



Repair Journey

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Living Knowledge 9 - June 2021

Open Design of Trusted Things

Smart Cities

Technology is fundamentally changing how cities work, but these smart cities are most often determined in a top-down fashion, with little transparency or accountability in how data influences the workings of the city. ***Can we create cities that are not just smarter, but kinder, fairer and more citizen-centred?***



3

FIRE EXIT
KEEP CLEAR
Fire exit
Keep clear

PLASTIC BOTTLE

Thomas





Focus:
waste prevention in smart cities

Reuse of materials in cities and towns through initiatives aimed at and run by local actors.

Research Questions

Research Question 1 (RQ1):

What prevents more widespread reuse of discarded materials in contemporary cities?

Research Question 2 (RQ2):

What are the different actors - formal and informal - involved in reusing material objects at a city scale and how do they operate?

Research Question 3 (RQ3):

What current and future digital technologies might help in making local societies reuse a higher proportion of materials that are otherwise discarded?

Design Probes

(...) objects that are usually small in scale, whose materiality and form are designed to relate specifically to a particular question and context, posing a question through gentle, provocative, creative means offering a participant intriguing ways to consider a question and form a response through the act of completing the probe creatively.

Making Design Probes Work

Jayne Wallace, John McCarthy, Peter Wright, Patrick Olivier



Trash Bin Mülltonne

by Grinch82 Sep 20, 2017



Evil Bin

Miniature plastic bin with either of

- Post-it notes?
- Cards with questions/prompts?
- Audio recording modules?



Roll over image to zoom in



Enshey 2 pcs Mini Wheelie Bin TRASH & RECYCLE Can Novelty Office Desk Tidy Worktop Tools Desktop Stationery Organiser Storage Box Kids Pen Pot Holder Creative Gift

by Enshey

★★★★★ 1 rating

Price: £11.99 ✓prime FREE Same-Day

New (2) from £11.99 ✓prime FREE Delivery

- **【No littering !】** Each measures 5.5 inches tall and 3 inches wide. Made of environmental friendly high-quality plastic
- **【No littering !】** Complete with closable tops, and real moving wheels
- **【No littering !】** One is a mini green curbside trash can, the other, a mini blue recycle bin
- **【No littering !】** Great to hold all your office supplies. This is that perfect item to put on your office desk to add some fun back into your work space
- **【No littering !】** It can be a great gift for your friends and family

[Compare with similar items](#)

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Repair Journey

a.k.a. Broken Probes

“The research will investigate in what ways can materials that are broken, obsolete or otherwise inadequate be **repaired, adapted or transformed in urban contexts**. In particular, the study expects to understand how the value of an object is perceived in different situations. It is part of a wider research project investigating alternatives for **handling discarded materials in the city.**”

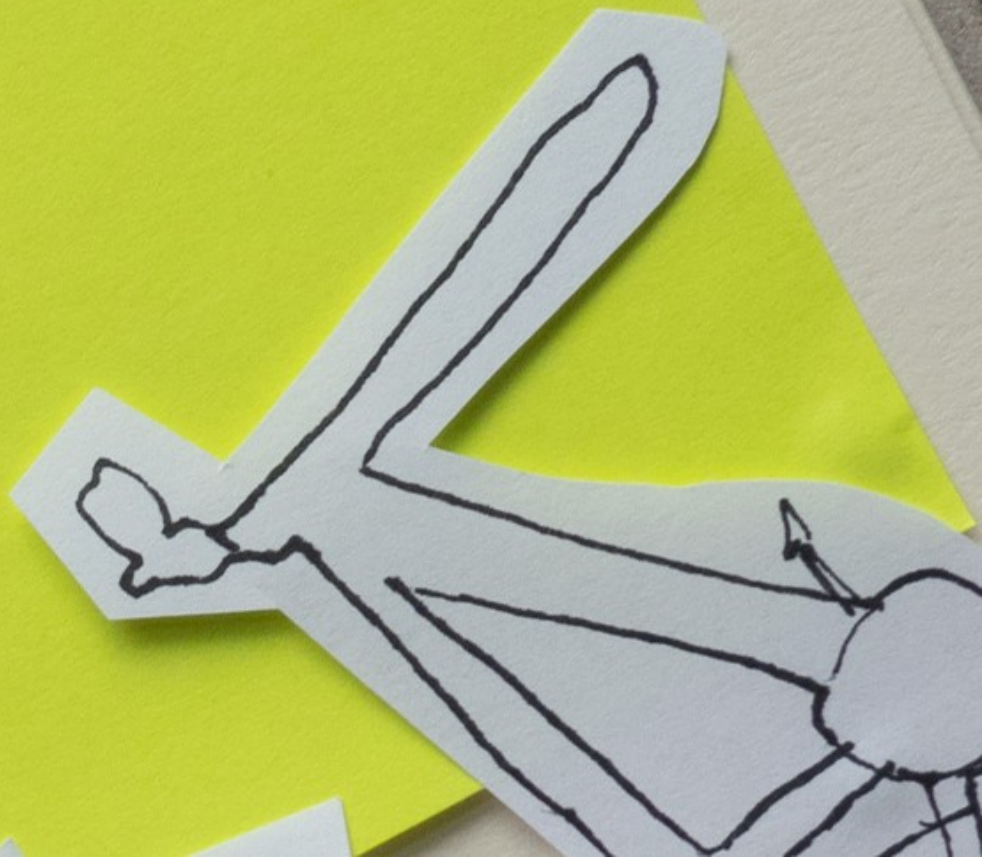
Repair Diaries

A group of participants was asked to spend about three weeks trying to repair at least one object of their choice, and keeping a diary of it.

Along the way, I sent them emails exploring different ways to frame issues about repair, reuse and waste in cities, around the following topics:

- An object's personal diary
- The story of your object
- Value
- The city

THE
FREE
Bicycle
DIARY



UBATUBA,
BRAZIL



I used 2 bike routinely:
to commute, do groceries,
take my kids to school or
go to the beach.

Dundee is relatively flat,
and I was already willing to
get 2 bike.

(In Ubatuba) I used a bike routinely: to commute, do groceries, take my kids to school or go to the beach. Dundee is relatively flat, and I was already willing to get a bike.

Repair Diaries - participation

- Eight participants. One gave up early for health reasons.
- Varied levels of engagement.
- Six agreed to join a final online workshop, but two of them had connectivity problems.
- The workshop had then 4 participants.
- 2 other participants interviewed separately.

“Great to had from you, and sorry for my silence over the past week. I am sure you will be happy to know I have been keeping a diary and in a true-to-style bound notebook. I have even just started repairing - an external usb battery pack, although as you can see from the photos there is some collateral damage to the case. It was bomb-proof!”



“Day 6 (1/2)

Today I did a spring clean of my drawers of electronics and have some wonderful finds to share with you. You know it's the right time of the year for a spring clean when there is a chorus of birds outside. There is a garrulous group of house sparrows tending to their homes, which are sadly in decline, ironically possibly because of the neatness of modern houses which lack suitable nesting sites. Huddled together they seem oblivious to government guidelines on social isolation - though thankfully for their sake as much as ours it doesn't apply to them. Either way the birds put a smile on my face and are a lot more welcome than swarms of locusts. More to the point of the repair diary, their business makes me feel I should also keep my nest (of wires and various electronics) in order.

For full disclosure, I also had to do a spring clean to move things out of the spare room.

In the course of my spring clean I found the prototypes and the fossilised remains of the key fob I repaired for a family member. To the left of the picture you can see the remains of the key fob (I didn't preserve the tape that held it together), and to the right, the back, and front covers of the printed key fob. These actually are **only a few of the many prototypes and failures** on route to a final part, and are in a sign of the first limitation of 3D printing, which ties in nicely to the theme of spring cleaning I introduced you with.



Waste. And worse, it is all plastic.

hoarding vs
spring clean

prototype vs fix



2/15/20

I am producing it but I am fighting it

Waste

Reduce & Reuse

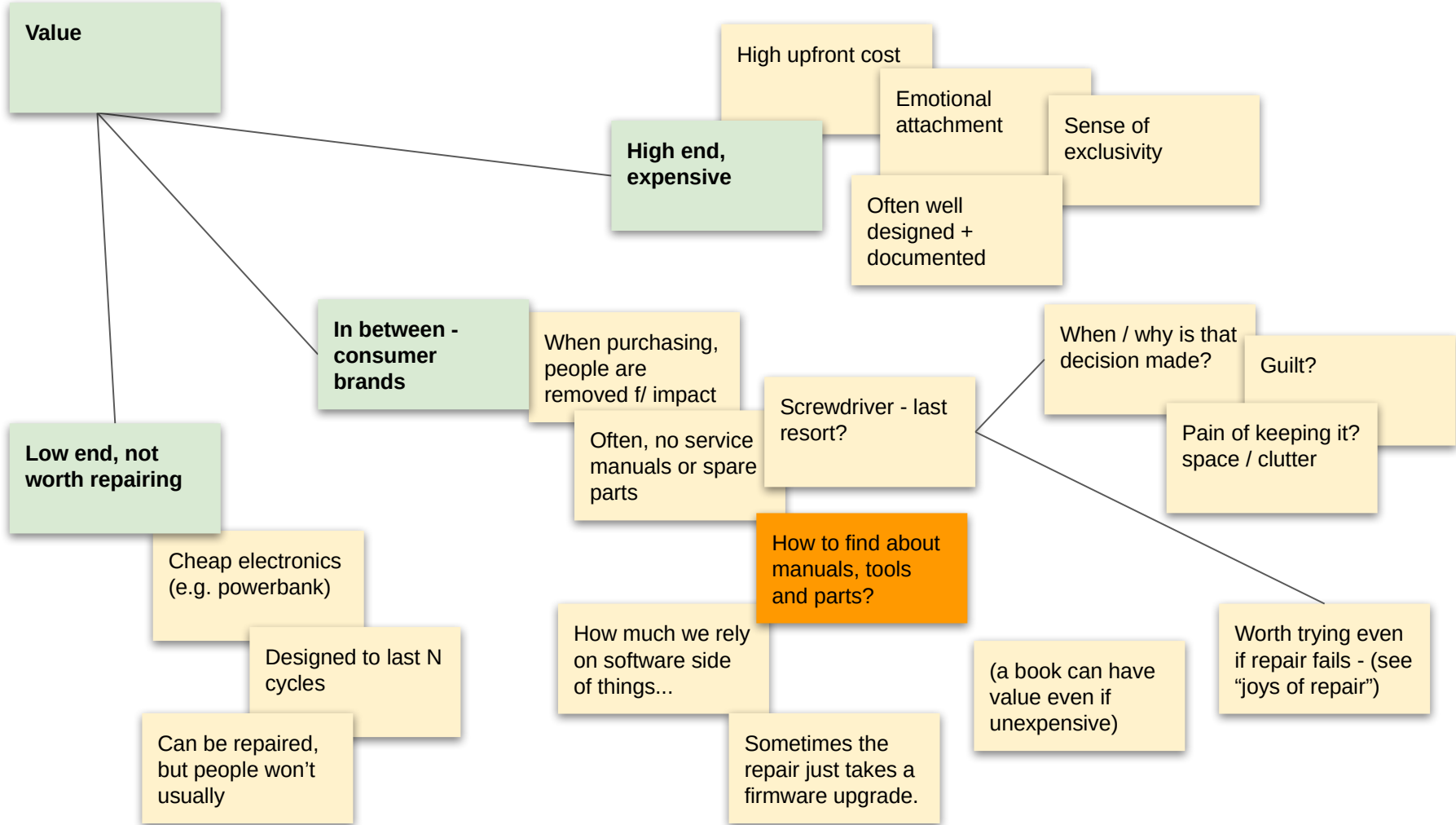
Recycle

One mesh bag

Measuring waste each week (as of the lockdown)

I learn about what materials I am putting in & how they are (probably) treated

eg. bioplastic used in 3D printing



Process of repairing (typically)

1 Investigate story of the object

2 Clean its outside

3 Open it up

4 Identify the problem

5 Repair / repurpose

Service manuals

Prior experience

Internet

Play / Experiment

Clean internals

Buy tools / replacement parts

Use alternative parts

Transform

Learn how things are made

Joys of repairing?

Overcome planned obsolescence

Document - be useful to others

Avoid damage / environmental impact

How to reward repairing?

How to identify the problem?

Social value of repair/reuse

Repairing / reusing in private spaces

Repairing / reusing in the city / community

Garden shed

Workshop

Social Media
Freecycle
Gumtree

“Free to collect”
signs replaced by
social media

Access to things,
parts, tutorials,
people

How to find about
people, spaces,
events?

Retailers

Professional
repair shops

Informal repair
markets

Makeshift /
informal
repairability

How to balance
liability / risks?

e.g. old cars -
there's always a
possible hack

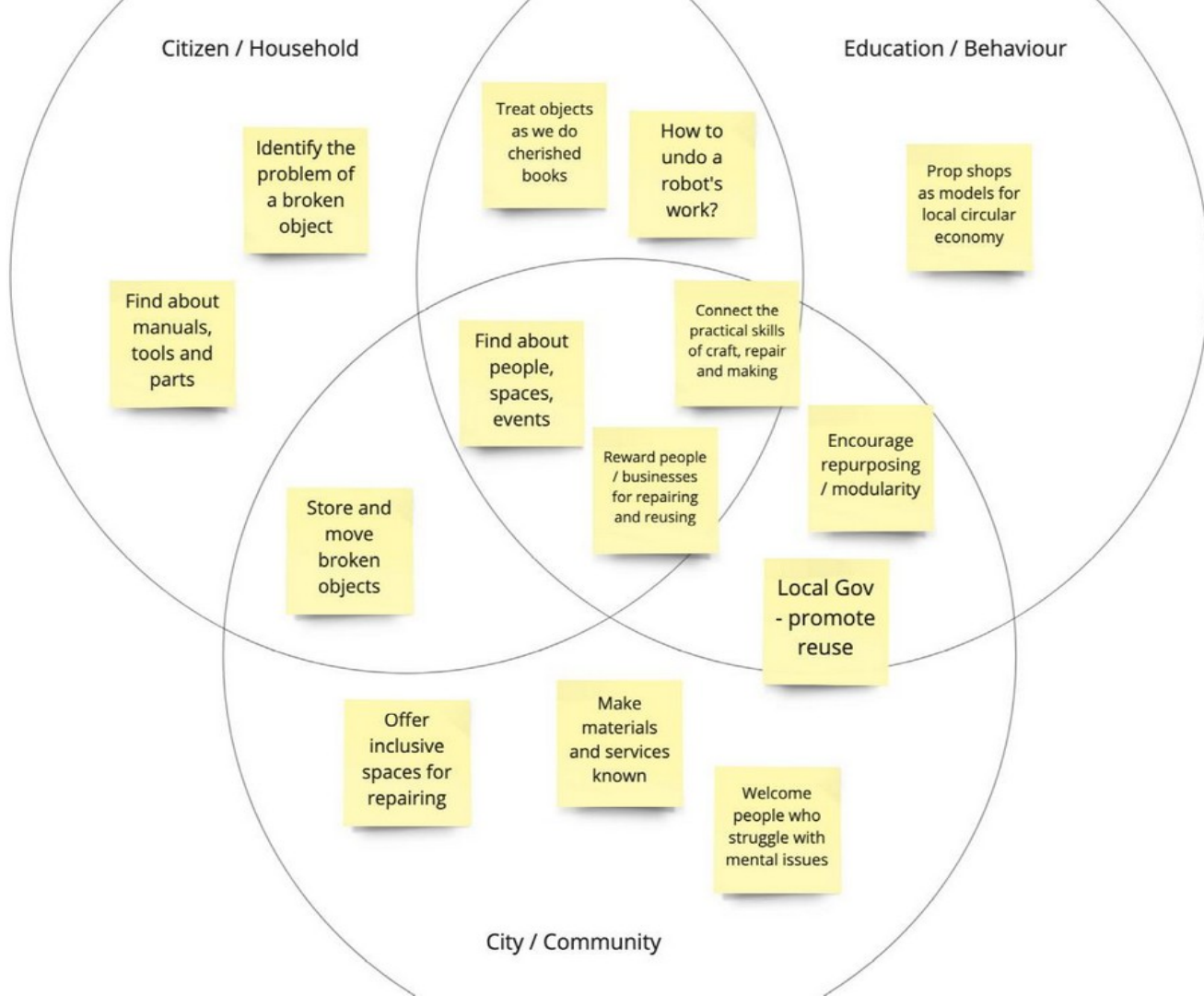
Repair Cafes
Men's sheds

Hackerspaces -
perceived as
inaccessible

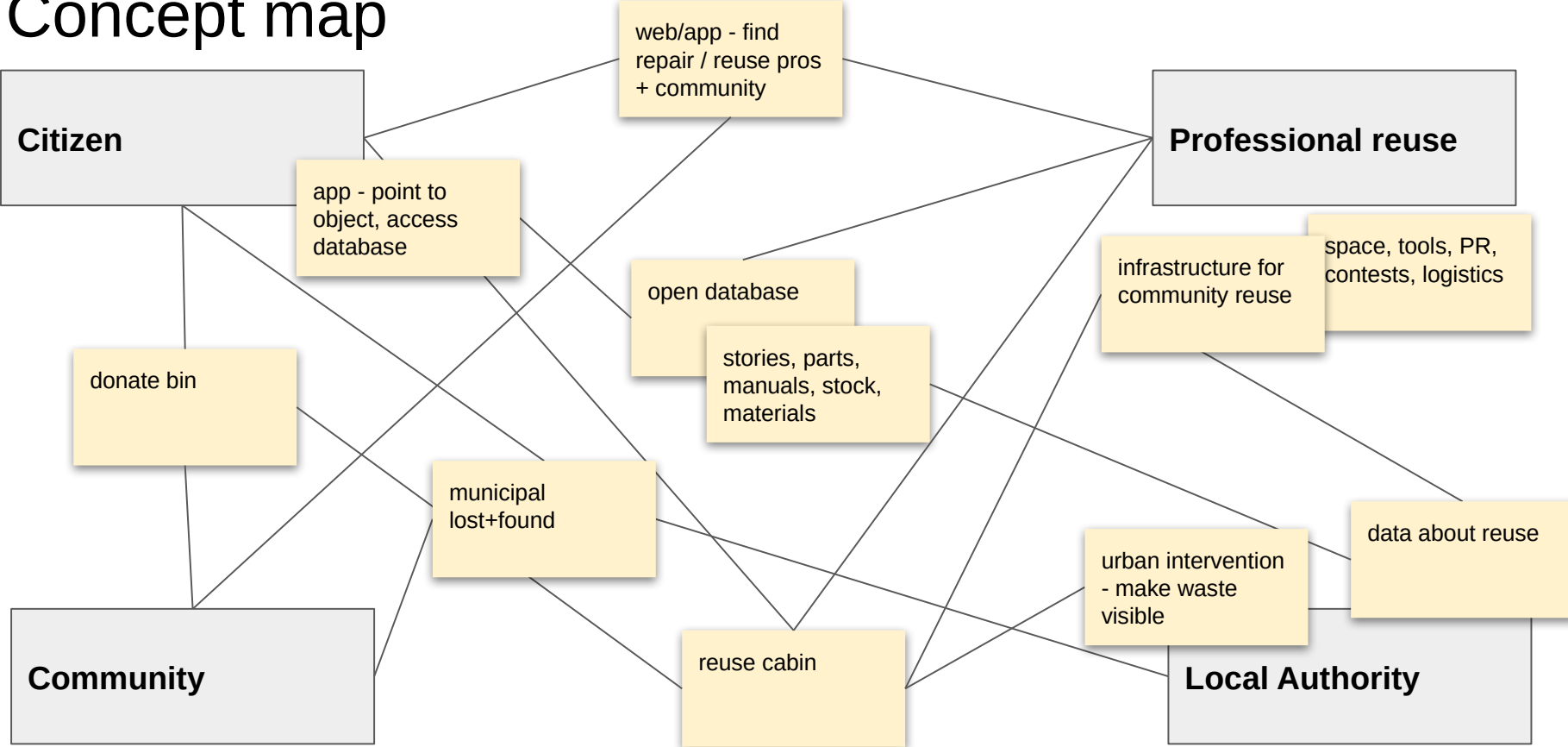
Repair Journey - Main Takeaways

- How to find about manuals, tools and parts?
- How to identify the problem of one specific broken object?
- How to reward people for repairing?
- How to find about people, spaces, events?
- How to store and move broken objects that can still be repaired?
- How to offer inclusive spaces for repairing?
- How to encourage repurposing by modularity?
- How to treat more objects as a cherished book?
- How to relate the practical skills of craft, repair and making?
- How to undo a robot's work?
- How to make Local Authorities and Councils more active in promoting reuse?
- How to make materials and services known?
- How to use prop shops as models for a local circular economy?
- How to welcome people who struggle with mental issues?

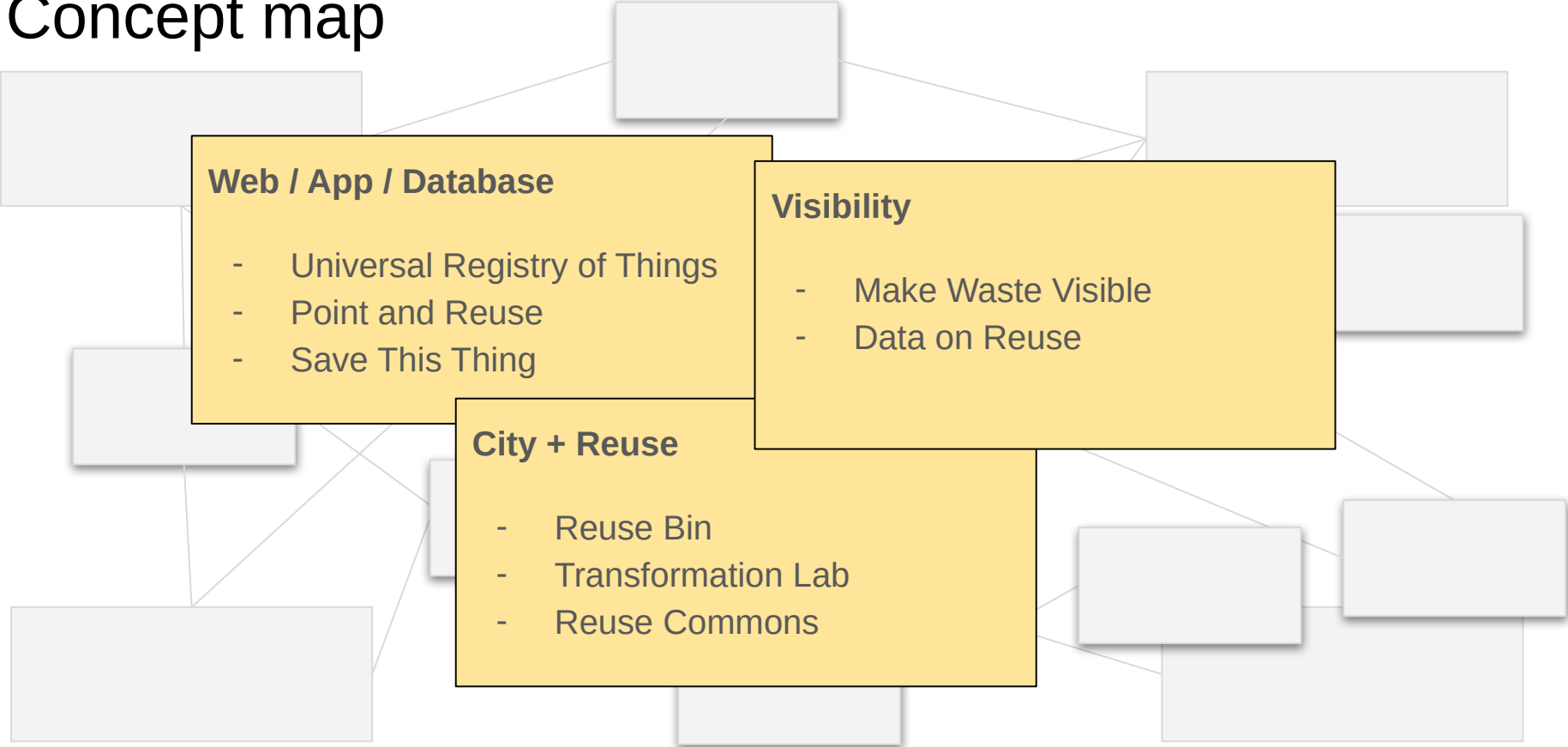
Repair Journey



Concept map



Concept map



1/8

Universal Registry of Things

Open database

Information about as many types of objects as possible.



2/8

Point and Reuse

App / Website

Allows users to quickly evaluate the potential value of an object.



3/8

Save This Thing

App / Website

Geo-referenced open directory of reuse alternatives with user evaluation / reputation system.



4/8

Make Waste Visible

Urban Interventions

Expose the volume of waste generated by towns and cities.



5/8

Data on Reuse

Open Dataset

Data about different kinds of reuse of materials in urban environments.



6/8

Reuse Bin

Urban Service

Track your donations.



7/8

Transformation Lab / Shop

Blueprint

Urban infrastructure for reuse / upcycling of materials.



8/8

Reuse Commons

Urban Service

Collective stewardship of post-consumption materials.



Thank you!