GLocalFlex
Service Design for Household Demand Response

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Funded by the European Union

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About Service Design

Roots in customer service design but these days widely applied

- 'Human centric', 'user centric': extensive use of qualitative methods

- Big emphasis on codesign and cocreation

- Enables and requires a multidisciplinary approach

- Establishes testable hypotheses

- Advocates quick hypothesis testing via 'probes' , 'prototypes' (e.g. mock-ups)
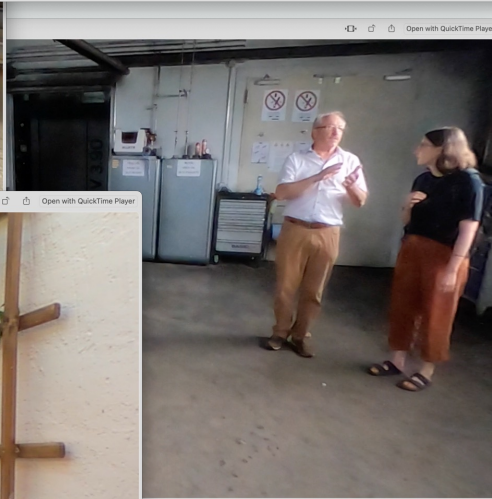
Qualitative Study in Wunsiedel and Schönbrunn, DE

- **4 days** field trip (18 Jun 23 – 22 Jun 23)

- **Visits** to local facilities (Energy park, CHP plant, SWW)

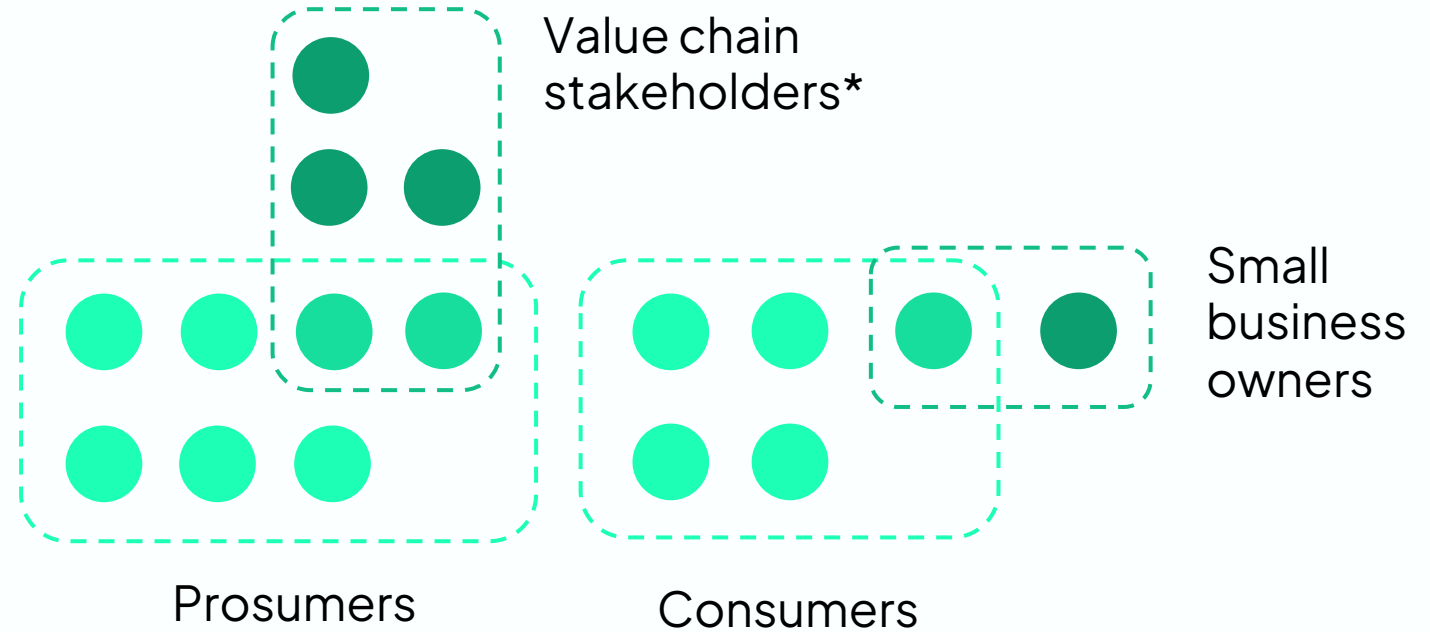- **12 interviews** with local participants and stakeholders

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Introduction

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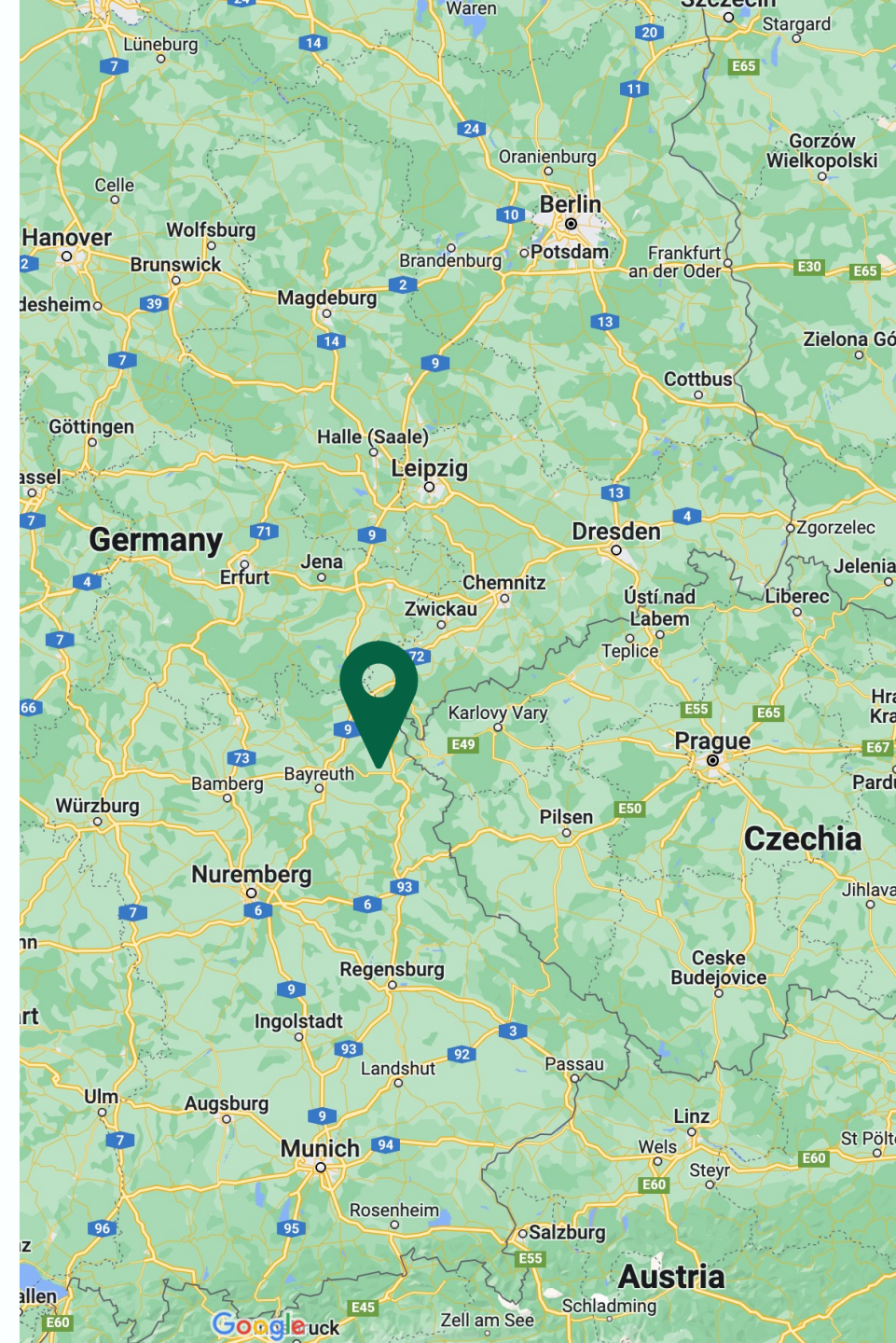
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Interview participants

16 participants
12 interviews
1 group interview

Interviewees were gathered by SWW representatives, who were our point of contact in Wunsiedel and are the pilot owners. The interviewees represent a variety of consumer and prosumers types, as well as actors from across the value chain.

Value chain stakeholders*

Small business owners

Prosumers

Consumers

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energy production, grid operation, municipality

Flexibility SWOT analysis

Strenghts

Existing resident interest

High trust in a municipality owned brand

Potential for energy costs reduction

Potential to mitigate unpredictability of renewable energy

Modern appliance's performance is not much impacted

Weaknesses

The topic is quite complex and requires previous knowledge

Previous projects have shown that the people's behaviour can only be influenced to a limit

The topic is not very familiar to average consumers

Research projects move slowly

The potential cost savings might not be enough as incentive

Opportunities

Potential to engage communities, allowing P2P trading

"Plug'n'play" solutions with a promise of cost reductions could allow easy consumer uptake

Threats

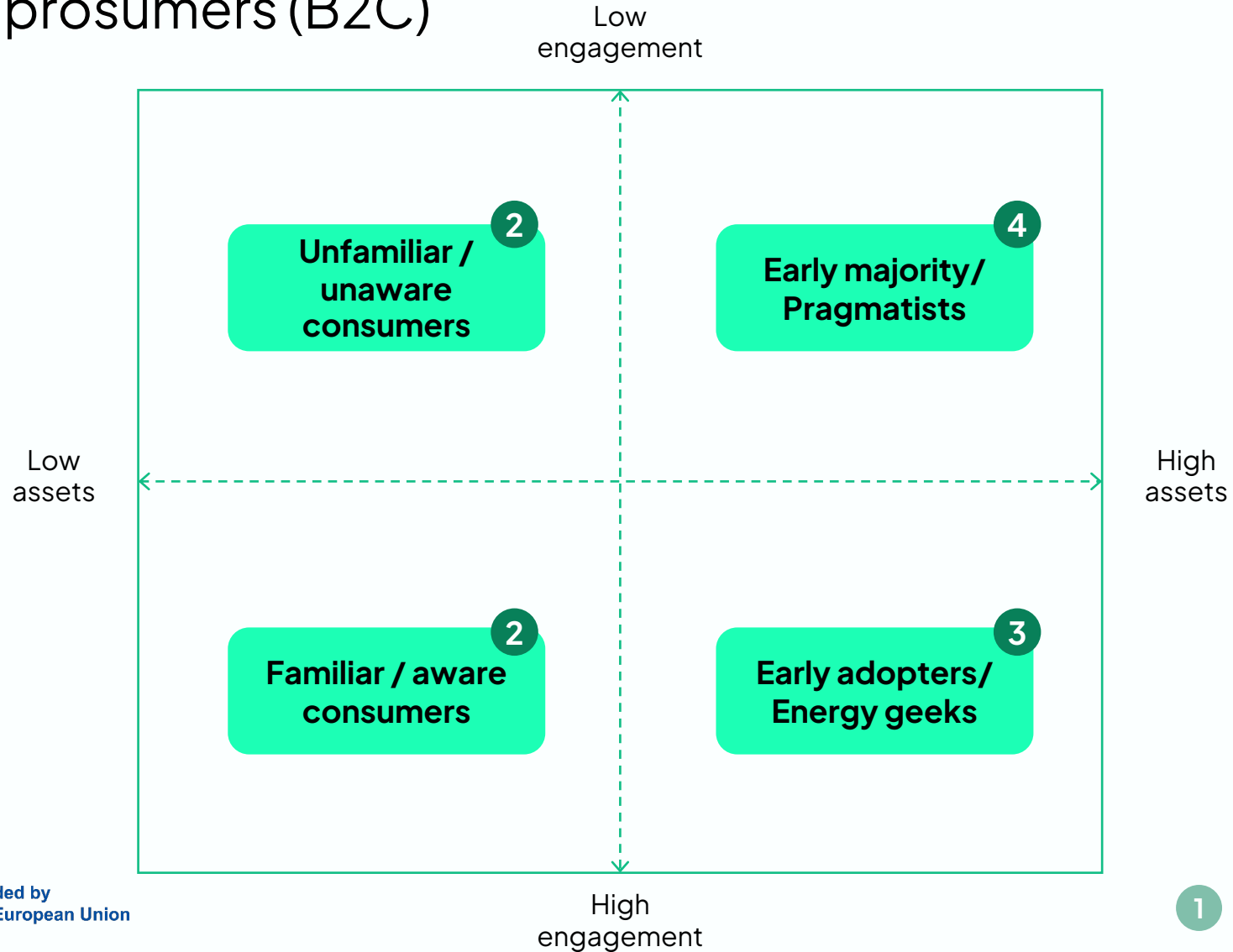Regulation: offering flexibility in Germany requires a status of a BRP (balancing responsible party).

Misinformation questioning costs, effectiveness and invasiveness of sustainable sources.

Digitalization also creates vulnerability
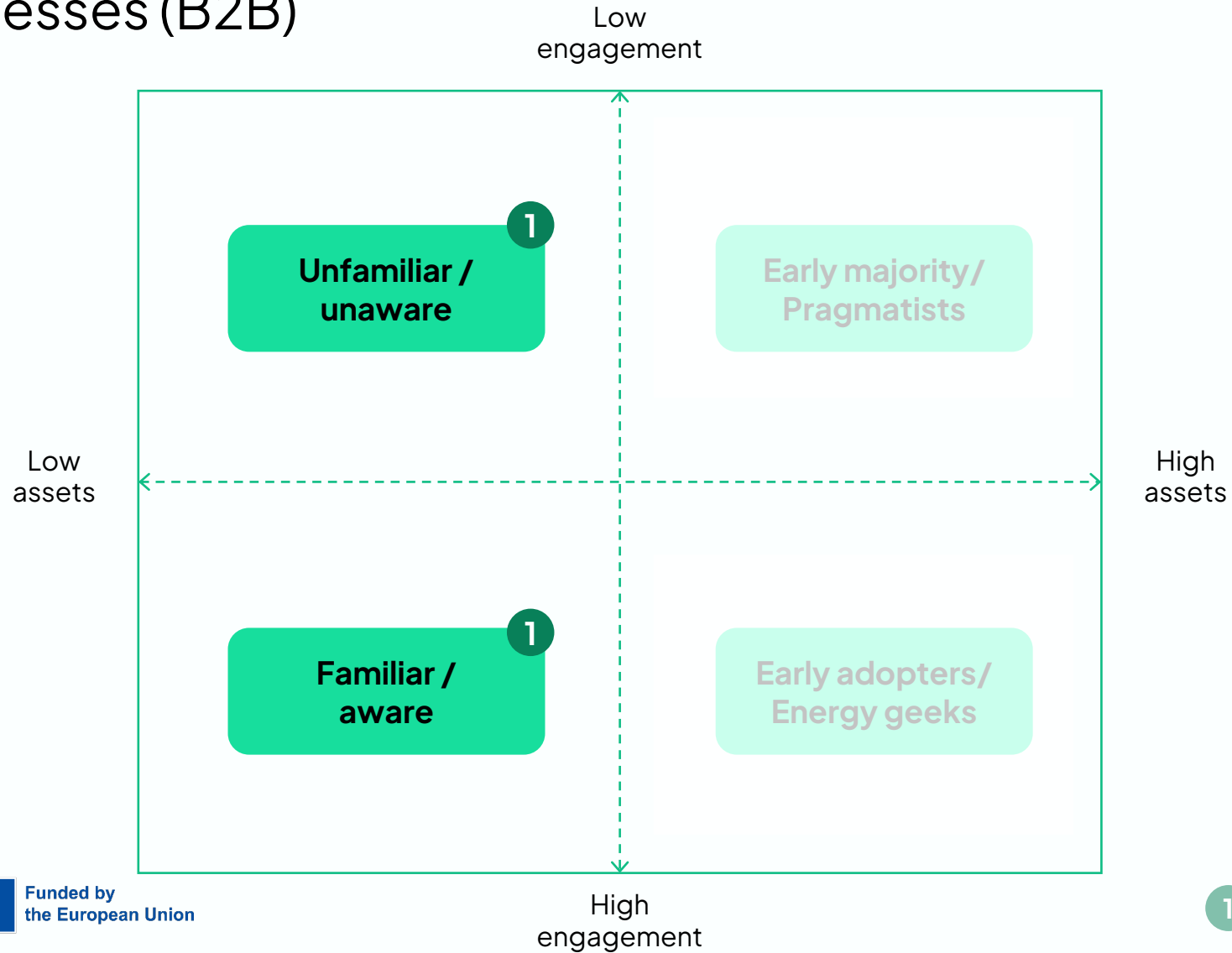
Entry costs (e.g. assets) is too high for many

Life circumstances of many (e.g. renters, shift workers) are also a barrier to participation

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Information sourced from stakeholder interviews

Consumers & prosumers (B2C)

Low
engagement

Low
assets

High
assets

**Unfamiliar /
unaware
consumers** 2

**Early majority/
Pragmatists** 4

**Familiar / aware
consumers** 2

**Early adopters/
Energy geeks** 3

High
engagement

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1 Interviewees per archetype

Small businesses (B2B)

Low
engagement

Unfamiliar / unaware ①

Early majority/ Pragmatists

Low
assets

High
assets

Familiar / aware ①

Early adopters/ Energy geeks

High
engagement

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① Interviewees per archetype

Key takeaways

Motivation

Reducing energy costs seems to be the main driver for consumers. It is used to argue for self-sufficiency and reducing environmental impact. However, a fair assumption can be made that sustainable action is especially important for the younger generation – the future prosumers.

Flexibility & automation

For most, automated 'invisible' solutions are ideal, but some wish to retain a higher level of control and visibility. Data-privacy also remains a concern for some.

Barriers

Energy flexibility is a really complex topic, requires high "energy literacy", needs to cater to various differing needs and may not be equally available to everyone (access to capital, homeownership, physical space). Different levels of participation are necessary to cater to various levels of flexibility potential.

Trust

Trust in SWW is a key driver in Wunsiedel developments. The presence of a motivated actor with strong community relationships and a will to work closely together with residents and businesses is responsible for a rapid technological evolution in the region.

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Open questions

- **How might we educate consumers on energy flexibility without overwhelming them?**

- **How can we incentivise users in a viable way that caters to all?**

- **How can we adapt flexibility to include needs of multiple users? How should these alternate versions look like?**

- **How can we achieve an inclusive flexibility system that allows everyone to participate?**

- **How might we bolster energy system trust amongst the consumers?**

- **How can we motivate community cohesion in our flexibility services?**

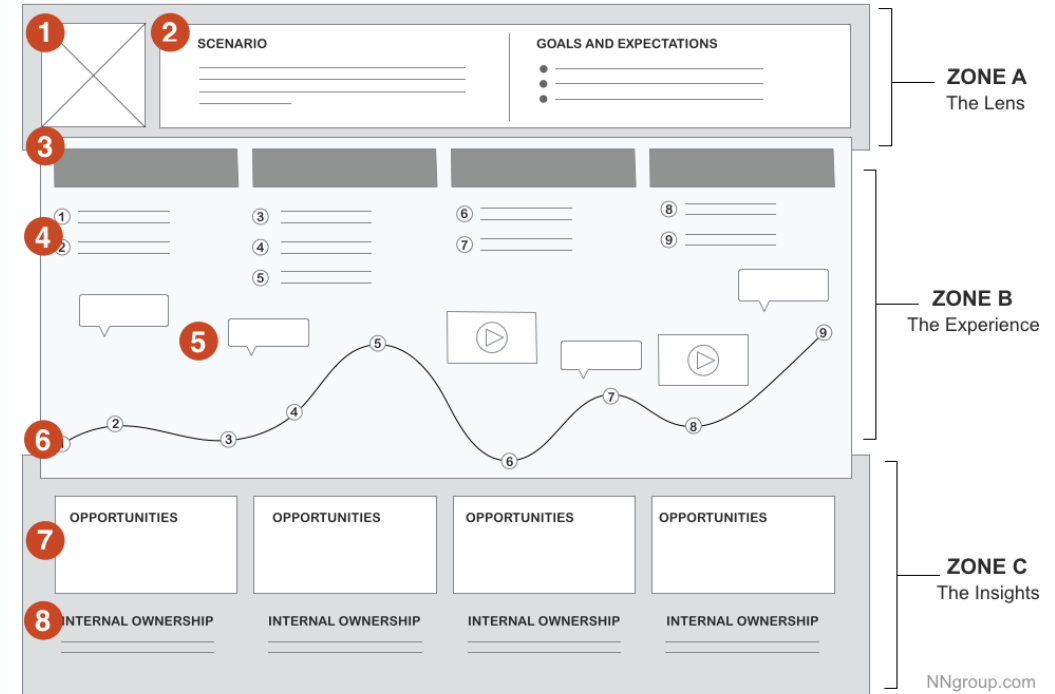- **How can we aid those that might be left out of the flexibility transition?**

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Wunsiedel energy flexibility study

Full report available soon
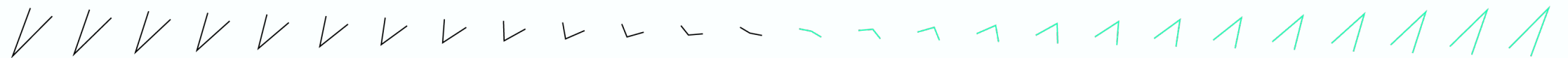
Who are the users and what are their needs?
Service Design Frameworks

- **Personas[1]**: Who are the users, what are their needs and objectives?

User Journey Maps[2]: How do users' needs and service experience evolve through a service lifecycle?
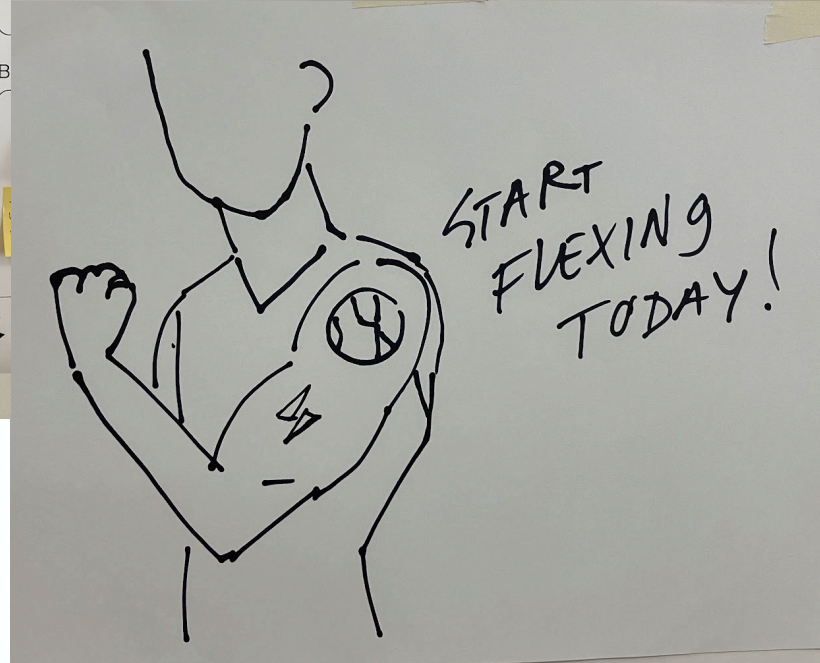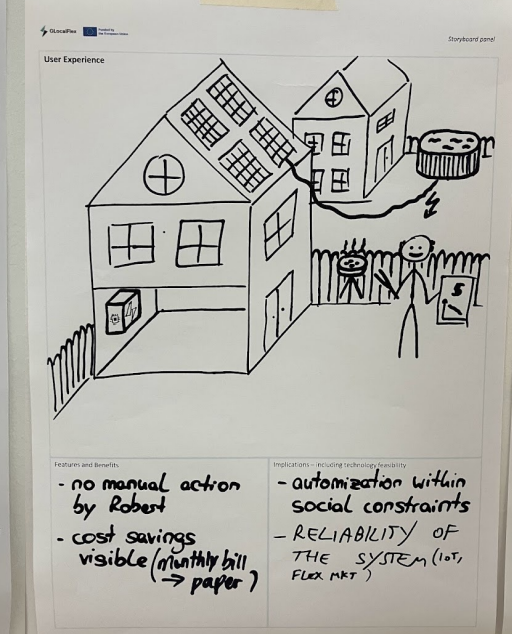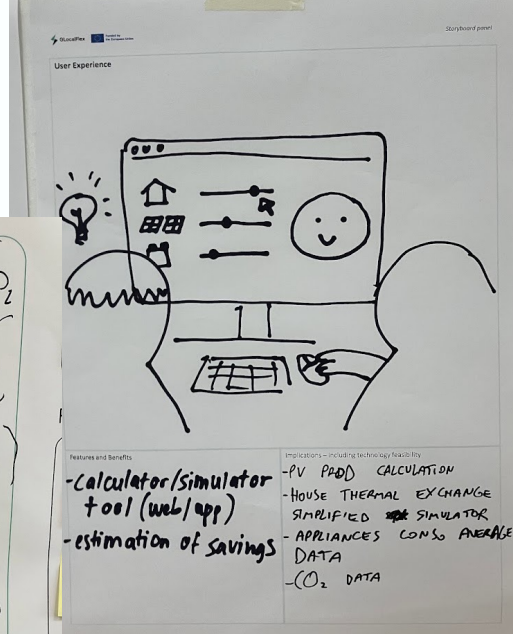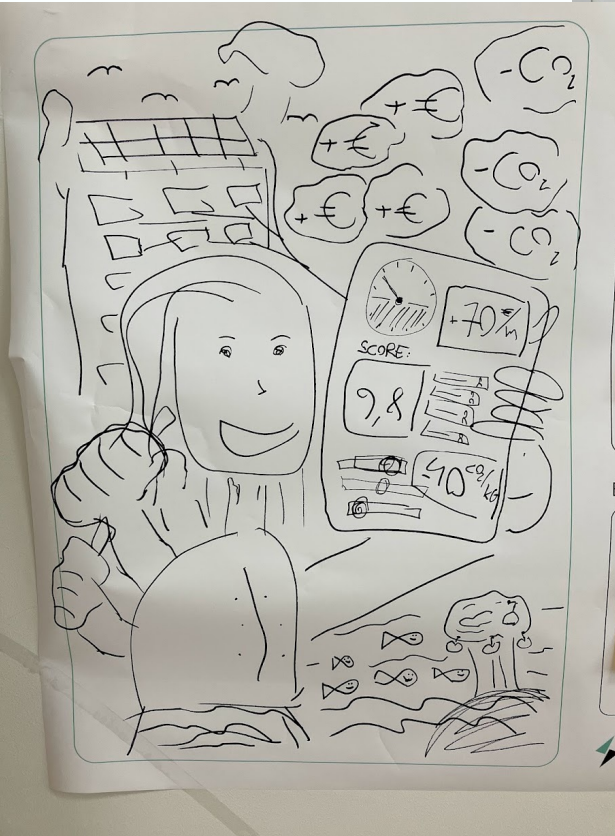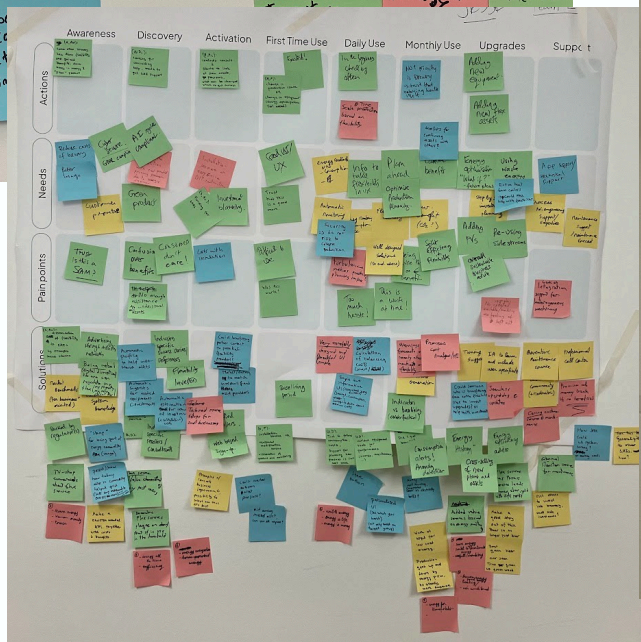
We've spent the last day and a half cocreating our GLocalFlex user journeys

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Architecting the service

Service Design Frameworks

Service Blueprint[1]: How do we map the user journey onto the back-stage processes and technology platforms?

SERVICE BLUEPRINT *Example*

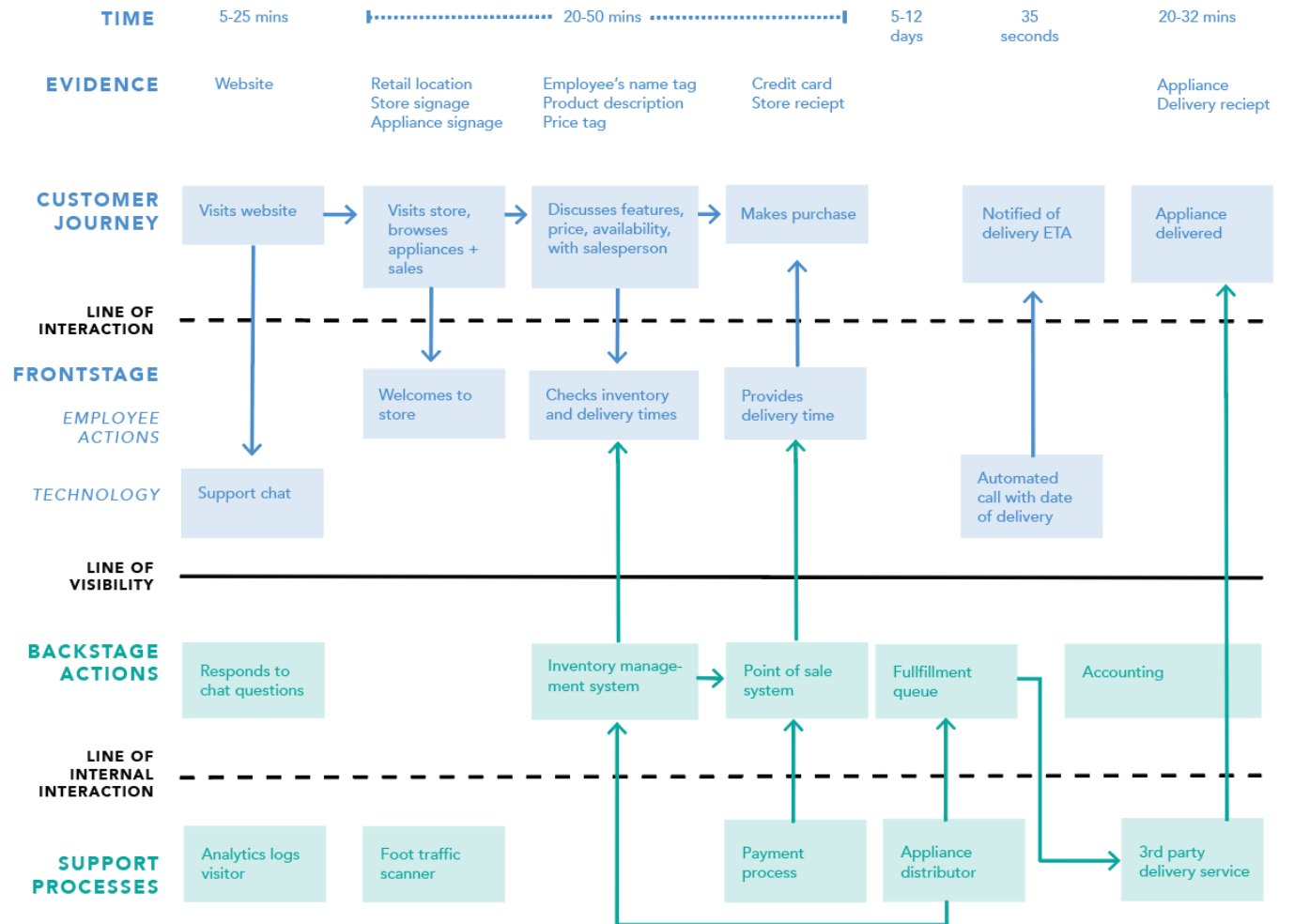|								
TIME	5-25 mins		20-50 mins		5-12 days	35 seconds	20-32 mins	
EVIDENCE	Website	Retail location Store signage Appliance signage	Employee's name tag Product description Price tag	Credit card Store reciept			Appliance Delivery reciept	
CUSTOMER JOURNEY	Visits website	Visits store, browses appliances + sales	Discusses features, price, availability, with salesperson	Makes purchase		Notified of delivery ETA	Appliance delivered	
LINE OF INTERACTION								
FRONTSTAGE *EMPLOYEE ACTIONS*		Welcomes to store	Checks inventory and delivery times	Provides delivery time				
TECHNOLOGY	Support chat				Automated call with date of delivery			
LINE OF VISIBILITY								
BACKSTAGE ACTIONS	Responds to chat questions		Inventory management system	Point of sale system	Fullfillment queue	Accounting		
LINE OF INTERNAL INTERACTION								
SUPPORT PROCESSES	Analytics logs visitor	Foot traffic scanner		Payment process	Appliance distributor	3rd party delivery service		

NNGROUP.COM NN/g

1. Source: Norman-Nielsen Group: https://www.nngroup.com/articles/service-blueprints-definition/

Next Steps

- Workshop synthesis – journey mapping and concept definition
- Rapid prototyping and user validation
- Service blueprinting and road mapping