



Design Thinking Toolkit

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“Design thinking is a **human-centered approach to innovation** that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success.”

-- Tim Brown, CEO IDEO

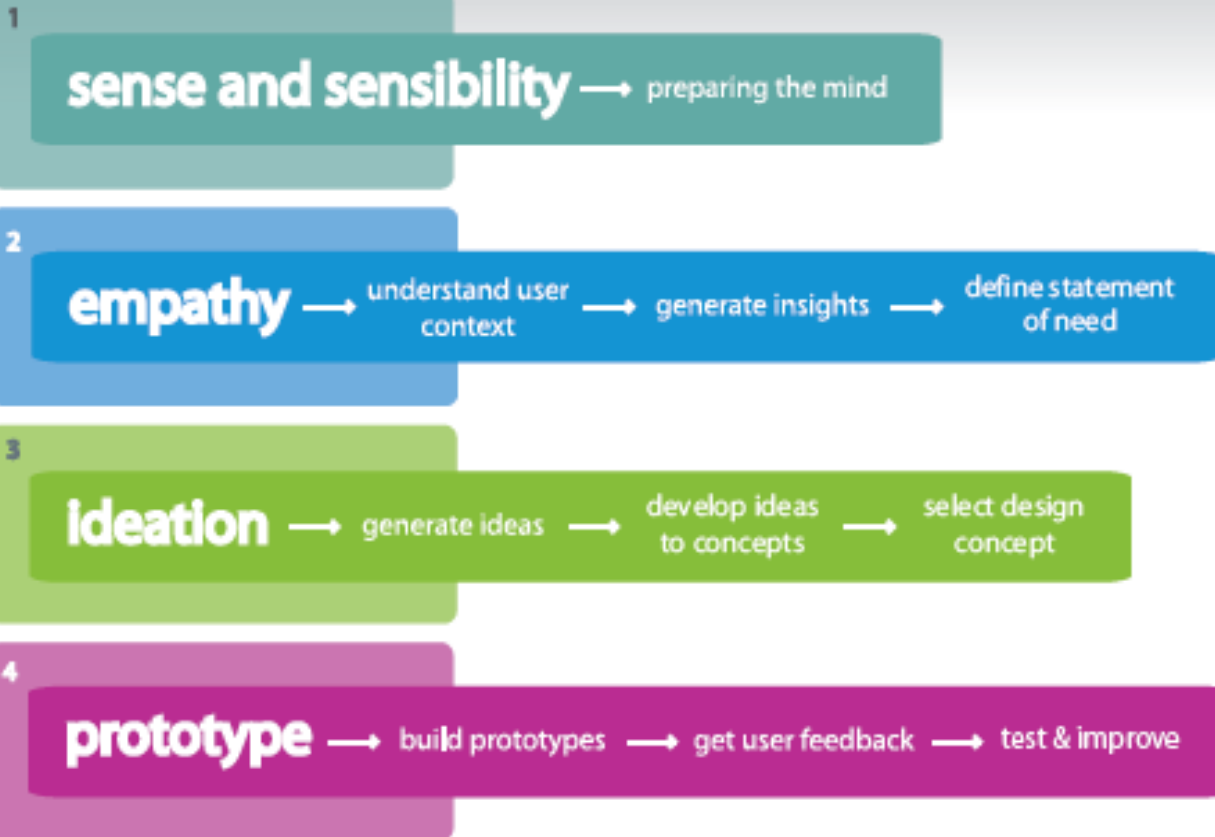
Based on deep empathy, design thinking is a deeply human process that taps into abilities we all have, but are overlooked by more conventional problem-solving practices. It relies on our ability to be intuitive, recognise patterns, and construct ideas that are emotionally meaningful as well as functional.

A concept is innovative if it meets human needs (Desirability), is implementable (Feasibility) and can sustain the business (Viability).

The success of a Design Thinking project is often credited to the way the project team is formed. It often involves getting people from multi-disciplinary backgrounds and engaging users early in the project.



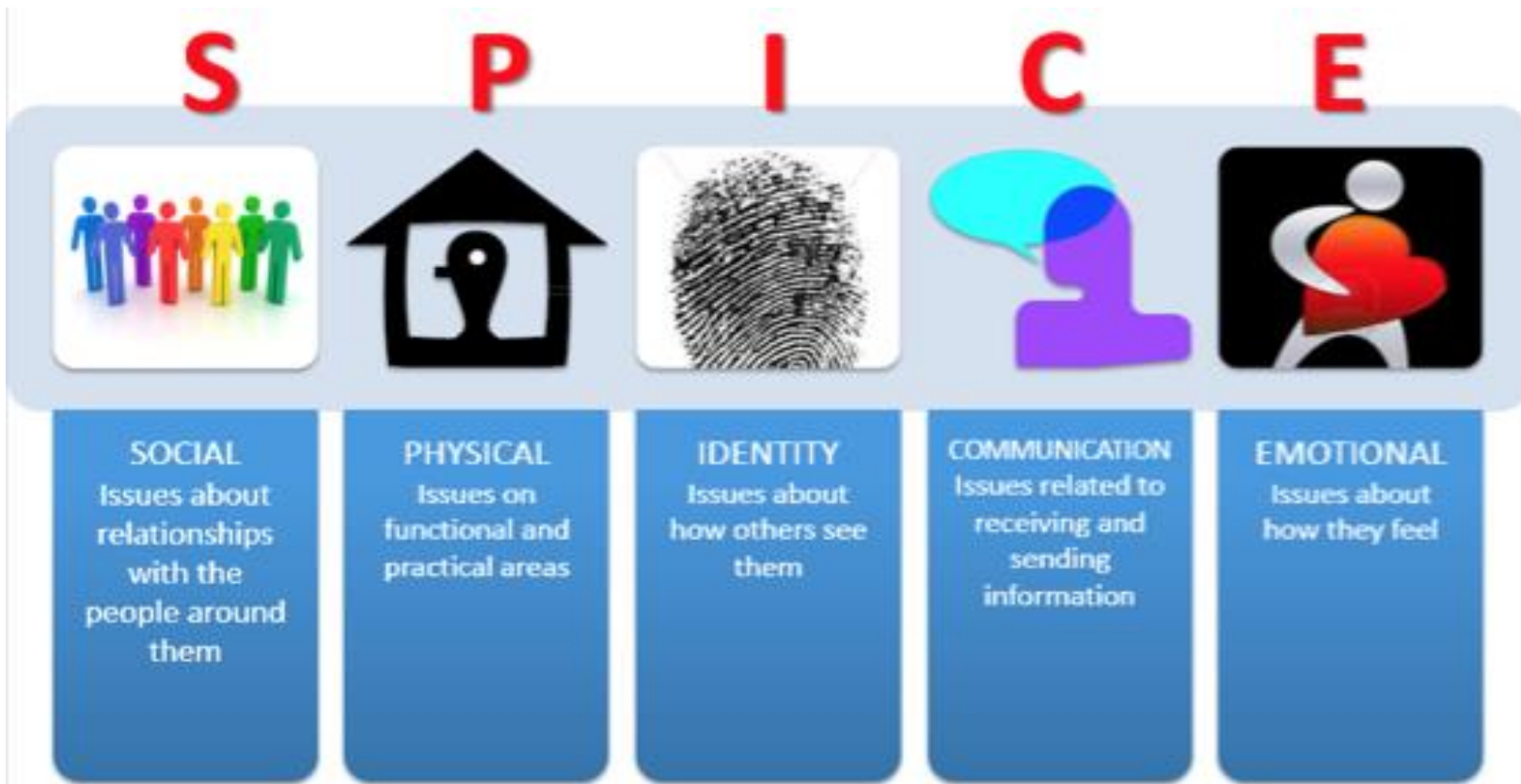
The 4 Phases of Design Thinking



Design Thinking: Sense and Sensibility



- Broadens understanding of the issue
- Encourages you to consider different aspects from the user's perspective
- Helps in crafting project statement and coming up with interview questions



- Start by learning more about pressing issues in Singapore – what are they about? Who needs help in this issue? What are contributing factors? What is currently being done to help the people involved?
- Look into your heart – choose an issue you feel for. Who do you want to make life better for?
- Craft your project statement – this will be your “North Star” as it will map out the issue you are trying to solve and who you are seeking to help.
- Suggested start:
 - Each team member to write down issues to appeal to them
 - Shortlist one issue that the team likes best (voting helps if the team can’t decide)
 - Identify the possible user for the issue
 - Use the DT tool **SPICE** to look at the issue from the user’s perspective



HELPFUL TIPS:

- Research to understand the issue helps shape the project statement
- Project statement should not include solutions
- Broader scoping of the problem allows for better exploration during the interviews
- After the interviews, project statement can be refined once you get a better sense of the real problem!

Crafting a project statement

Decide on a verb

What are you seeking to do with the user? Support? Empower? Encourage? Words like “educate” are a no-no as they hint at a solution.

Identify the primary user from a community in need in Singapore

Not an individual but a group of individuals, e.g., housewives, low-income elderly, youth

Articulate the problem to be tackled

Be clear on the problem to be addressed. Think of the problem at the individual or behavioural level and avoid policy issues (e.g., instead of tackling “traffic congestion,” consider instead how the user experience on public transport can be improved).



Example

How can we help ex-offenders to reintegrate into our society?





Active Ageing

Develop solutions to help the elderly to lead active and dignified lives in their silver years



Healthcare

Create solutions to encourage Singaporeans to lead healthy lifestyles



Social Integration

Propose solutions to foster a caring, gracious and inclusive society



Environment

Come up with solutions to address environmental issues that affect the world we live in

Consider the above themes for the competition. Examples:

- How can we help parents in Singapore develop stronger parent-child bonds?
- How can we help youth in Singapore stay mentally and emotionally strong when faced with challenges and setbacks?
- How can we encourage Singaporeans to revive the kampung spirit in our society?
- How can we help the elderly maintain close community relationships?
- How can we help the elderly go about their daily activities?
- How can we encourage Singaporeans to reduce food wastage?
- How can we encourage Singaporeans to lead healthier lifestyles?



Design Thinking: Empathy



The empathy stage is about gaining a deep understanding of what a user experiences, so that we can come up with solutions that tackle the root causes of problems, not just the symptoms, and create real human change.

Putting yourself into the user's shoes:

How can we step into the shoes of the users and see things from their point of view, not ours? Besides observing users in their natural setting, interviews will allow you to gather data about your users and understand them and their circumstances better.

INTERVIEWS

It is best to conduct face-to-face interviews to discover your user and their needs. During the interview:

- **Probe** to uncover the truths behind their human story
- **Observe** their non-verbal cues as well as pick out observations of their natural setting
- **Record** all the interview data for analysis (word for word)

Conduct interviews in pairs or groups of three. Decide on the role each member is to play (interviewer, note-taker, observer).



A

CLOSED-ENDED

**“Why?”, “What?”, “How?”,
“Who?”, “When?”,
“Where?”**

Good for: Speed,
Accuracy, Focus

For: Age, gender, health
status, hobbies, marital
status, occupation,
qualification, race, religion

B

OPEN-ENDED

**“Tell me more about...”,
“Why...”
“Why is that important to you?”**

Good for: Non-leading, non-
limiting, diverse/rich
information

For: Aspirations, inspirations,
motivations, pain points,
personal habits, social life



WHAT KIND OF INFORMATION DO WE NEED TO FIND OUT ABOUT THE USER?

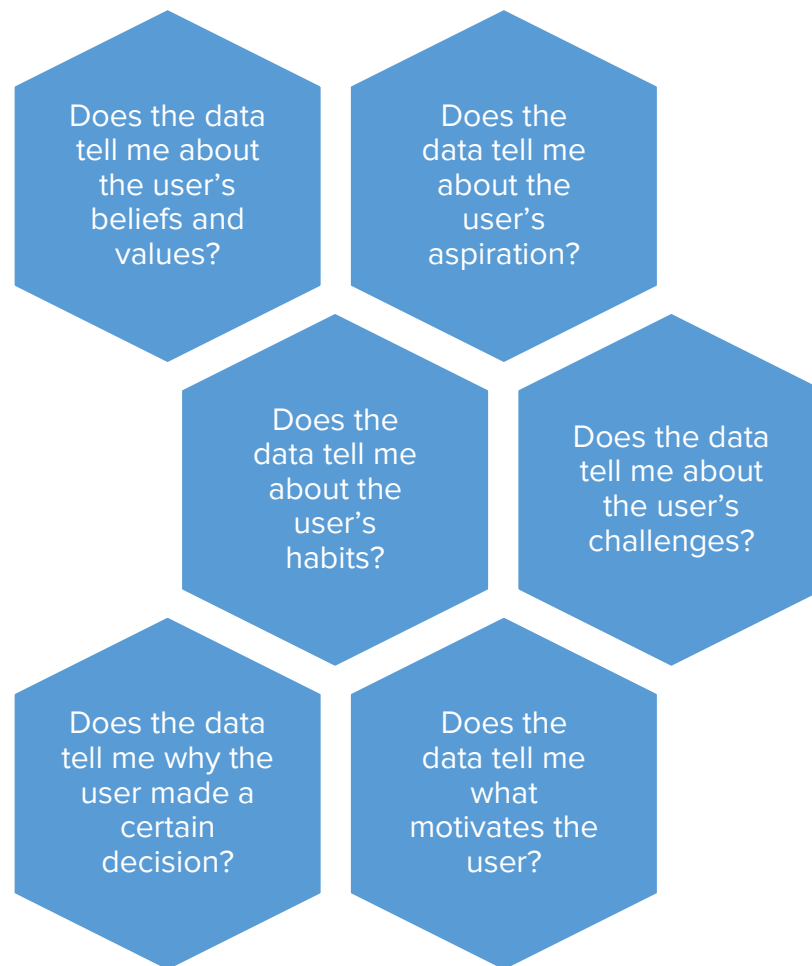
DEMOGRAPHICS / HABITS	Collect information on: • Age, Gender, Marital Status • Occupation • Hobbies • Personal Habits /Practices • Social Life	Sample Questions: • Describe your typical weekday/weekend. • What do you like to do during your free time? • Why do you like to do these activities? • What is most important to you in life? Tell me more... • Etc.
PERSONAL MOTIVATIONS	Collect information on: • Aspirations • Inspirations • Motivations • Pain Points	Sample Questions: • What drives/motivates you? Tell me more... • What do you look forward to? Why? Tell me more... • What frustrates/upsets you the most? Tell me more about that experience. • Etc.
AREAS RELEVANT TO THE PROBLEM STATEMENT	Collect information on areas related to the project statement: • Motivations • Pain Points • Etc.	Sample Questions: • Share an experience when? • If there are no constraints, how would you change ...? • Any areas of improvements...? • Describe your best and worst experiences.... • Etc.



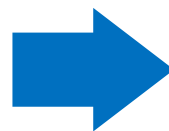
Useful data allows us to:

- Derive insights about the user
- Distil the critical needs related to the project statement

So what makes useful data?



Step 1: Identifying Useful Data



For example:

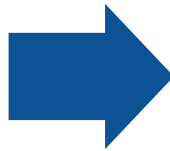
From observation and interview data, write down points that you think are **interesting** or **significant**, e.g., comments, a story or quotation from your interviewee, observations you made.

Write **one data point per post-it note**. Do not summarise or interpret. Use word for word, as spoken by the interviewee.

I prefer to stay out
because it is very
warm staying at home.



Step 2: Highlight the
most useful data



Star the ones that you feel are
especially important. Place them on
your canvas for discussion.

I prefer to stay
out because it
is very warm
staying at
home.



Mostly, I sit at the
senior citizen
corner because it's
windy there and
the chair is
comfortable



Too bad raining
cannot stay
there because
the rain comes
in.

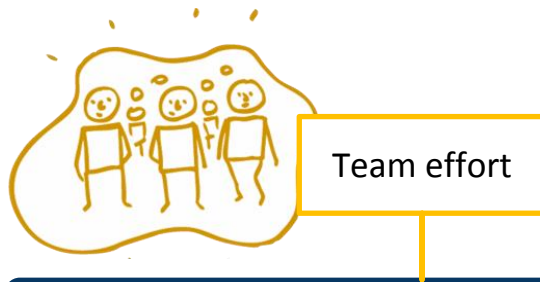


Another useful
data...



Another useful
data...





Step 3: Cluster similar data together

Discuss and cluster data points (according to common themes) according to key learning points about the user or your **insights**. To derive insights, ask questions like why the user is saying this.

Further cluster the insights to **derive your user's needs**. Crafted as “I need...”, the need statement should address a gap in the user’s experience and not contain any solutions.



PERSONA

- Is a fictional but “real character” based on consolidation of real data from a group of users
- Is an accurate representation of the user’s profile (capturing the user’s behaviour, beliefs, motivation, pain points, needs)
- Serves as a useful common reference for the project team during the project and to evaluate your concept



Name

Catchy & descriptive name
(e.g. Frustrated Felix)

Profile

Short paragraph to describe him
(Demographics: age, occupation, marital status, family size, lives with who, etc.)

Likes/dislikes (2-3 points)

Beliefs (3 key points)

Challenges (3 key points)

Motivations (3 key points)

Defining quote (what he would say)

Needs

List the Persona's top three needs

Include photos that help you visualize the key points stated in your persona

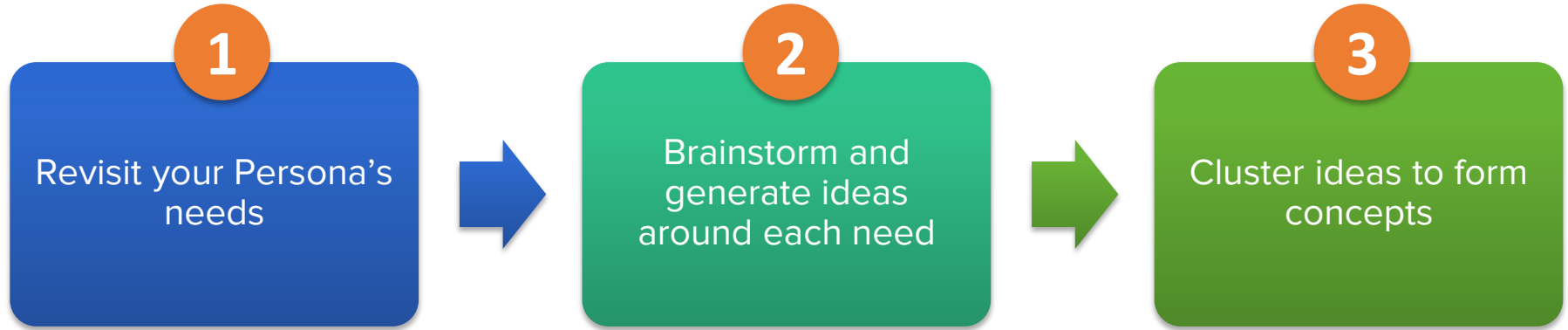


Design Thinking: Ideation

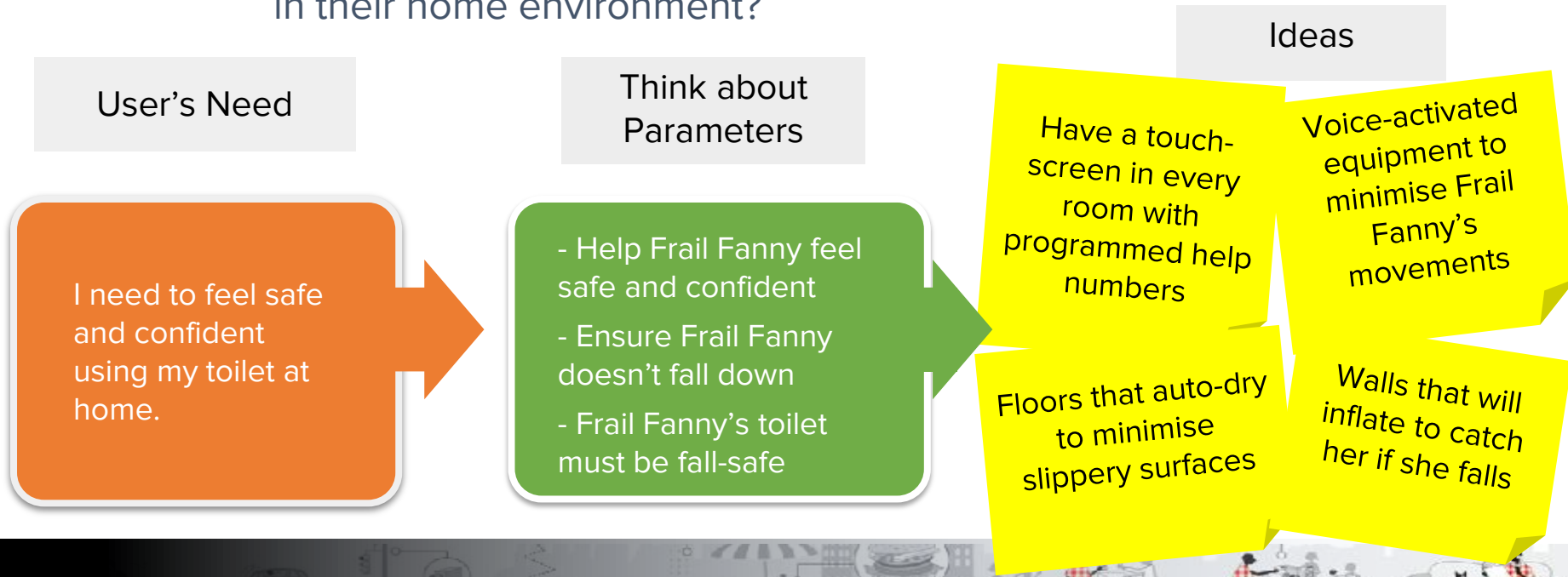


- Generate a large volume of ideas, develop these ideas into concepts and select one final concept to work on.
- Start with the critical user needs distilled from the data analysis.
- Brainstorm ideas on how to meet these needs.
- Draw inspiration from ideas around you.
- Think about how you can push the boundaries or improve on existing solutions. What will make your idea more unique?





Problem statement: How can we help the elderly stay safe in their home environment?

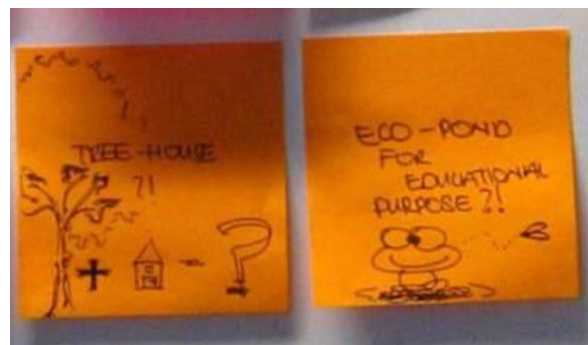


1. Defer judgement
2. Go for quantity
3. Encourage **wild** ideas
4. Build on other people's ideas
5. Stay focused
6. Do not dwell
7. Be visual
8. Stand up

1 idea per post-it



Sketch to communicate



Your concept should be a seamless integration of different elements. Make all the elements work together to form a new and improved experience for your Persona!

**Separate
elements**



**Integrated / seamless concept =
new improved experience
for your Persona**



Cluster related ideas

Place similar or related ideas together to form clusters

Develop one cluster into a concept

Cluster “best for Persona” ideas

Place team’s choices of what works best for Persona together

Develop cluster into a concept

“Forced” associations

Randomly select ideas and place them together

Develop cluster into a concept



**Assistive
devices for fall
prevention**

**Re-cluster
if you have
to. Play
around with
ideas!**

**Ways to seek
immediate help**

**Physical
designs that are
safe and fall-
preventive**



Clustering “best for persona” ideas

Which ideas meet
the Persona's
needs best?

Which ideas
improve the
Persona's daily
experience?

Which ideas are
the most practical
for the Persona?

Have a touch-
screen in every
room with
programmed help
numbers

Voice-activated
equipment so to
minimise Frail
Fanny's movement

Walls that will
inflate to catch her
if she falls

Floors that auto-
dry to minimise
slippery surfaces

CONCEPT
Smart automated
home that helps
Frail Fanny stay
safe and in control



Select the top concept using these guidelines:

1. Does the concept address the **Persona's needs**?
2. Is it **breakthrough**?
3. Does the concept **enhance** the user's **experience**?

In addition, is it:

Feasible:

Can it be done now or in 5-10 years?

My Great Idea!

Desirable:

- Will your user want it?
- Does your user feel positive using it?
- Is it easy to use?

Sustainable:

Will your idea last?
Are there short-term and long-term gains?



Design Thinking: Prototyping



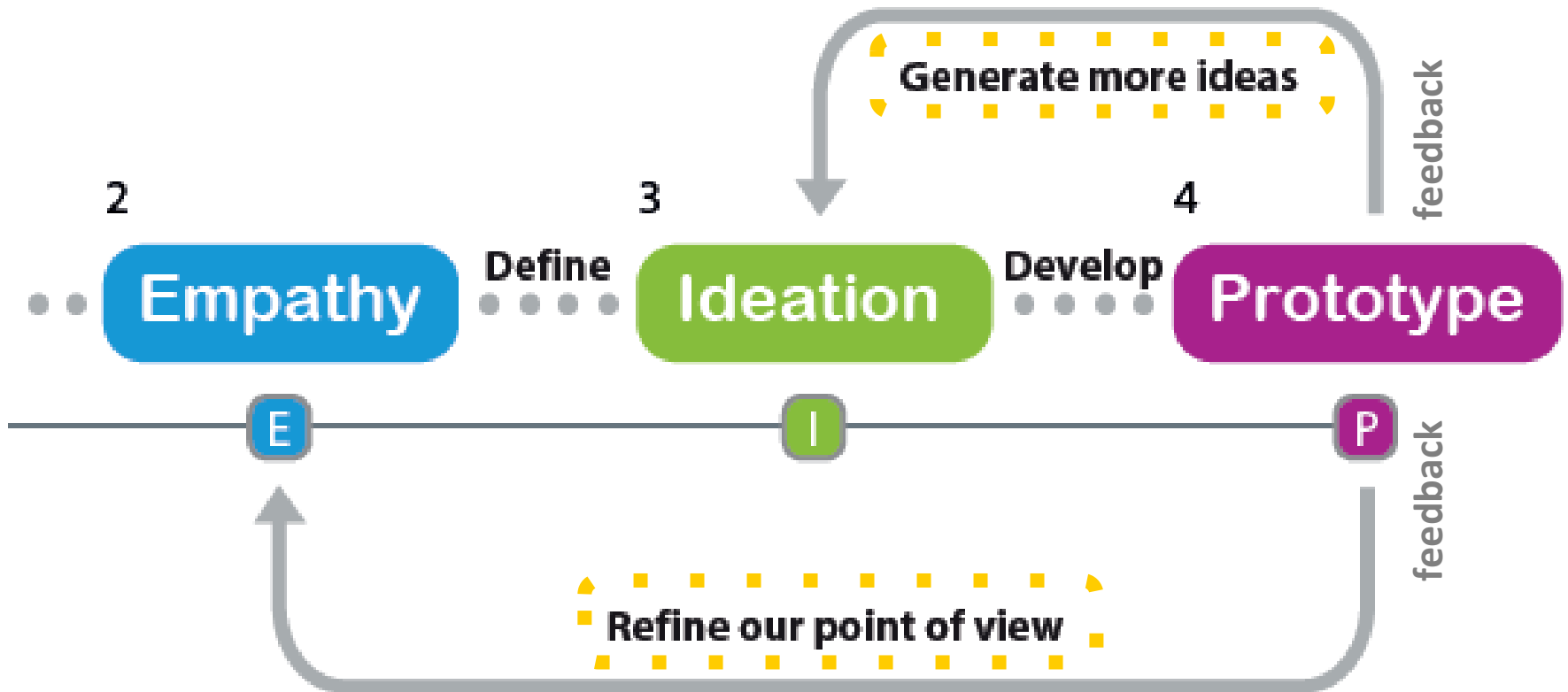
- Brings your ideas to life
- Shows how your concept is used
- Allows you to explain your concept and collect feedback

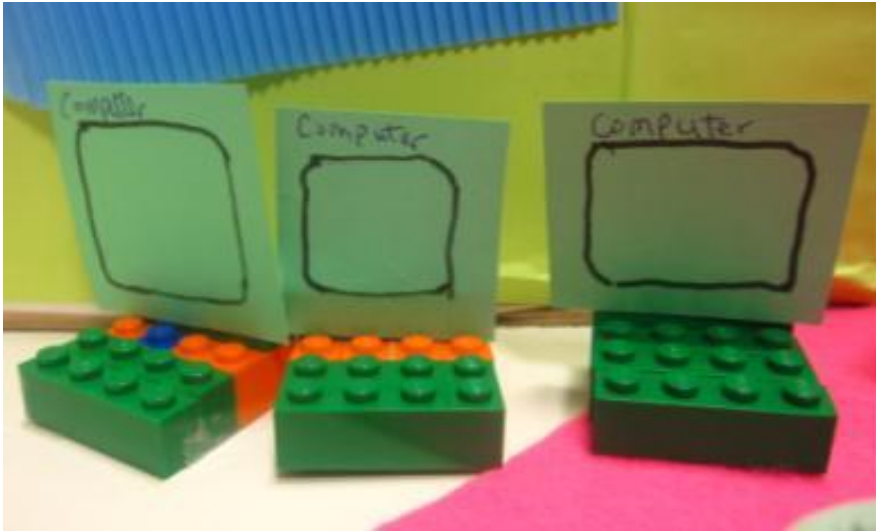
Prototyping is about communicating your concept in the form of a user's experience.

What should you create to explain how your user will experience and benefit for your solution?

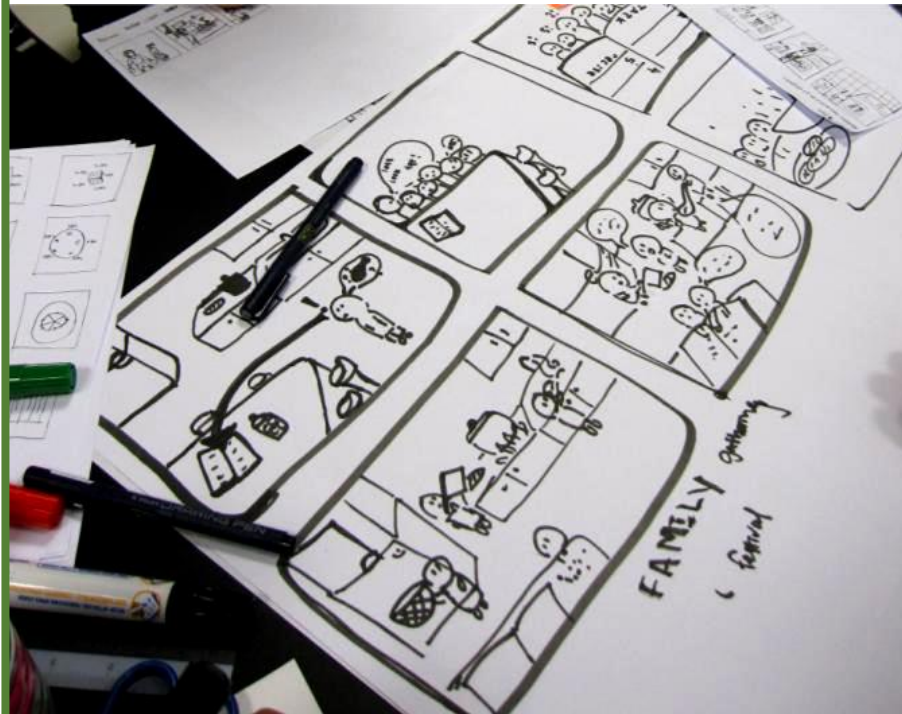


Why do we prototype?

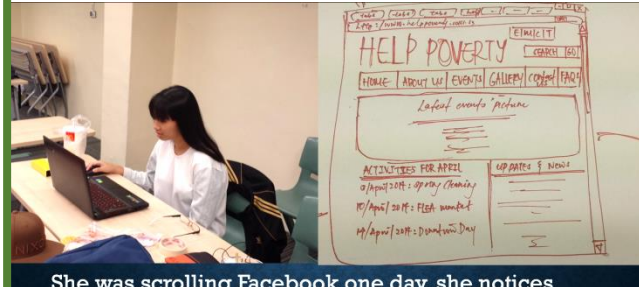




Consider using **storyboards** to illustrate the details of the touch points in your journey map.



You can also use a **photo essay** to illustrate your user's experience



She was scrolling Facebook one day, she notices that her co-workers keep website. Curious, she decided



Ms Lim and her friend both went to the Pasir Ris Community Centre to collect spring cleaning.



Ms Lim and her friend had a great experience of volunteering and finds it inspiring.



Final Words:

Consider whether your solution has addressed

- your project statement
- persona's needs

Why not talk to your user to find out:

- What works
- What doesn't work
- What can be better

We wish you all the best in creating solutions for a better tomorrow!

