Design Thinking

Class 10

Social Entrepreneurship

Session and Workshop by

Jyoti Sharma

Visiting Faculty, IIITD

President, FORCE Non-Profit

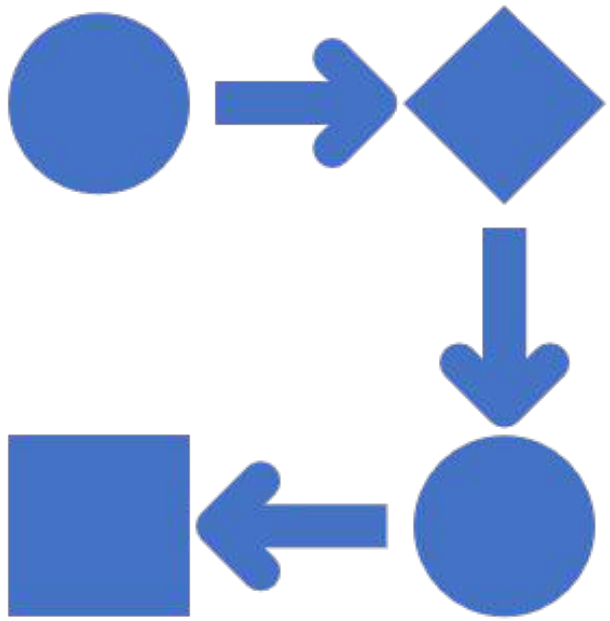
www.force.org.in

What is Design Thinking

Design thinking is a **non-linear**, **iterative** **process** that teams use to understand users, challenge assumptions, redefine problems and create innovative solutions. it is most useful to tackle problems that are ill-defined or unknown.

Design Thinking for Social Innovation

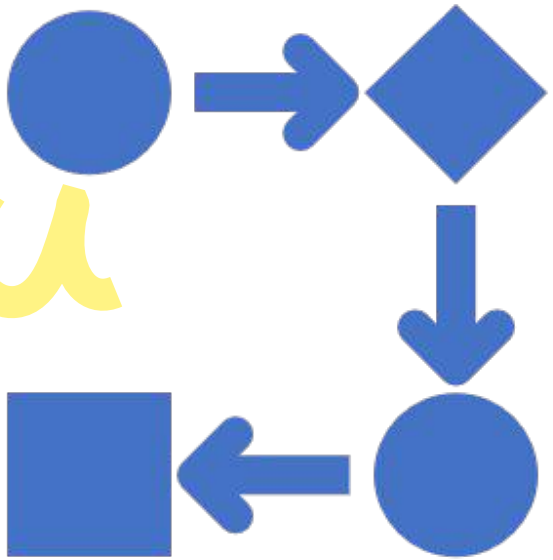
https://youtu.be/0V5BwTrQOCs



The Process

5 phases / stages / modes

- Empathize,
- Define,
- Ideate,
- Prototype and
- Test



They are not necessarily sequential steps. Objectives is to gain the deepest understanding of the users and what their ideal solution/product would be.

Stage 1 - Empathize

Research Your Users' Needs

Here, you should gain an empathetic understanding of the problem you're trying to solve, typically through user research. Empathy is crucial to a human-centered design process such as design thinking because it allows you to set aside your own assumptions about the world and gain real insight into users and their needs.

Stage 2: Define—*State Your Users' Needs & Problems*

Accumulate the information gathered during the Empathize stage. You then analyze your observations and synthesize them to define the core problems you and your team have identified. These definitions are called problem statements. You can create personas to help keep your efforts human-centered before proceeding to ideation.

Problem Statements ??

Problem statements are concise descriptions of design problems. Design teams use them to define the current and ideal states, and to freely find user-centered solutions. Then, they use these statements—also called points of view (POVs)—as reference points throughout a project to measure the relevance of ideas they produce.

“If I had an hour to solve a problem, I’d spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.” — Albert Einstein

How to write Problem Statement

Well-constructed, valid and effective problem statements are vital. Articulate the problem so everyone can see its dimensions and have a common view.

They should be:

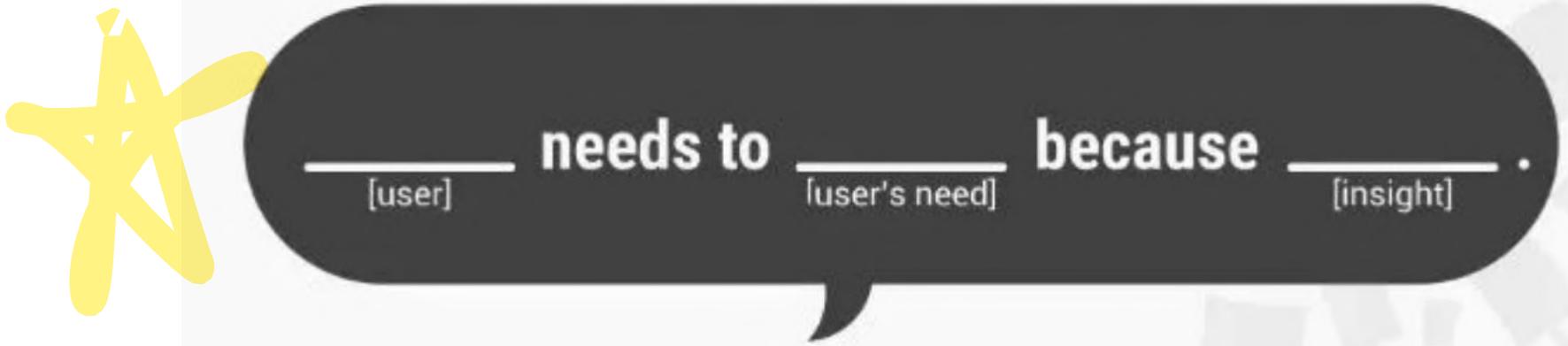
- **Human-centered**: Frame problem statements from insights about users and their needs.

- **Have the right scope**:
  - Broad enough to permit creative freedom, so you don't concentrate too narrowly on specific methods for implementing solutions or describing technical needs; but
  - Narrow enough to be practicable, so you can eventually find specific solutions.

- Based on an **action-oriented** verb (e.g., "create" or "adapt").

- **Fully developed** and assumption-free.

- Word problem statements from the **users' perspective** and not let bias influence you



Point of View Template – Example

User	Need	Insight
An adult person who lives in a city	To use a car for 10-60 minute trips 1-4 times per week	The user would not want to own his own car as it would be too expensive compared to his needs. He would like to share a car with others who have similar needs, however, there are no easy and affordable solutions for him. It's important for the user to think and live green and to not own more than he truly needs.

Build Personas

Personas are fictional characters, which you create based upon your research in order to represent the different user types that might use your service, product, site, or brand in a similar way. Creating personas helps the designer to understand users' needs, experiences, behaviors and goals.

Personas are distilled essences of real users. In user experience (UX) design, you use personas to build empathy with target users and focus on their world. You should always create personas from observations about real users, personas should never be invented out of your assumptions about your users. Because you must map your users' needs to your design's functionality, you must first clearly define both the needs and the users.

For a music app – persona making

Rebecca

Casual audiophile

Age	26
Occupation	Frontend developer
Education	Bachelor degree
Marital status	Single
Location	Mountain View
Online locations	Work and mobile
Computer(s)	iPhone and MacBook Pro
Internet usage	8-9 hours

TECHNOPHOBE — TECH WIZ

CDs — MUSIC STREAMING

CASUAL LISTENER — HARDCORE GEEK

Music is essential to Rebecca's life. She is listening to tunes almost every second of her life, particularly while working.

Obstacles Rebecca faces:

- Too busy to explore new music artists she might like
- Streaming music consumes a lot of data

How will Rebecca interact with Spotify?

Questions Rebecca will ask:

- How do I keep updated on new releases by artists I follow?
- How do I learn of new artists I haven't heard of?
- Can I listen to music in a data-efficient manner?
- How can I listen on both my MacBook and my iPhone?

Who influences Rebecca?

Rebecca's situation

Goals, motivations:

- Listen to great music to keep her productive at work
- Relax and unwind at the end of the day
- Superior music quality for full enjoyment of tracks
- Expand the circle of music artists she listens to

Key words

music, jazz, r&b, pop, artists, new releases, top charts, background music

Rebecca's story

Music is a big part of my life; I like to think that I always have a "background music" running in each scene of my life. I love working while listening to music; somehow, it gives me a lot of focus on my task.

I regularly talk to my co-workers about music and singers — that's what we like to talk about over lunch. We're constantly looking for new artists to inspire us and to expand our music library, but lately it seems a little tough to do that. Everything seems to have a "filter bubble" effect, and we keep listening to the same genres and artists.

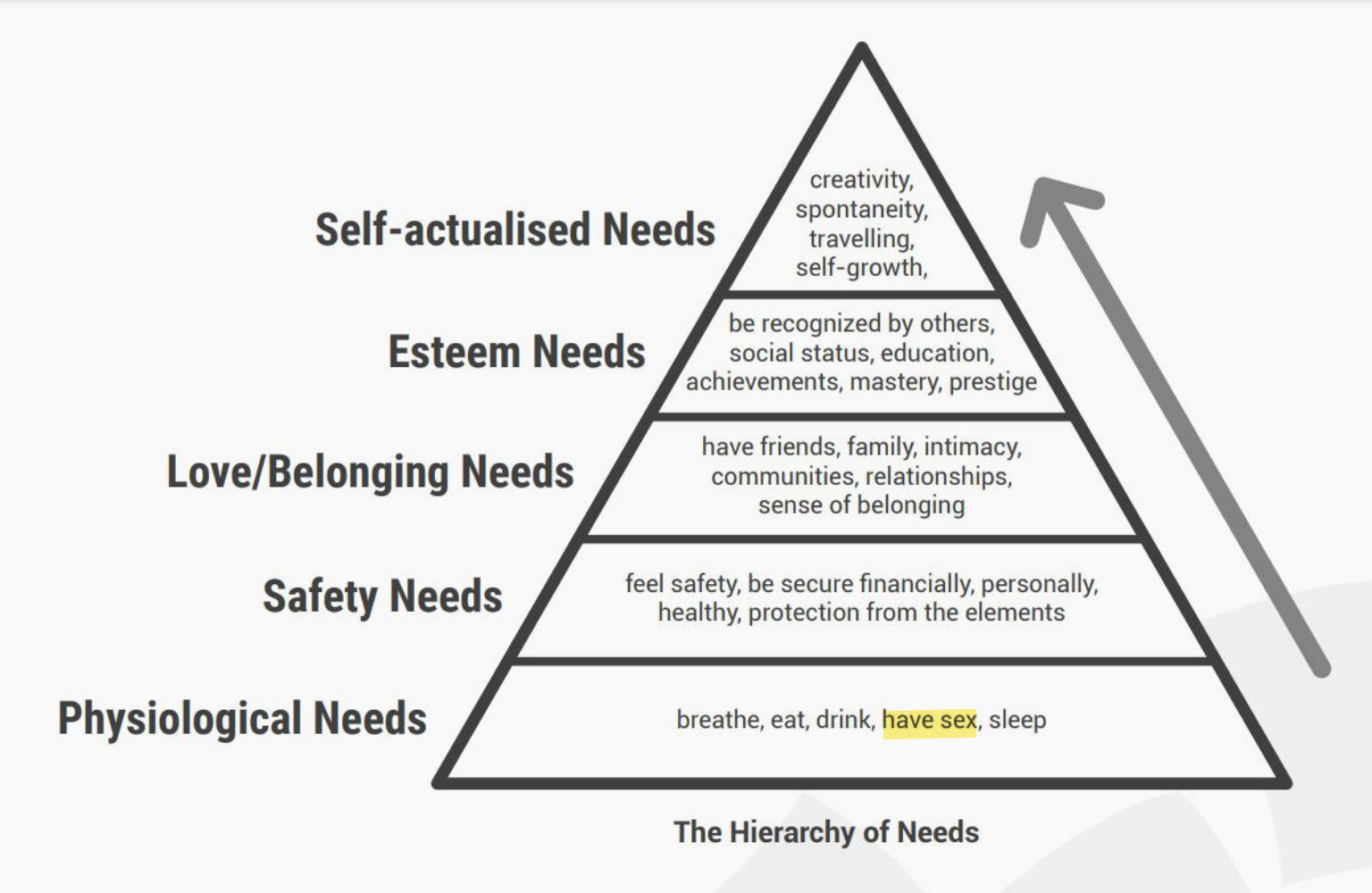
I really enjoy finding new artists that match my subjective taste, and most of the times I get those from my close friends. I wish there were a way to find more music and artists without having to rely on the serendipity of life!

Example of a persona that shows the six main elements you should include. Name, age, gender, tag line, experience and skills are placed on the left-hand side. The middle column focuses on the context to indicate how they would interact with a product or service. Finally, on the right-hand side some goals and concerns are shared, as well as a short scenario to indicate the persona's attitude.

How to make a Persona

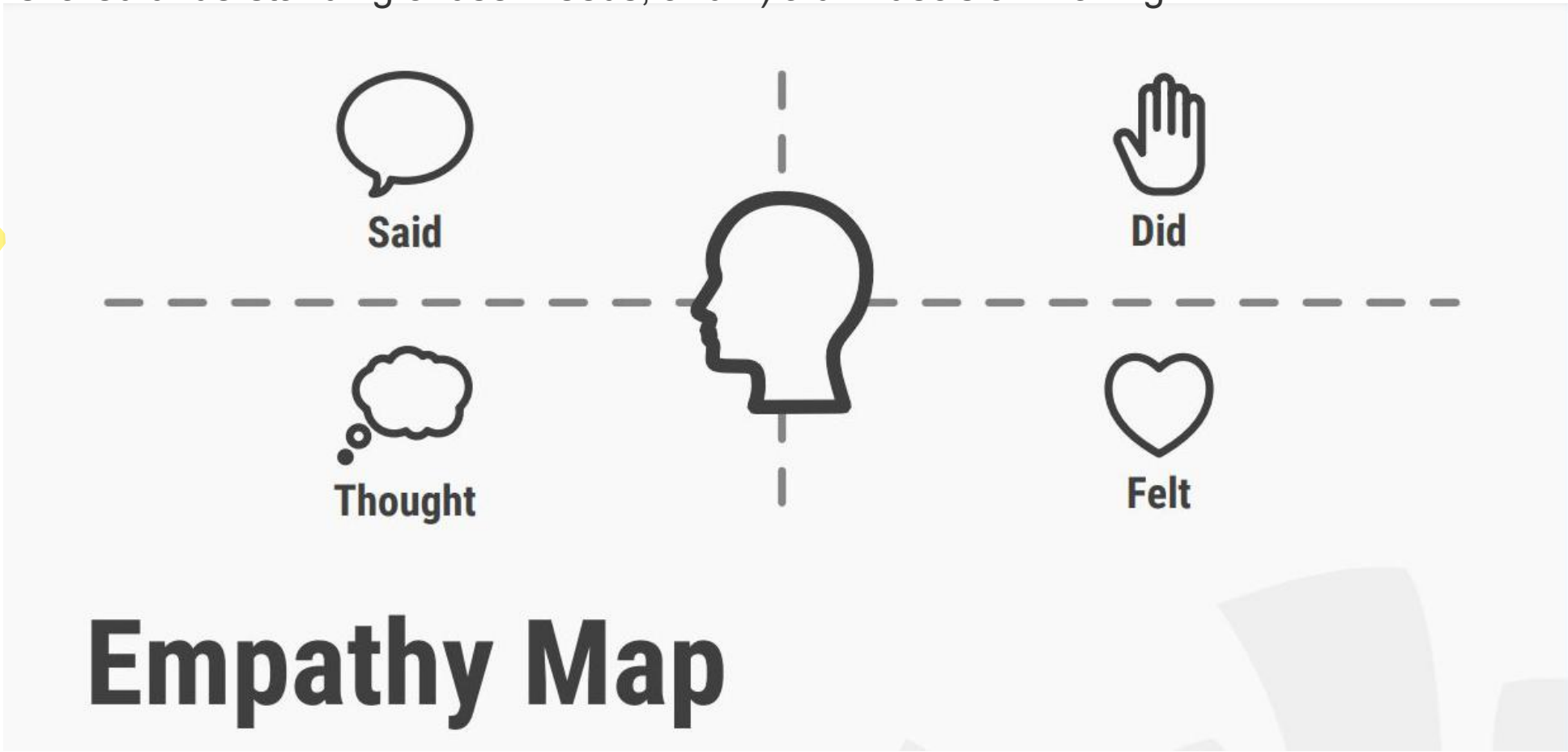
- Collect extensive data on target users.
- Determine the qualities of and differences between users.
- Develop a hypothesis from the research, determining the qualities of and differences between users.
- Ensure stakeholders agree on the hypothesis about the users.
- Determine a number of personas – more than one per project, but focus especially on one.
- Name and describe each persona in 1-2 pages, including:
  - A picture.
  - User's values, interests, education, lifestyle, needs, attitudes, desires, limitations, goals and behavior patterns.
  - Extra details about the persona (e.g., interests) – anything to make him/her more real and relevant and help build empathy. A written story is better than bullet points.
- Describe several situations/scenarios prompting the persona to use your product – put him/her in contexts with problems to overcome.
- Include everyone involved in the project so they'll accept the persona or advise revisions.
- Send them the persona to use in their work.
- Ensure everyone develops scenarios – these should expose the persona optimally to potential use cases.
- Make continuous adjustments – revisit the persona; add new features; add required new personas; discard outdated personas.

Synthesise the Needs of Persona – Maslow's Needs Hierarchy



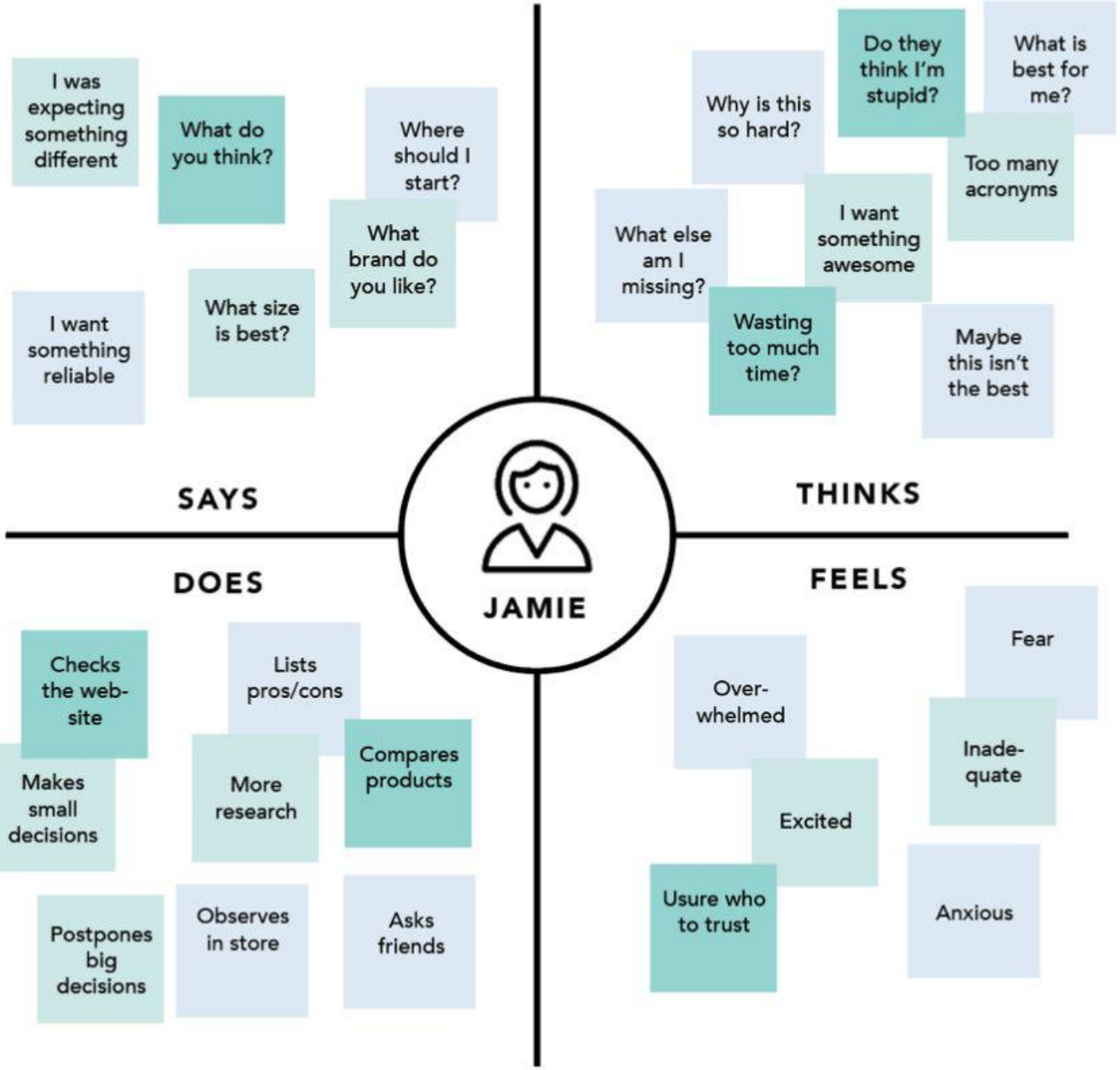
Make Empathy Maps for your persona

An **empathy map** is a collaborative visualization used to articulate what we know about a particular type of user. It externalizes knowledge about users in order to 1) create a shared understanding of user needs, and 2) aid in decision making.



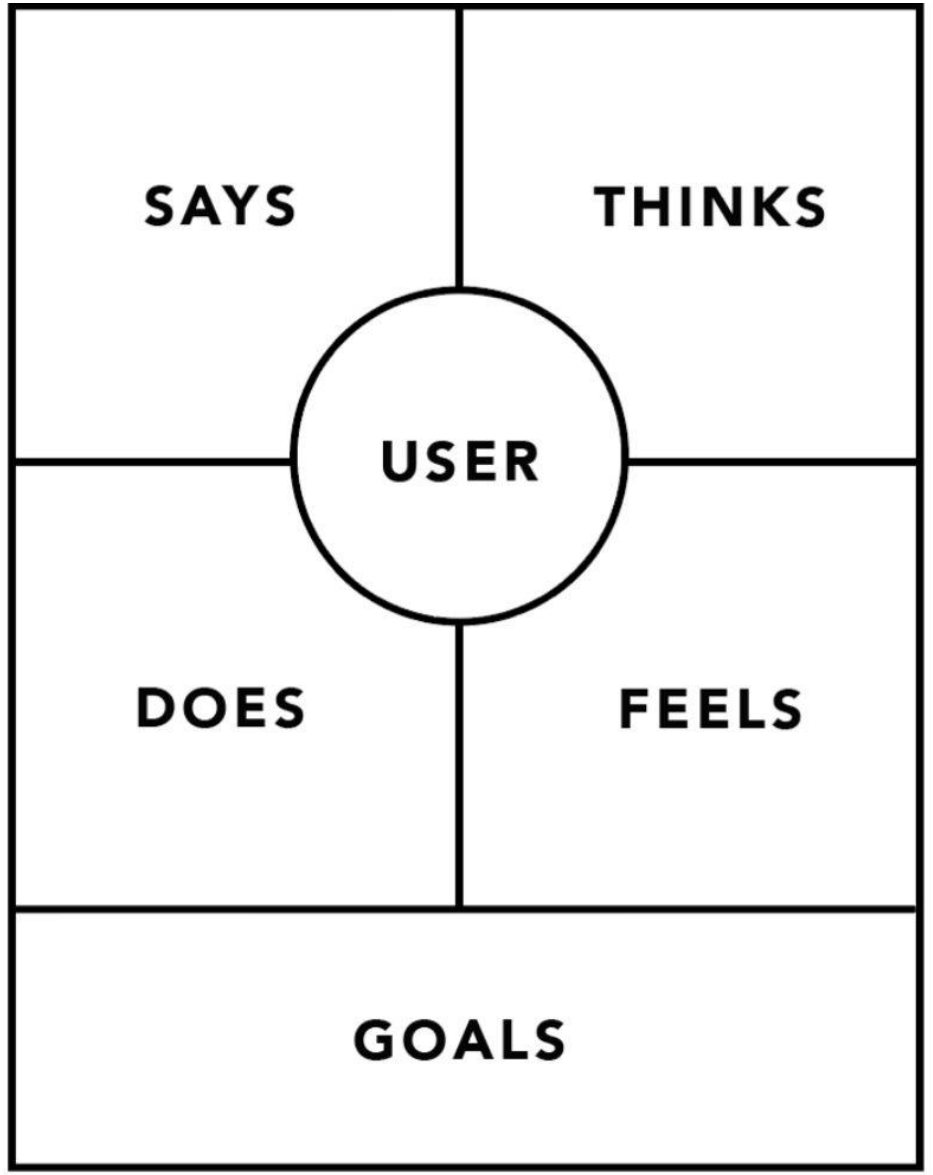
What each quadrant means

- The ***Says*** quadrant contains what the user says out loud in an interview or some other usability study. Ideally, it contains verbatim and direct quotes from research.
- The ***Thinks*** quadrant captures what the user is thinking throughout the experience. Ask yourself (from the qualitative research gathered): what occupies the user's thoughts? What matters to the user? It is possible to have the same content in both *Says* and *Thinks*. However, pay special attention to what users think, but may not be willing to vocalize. Try to understand why they are reluctant to share — are they unsure, self-conscious, polite, or afraid to tell others something?
- The ***Does*** quadrant encloses the actions the user takes. From the research, what does the user physically do? How does the user go about doing it?
- The ***Feels*** quadrant is the user's emotional state, often represented as an adjective plus a short sentence for context. Ask yourself: what worries the user? What does the user get excited about? How does the user feel about the experience?


I was expecting something different
What do you think?
Where should I start?
What brand do you like?
What size is best?
I want something reliable
Why is this so hard?
Do they think I'm stupid?
What is best for me?
Too many acronyms
What else am I missing?
I want something awesome
Wasting too much time?
Maybe this isn't the best
SAYS
THINKS
JAMIE
DOES
FEELS
Checks the web-site
Lists pros/cons
Compares products
Makes small decisions
More research
Postpones big decisions
Observes in store
Asks friends
Fear
Over-whelmed
Inade-quate
Excited
Usure who to trust
Anxious

How to build an Empathy Map

- **Define scope and goals**
  - **What user or persona will you map?** Will you map a persona or an individual user? If you have multiple personas, there should be an empathy map for each.
  - **Define your primary purpose for empathy mapping.** Is it to understand a particular user situation? Is it to align your team on the user?
- **Gather materials**
  - Use whiteboards, sticky notes or computer software – anything that works for you and allows you to brainstorm and share easily with the rest of the team.
- **Collect research**
  - Empathy mapping needs qualitative inputs: user interviews, field studies, diary studies, listening sessions, or qualitative surveys.
- **Individually generate sticky notes for each quadrant**
  - In the beginning, everybody should read through the research individually. As each team member digests the data, they can fill out sticky notes that align to the four quadrants. Next, team members can add their notes to the map on the whiteboard.
- **Converge to cluster and synthesize**
  - In this step, the team moves through the stickies on the board collaboratively and clusters similar notes that belong to the same quadrant.
- **Polish and plan**
  - If you feel that you need more detail or you have unique needs, adapt the map by including additional or by increasing specificity to existing quadrants. Depending on the purpose of your empathy map, polish and digitize the output accordingly. Be sure to include the user, any outstanding questions, the date and version number. Plan to circle back to the empathy map as more research is gathered



Synthesise Insights

- An “Insight” is your remarkable realization that can help you to solve the current design challenge you’re facing.
- Look to synthesise major insights, especially from contradictions between two user attributes or by asking yourself: “Why?” when you notice strange, tense, or surprising behaviour.
- Write down your insights.

Stage 3: Ideate—*Challenge Assumptions and Create Ideas*

Generate ideas. The solid background of knowledge from the first two phases means you can start to “think outside the box”, look for alternative ways to view the problem and identify innovative solutions to the problem statement you’ve created. Brainstorming is particularly useful here..

Brainstorming – 8 rules, 1 facilitator

- **Set a time limit** – Depending on the problem's complexity, 15–60 minutes is normal.
- **Begin with a target problem/brief** – sharply defined question, plan or goal and stay on topic
- **Refrain from judgment/criticism** – No-one should be negative (including via body language) about any idea
- **Encourage weird and wacky ideas** –keep the floodgates open so everyone feels free to blurt out ideas (provided they're on topic)
- **Aim for quantity** – Remember, "quantity breeds quality". The sifting-and-sorting process comes later.
- **Build on others' ideas** – It's a process of association where members expand on others' notions and reach new insights, allowing these ideas to trigger their own. Say "and"—rather than discourage with "but"—to get ideas closer to the problem.
- **Stay visual** – Diagrams and Post-Its help bring ideas to life and help build on ideas
- **Allow one conversation at a time** – To arrive at concrete results, it's essential to keep on track this way and show respect for everyone's ideas.

Stage 4: Prototype—*Start to Create Solutions*

This is an experimental phase. The aim is to identify the best possible solution for each problem found. Your team should produce some inexpensive, scaled-down versions of the product (or specific features found within the product) to investigate the ideas you've generated. This could involve simply paper prototyping.

Stage 5: Test—*Try Your Solutions Out*

Evaluators rigorously test the prototypes. Although this is the final phase, design thinking is iterative: **Teams often use the results to *redefine* one or more further problems**. So, you can return to previous stages to make further iterations, alterations and refinements – to find or rule out alternative solutions.

Readings and References

- https://hbr.org/2018/09/why-design-thinking-works
- https://designthinking.ideo.com/
- https://www.interaction-design.org/literature/topics/design-thinking
- https://www.ted.com/talks/tim_brown_designers_think_big?utm_campaign=tedspread&utm_medium=referral&utm_source=tedcomshare