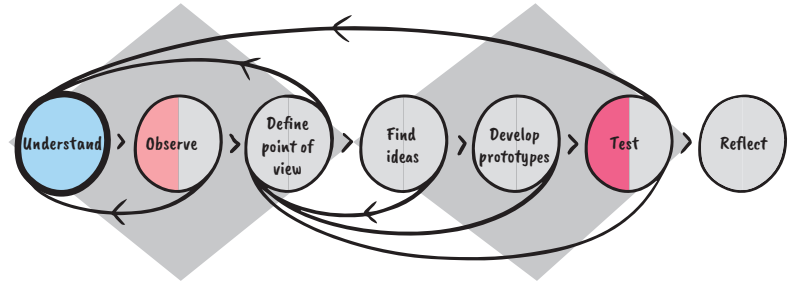
## I would like...

to consider the problem from the point of view of the user and build empathy with a user.



## What you can do with the tool:

- Build up a solid understanding of the user's needs, emotions, motivations, and ways of thinking.
- Gain insights that would have remained hidden in a superficial consideration (e.g. a user's frustration and deeper motives).
- Find out in the context of the usage which task flow the user prefers and what mental model he bases it on.
- Validate information already obtained and gain new insights.
- Establish a solid basis for discussions with the design thinking team.



## More information on the tool

- Interview for empathy aims at looking at the world from the point of view of a user.
- The tool is normally used at an early stage in the design thinking cycle in order to understand the context in which the user acts. Only then can the development of a solution begin.
- The tool also helps to overcome existing patterns of thought. Especially if, previously, a more analytical and less human being-centered approach had been applied to problem solving.

## What tools can be used as an alternative?

- Explorative interviews (see page 63)
- Peers observing peers (see page 115)

## Which tools support working with this tool?

Before and during the interview:

- 5W+H questions (see page 71) or Ask 5x why (see page 67) for the clarification of ambiguities that can be addressed in a dialogue

## After the interview:

- Field notes, video and photo documentation, sketch and empathy map (see page 93) to summarize, document, and pass on the findings
- Role-playing and shadowing for the validation of findings
- Storytelling to share the empathy gained with the rest of the design team (see page 129)

## How much time and what materials do we need?

### Group size



1–2

- Ideally, in a group of 2
- Always best with two people: One conducts the interview, and the second person takes notes on emotions and body language.

### Typical duration



30–60  
min.

- Together with the explanation of the problem and the confrontation with the problem, the interview usually lasts 30 to 60 minutes.
- Usually, the interviewees tell their true history and give important insights in the end, when the actual interview is over.

### Materials needed



- Notepad or template and pen
- Camera or smartphone for the documentation with video or photos (ask the interviewee's permission beforehand)

## Template: Interview for empathy

|                                                                                                                                                                                                                                                             |                                               |                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|
| Existing assumptions about the persona and the problem:                                                                                                                                                                                                     |                                               |                                                            |
| <br>How might we build a relationship with the interviewee in order to give him/her such a good feeling that he/she shares personal stories in the context of the problem? | Key questions for the exploration of stories: | Keywords and topics in connection with the emotions shown: |
| Outline of the story:                                                                                                                                                                                                                                       |                                               |                                                            |

## How the tool is applied...

- Start by introducing yourselves and then explaining the problem you are trying to solve via the interview.
- Emphasize to them that the interview is not about finding a solution but, rather, to learn something about their motives.
- Successful “interviews for empathy” succeed in building a relationship with the interviewee. It's most effective when the interviewee feels comfortable and is, therefore, willing to share his story with the design team in the context of the problem.
- If you succeed in having the interviewee tell his story, interrupt him as little as possible and, in general, be cautious about not influencing him with your own previously held assumptions.
- Listen sincerely and use open questions (e.g. W+H questions) if the motives are still not clear.
- Avoid questions that can be answered with yes/no or a single word.
- Ask additional questions that are not directly associated with the problem, or introduce statements that might confuse the interviewee at first but help to consider the problem from different points of view.
- Pay attention to the gestures and body language of the interviewee and, if required, note down and clarify if these signals are contradictory to the answer.
- Use the template in order to describe assumptions, write down key questions, and finally outline the story of the interviewee.



## VARIATION – IN-DEPTH INTERVIEW WITH QUESTION MAP AND JOURNEY MAP

### How much time and what materials do we need?

#### Group size



1–3

- Ideally, with a team of 2 or 3 with 1 or 2 observers and one interviewer
- The interviewer has the active part in the discussion. Together, the findings are documented and interpreted.

#### Typical duration



30–120  
min.

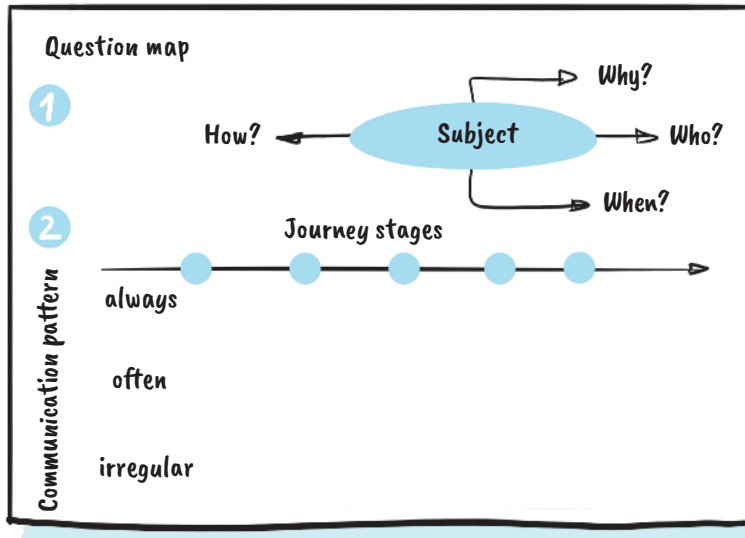
- Depending on the complexity of the project, the interview may take up to one hour.
- Add up to 90 minutes for the documentation and transfer to journey stages.

#### Materials needed



- Paper for question map, pens
- Visualization of the journey stages on a large whiteboard
- Optionally, camera or smartphone, to document the environment

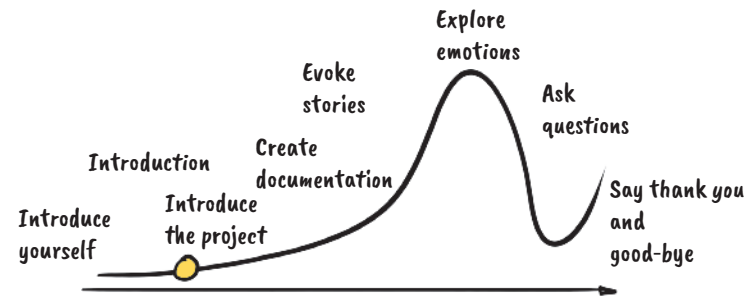
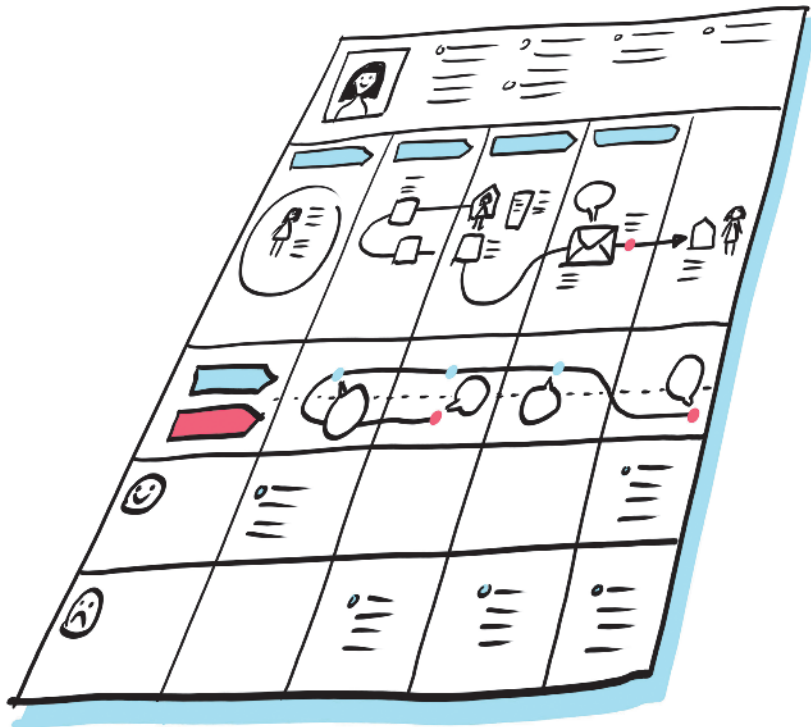
### Template: In-depth interview with question map and journey stages



### How the tool is applied...

- **Step 1:** Create a well-thought-out question map; it is crucial for an in-depth interview. Write the topic at the center of the sheet with W+H questions and explore the subject with the interviewee. Under no circumstances use a structured questionnaire. It would only serve the purpose of confirming our assumptions. Discuss the new findings with the design team.
- **Step 2:** Work with “journey stages” in addition to the question map. It helps to identify patterns at an early stage.
- Ask the interviewee to present or deepen a topic in the form of a sketch or a chronological sequence. This activity provides the interviewer with the opportunity to conduct even more in-depth discussions, even on sensitive subjects or subjects previously untapped.
- The question map and the “journey stages” aim at gathering unexpected insights that are triggered by different thought processes.
- For example, in this way, a user of an online shopping website can be questioned so as to find out:
  - All the places where a user had gathered information before
  - What information was valuable
  - When he made a decision for the purchase, and what was the decisive point for him
  - How easy the payment was

The in-depth interview and the “journey stages” can be used to produce a complete journey map. In addition to the empathy with the user and his interactions, the aim here is to show specific information on touch points that a user/customer had and discuss them with the team.



### Expert tips:

#### Conduct an interview!

- Find out who would be a good interview partner. Think of individuals who are directly or indirectly connected with the problem.
- Start the interview with an introduction to make the goal and the larger context clear. Do not try to explain the problem to the interview partner.
- Be friendly and don't talk too much. Good listening and observing are key skills in an in-depth interview.

#### Ask simple questions!

- Begin with simple questions such as “How did you come across the offer?” Then expand with more open questions, for example: “Can you describe how you solved the problem?”
- In general, open questions help to identify interrelationships and dependencies.
- Where are there contradictions, and why do they exist?
- Observe non-verbal information and repeat a question to find out what the interviewee is thinking.
- Avoid closed questions that can be answered only with yes or no.

#### Explore the expectations at the end!

- At the end of the interview, try to summarize the expectations and needs, for example: “Was it exactly the experience you expected?”
- A final question can also be revealing and give new insights in the end, for example: “Would you like to add anything else?”

## This is the favorite tool of Adharsh Dhandapani



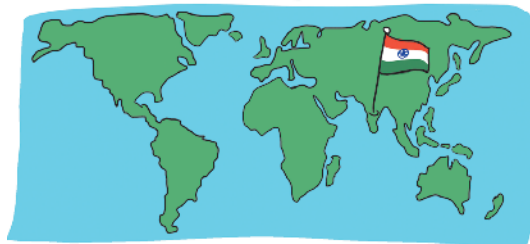
### Position:

Intrapreneur and Software Engineer, IBM

“Design thinking enables one to find the ‘x’ without needing an equation.”

## Why is it his favorite tool?

*Thanks to mirror neurons in our brain, we – as humans – have a natural ability and tendency to have empathy for others. The “Interview for empathy” tool helps us to make use of this natural ability, so that we can see the world from the user’s point of view. Achieving a new point of view also empowers us to identify and discredit the existing false assumptions and widely held beliefs in your problem area, which – in itself – can possibly differentiate you from the rest.*



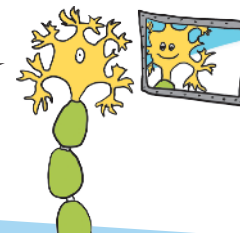
**Country:**  
India

**Affiliation:**  
IBM

**Checked by:** Jui Kulkarni

**Company/Position:** IBM iX, Application Consultant

Mirror neurons are triggered when people perform an action and also when they see other people performing the same action – with no difference between the two! It follows that mirror neurons are the reason that humans can empathize.



## Expert tips:

### Begin the interview by building trust

- We can begin the interview with an “ice breaker,” for example. Additionally, it is important to make the interviewee feel safe by assuring him that the personal information shared during the interview will not be revealed to the public. If necessary, we also assist the interviewee with how to use the microphone and other technical equipment used in the interview.

### Build a personal relationship with the interviewee

- Interviewees who know us personally will feel more secure when sharing their personal stories with us.
- Emphasize that the interview aims at the design for a better solution for him as a user.
- Generally people are averse to cold emails and cold calls from salesmen trying to sell products. Hence, right from the first contact, clearly specify that you are reaching out strictly for research purposes and would never use it as a marketing/sales opportunity.

### Address as many senses as possible

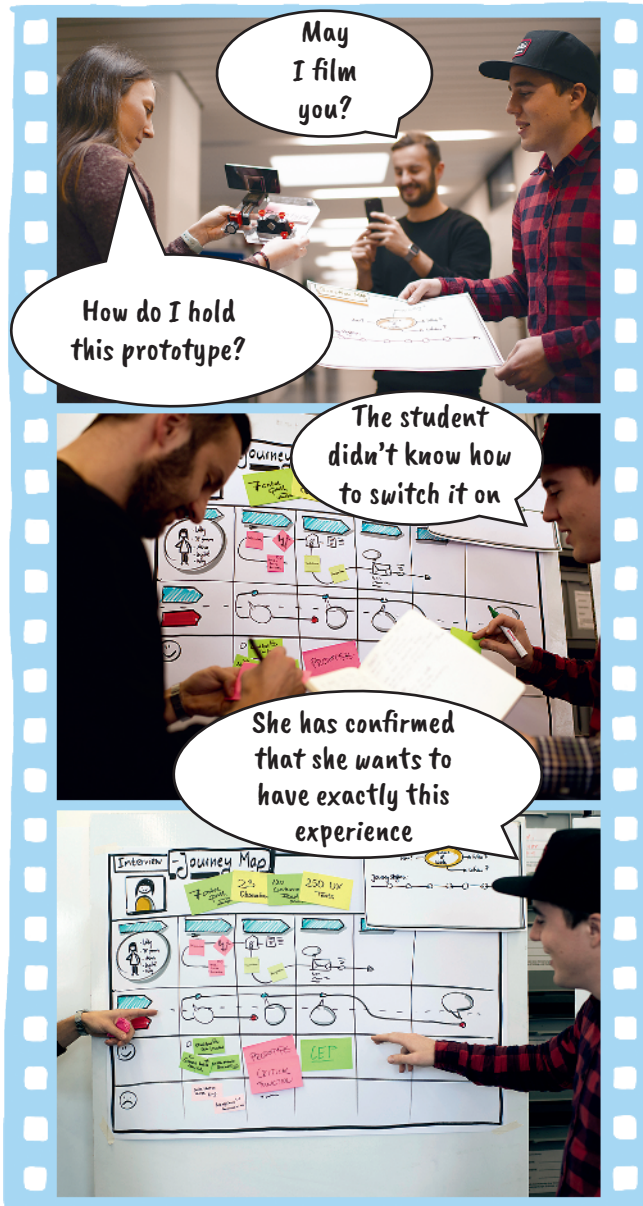
- Mirror neurons require a firsthand sensory perception to work, and it is therefore important to design the interview to engage as many senses as possible. Meeting the users face-to-face in their natural environment and using a smartphone recorder for viewing and making sense of it later are useful ways to achieve this.

### Validate the information from the interviews

- The authenticity of the interviewee’s statements can be verified with tools such as role-playing or shadowing.

### Use storytelling to share the message with the team

- Storytelling is a challenging but crucial tool for sharing the insights about users with rest of the team.



### Description of use case

- The student team has planned the interview, and the team members – equipped with the prototype and the question map – ask a student about her fears concerning artificial intelligence (AI).
- The student interacts with the AI prototype, and the team records the feedback.
- Later, the design thinking team consolidates the insights in an interview journey map.

### Key learnings

- You don't necessarily need to be a professionally trained ethnographer or designer to use this tool.
- It is difficult to remember all the information from an interview; hence it is always best to go there in pairs, make notes, and record the interview, if possible.
- Empathy interviews offer a unique opportunity for spending time with a user, listening to his stories, and digging deeper with W+H questions.

### Tool for download



**INTERVIEW FOR EMPATHY**

1

2

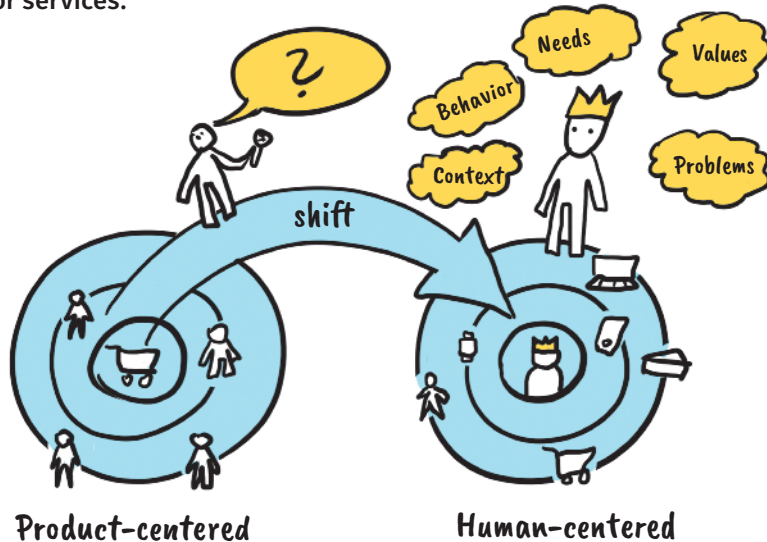
3

www.dt-toolbook.com/interview-empathy-en

# Explorative interview

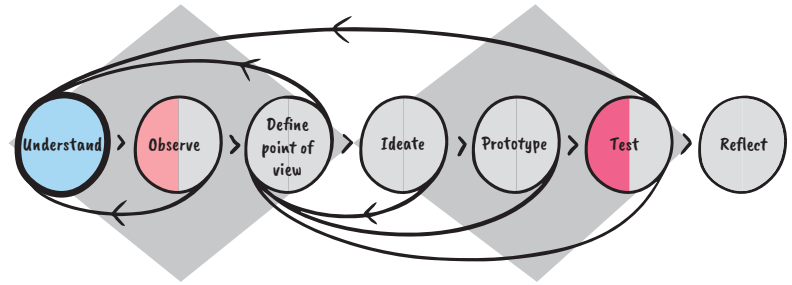
## I would like...

to learn more about the user before thinking about new products or services.



## What you can do with the tool:

- Explore the everyday life of people.
- Obtain a deep understanding of the user and his unspoken needs.
- Get a view of the basic values, beliefs, motivations, and aspirations that influence behavior.
- Create a mindset that does not put the product but the person and his or her needs in the foreground.
- Explore cultural and social aspects that might affect the satisfaction of needs.
- Minimize risks, identify opportunities, and test initial conceptual ideas at an early stage.



## More information on the tool

- An “explorative interview” is usually used in the early phase of the design thinking cycle.
- With this type of interview, our main goal is to learn something about the everyday life of the people for whom we are creating a solution.
- The “explorative interview” is a good opportunity to get away from the focus on the product and show the team that our users have other needs.
- Thus it is suitable to question assumptions made and direct the development to functions and experiences that are actually relevant.

## What tools can be used as an alternative?

- Observations, for example, with the AEIOU tool (see page 107) or other ethnographic methods, in order to gain a deep understanding of the lived experiences of people

## Which tools support working with this tool?

- Customer journey (see page 103)
- Persona/user profile (see page 97)
- Association cards
- Walk and talk
- Visualizations of activities, such as “Day in a life”



## How much time and what materials do we need?

### Group size



1–2

- One interviewer is ideal to establish a deep relationship with the interviewee.
- As an alternative, one person can conduct the interview, while a second person takes notes.

### Typical duration



60–120  
min.

- The development of an interview guide usually takes 40 minutes; conducting the interview 60–120 minutes.
- Allow enough time for the exploration of the environment in order to gain a deep understanding for the everyday lives of the participants.

### Materials needed



- Interview guide
- Pen and paper
- Camera or smartphone to capture images and videos if the interviewees allow it

## Procedure: Explorative interview

### Interview Guide:

#### 1 Introduction:

Begin with general things. What are “broad” questions to open the conversation and break the ice?

What is your profession?

Tell me what you experienced recently.

Tell me what annoyed you recently.

#### 2 Get to know the entire story:

What are the questions that help you to understand the hopes, fears and motivations of the people interviewed?

What are you saving for?

What helps you to save money?

What was the biggest challenge in this context?

What happened before/after/during?

Why?

Wait..., what exactly do you mean by that?

... (pause)

#### 3 Conclusion: Explain what happens with the answers and thank the interviewee for the discussion. Always be appreciative!

“If you had one wish to make....”

Thank you very much for the conversation

## How the tool is applied...

- **Step 1:** First create an interview guide with the topics and questions to be dealt with. Start with broad questions and zoom in on the topic step by step.
- The interview should take place at the location of typical use or at a location where the participant feels comfortable – the most suitable place may be his or her home.
- Be prepared to depart from the interview guide if questions and topics come up that are important to the interviewee.
- **Step 2:** Ask open questions, such as “what,” “why,” and “how” and avoid yes/no questions.
- Make sure that the questions allow the participant to describe his behavior or his opinions from his own perspective.
- Ask about concrete examples to avoid standard answers and search for specific events, for example, “When did you last....”
- Try to dig deeper, for example, “What does this mean to you...” or “Why did you....”
- At the same time, try to speak the language of the participant and avoid technical terms. Keep in mind that the interviewee is the expert in his life.
- **Step 3:** Complete the interview with questions such as: “What would happen if you had one wish to make?”



### This is the favorite tool of Rasmus Thomsen

**Position:**

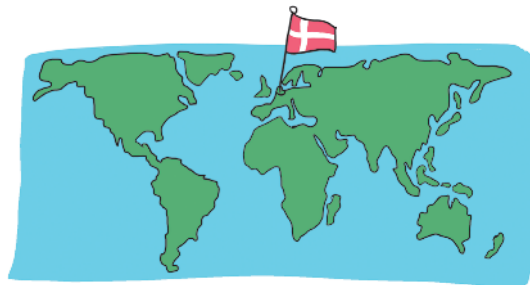
Design Director & Partner at the strategic innovation agency IS IT A BIRD.

"I love design thinking because it has the potential to answer two fundamental questions in every innovation process: Are we designing the right thing? And are we designing the thing right? For me, the first question has always been the most important, which means we need to do

the early work thoroughly by being truly explorative and curious about people and the worlds they inhabit."

### Why is it his favorite tool?

*Products or services will be used in our daily life. If we do not completely understand the context in which they are used, we cannot design meaningful solutions. After all, they should be designed in such a way that they really present added value for the user. The explorative interview is a good way to make sure we develop the right thing for our target group.*



**Country:**  
Denmark

**Affiliation:**  
IS IT A BIRD

**Checked by:** Philipp Bachmann

**Company/Position:** The University of Applied Sciences of the Grisons, Head of Service Innovation Lab SIL, Professor of Strategy and Innovation



### Expert tips:

**Focus on human values**

- We question our own assumptions and hypotheses.
- In doing so, we do not shy away from seemingly banal questions or from challenging things that most people take for granted. For example: If we asked a 5 year old what a radio is, we will get an answer that is completely different from the answer we get from an adult.

**A picture says more than a thousand words**

- With sketches and pictures, we can make even abstract topics more within grasp of the scope of the "explorative interview" and have a more concrete type of conversation.
- If it makes sense, we ask the participants to show us how they do things instead of just talking about it.
- When we are at their home, we ask participants about objects that have a personal meaning for them in order to get an additional personal component about the interviewee.

**Good conversations have room for silence**

- We use short lulls in the conversation so the participants can analyze the situation.
- During the evaluation of the interview, it is particularly important to watch out for new topics and questions that crop up during the interview. Surprising insights are the order of the day with such interviews.

**Get help from outside if necessary**

- We encounter our interviewees on an equal footing in relation to language and clothing style.
- If we need help, we take an experienced design thinker to the interview.



## Description of use case

- We all tend to seek a solution first instead of getting to the bottom of things. A popular mistake is to develop an offer for a target group without having asked whether these people actually need such an offer.
- A better way is first to use the “explorative interview” in order to understand the problem before developing a solution.
- The success of a design thinking project depends on whether we solve the right problem or not.
- Lilly can be proud of her team. There will even be a follow-up meeting.

## Key learnings

- Be open: People who were interviewed may have a completely different world view and value system.
- Pay attention: At the beginning of the design thinking process, the goal is to explore and understand.
- Be naive: Don't be afraid of asking “dumb” questions.

## Tool for download

**EXPLORATIVE INTERVIEW**

1

2

3

[www.dt-toolbook.com/explorative-interview-en](http://www.dt-toolbook.com/explorative-interview-en)

# Ask 5x why

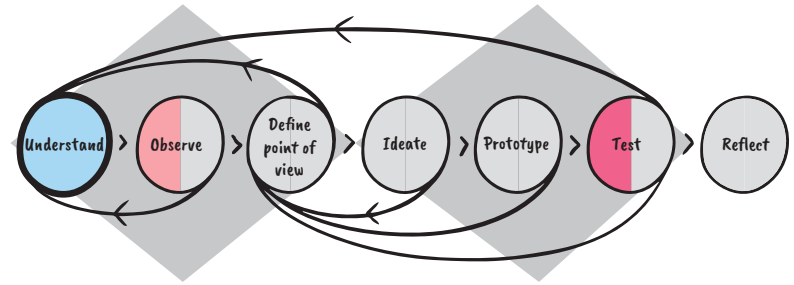
## I would like...

to understand a problem in depth, not just scratch the surface.



## What you can do with the tool:

- Discover the true cause of a problem.
- Develop a sustainable solution.
- Dig deeper and get to know more than just exploring the symptoms that are obvious.
- Dig deeper and deeper to gain new and surprising insights.



## More information on the tool

- We ask 5x “Why?” in order to understand the situation and the true causes of a problem.
- This questioning technique can be used whenever we ask questions and observe a user and want to explore critical experiences and functions of a problem in a more in-depth way.
- The tool is mainly used in the early stages of the design cycle and in the testing of prototypes.
- Asking repeatedly also helps us to identify hidden problems that a user would not mention if only asked once. In this way, we gain insights on a different level and are better able to assess situations.
- If we use this interviewing technique in the “test” phase, it may help us to understand more exactly what functions and experiences work and which need to be adapted or should be discarded.

## What tools can be used as an alternative?

- The feedback capture grid in the test phase in order to learn more about the user and the problem to be solved (see page 217)

## Which tools support working with this tool?

- Explorative interview (see page 63)
- Persona/user profile (see page 97)
- 5W+H questions (see page 71)

## How much time and what materials do we need?

### Group size



2

- Ideal are groups of 2.
- One person conducts the conversation and the other focuses on documentation.

### Typical duration



30–40  
min.

- The required time is the duration of the interview, usually 30 to 40 min.
- “Ask 5x why” can be used for a specific problem or as a guide to direct the conversation toward greater depth.

### Materials needed



- Notepad and pen
- Smartphone or camera, if the interview partner consents to the recording

## Template: 5x why

- 1 Detailed description of the problem.

| 1. Why is it a problem (problem description)? | 2 Consequence                                           |
|-----------------------------------------------|---------------------------------------------------------|
|                                               | What is the problem?<br>What are its symptoms?          |
| 2. Why?                                       | Direct impact                                           |
|                                               | Why does the problem occur?<br>What technology is used? |
| 3. Why?                                       | Cause – effect                                          |
|                                               | What could be another cause of the problem?             |
| 4. Why?                                       | Organizational hurdles                                  |
|                                               | How could the problem be avoided?                       |
| 5. Why?                                       | Systematic hurdles                                      |
|                                               | The systematic approach might prevent the occurrence?   |

## How the tool is applied...

- Use the template or write the answers on a blank sheet of paper.
- **Step 1:** Describe the problem in as much detail as possible and use photos or sketches to illustrate it.
- **Step 2:** Start with a “root cause” analysis and ask “Why?” as often as possible. Try to counter each answer with a follow-up why question.
- Stop asking “Why?” once it no longer makes sense. Then explore another problem in this way or get into an in-depth discussion with the interviewee on the answers given.
- Integrate simple prototypes and sketches into the solution discussion to obtain first reactions from the users.

### Variation:

In addition to “Why?,” you also ask 5x “How?” Use this interviewing technique to find a lasting solution to the “root causes” of the problem. With the “Why?” questions, design thinking teams can review the problem; with the “How?” questions, they can determine how to solve it.

### This is the favorite tool of Florence Mathieu



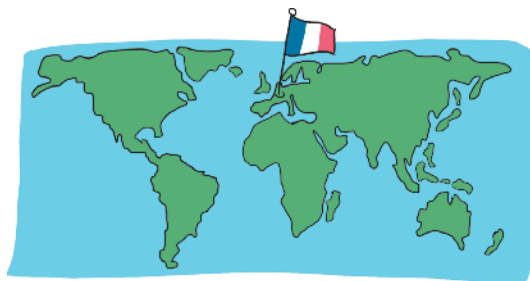
#### Position:

Founder of Aïna, author of Le Design Thinking par la pratique, Eyrolles

“Empathy and experimentation through prototyping are the key elements of design thinking which I use for reinventing the life of the elderly. There isn’t a better tool to start tackling aging than to put yourself in the shoes of our elders and understand their deep needs.”

### Why is it her favorite tool

*Good design is based on a keen understanding of the problem. In order to develop innovative solutions, I must therefore carefully analyze the origin of the problem. Asking 5x why helps me to go deeper and not get stuck on the surface of a problem. 5x why is the simplest tool we can use when we want to achieve an interview with good results. It helps us to understand the roots of the problem, which in turn results in better solutions.*



**Country:**  
France

**Affiliation:**  
AïNA

**Checked by:** Sebastian Garn

**Company/Position:** B&B Markenagentur GmbH, Creative Director



### Expert tips:

#### Don't make any assumptions

- Try not to make any assumptions about the roots of a problem.
- We let our interview partner tell his or her story, listen attentively, and ask further questions should something still be unclear.

#### Don't stop asking questions too soon

- There is no guarantee that five why questions are enough to get to the bottom of things.
- We keep asking until it gets uncomfortable or until the real cause is discovered.

#### Check the results with reverse questions

- In order to verify that we really discovered the root of the problem, reverse questions in the form of an if-then sentence are great.

#### Example:

- Why did you get sick?
  - Because I spent some time outside in the fresh air on the weekend.

#### Reverse question:

- If you hadn't spent time outside in the fresh air on the weekend, then you wouldn't be sick now?
  - The lack of a jacket was probably more of a cause than being in the fresh air. The fresh air is therefore only a part of the cause. With more why questions, the root of the problem can be further broken down.





## Description of use case

- Contradictory statements were repeatedly noticed during the interview and in the subsequent discussions with the design thinking team.
- The team would like to explore these areas again. The team goes into the next interview, having resolved to ask “Why?” at least five times, this time before letting up.
- They go as far as to ask “Why?” so many times that the interviewee stops giving answers and the questions become quite philosophical.

## Key learnings

- Describe the problem in as much detail as possible at the beginning.
- Involve experts and users in the problem-cause analysis.
- Ask why at least five times.
- Don’t forget to document the findings.

## Tool for download



**ASK 5x WHY**

1

2

3

4

5

[www.dt-toolbook.com/5xwhy-en](http://www.dt-toolbook.com/5xwhy-en)



# 5W+H questions

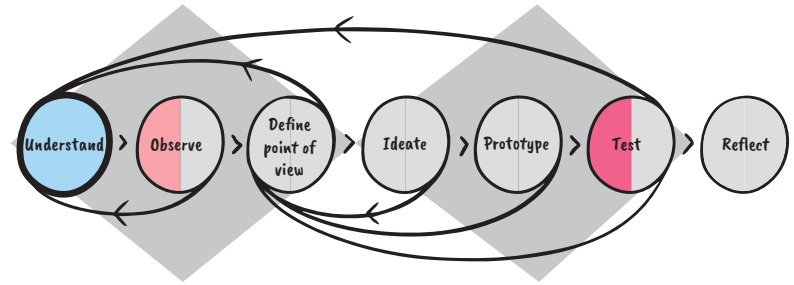
## I would like...

to gain in-depth insights as well as new findings and information in order to grasp the problem or situation holistically or simply to find relevant questions for an interview.



## What you can do with the tool:

- W+H questions help to gain new insights and information, thus capturing the problem or situation in a structured manner.
- Infer more abstract, potential emotions and motives from your concrete observations in a specific situation.
- Use W+H questions during the observation phase in order to observe more closely and dig deeper when you discover something new.



## More information on the tool

- Intuitively, the 5W+H questions are question words starting with a W or H: Who?, What?, When?, Where?, Why?, and How?
- Investigative journalists, for instance, use the 5W+H questions as a basis for their research. They use the 5W+H questions since they are open questions that allow a wide range of answers.
- The W+H questions allow us to learn more about the wishes and opinions of the user or a customer.
- The simple structure of the W+H questions helps in the divergent phase to gain a basic overview and in-depth insights. The findings of the team and photos of observations can be analyzed with this tool and guide the team into areas where previously undiscovered needs and knowledge are unearthed.
- During the observation phase, the W+H questions help to explore “what” happens, “where” it happens, and “how” it happens.

## What tools can be used as an alternative?

- Interview for empathy (see page 57)
- Explorative interview (see page 63)
- AEIOU (see page 107)

## Which tools support working with this tool?

- Problem statement (see page 49)
- Design principles (see page 53)
- Ask 5x why (see page 67)

## How much time and what materials do we need?

### Group size



3–5

- 5W+H questions can be applied on the team or to prepare for an interview.
- This is why the team size is secondary.

### Typical duration



30–60  
min.

- The duration varies. 5W+H questions can be used quickly and perfunctorily as an entry point or intensively with many discussions.
- Usually, W+H questions are a profitable tool in many phases of the design cycle.

### Materials needed



- Print the template or sketch the 5W+H grid on a sheet of paper
- Pens, Post-its

## Template: 5W+H questions

| Who                               | What                                                 | When                                | Where                               | Why                           | How                                                 |
|-----------------------------------|------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------|-----------------------------------------------------|
| Who is involved?                  | What do we already know about the problem?           | When did the problem start?         | Where does the problem occur?       | Why is the problem important? | How could this problem be an opportunity?           |
| Who is affected by the situation? | What would we like to know?                          | When do people want to see results? | Where was it resolved before?       | Why does it occur?            | How could it be solved?                             |
| Who is the decision maker?        | What are the assumptions that should be scrutinized? |                                     | Where did similar situations exist? | Why was it not yet solved?    | What has already been tried to resolve the problem? |

## How the tool is applied...

- The 5W+H questions can be used in all sorts of situations. We would like to introduce two situations.

### Situation 1: To understand the problem better

Objective: to get an initial overview of the problem as well as information about possible hypotheses and starting points

- Try to raise and answer all relevant W+H questions.
- If a W+H question does not make sense in the given context, skip it.
- Look where uncertainties exist or further questions crop up. Find out what questions should be raised in the interview.

### Situation 2: Learn more about the needs

Goal: to provide a basis for an interview with users or stakeholders

- Prepare a list of possible sub-questions (e.g. in the form of a mind map).
- Vary the questions and “play” with them. Adapt them to the situation.
- Create the interview questions or a question map from all this.
- Try to get a lot of information. Ask why even in the context of other W+H questions.

### This is the favorite tool of Kristine Biegman

**Position:**

Trainer / Coach / Facilitator human-centered design launchlabs GmbH, Berlin

"Design thinking forces us to open up, let go assumptions, experiment, embrace insecurity and 'failure' and above all: to trust the process. For me, design thinking is a powerful vehicle to make wonderful things happen in and between people while designing for people. I'm grateful to contribute to this every day!"

### Why is it her favorite tool

*The 5W+H questions are probably one of the most commonly used tools across the entire design thinking cycle. The questions are particularly valuable for understanding the problem statement and the associated problem area better. In addition, W+H questions help analyze and scrutinize information already gathered. W+H questions are my favorite tool because they help me dig deeper!*



**Country:**  
Germany

**Affiliation:**  
launchlabs

**Checked by:**

**Moritz Avenarius**

Company/Position: oose, Design Thinking Facilitator & Strategy Consultant

**Expert tips:****Always ask several times for answers**

- By asking and asking again, we dig deeper. Even if we think we already know the answer, we ask again. It seems strange, but use a "beginner's mind" and ask "Why?" several times in succession like a child would.
- In addition, we should try to find more than one answer to every question. Conflicting answers can be of particular interest for unearthing more information on genuine needs.
- If a W+H question from the table does not make sense in the context of the problem statement, we simply skip it.
- We try to gather as much information as possible with the 5W+H questions, and combine them with other interviewing techniques, for example, 5x why. A list of possible sub-questions can be created, for instance, which are then combined into a mind map.

**Turn questions into the negative in order to create different perspectives**

- Turning the questions into the negative can bring advantages and encourage creativity, for example, "When does the problem NOT occur?" or "Who is NOT affected?"
- We also found it to be very useful to use the 5W+H questions in the context of a brainstorming session or as a basis for an initial brain dump in order to find out everything the team thinks they believe or know.

**No fake news – always go with the facts**

- Furthermore, it is always good to underpin the answers with facts – with the help of desk research and data analytics, for instance.



### Description of use case

- For the preparation of in-depth interviews with decision makers in Singapore, the team is divided up.
- W+H questions aim at a better understanding of the problem.
- In the end, the design team has collected more than 40 different W+H questions that will help them learn more about the digital transformation of companies in Southeast Asia.
- Lilly spurs the design thinking team on to use the 5W+H questions even more often in the process.

### Key learnings

- Define the right W+H questions for the situation.
- Answer the team's questions in order to come up with a structured overview.
- Dig deeper in the customer interview and ask again.
- Supplement the answers with important facts.

### Tool for download

**5 WH QUESTIONS**

www.dt-toolbook.com/wh-questions-en

# Jobs to be done (JTBD)

## I would like...

to focus the problem solution on things that are an added value for the customer and help him accomplish his tasks.

### When

I take a photograph with the digital camera,



### I want to

be able to edit it in such a way that it looks like it's been taken by a professional photographer.



### So I can

show perfect



### When

I take a photograph with my cell phone,



### I want to

be able to edit it in an easy and simple manner.



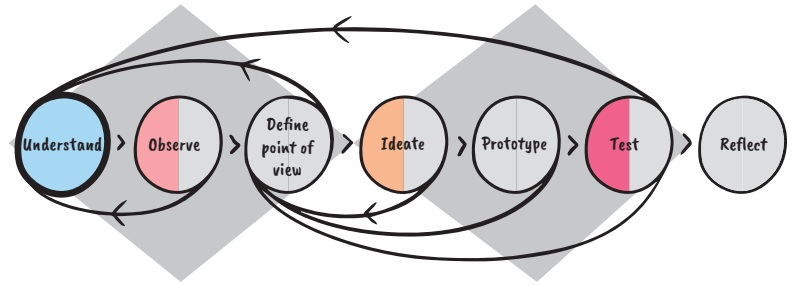
### So I can

share it quickly with my friends.



## What you can do with the tool:

- Capture the customer tasks (jobs to be done) in a structured way and gain new insights.
- Find hidden tasks of the customer that were not mentioned before in order to derive from them customer needs later or give known needs a clearer contour.
- Optimize the entire customer experience, for example, to give a service a unique purpose.



## More information on the tool

- The “jobs to be done” (JTBD) approach by Clayton Christensen helps us to focus on the customer/user and find new solutions.
- If the tasks a customer must perform are understood in great depth, the potential for success is virtually guaranteed.
- This is why JTBD has become more and more popular in the design thinking community. The alignment to the job the customer has to perform acts as a compass and makes disruptive business models possible.
- The basic idea of JTBD is that customers “scream” for a product or service whenever they have to solve a task.
- The aim is, above all, to satisfy the deeper social, emotional, or personal tasks of the customers.

## What tools can be used as an alternative?

- Persona/User profile (see page 97)

## Which tools support working with this tool?

- 5W+H questions (see page 71)
- Ask 5x why (see page 67)
- Interview for empathy (see page 57)
- Customer journey (see page 103)



## How much time and what materials do we need?

### Group size



3–5

- JTBD can be used for teams of all sizes. An efficient team size should not exceed 5 persons.
- Direct interviews with the customer are best conducted in pairs.

### Typical duration



60–120  
min.

- 30–60 minutes per problem statement should be estimated for each interview.
- Conduct at least two interviews.
- Basically, JTBD can be done in a couple of minutes; it may trigger further discussions, though.

### Materials needed



- Post-its, pens, markers
- Flip chart, wall, or other free surface
- If fitting, templates with sample customer tasks

## Template: Jobs to be done (JTBD)

| When I,     | I want to    | so I can          |
|-------------|--------------|-------------------|
| _____       | _____        | _____             |
| _____       | _____        | _____             |
| _____       | _____        | _____             |
| _____       | _____        | _____             |
| _____       | _____        | _____             |
| _____       | _____        | _____             |
| [situation] | [motivation] | [expected result] |
| 1           | 2            | 3                 |

## How the tool is applied...

- JTBD consists of three elements: (1) description of the situation, (2) explanation of the motivation, and (3) expected result.
- Capture the indirect goals and tasks with the JTBD approach. In order to understand them, it is necessary to dig deeper with the 5W+H questions and with the “ask 5x why” method.
- The customer tasks can be captured along the customer journey (see page 103) or across the product life cycle. The tasks are best written down individually and divided into different tasks to be fulfilled.
- Ask why with each task to be fulfilled. Begin, for example, with the question: Why does the customer buy from us?
- This procedure facilitates the collection, structuring, and prioritizing of customer tasks.
- Write down the customer task in the form of “When... (situation), I want to... (motivation), so I can... (expected result).”
- Based on this, you ask “why not” next; for example, “Why does the customer not buy from us?”
- From the replies to the JTBD sentences, you generate new ideas and finally the experiences and functions that are critical to a user.

### This is the favorite tool of Patrick Schüffel

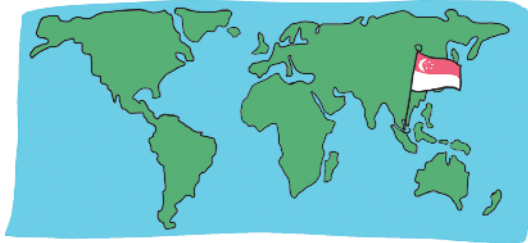
**Position:**

Professor & Liaison Officer of the School of Management Fribourg in Singapore  
Momentum Builder at STO Global-X

*"Design thinking helps me develop products and services extremely quickly and on a customer-oriented basis."*

### Why is it his favorite tool?

*Jobs to be done is my favorite tool since, for one, it is simple and intuitively understandable; secondly, it asks about deep-rooted customer needs. When used correctly, this tool can provide insights decisive for a match in situations that may seem trivial at first.*



**Country:**  
Singapore

**Affiliation:**  
STO Global-X

**Checked by:** Line Gram Frøkjær

Company/Position: SODAQ, Mechanical Design Engineer

*Customers don't just buy products, they hire them to do a job.*

– Clayton Christensen



**MORE THAN JUST ...**

### Expert tips:

#### Find the real needs

- The JTBD approach is valuable because customers/users are reluctant to talk about their needs, but they are able to talk about the tasks they have to perform and the challenges they face.
- For the JTBD approach to be beneficial, it should be used not only superficially, but a number of principles must also be observed. The focus of the value creation is on the core task to be accomplished by the customer. JTBD constitutes the basis for a market opportunity, that is, other tasks must also be considered to attain a holistic picture (i.e. adjacent and emotional tasks as well as the touch points of a customer/user across the product life cycle). Do not combine these tasks but measure them separately. In addition, each task can be measured by KPIs that are defined beforehand. The expected result is part of a market and describes precisely what the customer wants to achieve. The results are independent of solutions and should be verified and measured by quantitative survey techniques.

#### Also look at the pains and gains

- At the same time, try to document the pains (problems and troubles) and gains (benefits and joys) the customer has with the tasks.
- Workarounds and improvised solutions on the part of the customer can also be very illuminating. They show points where customers invest time and money to solve their problems.



## Description of use case

- Lilly's team defines the tasks that the user should carry out. She uses the customer journey as a basis and complements it with further important emotional and social tasks.
- After prioritization, the most important tasks within the "jobs to be done" framework are described.
- For each sentence, the major pains and gains are determined. The individual JTBDs are a vital starting point for Lilly to redesign the customer experience.

## Key learnings

- The customer tasks are written down according to the pattern: "When I ... (situation), I want to... (motivation), so I can... (expected result)."
- The hidden non-functional, social, emotional, or personal customer tasks are particularly significant and often constitute the key to the solution.
- Use the JTBD framework for all tasks along the customer journey.

## Tool for download



**JOBS TO BE DONE**

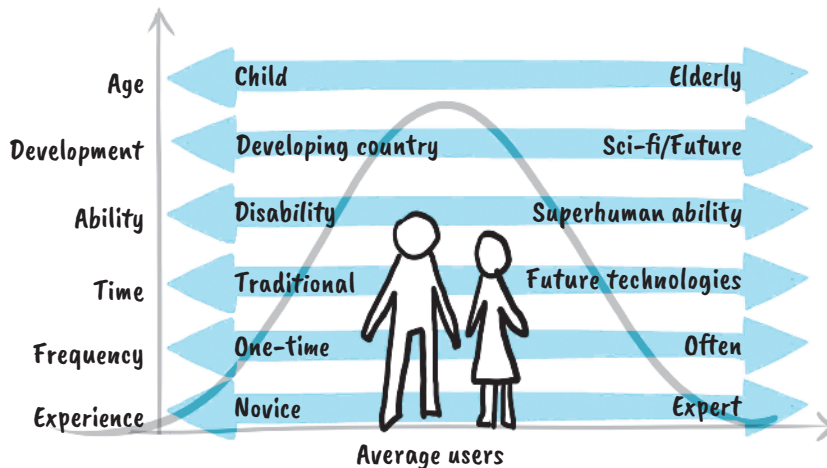
| 1     | 2     | 3     |
|-------|-------|-------|
| _____ | _____ | _____ |
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[www.dt-toolbook.com/jtbd-en](http://www.dt-toolbook.com/jtbd-en)

# Extreme users/Lead users

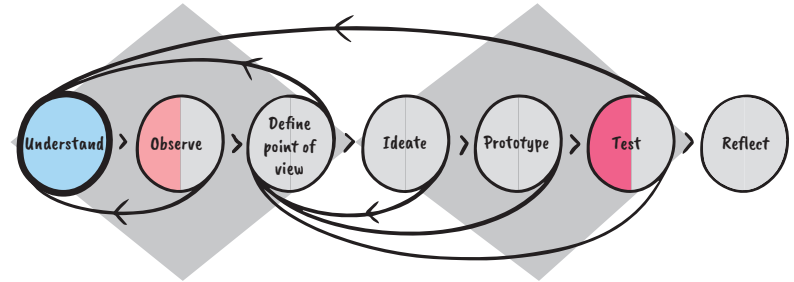
## I would like...

to find new, innovative ideas and user needs (as yet) unknown to the average user.



## What you can do with the tool:

- Explore those user needs that average users are not able to articulate.
- Find new, innovative ideas.
- Identify early trends in user behavior or needs.
- Ideate for a more inclusive design.



## More information on the tool

- Extreme/lead users (also known as power users and expert users) are based on the same basic idea. Through the interaction with them, we want to gather better information on users and their needs.
- A lead user often appears as an innovator himself. Lead users have needs that are way ahead of the mass market. A lead user is a user that has had a strong need already, no matter whether a product exists, and may even have created a solution – since they have a lot to gain from a solution. In the case of complex products, the traditional lead user methods hit their limits.
- An extreme user, however, is a user who goes beyond the usual usage limits or utilizes the product, system, or the space significantly more than an average user (e.g. taxi driver vs. normal car driver, extreme athletes vs. casual athletes).
- Extreme users experience the world differently than an average user. This means that their needs can be more prominent. The needs uncovered with groups of extreme users are frequently also latent needs in the wider population.

## What tools can be used as an alternative?

- Interview for empathy (see page 57)
- Explorative interview (see page 63)
- AEIOU (see page 107)
- Empathy map (see page 93)
- Peers observing peers (see page 115)

## Which tools support working with this tool?

- Ask 5x why (see page 67)
- 5W+H questions (see page 71)
- Jobs to be done (see page 75)

## How much time and what materials do we need?

### Group size



2

- Teams of 2 are ideal, so one person can concentrate on the conversation, the other on recording the statements.

### Typical duration



30–120  
min.

- The interaction with the user in her environment may vary in length.
- It usually takes a lot of time and persistence to seek out the lead user. Extreme users are easier to find.
- Ask known users about recommendations for other potential lead users.

### Materials needed



- Notepad and pen
- Smartphone or camera, if the interview partner gives his/her permission, to document the findings

## Procedure: “Extreme users/lead users”



## How the tool is applied...

### Lead User

- Identify the potential lead user for a market trend or a relevant problem statement area.
- Interview or co-create with the lead user. It is always advisable to ask the lead users about recommendations for other potential lead users.
- Previously unconsidered solutions or paths to a solution may arise from the interaction with lead users.

### Extreme User

- Identify potential extreme users based on dimensions in which such a user could be of interest (e.g. a child or a much older person, a beginner or a super expert).
- Decide how best to learn more about them.
- Use the findings to accumulate information about the problem or a broader target group. Power users are heavy users who are characterized by a high intensity of use.

### Procedure

- When interviewing and observing lead users, power users, or extreme users, we should especially look for workarounds or previously unknown solution alternatives such a user might have developed. Such findings should then be validated later by testing prototypes to ensure that the idea meets the needs of the target users as well.

|               | Characteristics                                                                                 | Complexity   | Outcome                       | Procedure                                                                                                                                                                                                                                                            |
|---------------|-------------------------------------------------------------------------------------------------|--------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead user     | Ahead of the trend<br>Willing to invest time and resources, very experienced and well connected | Hard to find | Usually very good insights    | <ol style="list-style-type: none"> <li>1. Identify trend</li> <li>2. Identification of lead users</li> <li>3. Co-creation with lead user</li> <li>4. Reflection and projection of the results onto the problem statement</li> </ol>                                  |
| Extreme users | Extremes:<br>young /old, poor/rich<br>Differences:<br>regular/infrequent user, expert/amateur   | Easy to find | Useful additional information | <ol style="list-style-type: none"> <li>1. Identify extreme users</li> <li>2. Determine observation and interaction (questioning, shadowing, or group interview)</li> <li>3. Use findings for persona, sharpen problem statement, or collect initial ideas</li> </ol> |



### This is the favorite tool of Katja Holttä-Otto

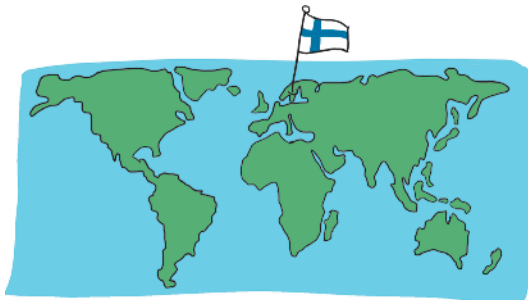
**Position:**

Professor of Product Development, Design Factory, Aalto University

“Design thinking is really people thinking. It is thinking about the people we develop for, also the non-obvious people.”

### Why is it her favorite tool?

*For me, interaction with these users is as if someone handed me a magnifying glass that allows me to see their needs, which of course had been there all the time but which I had not been able to recognize before. In different design challenges, the work with extreme users helped me enormously. In one project, I gained insights about wheelchairs. In the interaction with extreme users, I became aware of the fact that these aids should not only work on the road but also on uneven surfaces such as the lawn or gravel road.*



**Country:**  
Finland

**Affiliation:**  
Aalto University

**Checked by:** Andreas Uthmann

Company/Position: CKW, Head of New Business & Innovation



### Expert tips:

**Search for wild ideas**

- The inspiring exchange with extreme users often leads us to wild and new ideas. We should take every opportunity to spend time with this type of user.
- Generally, we should treat every user as an expert. We respect their concerns, particularly if we are dealing with sensitive population groups.

**Collaborate across boundaries**

- We have had very good experience with interacting with groups (i.e. 8 to 12) of extreme users. The different opinions and the interaction within the group often yield additional insights.
- This suggests that we should always observe and interview several extreme users. As a result, the probability of recognizing needs patterns increases.
- But watch out! Not everyone who applies something in an extreme way is innovative. An extreme user is not a lead user.

**Use all channels to stay in contact with lead users**

- There are different possibilities for interacting and staying in touch with lead users. They include WhatsApp groups or temporary blogs. They can be geared to normal users or lead users and offer a broad range of possibilities for discussion.
- In addition, chats can be set up temporarily for which all participants can create contributions. A “letter box” for spontaneous first ideas, thoughts, and limited surveys also fuel interaction.



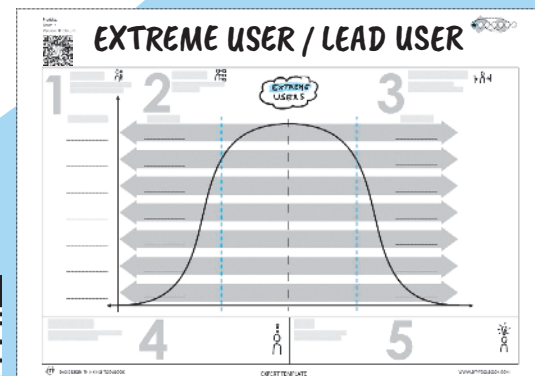
## Description of use case

- Lilly's team determines lead users and extreme users in order to capture the needs of the majority.
- A gamer is an extreme user. He is at home only in his virtual world and no longer notices many things in the real world. But he has very specific ideas about what should be well-designed virtual worlds.
- Lilly's team wants to focus on such extreme users in order to refine further their understanding of the problem.
- Images of the identified lead and extreme users help the team to build empathy with them.

## Key learnings

- Take all extreme user needs into consideration, even if they don't seem relevant at first glance. Often, we don't properly perceive things (e.g. we cannot hear properly in a loud environment).
- Test the requirements later with all types of users and not only with the extreme and lead users.

## Tool for download

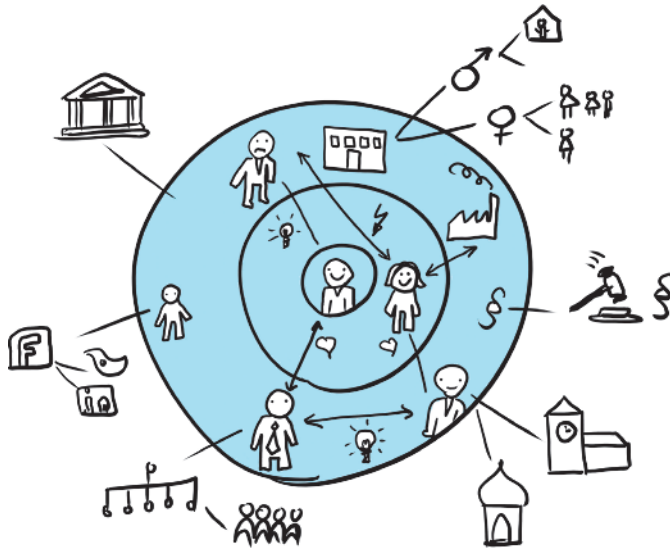


[www.dt-toolbook.com/extreme-user-en](http://www.dt-toolbook.com/extreme-user-en)

## Stakeholder map

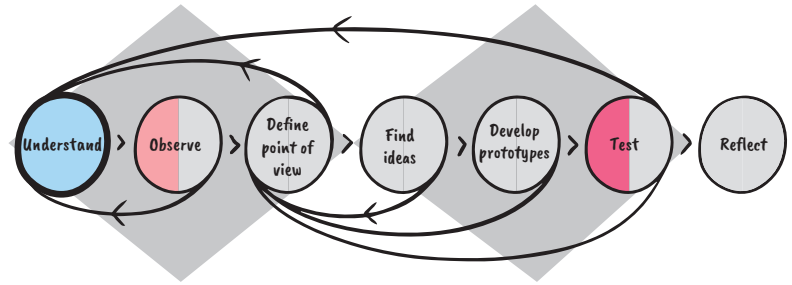
### I would like...

to get an overview of all stakeholders, that is, organizations and people who have a claim or interest in the problem and a potential solution.



### What you can do with the tool:

- Obtain valuable information for strategic and communicative planning as well as future activities.
- Make assumptions about the influence of certain actors in the project.
- Identify clues that suggest a lack of information regarding actors, for example, which actors have not been sufficiently taken into consideration so far (white spots).
- Draw first conclusions with respect to alliances or power structures and identify potential conflicts between different stakeholders.



## More information on the tool

- The stakeholder map is a visualization that helps to clarify the positions of the various stakeholders. This tool is part of the stakeholder analysis that aims at identifying the interests, the inhibitory and supporting factors, as well as power structures within the system.
- The stakeholder map and the analysis yield information on the characteristics of all interest groups and the relationships among them, and serves the purpose of communicating effectively with all relevant stakeholders.
- Understanding the interest groups and building a relationship with them is an essential part of the process.
- Knowledge about stakeholders is vital, since they are the ones who decide on the “top or flop” of a project; in addition, they are crucial for the implementation of solutions.

### What tools can be used as an alternative?

- Power-interest matrix

### Which tools support working with this tool?

- 5W+H questions (see page 71)
- AEIOU (see page 107)
- Brainstorming (see page 151)

## How much time and what materials do we need?

### Group size



3–6

- Ideally, the team is complemented by a representative of the respective stakeholder.
- Often, the design team develops a first map and then validates the results in follow-up discussions with the stakeholders.

### Typical duration



60–240  
min.

- The creation of a stakeholder map takes from 60 to 240 minutes, depending on the complexity.
- Often it takes some time before all parties involved speak openly about stakeholders and their needs.

### Materials needed



- Large sheet of paper and pens
- Large square table or whiteboard
- Using Legos or Playmobil figurines, you can assign a character to the individual actors

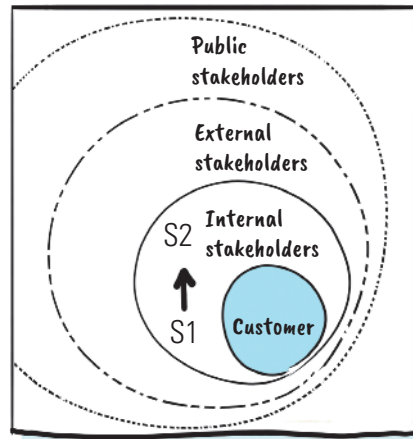
## Procedure and template: Stakeholder map

- 1 Define use case
- 2 Stakeholder brainstorming



- 3 Draw in connections.

- Close relationship (frequent contact, exchange of information, coordination, mutual trust, common interests).
- ? Weak or informal relationship. Question mark shows unclear relationship.
- == Institutionally established alliances and cooperative projects.
- The arrow indicates the flow direction, for instance, of information and values.
- ⚡ The lightning sign shows tensions, conflicts, or dangers between stakeholders, broken or injured relationships.



## How the tool is applied...

- **Step 1:** Start by defining the use case. It can be a product, project, or the collaboration of different departments.
- **Step 2:** List all stakeholders involved.
- In addition, deepen the understanding of the various stakeholders by asking questions. The questions are defined in accordance with the use case:
  - Who will benefit from the success? Who has an interest in it being a success?
  - Who do we collaborate with? Who provides us with valuable ideas?
  - How can sales and marketing make a mark?
  - Who is blocking the idea, and for what reasons? Who benefits from a failure?
- **Step 3:** First create a stakeholder map and enter the various stakeholders on the map. Then enter the connections of the stakeholders to one another.
- Define and use different symbols for the connections, for example, broken lines for more complex relationships.
- Reflect on the stakeholder map and determine the next steps, actions, and possible consequences from working with the stakeholder map.

### This is the favorite tool of Amber Dubinsky

**Position:**

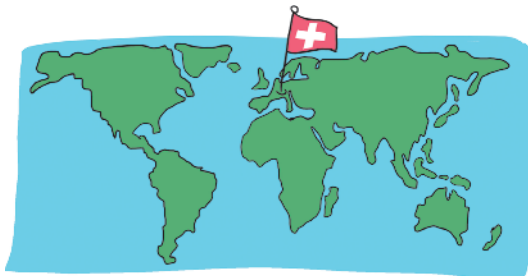
Co-founder of THES - TauschHaus - EduSpace

*"I live according to the principle: Only when you are able to visualize 'it' have you really understood 'it.'"*



### Why is it her favorite tool?

*The dynamics within the team, department, organization, and other interest groups are often hugely exciting, complex, and crucial. It is very important to understand these interactions, and for that the creation of the stakeholder map is essential. Then the relationships identified must be dealt with in a constructive way, which requires a great deal of sensitivity, clarity, and transparency.*

**Country:**

Switzerland

**Affiliation:**

THES

**Checked by:**

Remo Gander

Company/Position: Bossard Group, Group Project Manager

### Expert tips:

**Bring together the right people for the job**

- For the creation of a stakeholder map and the analysis of the stakeholders, it is important to select the participants carefully. For one, we need expert knowledge; secondly, we need participants who bring along a fresh perspective. Frequently, it makes sense to create the stakeholder map on the project team and later interview the most important actors, at the same time questioning our assumptions.

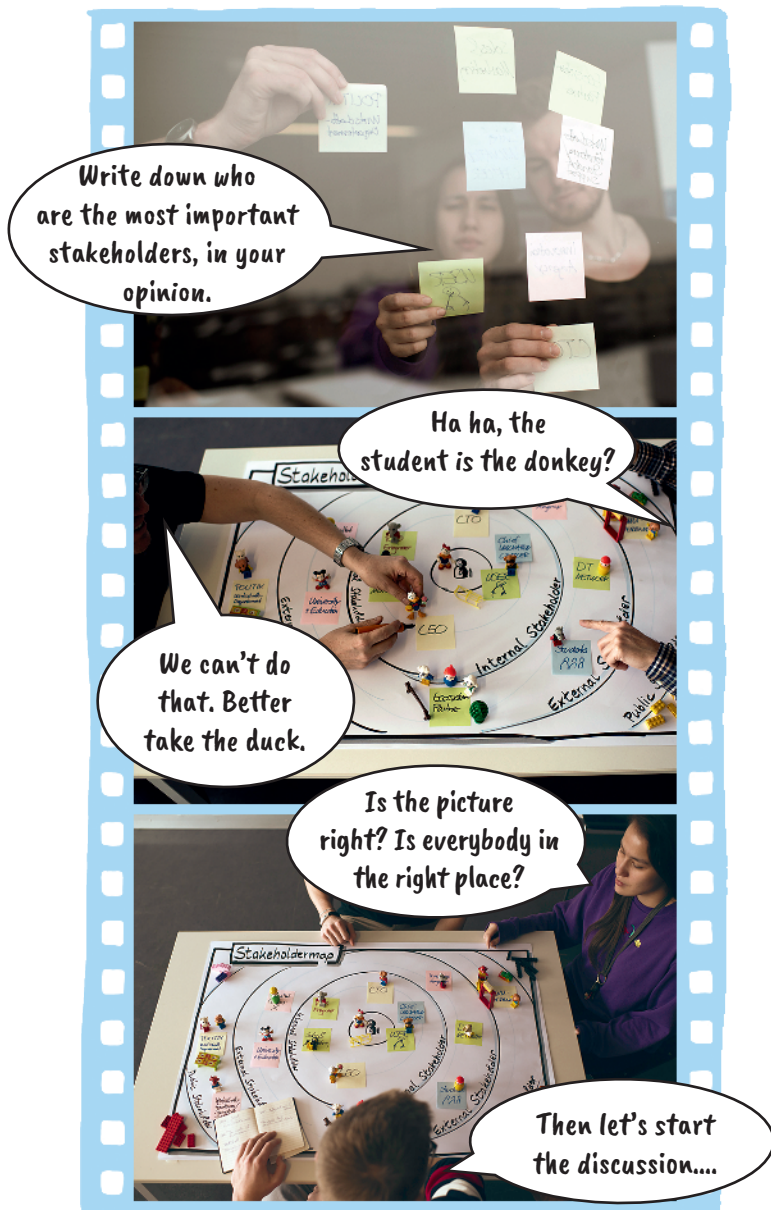
**Work efficiently and effectively**

- Generally, when defining stakeholders, it is important to get away from general profiles and be as specific as possible.
- Enough time should be scheduled for brainstorming, the positioning, and the evaluation of the stakeholders. A common symbolic language helps with interpretation. We have had very good experience with using different figures for stakeholder maps (e.g. the animals from Lego Fabuland). Cords and pipe cleaners in different colors can be used for the connections.

**Identify key stakeholders for implementation**

- Communicating the results and regular updating during the entire project is recommended. A stakeholder map for the implementation of a project can be instrumental for its success. Applying stakeholder analyses when preparing the implementation of solutions has proven its worth many times over.





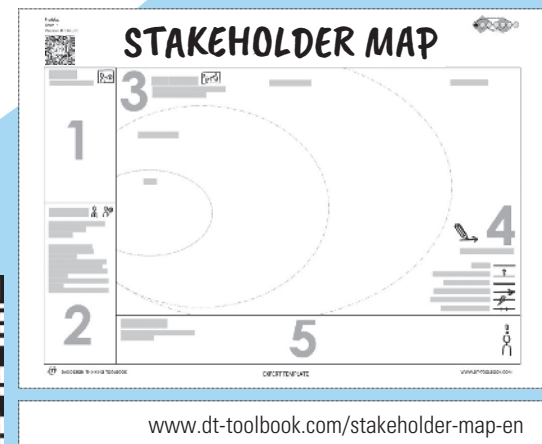
## Description of use case

- Lilly first does a brainstorming session with her team. Subsequently, they pick the most important stakeholders together. For a better identification with the stakeholders, the team uses symbolic figures that describe or symbolize the personality.
- They are then arranged in such a way that they represent the relationships among one another and determine who are the most important ones and who, in what way, will be involved.
- This way, communication measures can be defined at an early stage, and nobody will be forgotten. Based on this, Lilly can now involve the key stakeholders and, for instance, test the prototype with them.

## Key learnings

- Define a specific use case.
- Compile a list with all relevant stakeholders.
- Ask specific key questions, for example, "Who will benefit from the success?"
- Enter the stakeholders on a stakeholder map and visualize the relationships to one another.
- Reflect on the result and infer from it specific steps to be taken.

Tool for download



# Emotional response cards

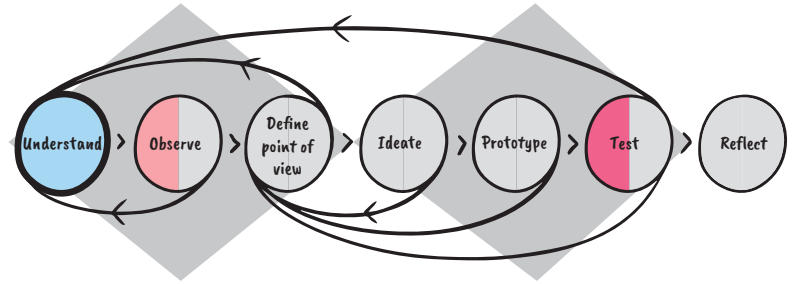
## I would like...

to learn more about the a user's feelings when interacting with him to obtain better interview results and insights.



## What you can do with the tool:

- Test existing products for their attractiveness before redesigning them and compare them to new ideas.
- Learn more about competitive products, brands, and experiences.
- Collect statements on strategy, information architecture, interaction, aesthetics, and speed.
- Vision: Find out from the client as early as in the kick-off how he wants his product to be characterized by the user.
- In the case of new products, find out what the user experienced, thought, and felt (e.g. after a usability test).
- Compare prototypes across various iterations.



## More information on the tool

- The emotional response cards are a qualitative tool for empathetic target group analysis. The cards provide the target group with a simple aid that enables them to talk about a situation in a targeted and deeper way.
- As a result, members of the target group are encouraged to speak about their emotions, beliefs, and perceptions. People can remember well what something felt like but they usually need a trigger to start talking about it.
- The emotional response cards are normally used in the early stages of the design thinking cycle to gain understanding and determine the direction of the development.
- The “Microsoft reaction cards” were mentioned for the first time by Joey Benedeck and Trish Miner in 2002 in their publication “Measuring Desirability” – at that time, still on the basis of 118 cards. Fifty emotional response cards have proven useful to us.

## What tools can be used as an alternative?

- Interview for empathy (see page 57)
- Empathy map (see page 93)

## Which tools support working with this tool?

- Persona/user profile (see page 97)
- Structured usability test (see page 229)
- Solution interview (see page 225)
- 5x why (see page 67)
- 5W+H questions (see page 71)

## How much time and what materials do we need?

### Group size



1–2

- Teams of 2 are ideal. One person observes the conversation, while the other person poses the questions.
- But it also works with one interviewer.

### Typical duration



15–20  
min.

- You need about 5 minutes for the preparation of the emotional response cards.
- Depending on the follow-up questions, 10-15 minutes should be planned for one run.

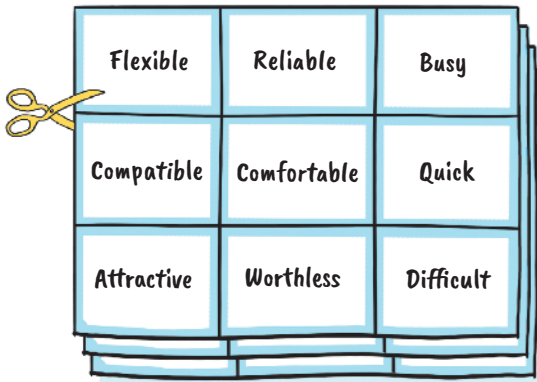
### Materials needed



- 50 emotional response cards
- Notepad and pen

## Template and procedure: Emotional response cards

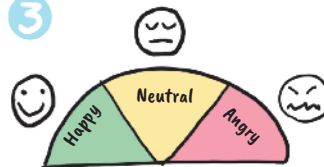
1



2



3



5



4



## How the tool is applied...

- **Step 1:** Print the 50 cards and glue them on thin cardboard.
- **Step 2:** Lay the cards on the separate table in any order.
- **Step 3:** Ask the users after the test to select 3 cards from the set that best describe their experience with the product. Add that it is not important for the adjective to be absolutely exact and that it is also allowed to be negative! It serves only as a trigger for an emotion. The person is also allowed to show emotions during the selection and talk to himself/herself. Write down anything conspicuous! As soon as the test person picks up a card, put it aside on the table and write down the adjective. Leave a little space with your notes for later insights.
- **Step 4:** As soon as the user has selected the 3 cards, explore (through questions) the adjective for the respective situation in which the user felt like that and deepen the insight by asking “why” questions. Other question techniques yield supplementary information, for example, “What did you expect instead?,” and so on.
- **Step 5:** Also write down the statements as direct quotes. Take a photo of the map situation or record the stories on video.

Note: based on Microsoft Desirability Toolkit

### This is the favorite tool of Armin Egli



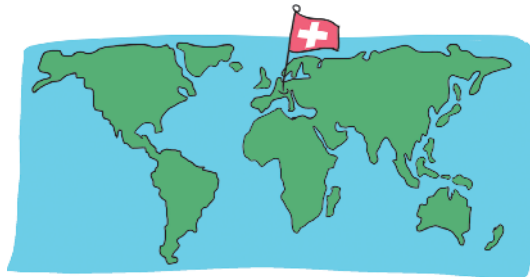
**Position:**

UX consultant and lecturer for User Experience and Innovation

“Design thinking is my magical toolbox with which I can create the right product together with the customer.”

### Why is it his favorite tool?

*I think the way to a good product is not obvious. The solution often suggests itself (in the problem) but is invisible. It is my job to grasp the core of the project and of the problem. The most important question in this context is WHY. I discover connections and original problems when I get a really close look at the people involved. This requires trust. When I have trust, I can research for personal stories. The response cards provide a simple entry point for it. Then I dig deeper.*

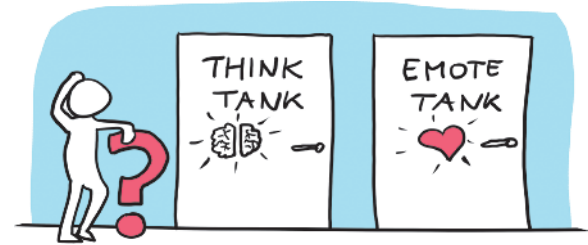


**Country:**  
Switzerland

**Affiliation:**  
Zühlke

**Checked by:** Philip Hassler

Company/Position: Venturelab | Co-Managing Director



### Expert tips:

Emotional response cards can also be used to clarify a vision or in the context of a prototype test.

#### Describe the bigger vision

- The cards are used to raise the client's awareness of his later product and its properties even before the beginning of the project.
- The duration: 5 minutes for considerations of the product (not final) and 5 minutes for the “why” questions. When interviewing the CEO and the product manager, for instance, it is intriguing to see on which level the interviewees answer (strategy, function, interaction, aesthetics). This can already result in eureka moments, which in turn provide important information for the design principles.

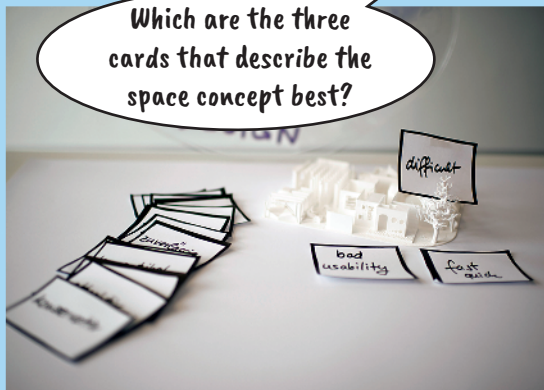
#### Explore the response to a prototype

- The cards are used for the in-depth analysis of the user's point of view, for example, after testing a prototype.
- The typical duration: approx. 3 minutes for selecting the 3 cards and approx. 10 minutes for the stories (“why” questions) the user tells for each card.

#### Keep in mind

- If current situations are queried (possibly with several tools) and afterward the desired future situation is also to be asked about: First pose questions about the current situation with all tools. Only then, find out what the user thinks about the target situation. Otherwise, we run the risk that the questions about the current situation are influenced.





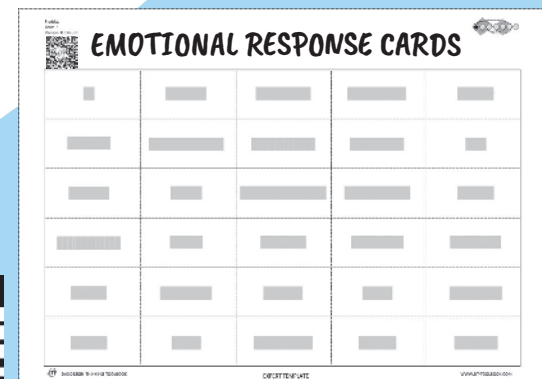
## Description of use case

- Within the framework of “Future of Work,” the design teams have designed various floor layouts for agile collaboration.
- After a typical walk-through in a 3-D model, the team uses the “emotional response cards” to test the relationship to the space concept regardless of the room size.
- The test person selects the adjective “difficult” and says to it: “If I have to imagine working in this room...ouch.... They are not directly conducive to working together effectively, and it is difficult, for example, to hold a stand-up meeting in the narrow corridors.”

## Key learnings

- People remember emotions!
- People find it easier to remember if they are given a trigger, such as an emotional response card.
- Users and customers normally want to be polite. The cards help to lower inhibitions.

## Tool for download



[www.dt-toolbook.com/response-cards-en](http://www.dt-toolbook.com/response-cards-en)