

2019

Workshop: Designing sustainable futures with the systemic design toolkit

Van Ael, Kristel, Monastiridis, Stefanos, Tarquini (Namahn), Sabrina and Nogueira, Andre

Suggested citation:

Van Ael, Kristel, Monastiridis, Stefanos, Tarquini (Namahn), Sabrina and Nogueira, Andre (2019) Workshop: Designing sustainable futures with the systemic design toolkit. In: Relating Systems Thinking and Design (RSD8) 2019 Symposium, Oct 13-15 2019, Chicago, USA. Available at <http://openresearch.ocadu.ca/id/eprint/3255/>

Open Research is a publicly accessible, curated repository for the preservation and dissemination of scholarly and creative output of the OCAD University community. Material in Open Research is open access and made available via the consent of the author and/or rights holder on a non-exclusive basis.

The OCAD University Library is committed to accessibility as outlined in the [Ontario Human Rights Code](#) and the [Accessibility for Ontarians with Disabilities Act \(AODA\)](#) and is working to improve accessibility of the Open Research Repository collection. If you require an accessible version of a repository item contact us at repository@ocadu.ca.

Designing sustainable futures with the Systemic Design Toolkit

Hands-on session

namahn

shift[®]





Who is who?

Facilitators:

- Stefanos Monastiridis (Namahn)
- Sabrina Tarquini (Namahn)
- Kristel Van Ael (Namahn, University of Antwerp)
- Andre Nogueira (HSPH)
- Alexis Jacoby (University of Antwerp)

Briefly present yourself

Systemic design toolkit workshop at RSD7

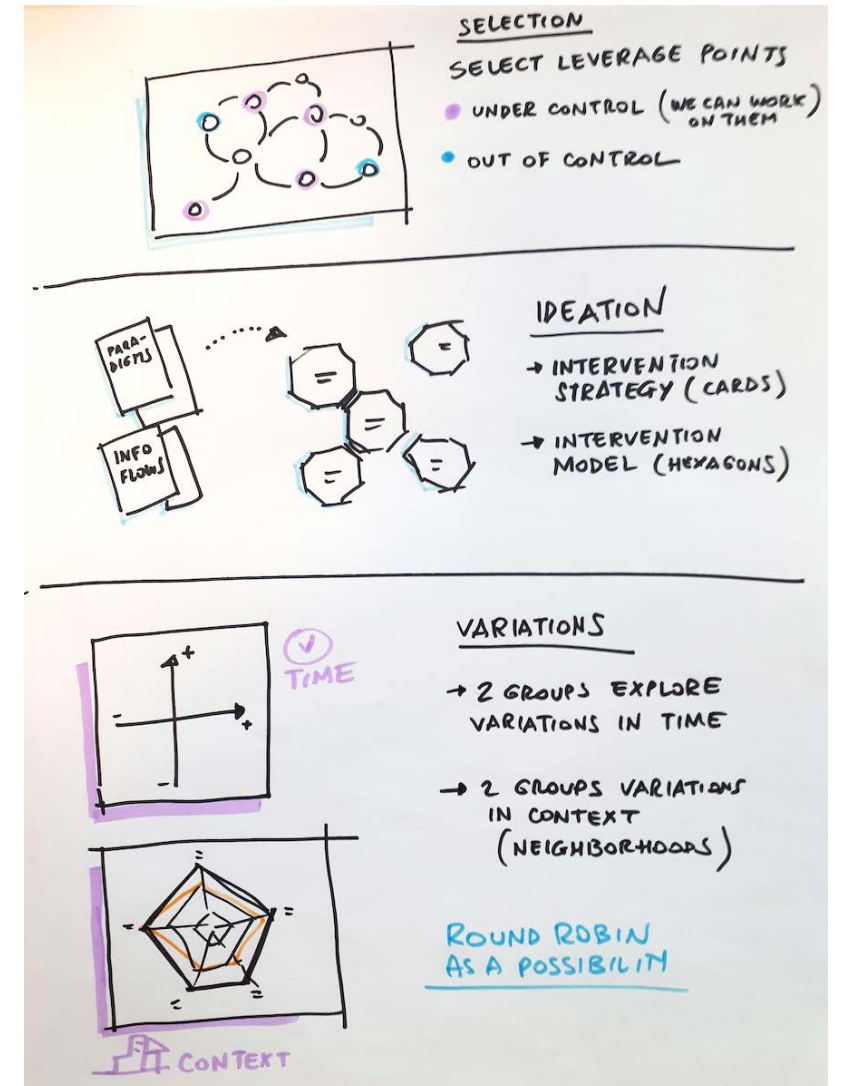




Hands-on session

Agenda

14:00 – 14:15	Introduction systemic design toolkit
14:15 – 14:30	Presentation of the case
14:30 – 14:45	Identification of leverage points
14:45 – 15:05	Intervention strategy
15:05 – 15:30	Generic intervention model
15:30 – 16:00	Break
16:00 – 17:00	Contextual intervention models
17:00 – 17:30	Presentations and discussions



Increasing complexity
of challenges to solve...





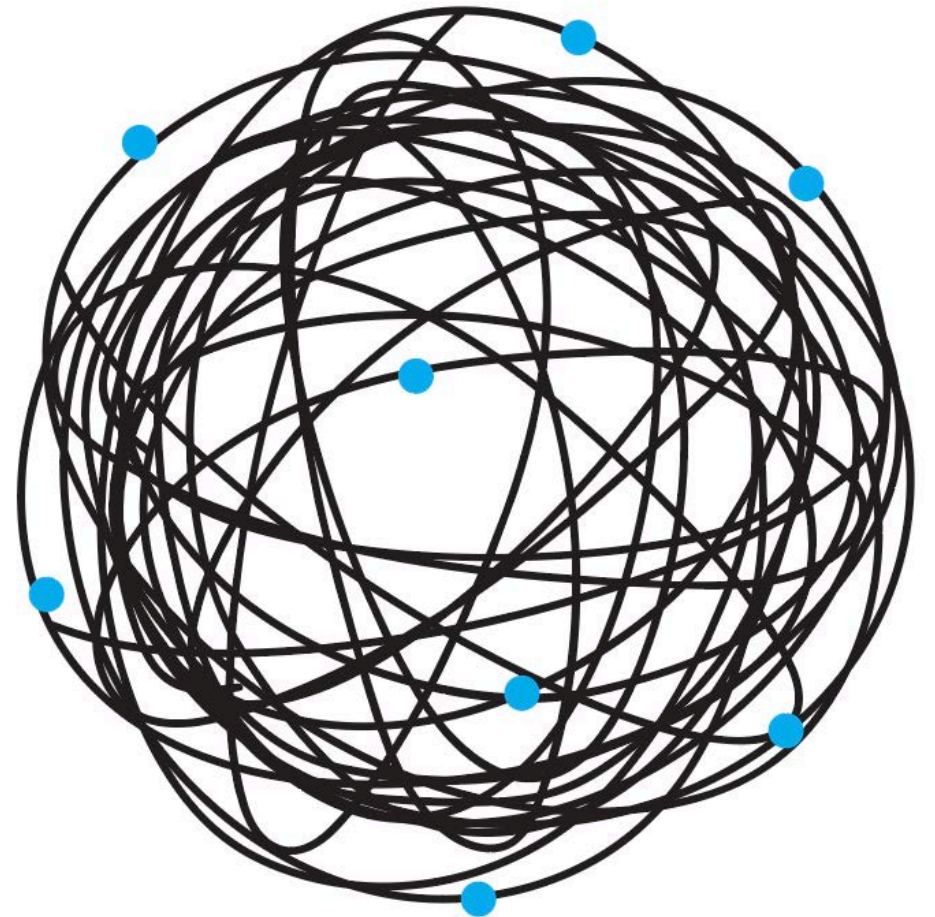
Why Systemic design?

We are in the midst of a fundamental shift where the **conventional ways of problem solving don't work anymore.**

- They even make it worse

Systems thinking has the ambition to provide an answer but it lacks a solution oriented approach.

- We believe systemic design has the potential to evolve towards a **novel way of problem solving.**



“From a very early age, we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay a hidden, enormous price.”

Peter Senge, *The Fifth Discipline*



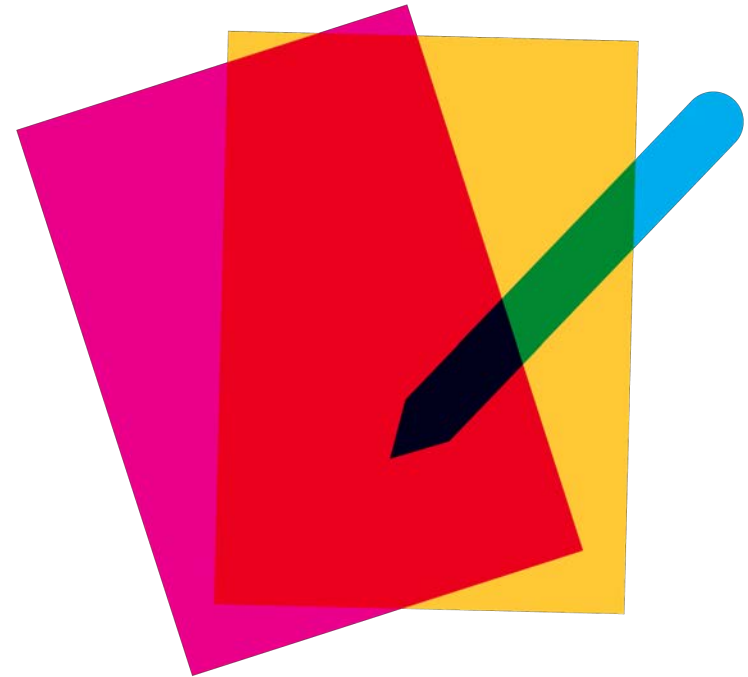
A toolkit for systemic change

Systemic Design toolkit

- created by **Namahn** in collaboration with **shiftN, SDA, MaRS**

A methodology and a library of **tools**

- First of its kind
- Based on academic research and human-centred design expertise





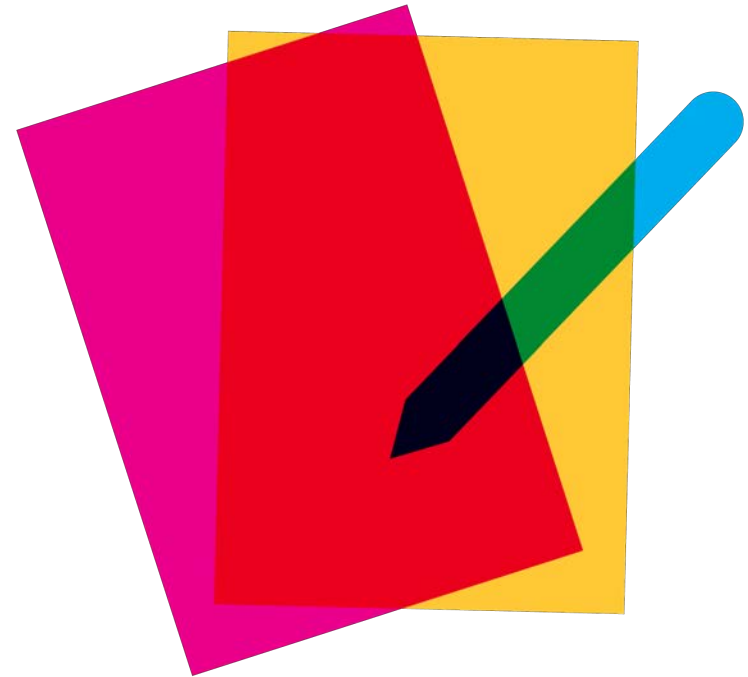
A toolkit for systemic change

Systems change should be done from within

- **With and by the actors** in the system
- **Co-creation sessions** with the stakeholders in the room

Tools to foster **dialogue**

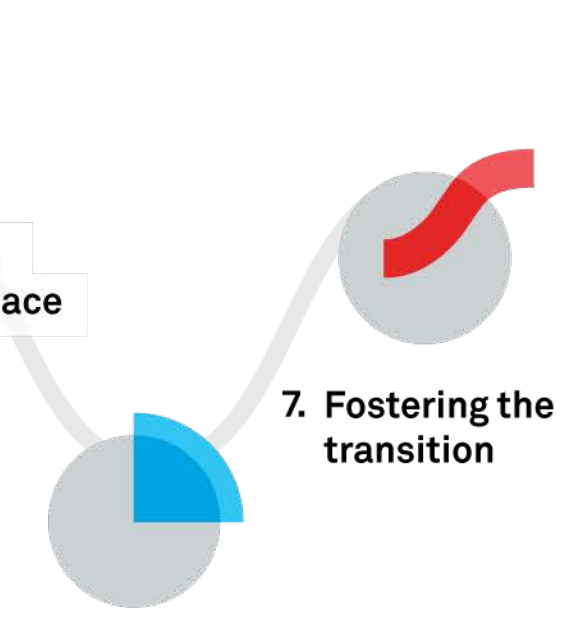
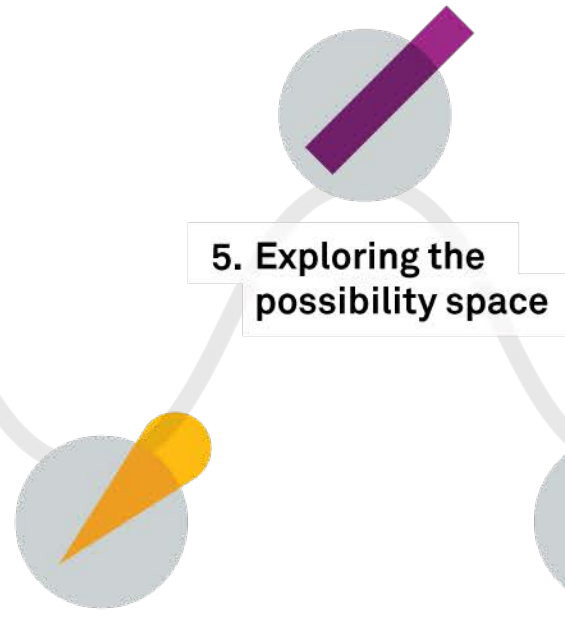
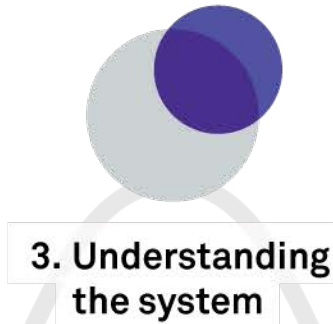
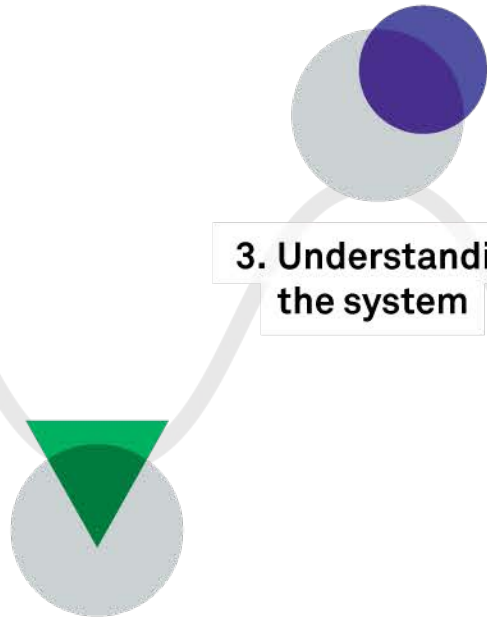
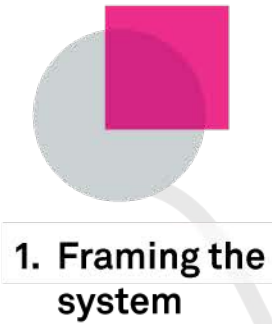
- No need for the participants to master the vast underlying principles of **systems thinking** and **human-centred design**





The toolkit in the design process

Systems thinking
infused with
design thinking



Design thinking
infused with
systems thinking

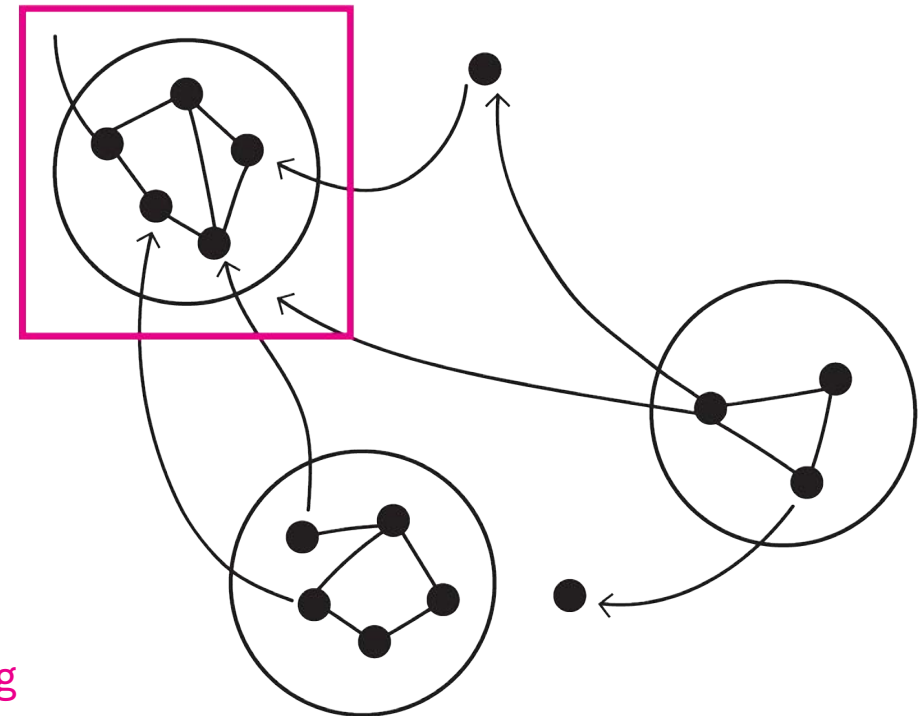


Step 1

Framing the system

- Defining the initial **boundaries**
- Understanding the **necessity for change**
- Identifying the actual and future **stakeholders**
- Identifying the **emerging initiatives**
(new ways of doing)

Tools & techniques: boundary judgement, rich context, emerging initiatives, stakeholders map, stakeholders management



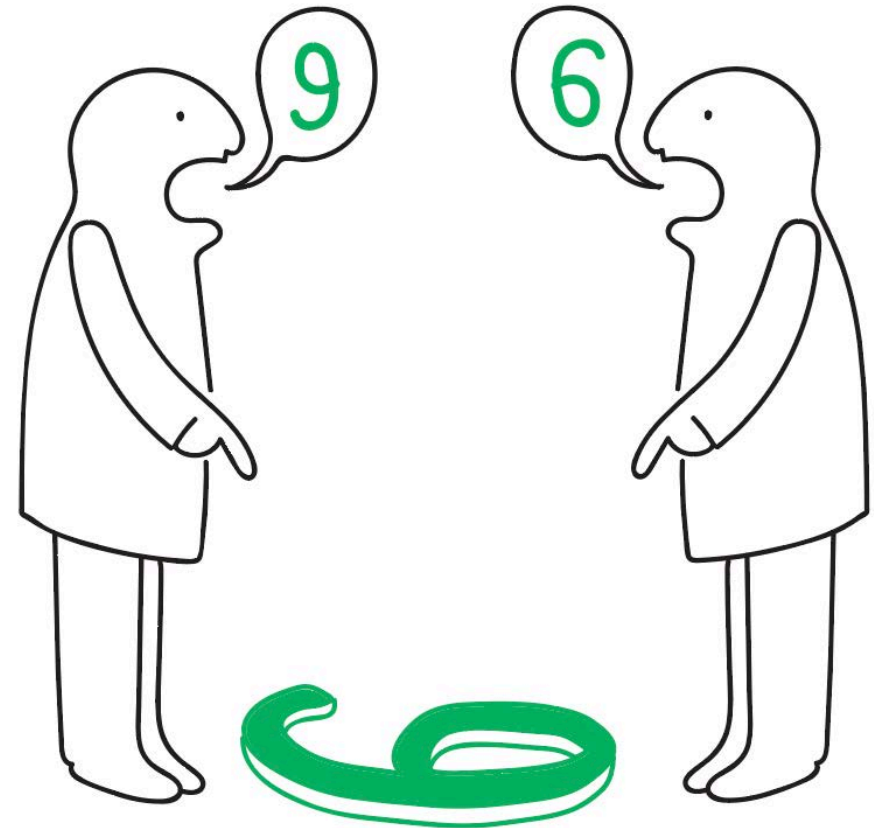


Step 2

Listening to the system

- Understanding the different **perspectives**
- Identifying the **factors** contributing to the current practise
- Questioning the **dynamics** over time

Tools & techniques: CLA research questions, experience interview, metaphors, actants, socio-ecological model

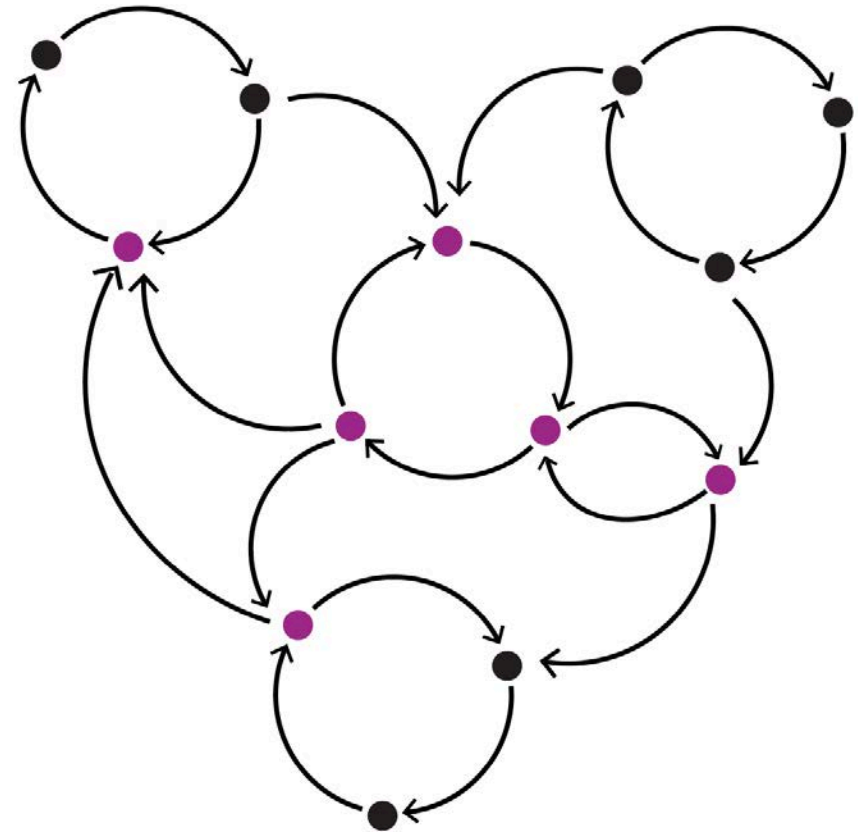




Step 3

Understanding the system

- Analysing and visualising how the factors of the system **influence** each other
- Converging on “where” interventions are needed to activate change in the system (**leverage points**)



Tools & techniques: archetypes, system map, leverage points

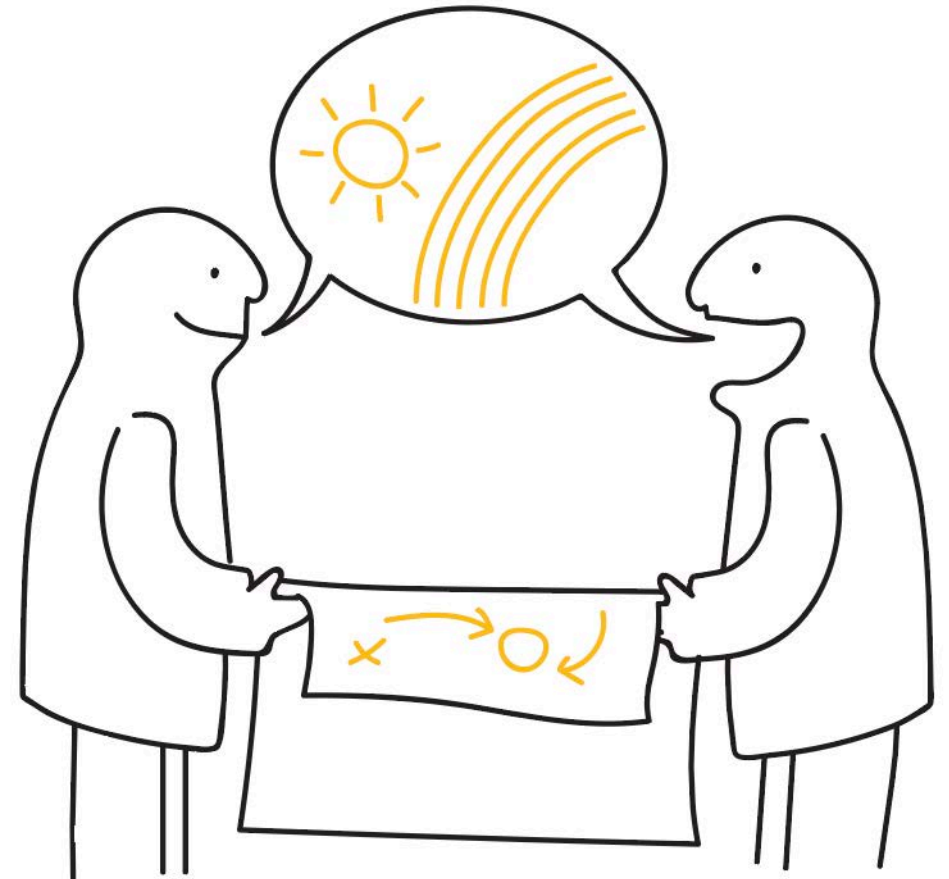


Step 4

Defining the desired future

- Aligning the stakeholders on the **vision** for the future
- Making explicit the **intended value** creation
- Predicting **possible futures** according to which the system might adapt over time

Tools & techniques: ideal future, value proposition, future state scenarios





Step 5

Exploring the intervention space

- Exploring **intervention strategies**
- **Building upon** emerging initiatives
- Working with the **power of paradoxes**
- Ideating through **scenarios**

Tools & techniques: intervention strategy, paradoxical ideation



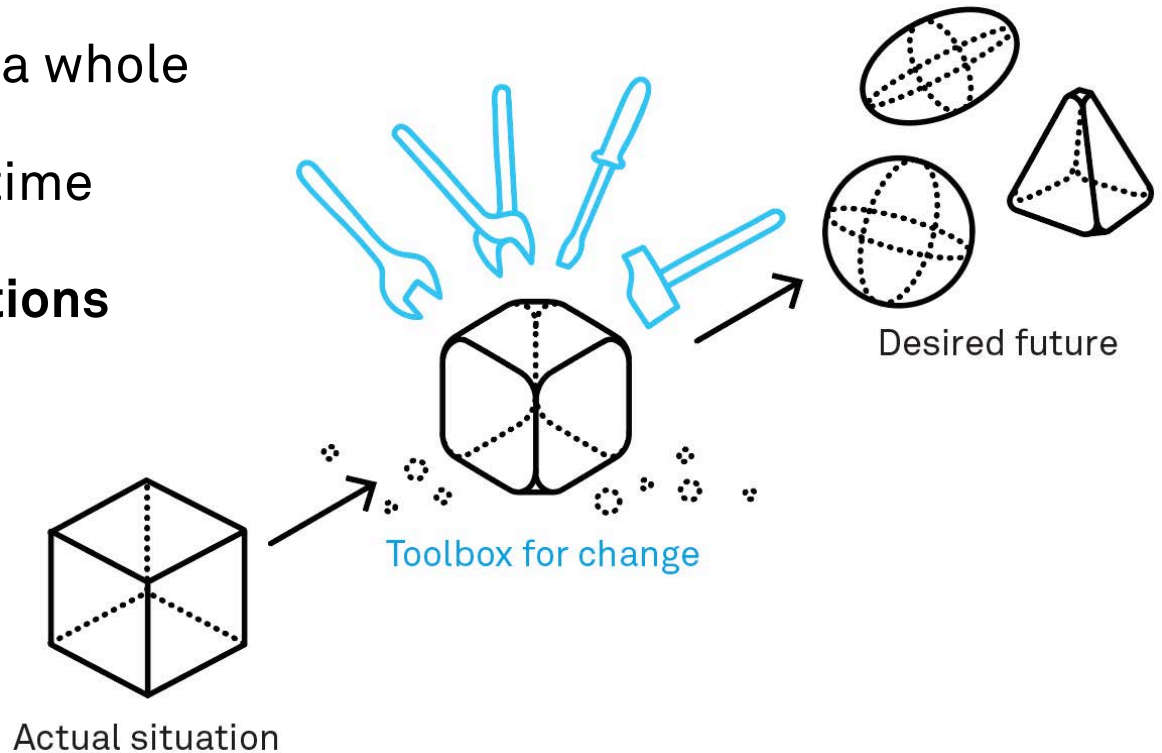


Step 6

Designing the intervention model

- Visualising the different **interventions**, as a whole
- Elaborating on the **variety** in context and time
- Collaborating on the **non-design interventions**
- Designing tangible and intangible **artefacts to support the change**

Tools & techniques: generic and contextual intervention models, collaboration model

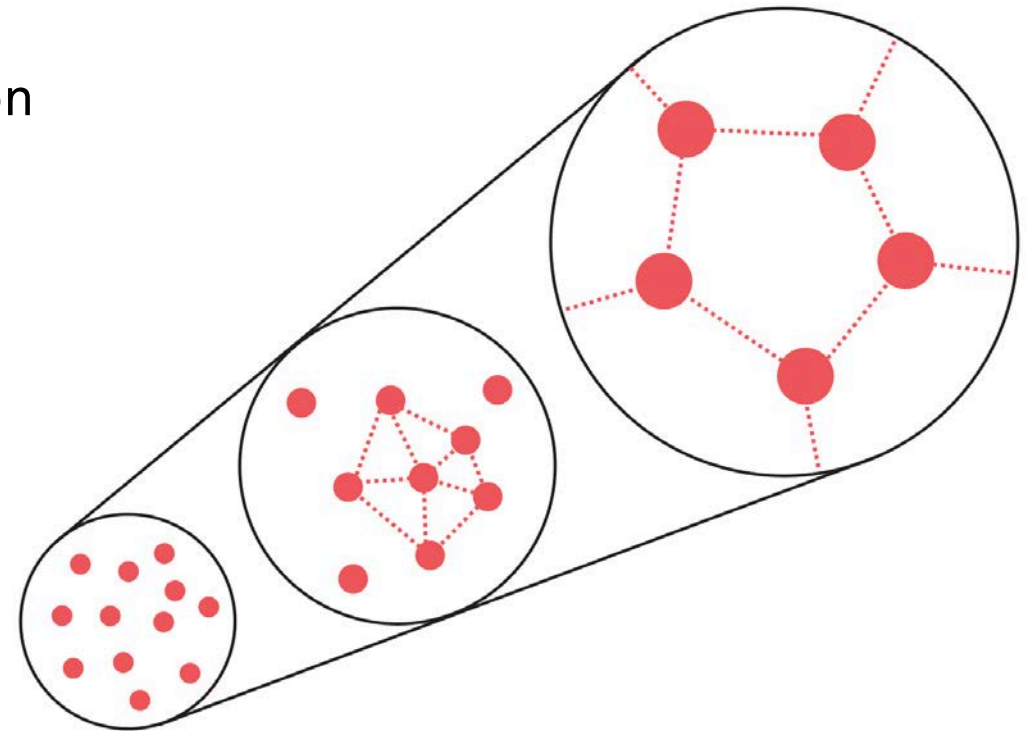




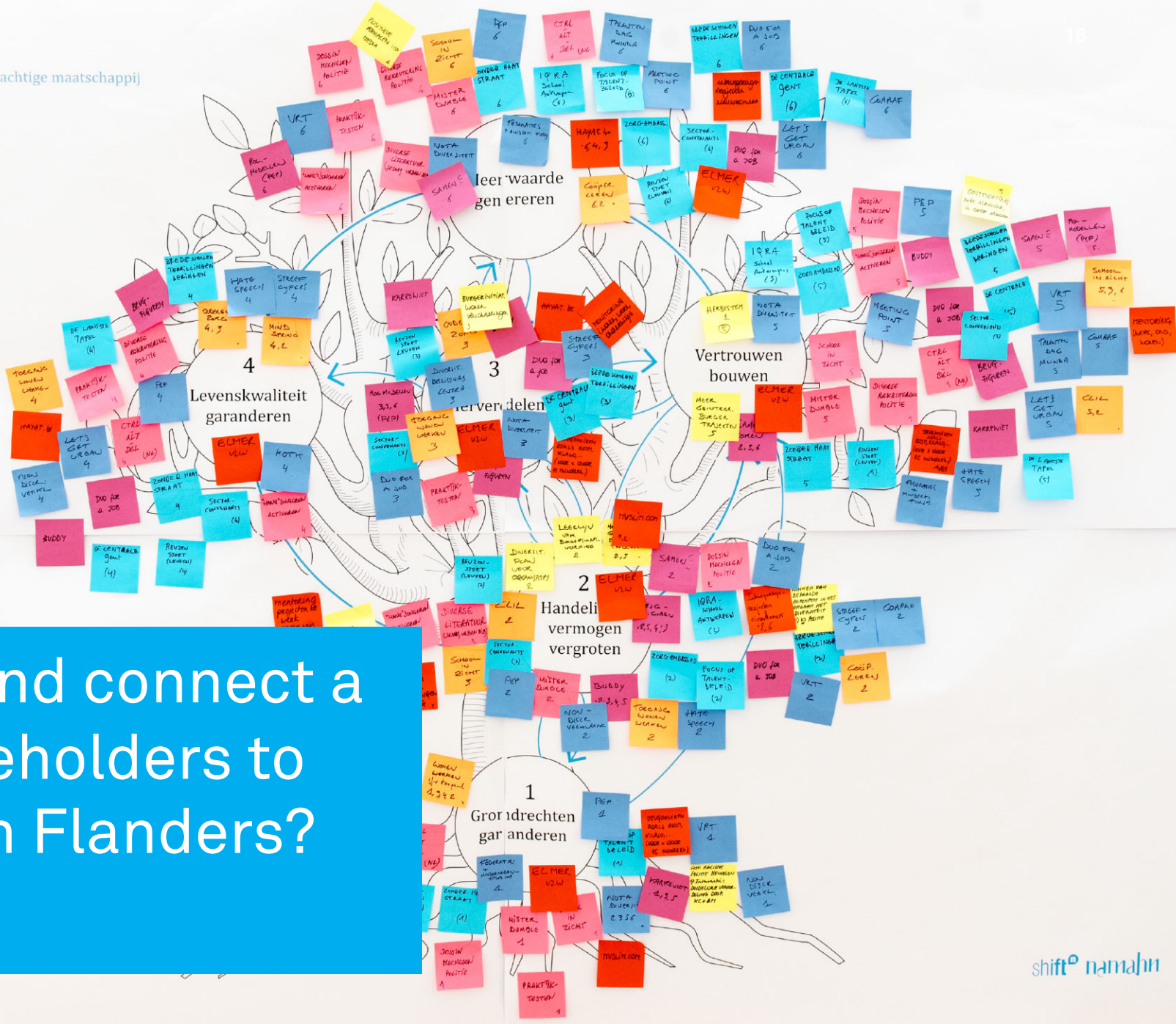
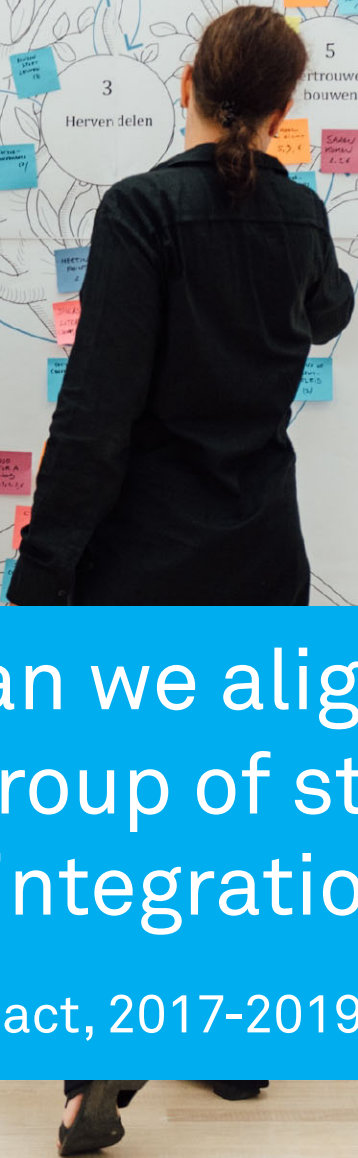
Step 7

Fostering the transition

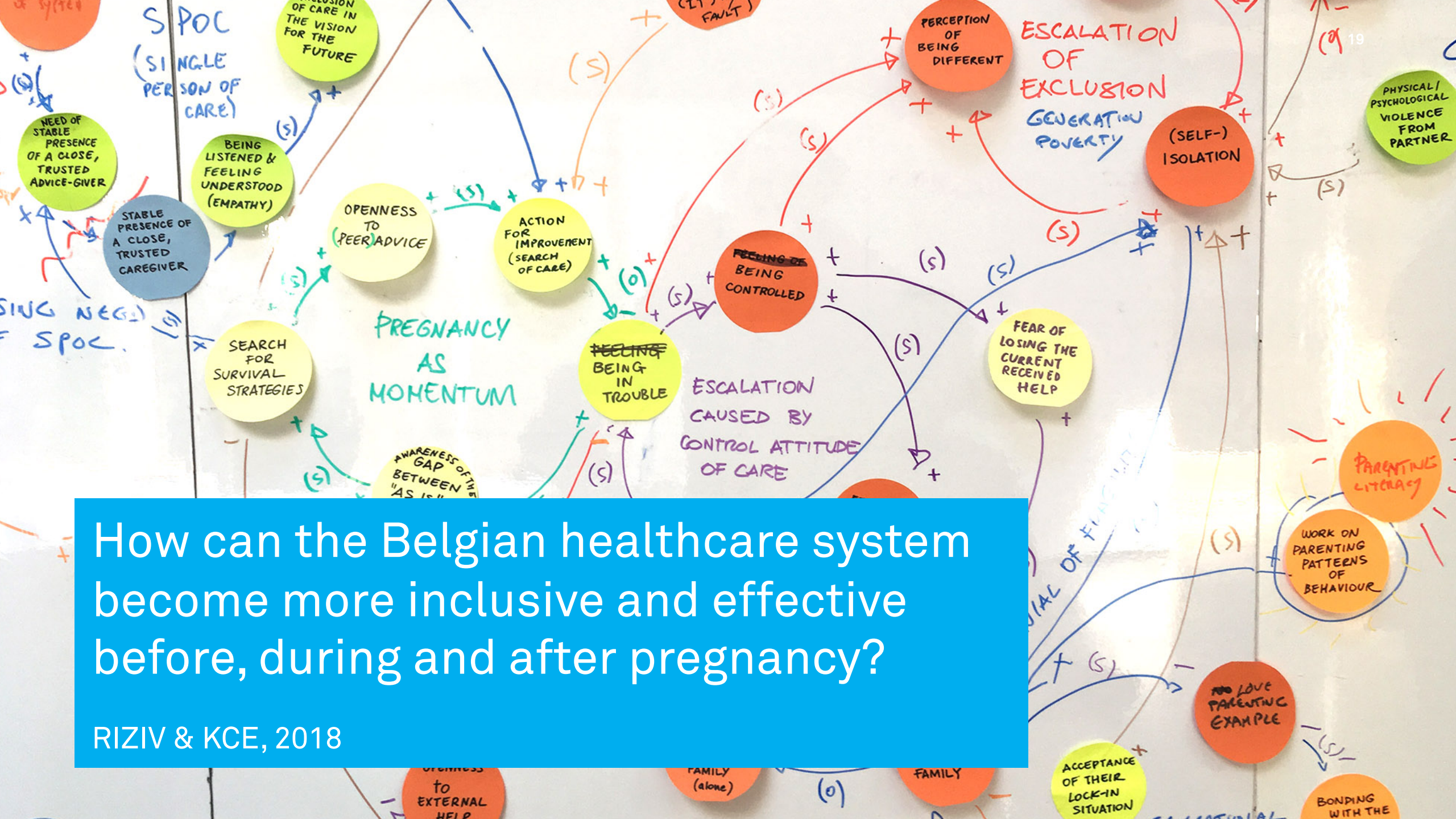
- Defining the condition to allow the intervention strategy to **scale over time**
- Formalizing strategies to **fade out the current system**
- Planning how the impact can be measured and used in the short, mid and long-term



Tools & techniques: transition by design, 3 horizons, panarchy, future language, maturity model



How can we align and connect a large group of stakeholders to foster integration in Flanders?
 Integratiepact, 2017-2019

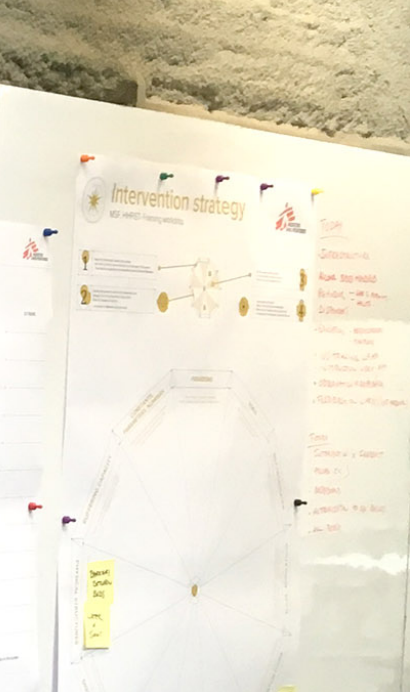
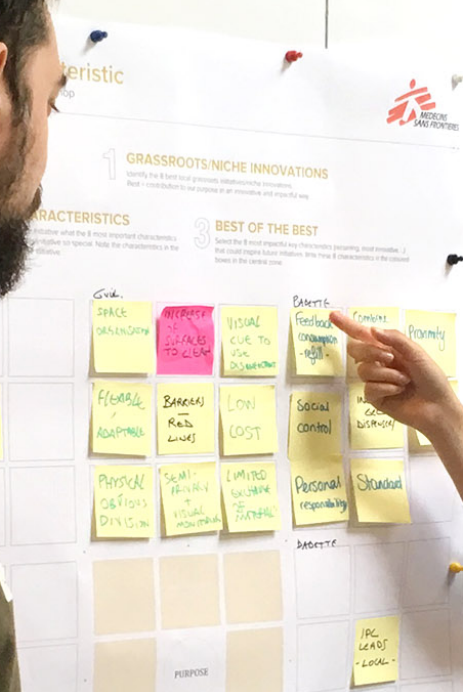


How can the Belgian healthcare system become more inclusive and effective before, during and after pregnancy?

RIZIV & KCE, 2018



How can MSF foster hand-hygiene awareness and behaviour in the field hospitals worldwide?
 MSF (Doctors Without Borders), 2018



A man in a white shirt is standing in the center of a meeting room, holding a microphone and pointing towards a flipchart. He is addressing a group of people seated around a long table. The room has large windows and several whiteboards. One whiteboard on the left shows a diagram with arrows. Another whiteboard on the right has a photo and some text. The audience consists of men and women of various ages, some looking at the presenter, others at their phones or papers. The overall atmosphere is professional and collaborative.

How can a European network
change its culture and way of
working to become more client-
centric and effective?

EASME (European Commission), 2018

Exploring the toolkit

Today's case

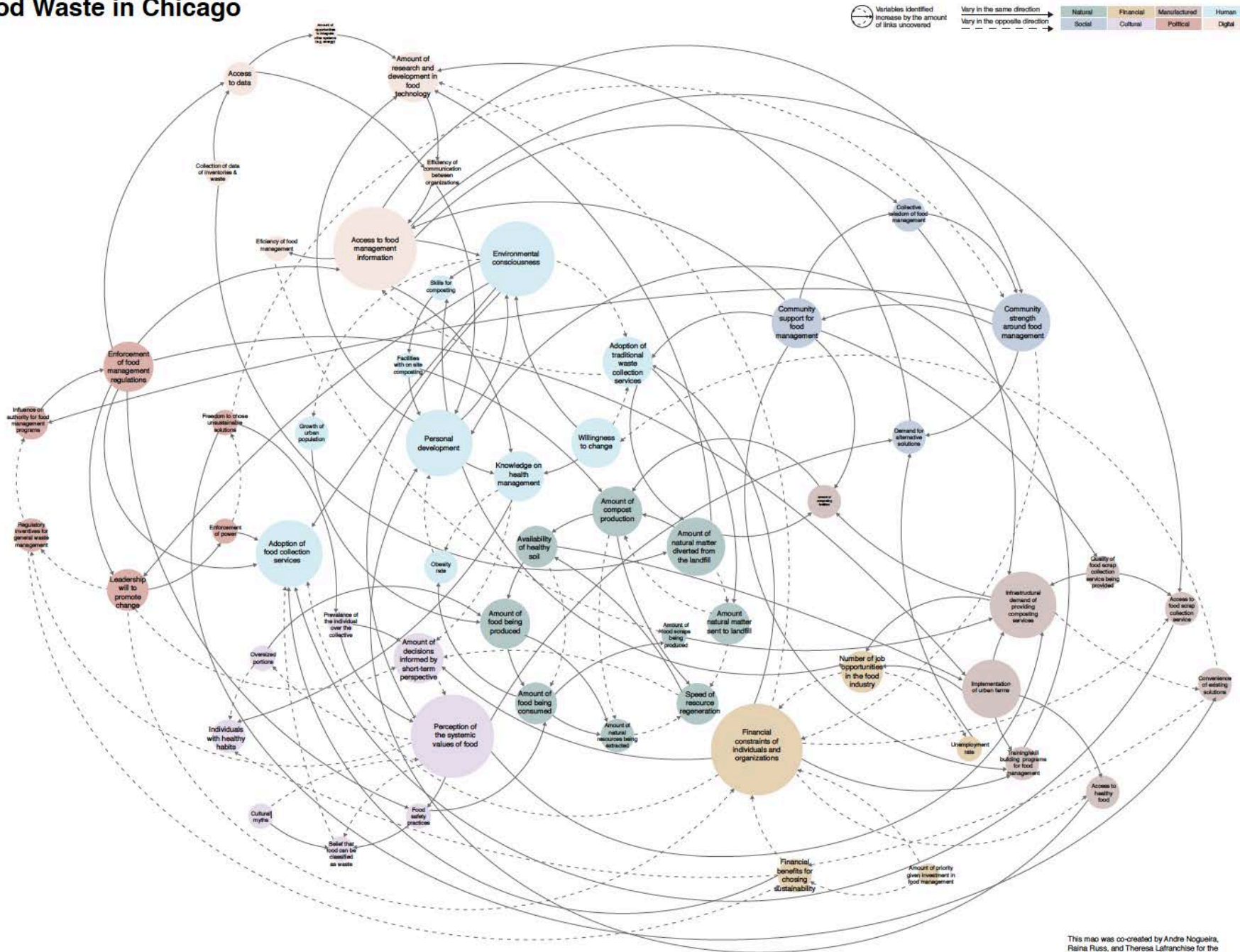




Food waste as a critical path for co-designing sustainable food systems in Chicago

Today's challenge: How can we make the food system more sustainable?

System dynamics Food Waste in Chicago



This map was co-created by Andre Nogueira, Raina Russ, and Theresa Lafranchise for the Bam!Raise 2017 at the IIT-Institute of Design

Social Tensions

Long term impact – Short term convenience

There is tension between the convenience of everyday life and the long term impact of daily choices. Currently, **individuals are protected from the systemic impact they are generating.** Wasting food is very easy, and the long-term effects are unclear and often unconsidered.

Collective responsibility – Individual will

Food waste is a communal challenge. There is a tension between collective responsibility and individual will when it comes to managing food. Without explicit recognition of the value of food, sustainable solutions rely on individuals being knowledgeable and proactive.

Opportunity of growth – Concentration of wealth

There is tension in the system between concentrated wealth and opportunity of growth. Under reinforcing conditions, wealth concentration in the City of Chicago limits access to the benefits of others, including access to healthy food. **When communities have access to healthy food, there is a greater opportunity for growth** and thriving communities can be created.

Recognition of value – Wasteful thinking

There is a tension between what we perceive as valuable and what we classify as waste. Humans take, make, consume, and dispose of what is thought to be no longer valuable. **The moment food is classified as waste, it loses its value in the linear food and waste chains.**

Good Food Purchasing Policy

Local Economies

Support local family-and cooperatively owned, small and midsize agricultural and food processing operations.

Environmental Sustainability

Source from producers that practice sustainable or regenerative agriculture and protect natural resources.

Valued Workforce

Source from producers and vendors providing safe and healthy working conditions and fair compensation.

Nutrition

Make minimally processed, health promoting foods more available; reduce ingredients such as added sugars and saturated fat.

Animal Welfare

Source from producers that provide healthy and humane conditions for farm animals.



Food waste in Chicago

Why is this a problem?



The world generates
2.6 trillion lbs
of garbage in one year. ¹

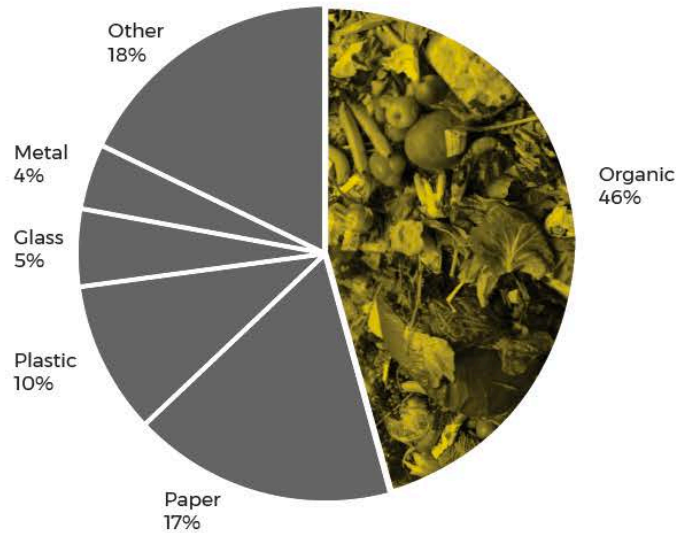


Chicago generates
1.6 billion lbs
of garbage in one year. ²

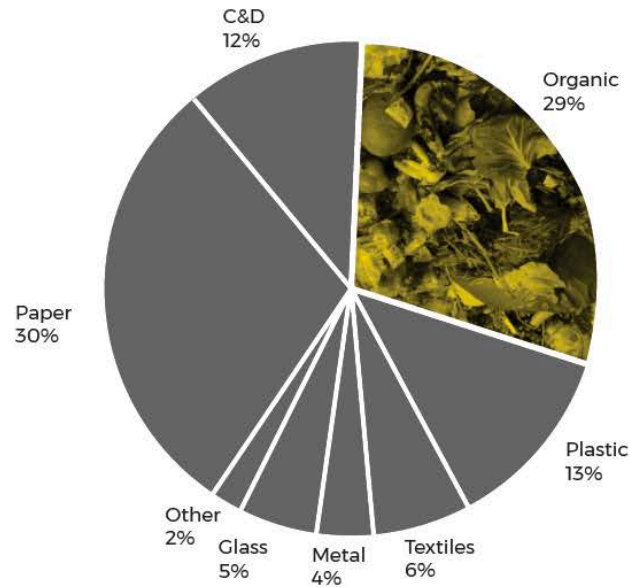


This is the equivalent weight to
20,000 filled semi-trucks

Worldwide composition of waste ¹



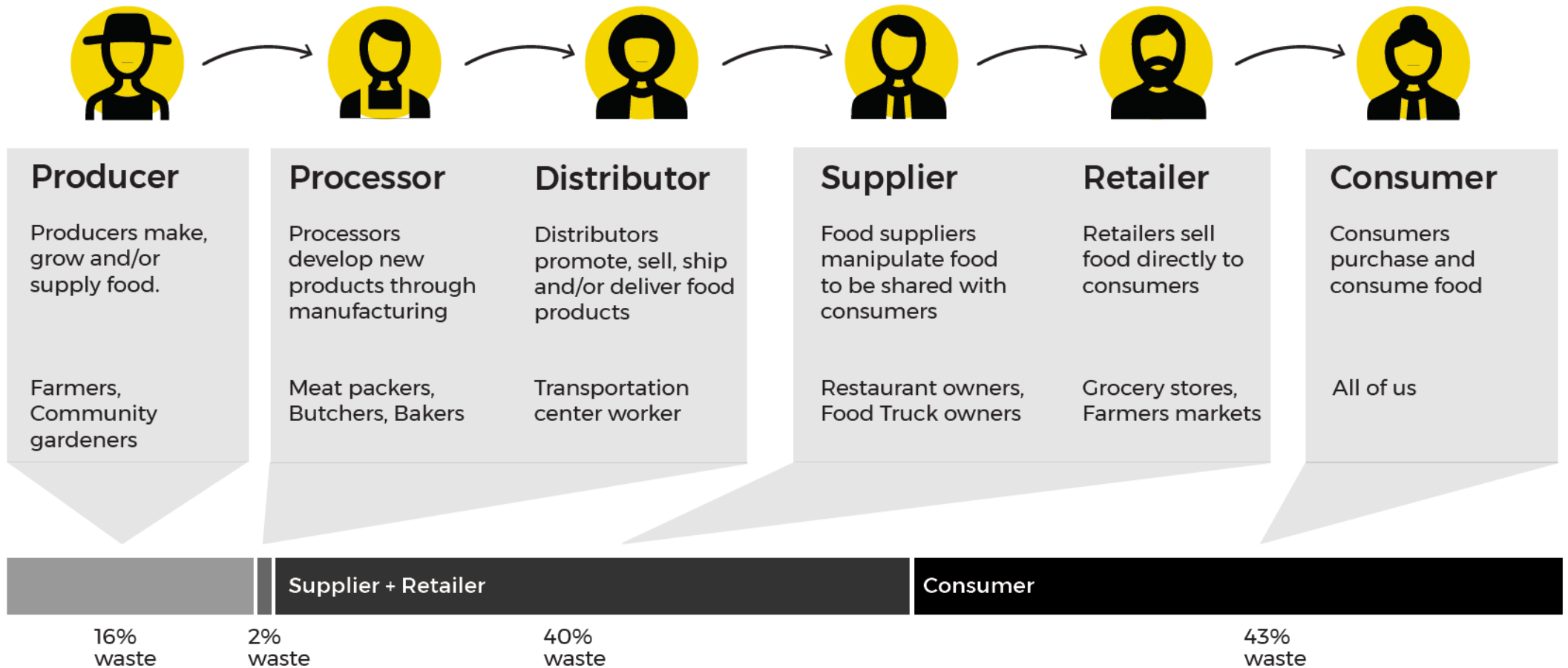
Chicago composition of waste ³





Food waste in Chicago

Waste per step in the supply chain





Food waste in Chicago

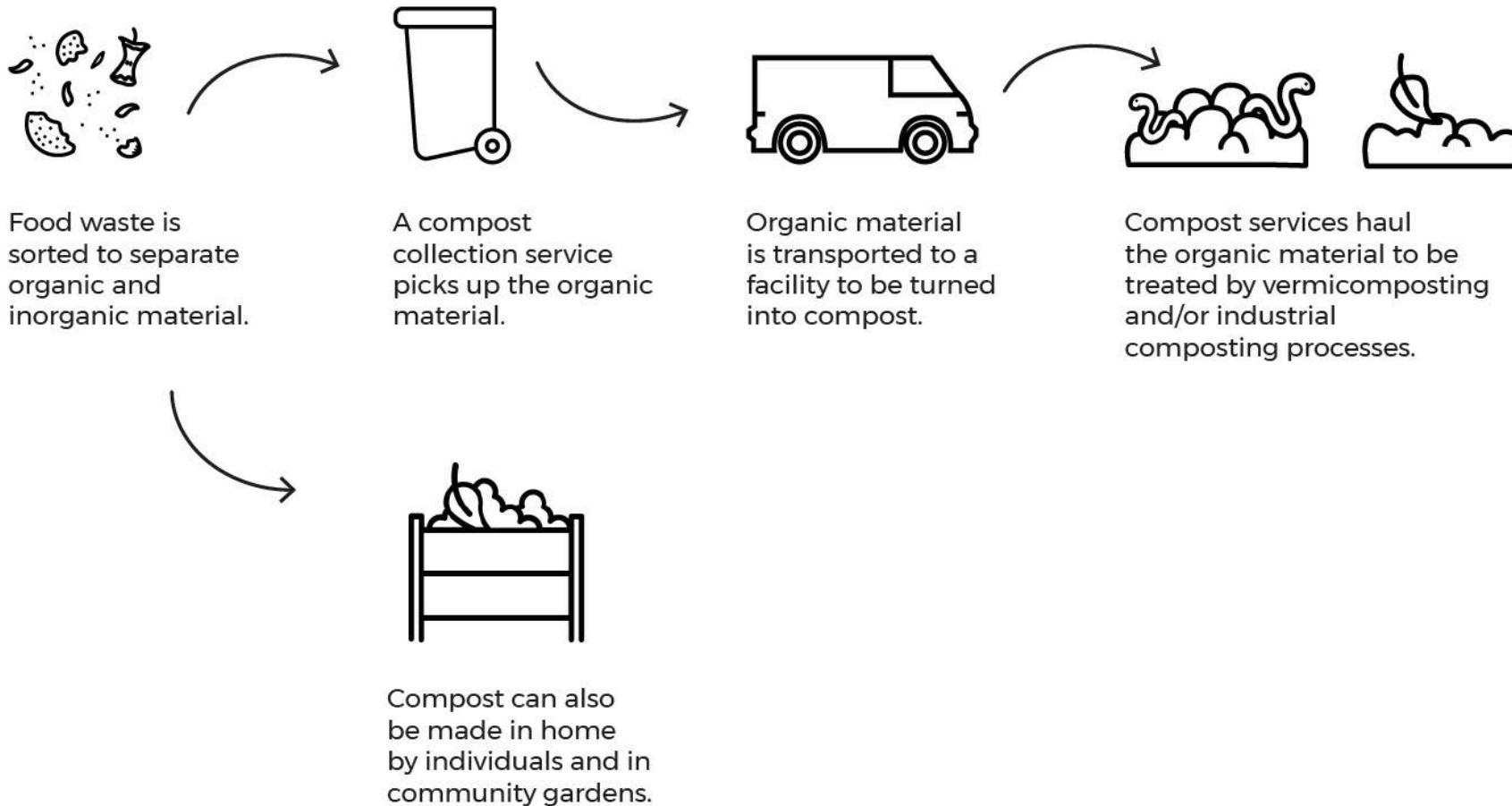
The dominant waste journey





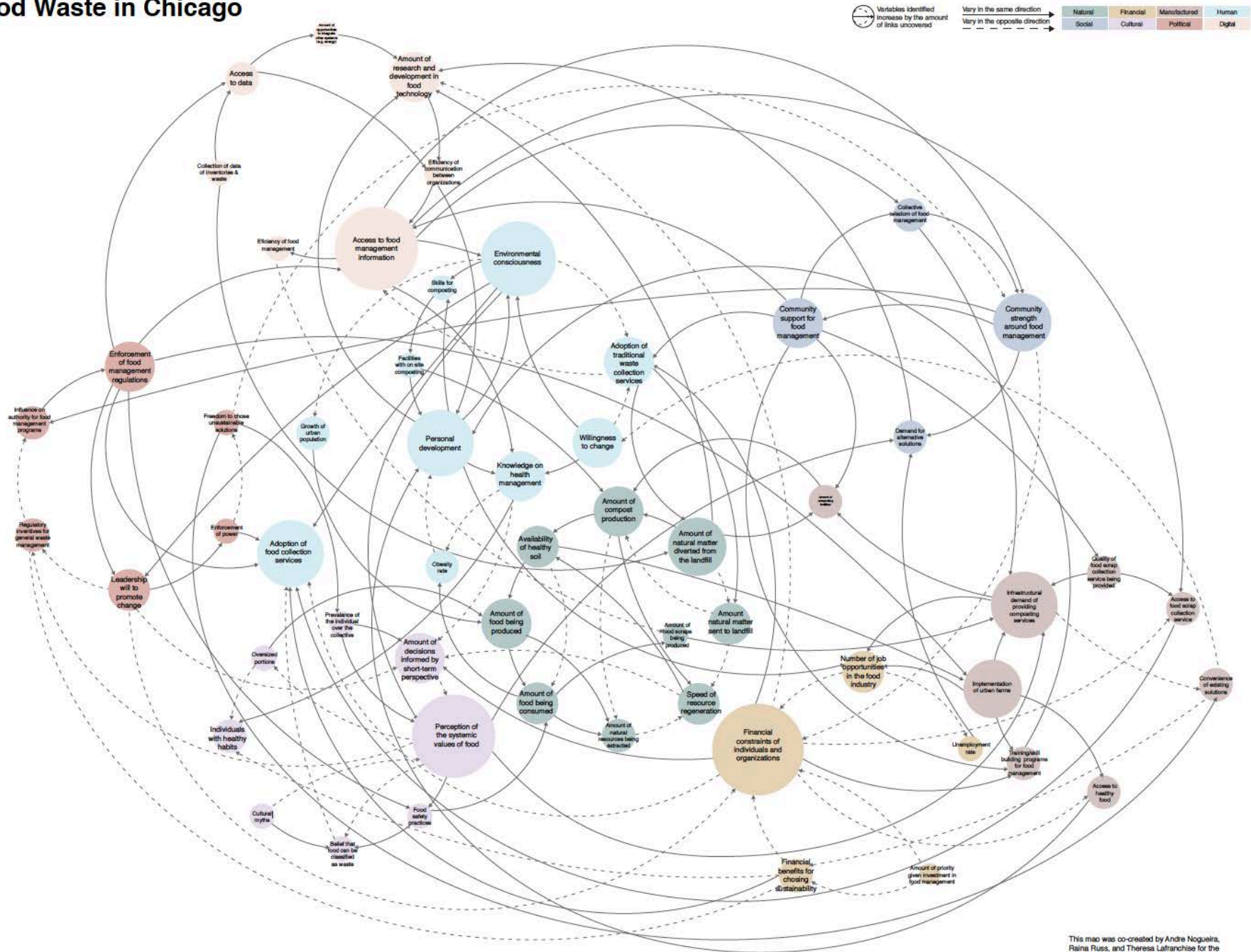
Food waste in Chicago

Emerging alternative journey



System dynamics

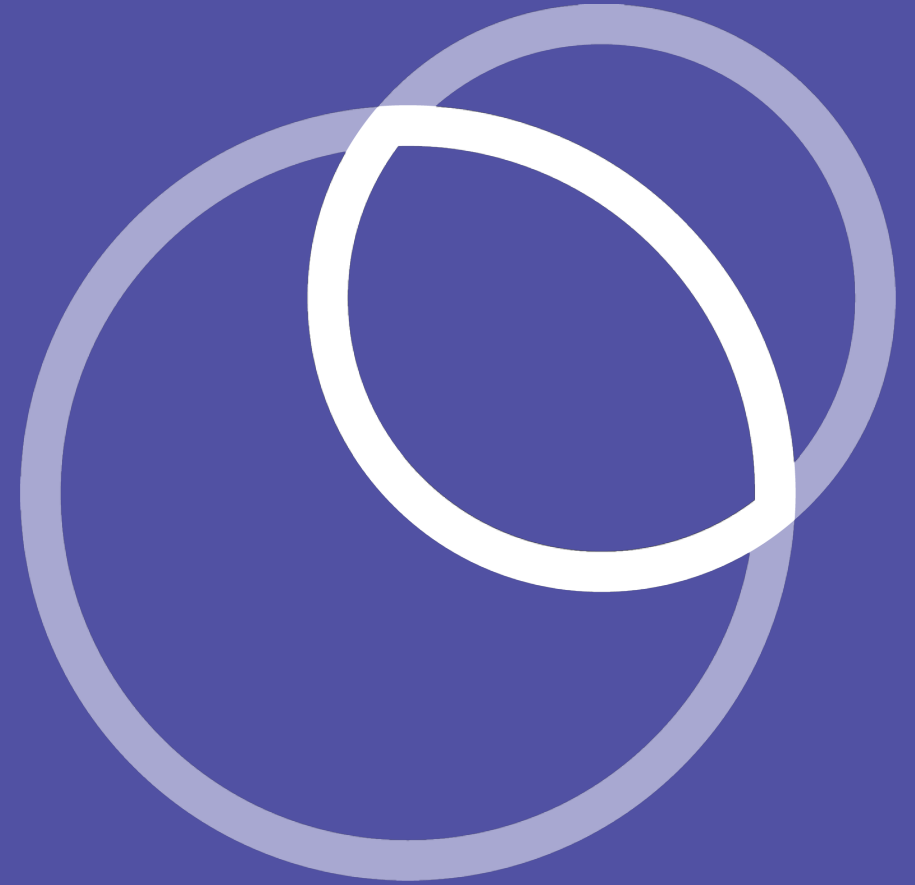
Food Waste in Chicago



This map was co-created by Andre Nogueira, Raina Russ, and Theresa Lafranchise for the BamRaize 2017 at the IIT-Institute of Design

Leverage points

Step 1





Understanding the system

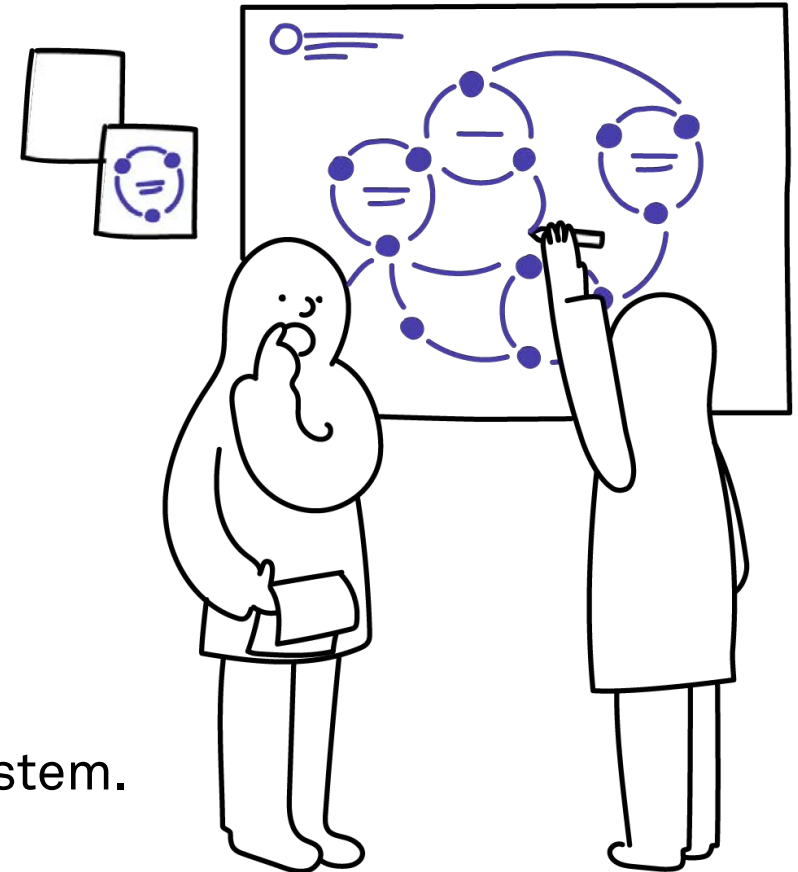
System map

A system map is a technique for **visualising the system**, its structure and the interrelations between its elements.

Why

System mapping helps to:

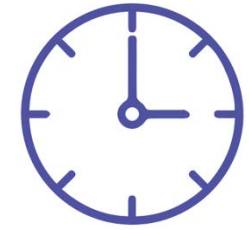
- Develop shared understanding about the contributing factors and interdependencies in the system;
- Discover the leverage points and leverage loops in the system.





Understanding the system

Identifying the leverage points

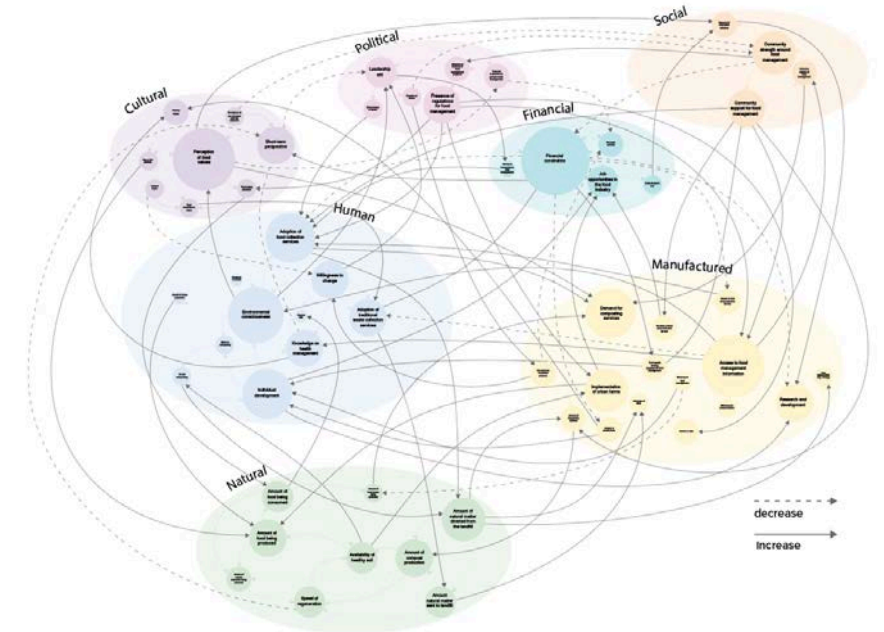


15 minutes

In your group

Start from the system map and investigate the variables and relations.

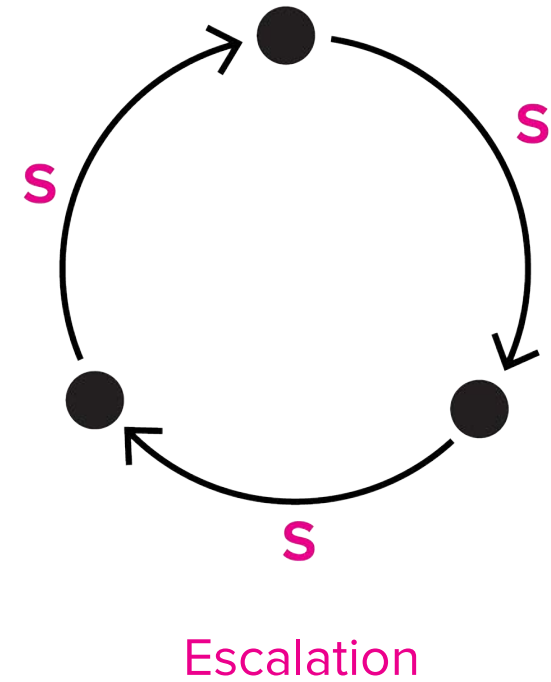
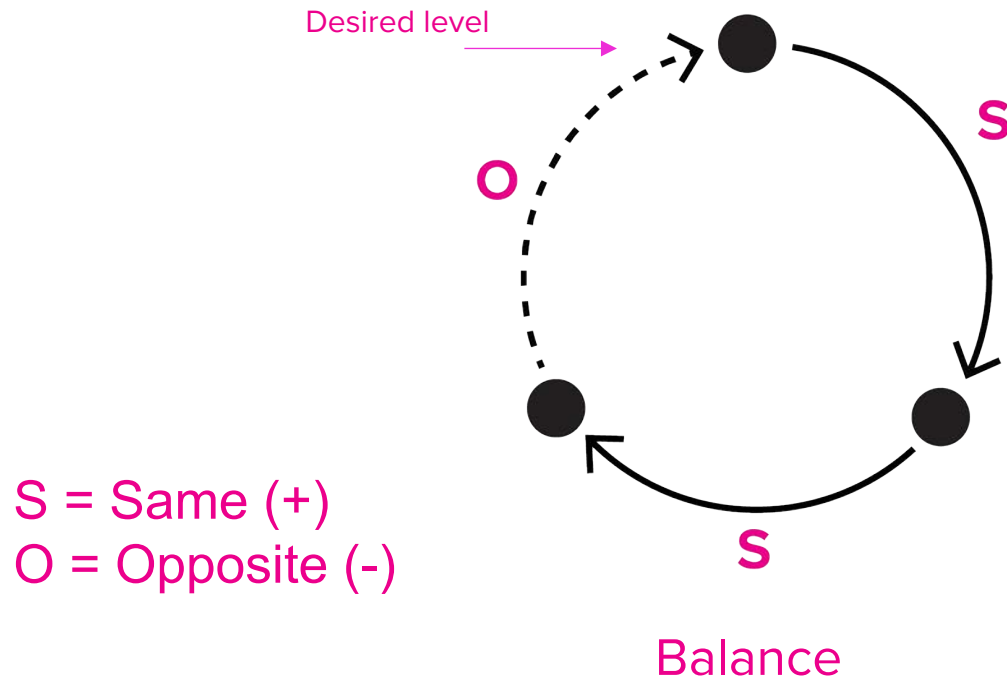
- What are the most promising places in the system's structure where a small shift in one thing can produce big changes?
 - Which factors are highly blocking (most arrows in)?
 - Which factors are highly driving (most arrows out)?
 - What are the reinforcing and balancing loops?
- In which leverage points you can intervene by Design?





Understanding the system

Loops



Intervention strategy

Step 2





Exploring the possibility space

Intervention strategy

Exploring different possible future concepts (future-state scenario's) and from there, envisioning the **intervention strategy**.

Why

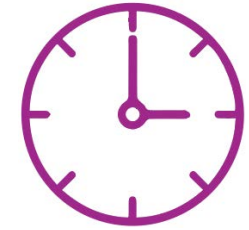
Finding out which elements can make the system shift, even with only small interventions (system acupuncture).





Designing the intervention model

Intervention strategy ideation

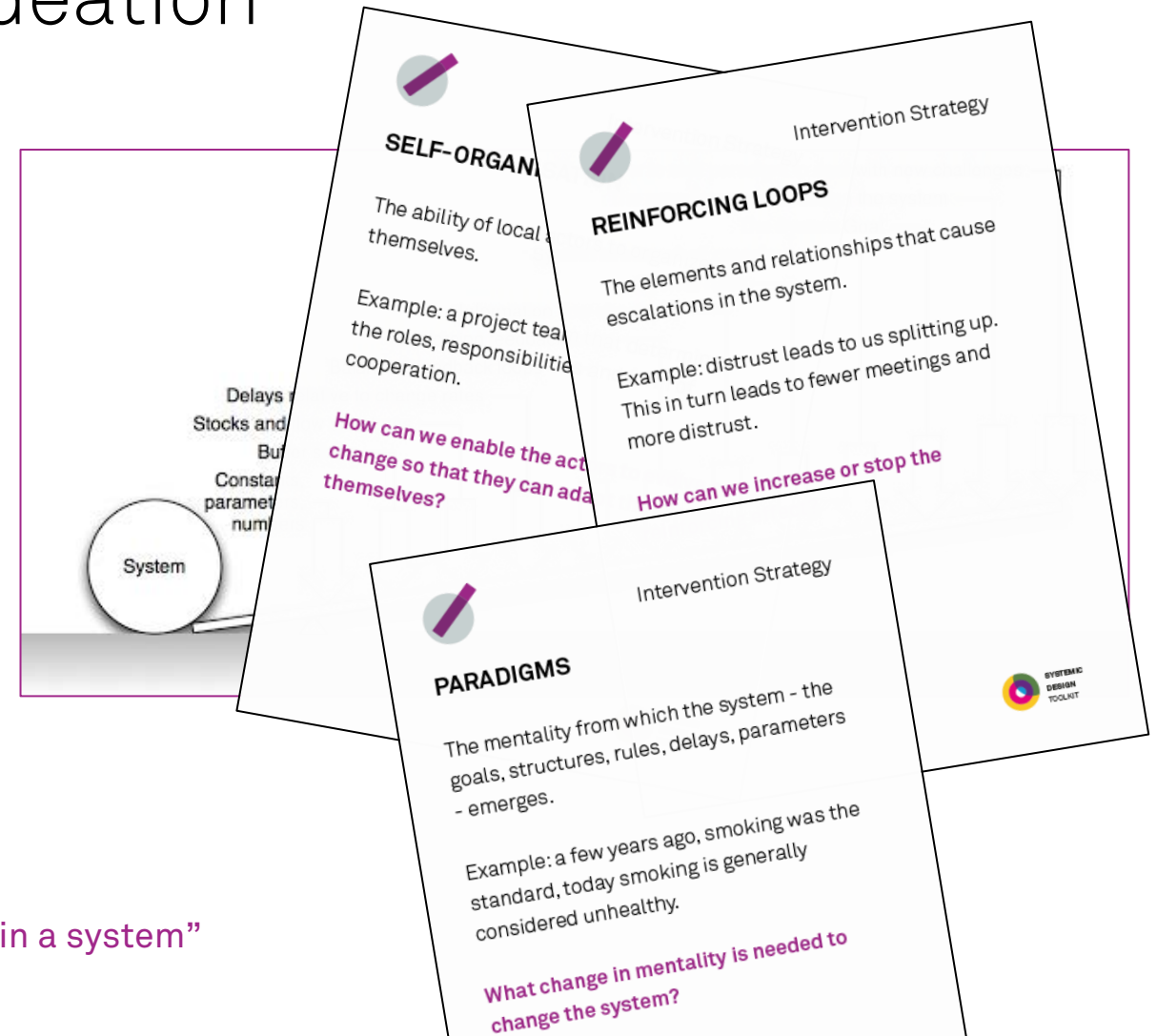


20 minutes

In your group

Use the intervention strategy cards to ideate about ways to intervene in the current system.

- How can you **enhance the drivers and clear the blockers?**
- How can you **stop or enhance the reinforcing and balancing loops?**



Inspired by D. Meadows – “Leverage Points: places to intervene in a system”

Generic intervention model

Step 3





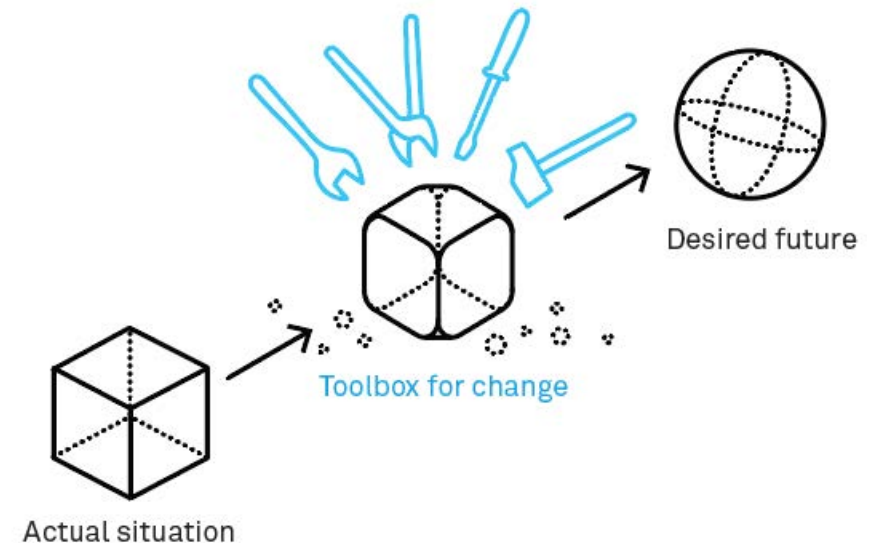
Designing the intervention model

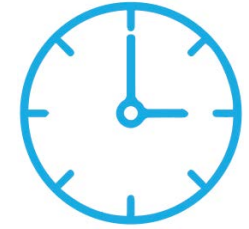
Generic intervention model

The intervention model represents the core **DNA of change** within the system; it contains the formative principles that will enable change in the new system.

Why

To envision an effective strategy for change, it is necessary to look at how interventions **connect and reinforce each other**.





25 minutes

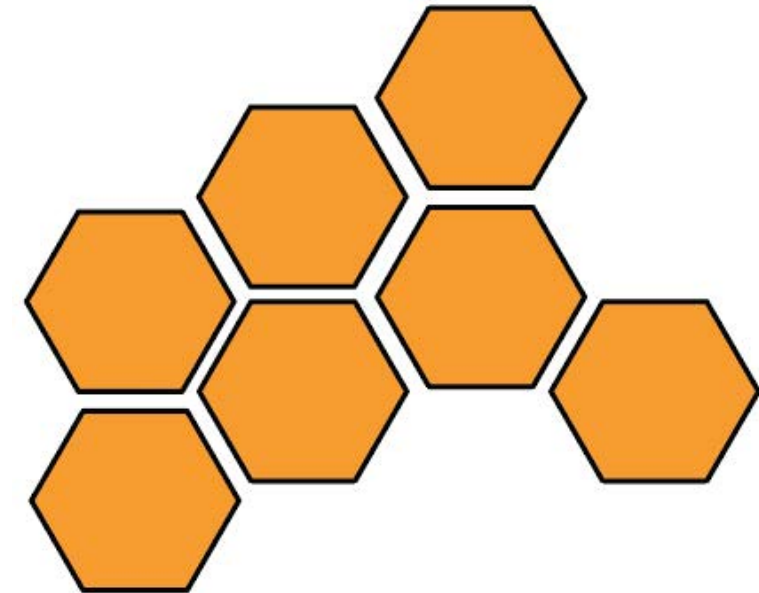


Designing the intervention model

Intervention model

In your group

- Review your ideas and translate them into **activities**.
- Transcribe them on the orange hexagon post-its
Use the hexagons to **connect your ideas**.
- Enhance the activities: how can the activities **enable** or **reinforce** each other?





Designing the intervention model

Additional tools

Feel free to use:

- Paradox cards
- Patterns of human behavior cards



Contextual intervention model

Step 4





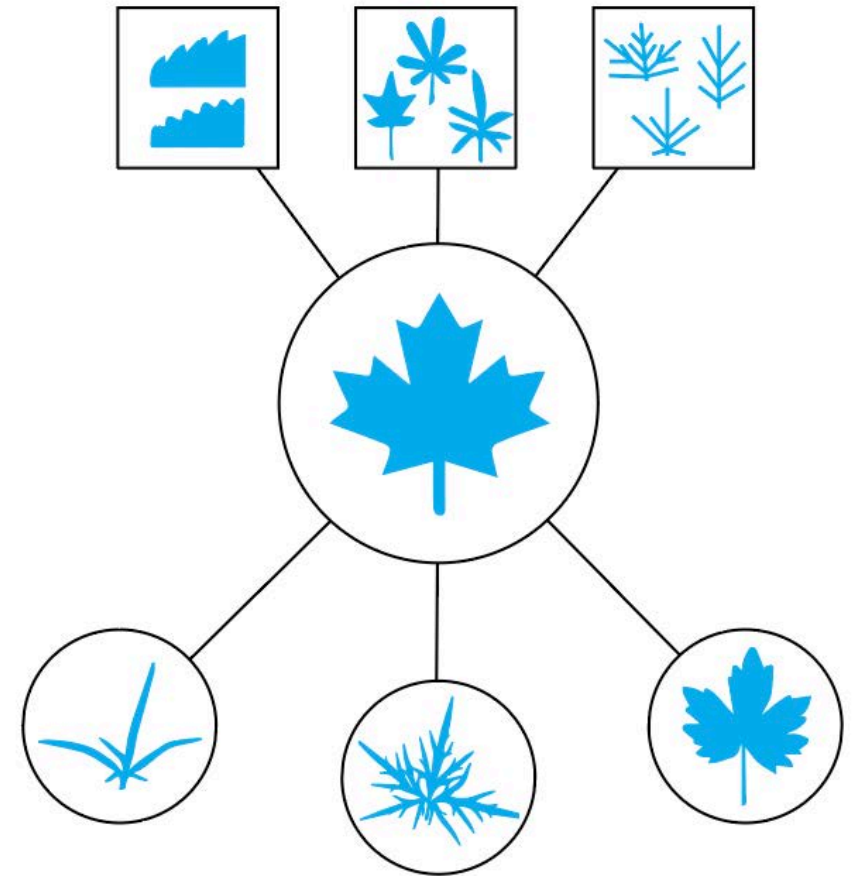
Designing the intervention model

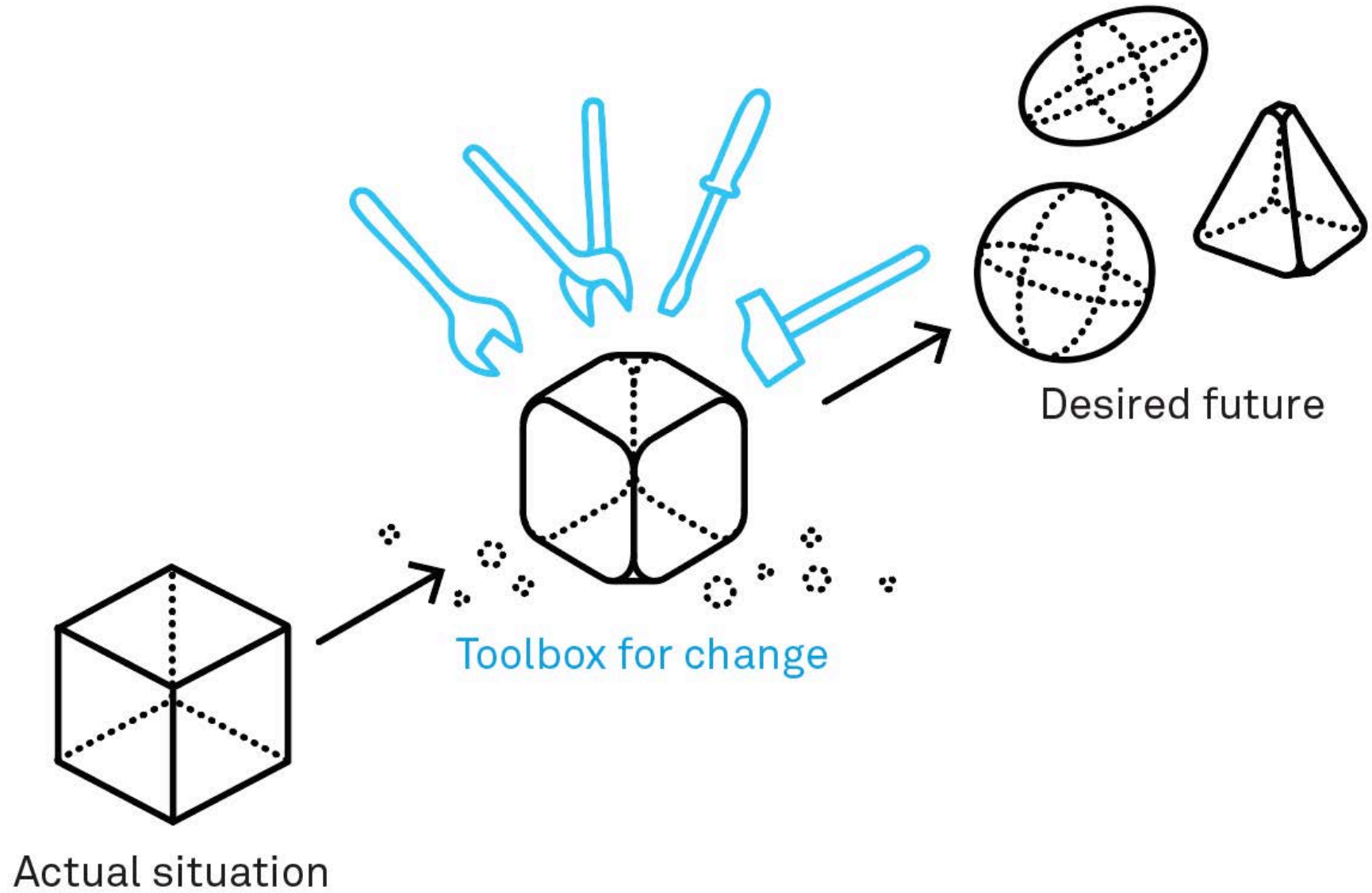
Contextual intervention model

The contextual intervention model brings requisite variety into the intervention mix. It allows the system to adapt in space and time.

Why

You want the system to be self-adaptive and resilient.

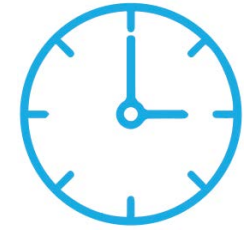






Designing the intervention model

Contextual intervention model



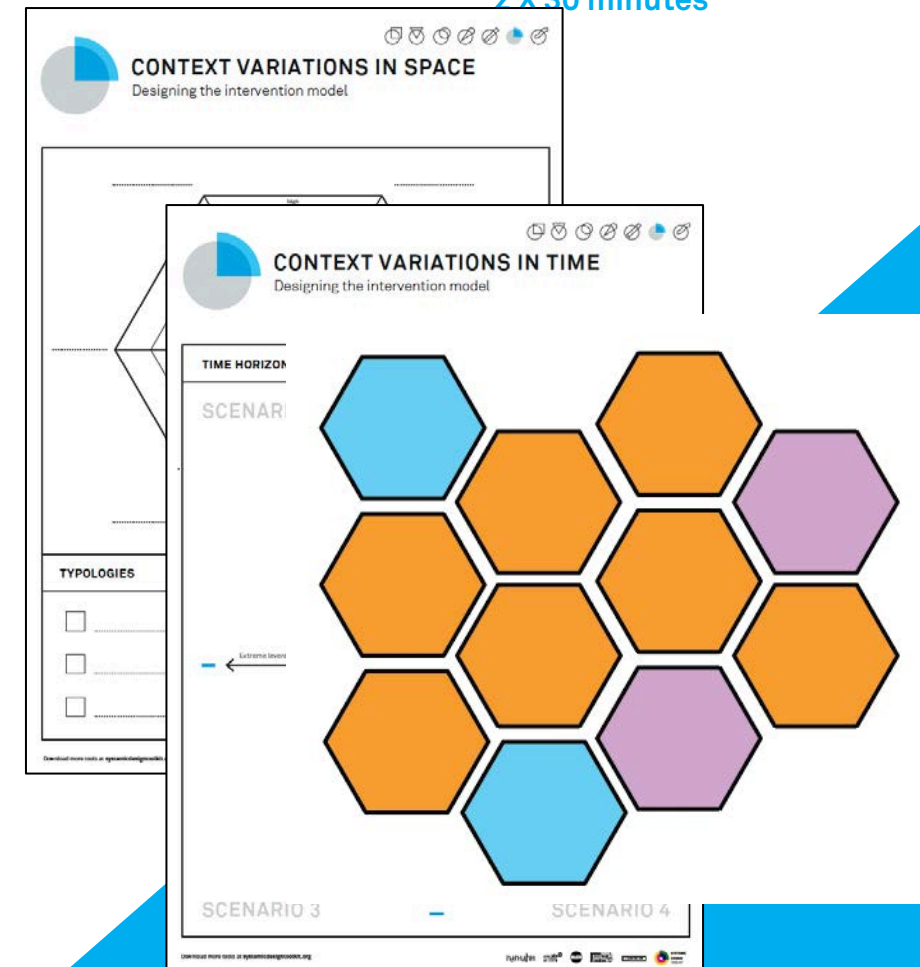
2 X 30 minutes

Plenary

Define the dimensions (space) and uncertain leverage points (time).

In your group

- Review your model and make at least 2 variations.
- A/B testing: $\frac{1}{2}$ of the groups start with space variation (add blue hexagons), $\frac{1}{2}$ of the groups start with time variation (add purple hexagons)







South Loop, Chicago - Population: 33,309 | 2.308 square miles

South Loop, Chicago - Population: 33,309 | 2.308 square miles

Post-Industrial Legacy: empty land open for redevelopment

Density: Most of the residential buildings are high-rises built in the last 30 years, luxury buildings.

Institutions: Museum Campus with the Field Museum, Aquarium, Planetarium, Soldier Field, Grant Park, and McCormick Place Convention Center, schools, and hotels.

Access to food: large grocery stores, small Bars and cafes, local markets, corner stores, and a variety of restaurant options.

Population: Majority Americans – 1.5% don't speak English. 70% of the total population is: between 20 and 65 years old with a bachelor diploma, white collar workers making on average 98.5K/year.



Back of the Yards, Chicago - Population: 58,889 | 4.145 square miles

Back of the Yards, Chicago - Population: 58,889 | 4.145 square miles

Post-Industrial Legacy: large abandoned buildings

Density: Most of the residential buildings are 2-3 levels

Institutions: Several schools and Community-Based Organizations, large and small industrial activities, large container storage areas.

Access to food: Small community-gardens, small markets, small amount of restaurants, and corner stores

Population: Majority Latinex - 20% don't speak English. 50% of the total population is: below 30 years old without a high school diploma, blue collar workers making less than 30K/year.

Presentation and discussion





Presentation and discussion

Each group presents (XX minutes)

- Briefly, the intervention models
- What is new/different from current practice?
- What was easy/difficult?
- How will you apply this in your practice tomorrow?
- How could this workshop be improved?

Download the tools on
systemicdesigntoolkit.org

#systemicdesigntoolkit

