

Future Roadmap of Diabetes management

Design research and strategy

Company Future Factory, Mumbai

Duration 3 months (Oct'24 - Dec'24)

My Role Design researcher and Strategist

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Background

Future Factory is a Mumbai-based design and innovation consultancy renowned for its user-centric approach to solving complex problems. The firm works at the intersection of strategy, design, and engineering, delivering innovative solutions across industries such as healthcare, technology, consumer goods, and manufacturing. This project was undertaken as part of my fellowship with the organization.

Problem Statement

India has worlds second highest number of diabetic cases and number is only increasing with the widespread unawareness, sedentary lifestyle and carb heavy diet

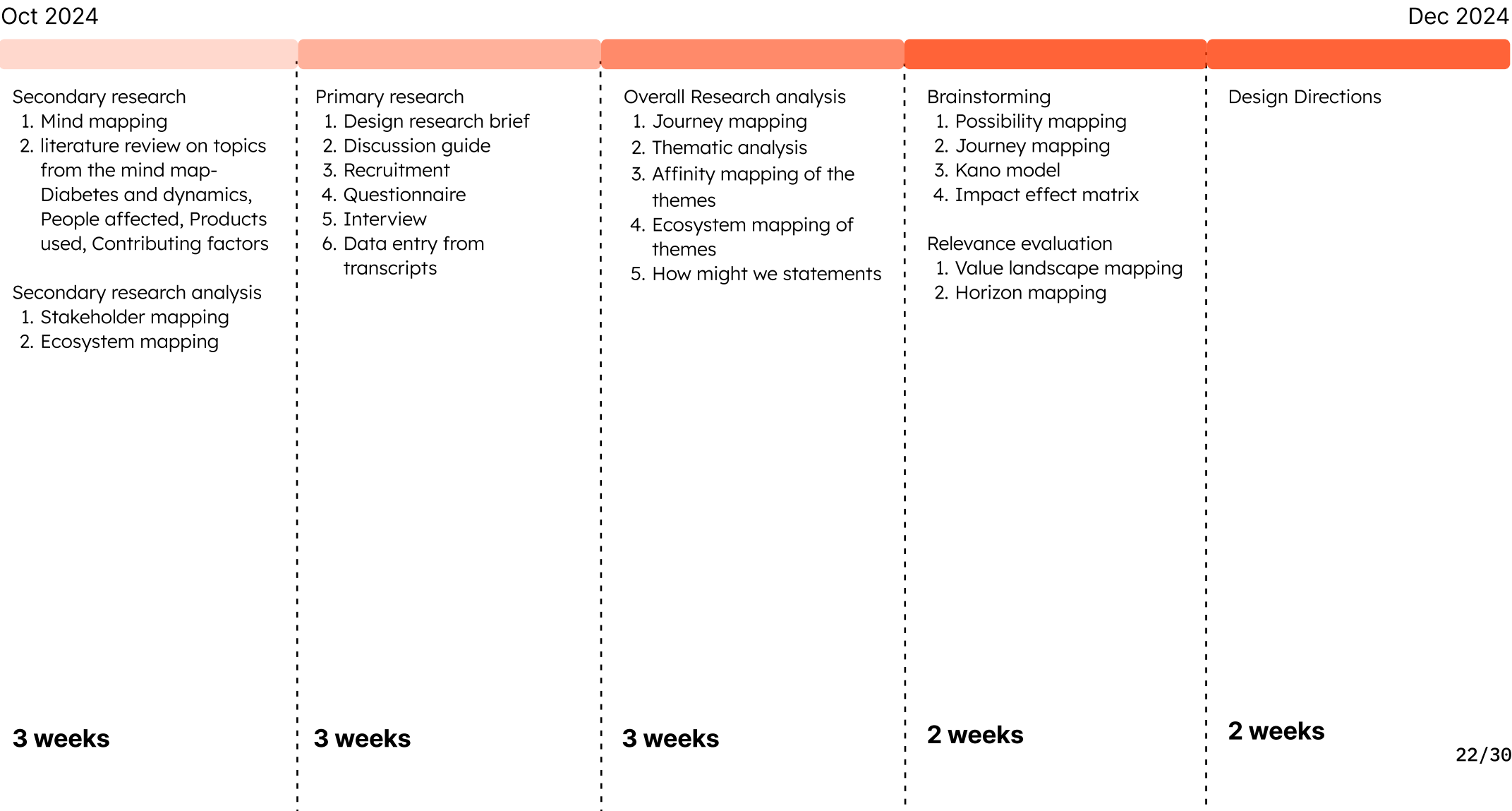
Goal

The purpose of this project was to identify gaps in the journey of a person from pre-diabetic to diabetic, and come up with design directions and strategies

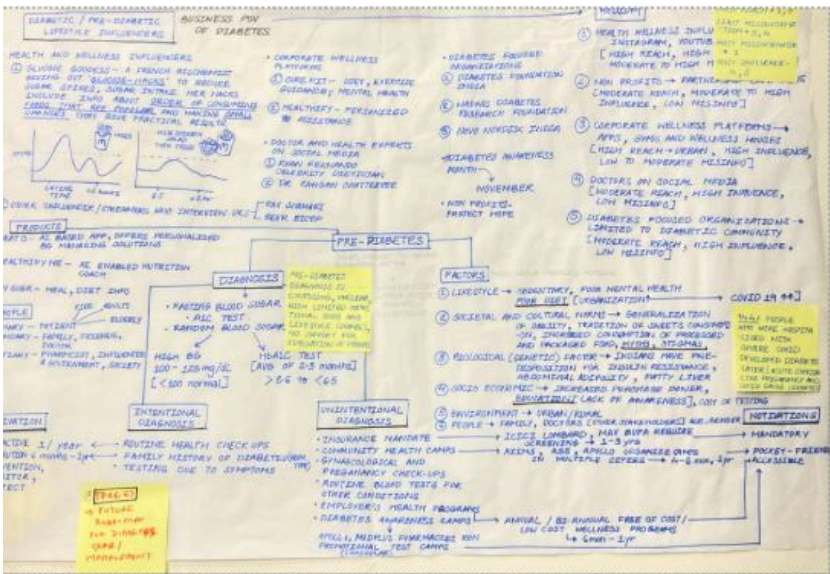
Design Brief

How might we come up strategies and design directions to create a Future road map for Diabetes management to prevent, delay or help manage the transition and long term management better ?

Project Timeline and Process (13 weeks)



Secondary research



Brainstorming

India is home to the world's 2nd highest number of diabetic patients (10+ crore in 2023)

- A survey commissioned by the health ministry also found that **136 million people** could be living with **pre-diabetes**
- More than **50% of people are unaware** of their diabetic status
- Diabetes has increased from **5.5% to 7.7%** from 1990 to 2016

<https://www.bbc.com/news/world-asia-india-65852551>

Factors causing Pre- diabetes (trends, myths, stigmas)

Dietary shift and Cultural norms <ul style="list-style-type: none">Generalization of obesityTraditions of gifting and consuming sweets during festivalsIncreased consumption of packaged foods and sweetened drinks (sugared drinks) - societal status, globalization	Lack of awareness <ul style="list-style-type: none">Risk factors, causation, and dynamics of the disease	Lifestyle changes and Physical activity <ul style="list-style-type: none">Decreasing physical activityPoor mental health
Socioeconomic and awareness factors <ul style="list-style-type: none">Increased purchasing power driving higher energy intake	People <ul style="list-style-type: none">Gender, ageFamily history and family sizeDoctors	Biological and genetic factors <ul style="list-style-type: none">Genetic predisposition among Indians for insulin resistance, abdominal adiposity, and fatty liver
	Place <ul style="list-style-type: none">Urban/RuralAccess to open and natural spacesGeography- climate, population	Control Processes <ul style="list-style-type: none">Precautionary measuresEarly detectionContinuous evaluation of preventative measures

Diabetes trends in India

Demographic Patterns

Gender- Women are more likely to be aware, receive treatment, and manage diabetes than men

Age- Control over diabetes is better in younger groups, though awareness and treatment increase with age.

Young adults

Unmarried people

People with large families

Schedule tribe

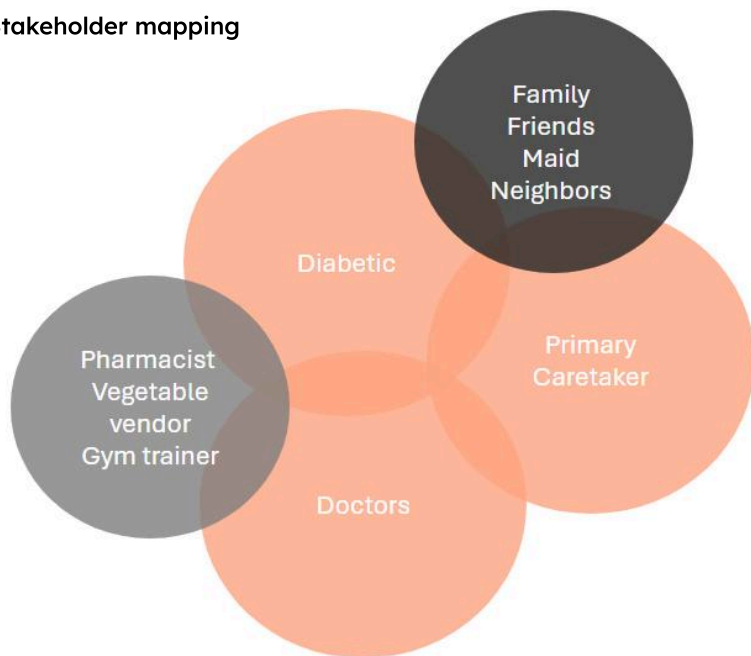
ATC are lower in these groups

- Young adults may lack motivation or resources for self-care,
- In large families where healthcare is deprioritized.
- There is also greater prioritization of women's diabetic health in Indian households- subservient to the rest of the family
- There's also social stigma around diabetes

Gathered stats and diabetes trends in India- Regional, demographic, socio-economic groups, awareness, treatment and control data

Primary research

Stakeholder mapping



Recruitment Criteria

Age

Elders
60 and above

Adults
21 and above

Treatment

Allopathy

Alternative like ayurveda

Experience

Pre-diabetic

Diabetic 1-5
years

5-10 years

10-20 years

20 years+

Place

Rajasthan

Kerala

Mumbai

Other

Education

High school graduate

Undergraduate

Graduate and above

Socio economic
status

Low (Income < ₹3 lpa)

Lower Mid (<₹6 lpa)
Upper mid (<₹12 lpa)

High (Income > ₹12 lpa)

Influences

Doctor- Diabetologist, dietician

Partners/ family/ caretakers

Sample questions

Pre-diabetes

1. What does a day in your life look like?
2. When did you first learn about diabetes?
3. How long has it been since you first discovered you had high sugar? And how, what were you getting tested for?
4. What factors do you believe contributed to increased sugar levels?
5. Did your healthcare provider mention that you were pre-diabetic? What was the diagnosis experience like?
6. Have you observed any changes in yourself physically or emotionally, before and after diagnosis?
7. Since you have been diagnosed, have you tried taking any precautionary measures/ lifestyle and dietary changes? (lifestyle changes, tools/products used)
8. How did you get introduced to these measures?
9. Have you been consistent with those measures?
10. Have you observed any difference?
11. Did you get tested again? How often?

Interview method

On call in-depth interview

Duration

30-45 mins

Sample- 10 (5 diabetics, 4 primary caretakers, 1 doctor)

Research analysis

Persona 1, day in a life of a Pre-diabetic adult from the Northern part of India

Persona 1 Pre-diabetic

- Demographics:
- Age: 30 years
 - Income Category: Middle class
 - BMI: Obesity Class 1 (Weight: 100kg, Height: 180cm)
 - Location: Rajasthan
 - Health Status: Pre-diabetic, recently diagnosed
 - Education: BBA graduate
 - Diet: Non-vegetarian



Background

Aditya recently stepped into a pivotal phase of his life by taking over his family's metal fabrication and manufacturing business. The plant employs 12 laborers, and since his father's retirement a few months ago, Aditya has been managing all aspects of the business single-handedly. Despite his dedication, the overwhelming responsibility has begun to take a toll on his well-being.



Everyday habits

Balancing his demanding workday, Aditya often seeks respite by hanging out with his friends after hours.



Social gatherings typically involve dining out, where he has transitioned from a lifelong vegetarian diet to consuming non-vegetarian meals to fit in with his peers.



These outings are also accompanied by frequent alcohol consumption, which has become a regular part of their routine.

Current Challenges

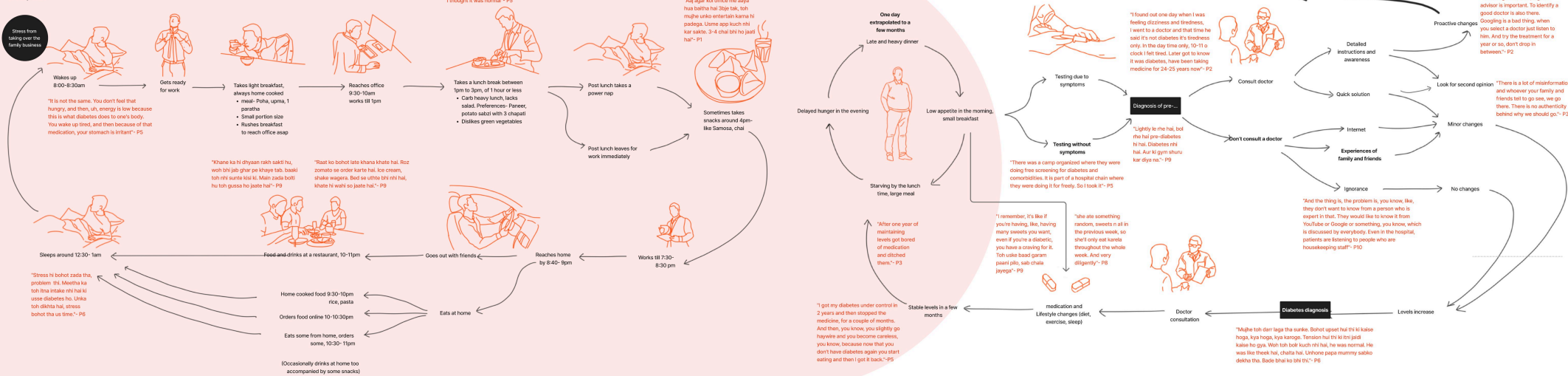
- **Health Risks:** Serious risk of progression to type 2 diabetes if not addressed promptly.
- **Work Stress:** Taking full charge of the business has left Aditya feeling overburdened and isolated
- **Social Influences:** Peer pressure and social habits are negatively impacting his dietary and lifestyle choices, compounding his health challenges.

Needs

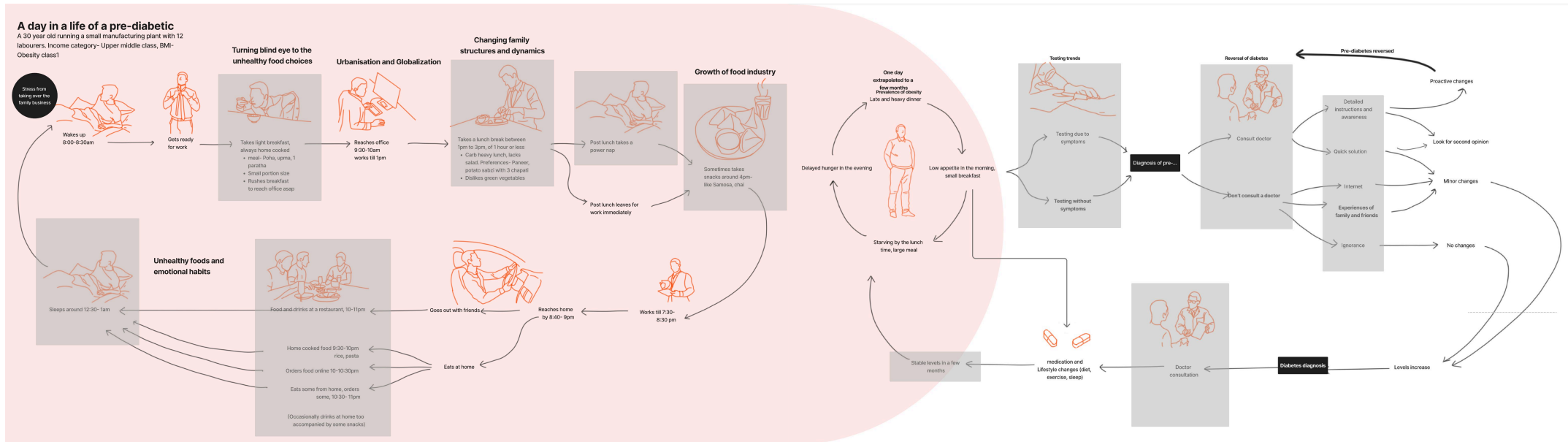
- Healthier stress management techniques
- Ways to integrate exercise and balanced meals into his routine
- Educating himself about managing pre-diabetes effectively and breaking unhealthy social habits.

A day in a life of a pre-diabetic

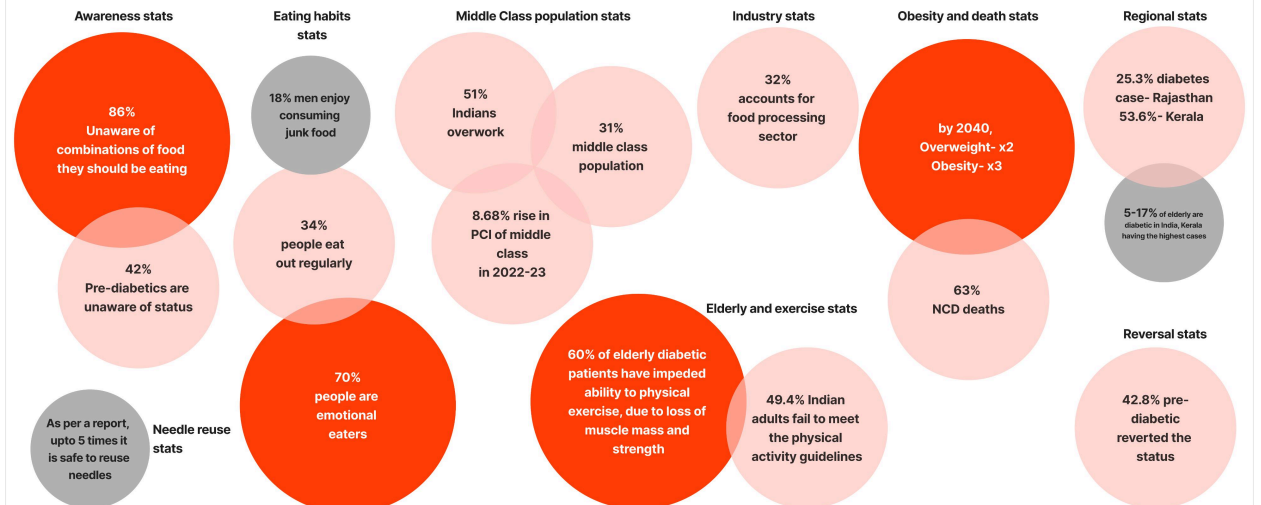
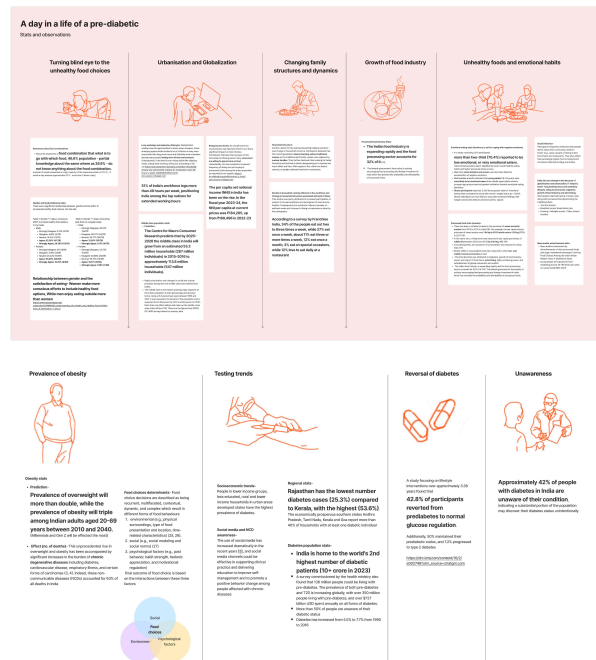
A 30 year old running a small manufacturing plant with 12 labourers. Income category- Upper middle class, BMI- Obesity class1



Gaps identified in the journey



Connecting data from secondary research the the gaps identified to understand the relevance



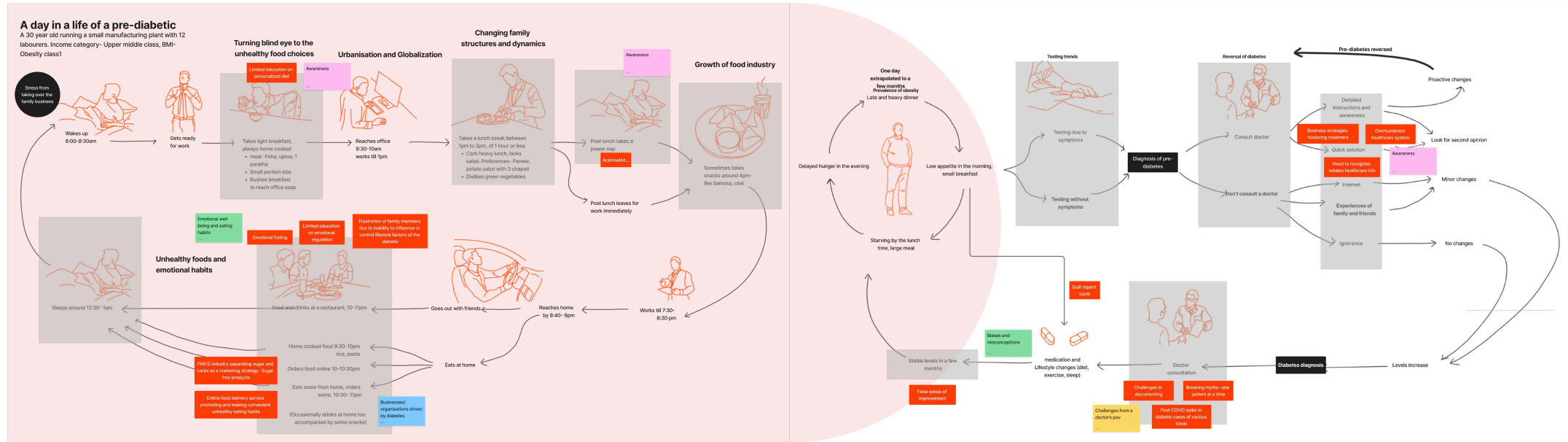
Needs from stats

- Awareness- pre-diabetes status, food combinations, precautions for reuse of needles
- Demote- Emotional eating, eating junk food
- Exercise- elderly/ adults to prevent obesity
- Population- Middle class
- Industry- food (restaurants, FMCG)
- Region- Southern India

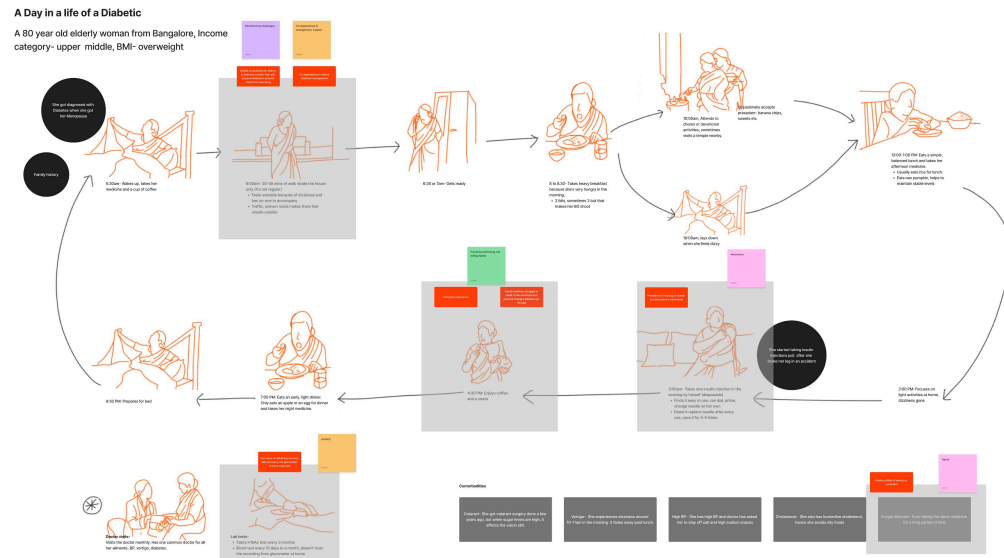
Sources-

- Research paper- https://www.researchgate.net/publication/378800001_Understanding_the_Health_and_Health_Food_Preferences_of_Generation_Y_and_Z
- Business Standard, India News- <https://mbs.in/2d2098f>
- BMJ Open Diabetes Research and Care Journal- <https://dx.doi.org/10.1093/diabet/0000000000000000>
- Analyzing the Attitude of Millennials towards their Food Habits, Eureka Journals 2021- <http://management.eureka-journals.com/index.php/JTTHMCH/article/download/541/181/>
- Research paper- https://www.researchgate.net/publication/364246181_Assessment_of_eating_habits_sleep_quality_and_perceived_stress_with_emotional_eating_behaviour_among_indian_adults_A_cross-sectional_study

Thematic analysis from the identified gaps

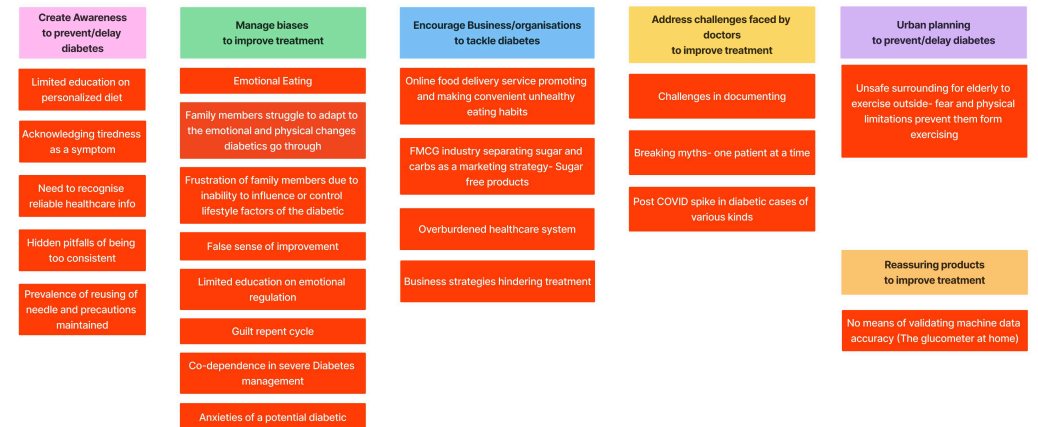


Persona 2, day in a life of a diabetic elderly from the southern part of India



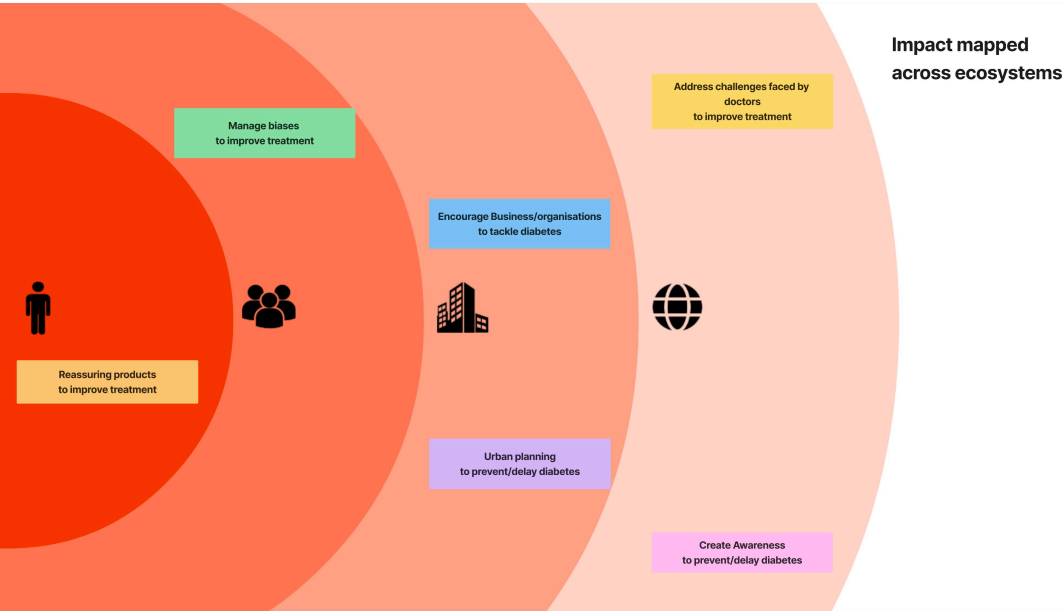
Clustering of the themes

How might we?

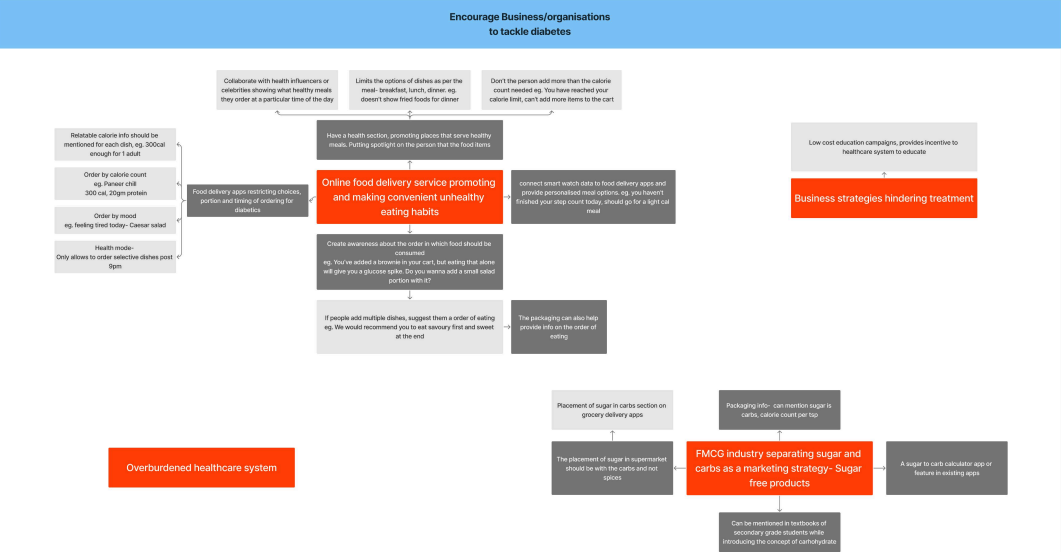


Brainstorming

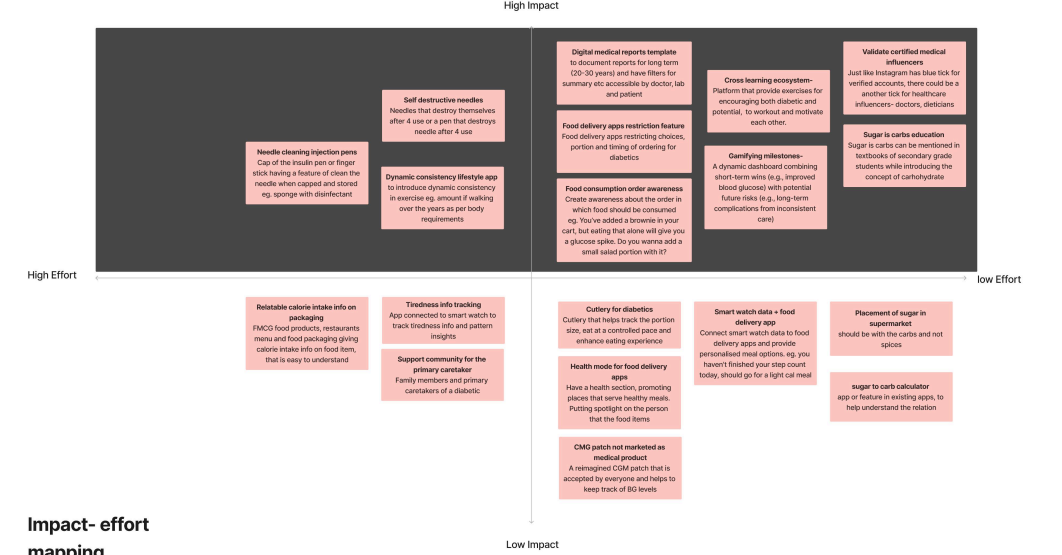
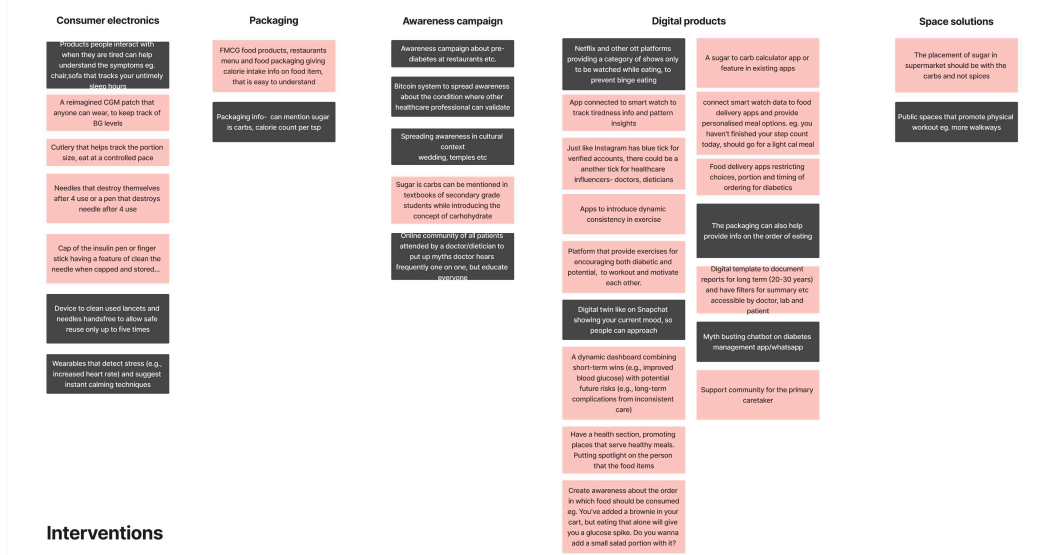
Ecosystem mapping of the umbrella themes



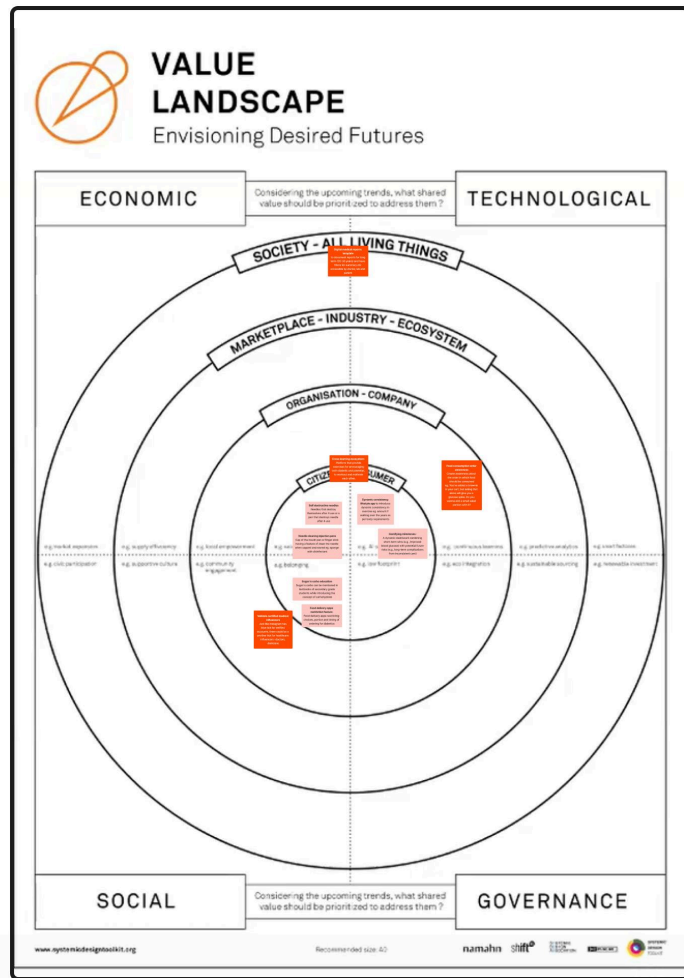
Possibility mapping of the themes to generate ideas



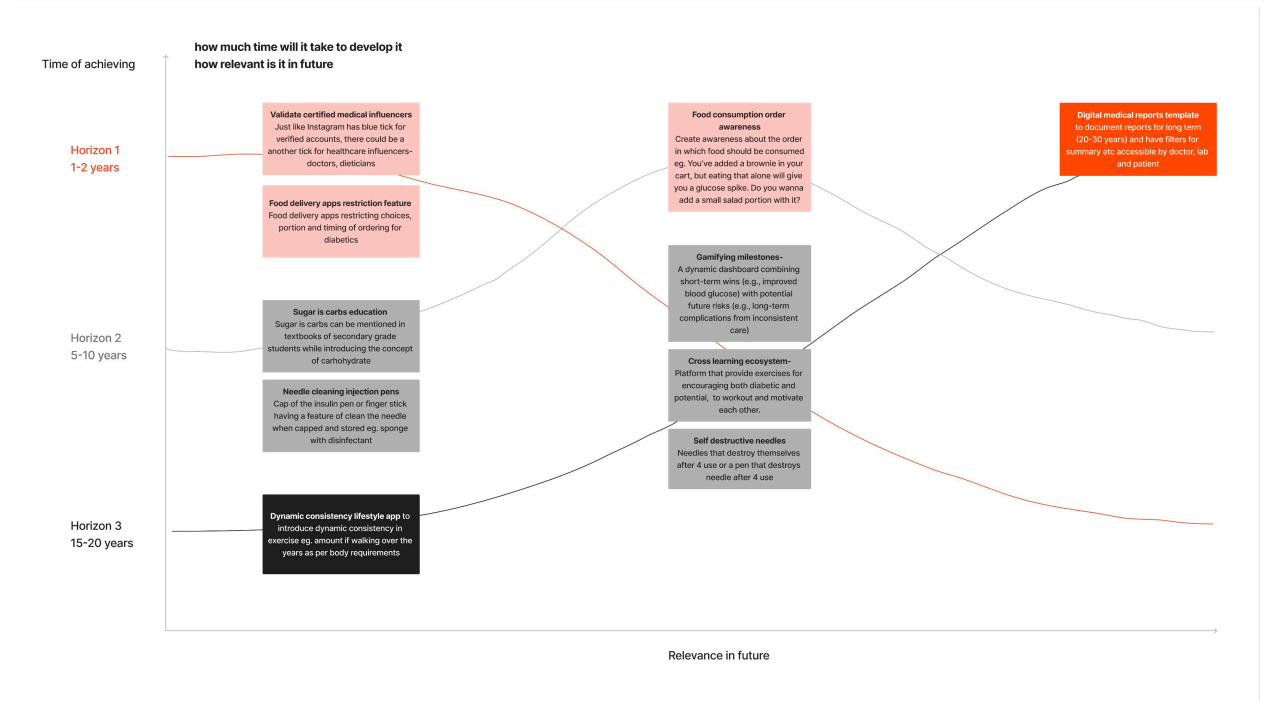
Narrowing down of the ideas



Relevance evaluation



Horizon mapping and Value landscape templates have been taken from the book- *Design journey through complex systems* by Kristen Van Ael, Peter Hayward Jones



From the use of multiple tools, four ideas were highlighted repeatedly. They were used to generate 4 separate design briefs and handed over to the design team.