



Multispecies Sustainability

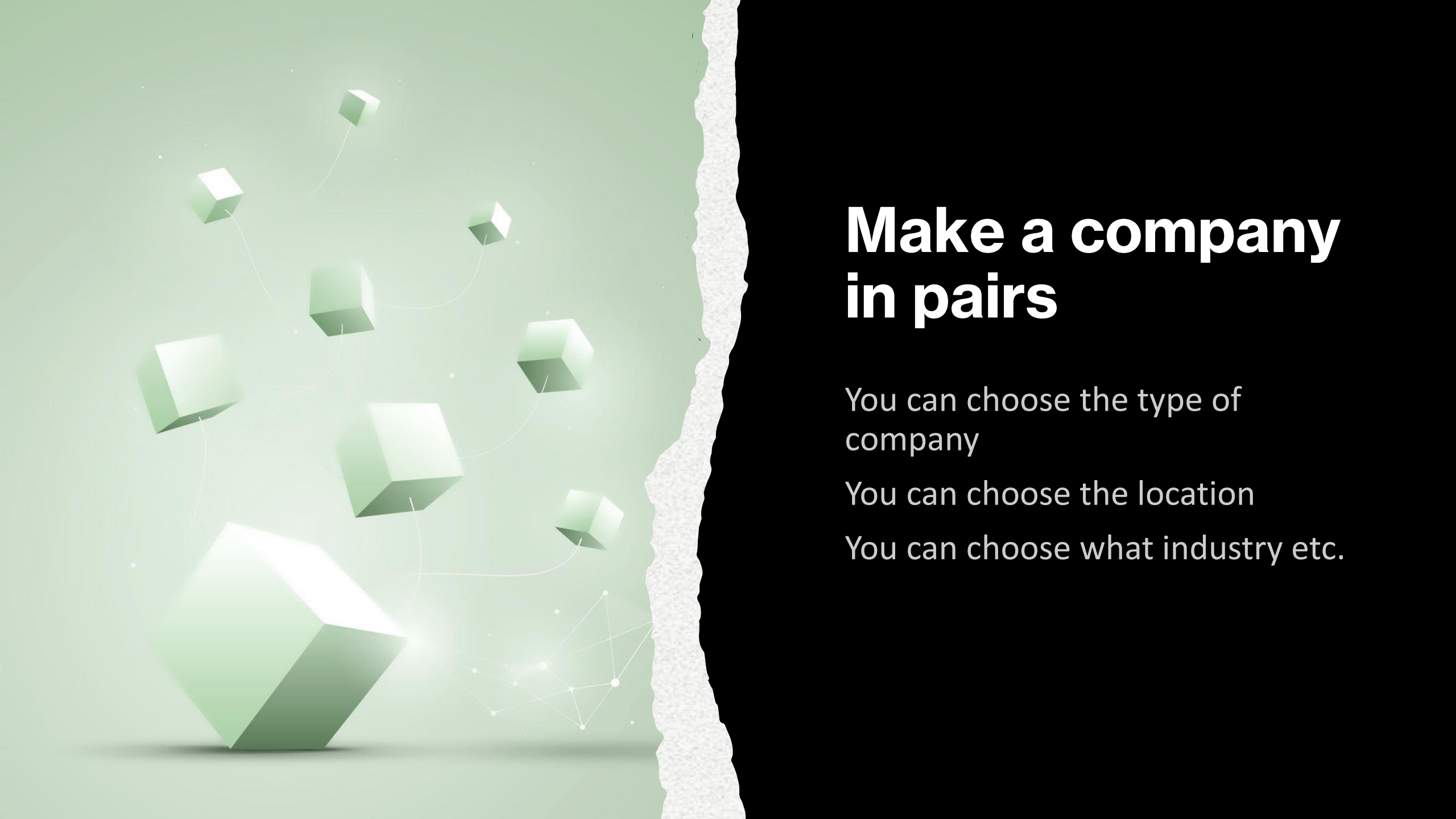


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Icebreaker:

- **Read the following article:**

[For the sake of the planet we need to rethink human-centred design – Sydney Business Insights \(SBI\)](#)



Make a company in pairs

You can choose the type of
company

You can choose the location

You can choose what industry etc.

Lecture Outline

- **Non-human and non-user personas**
- **Researching the Non-human and non-user (Activity)**
- **Multispecies Sustainability (paper discussion)**

What are ecosystem services?

- *“the benefits people obtain from ecosystems”*

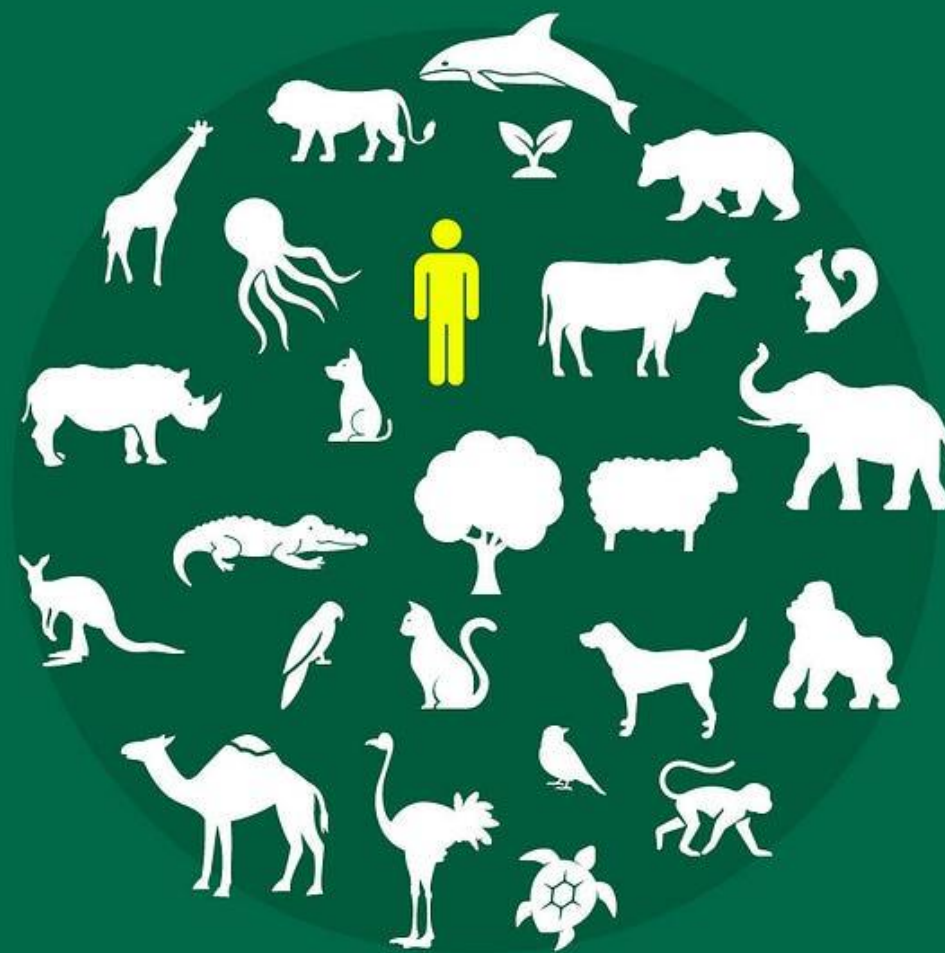
(MA 2005)

Note: that the concept of ecosystem services takes a very anthropocentric perspective

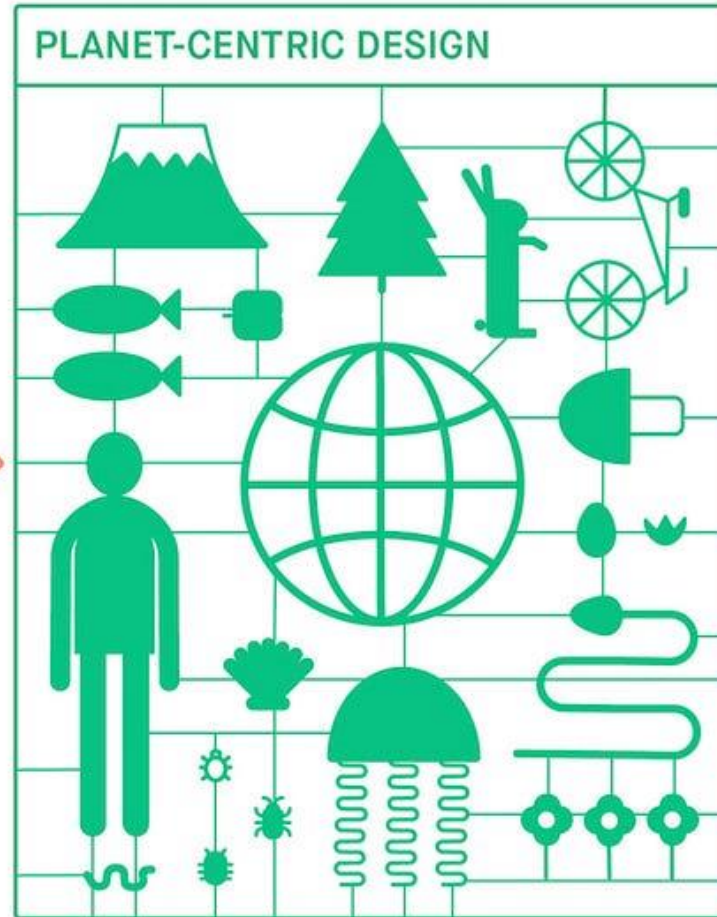
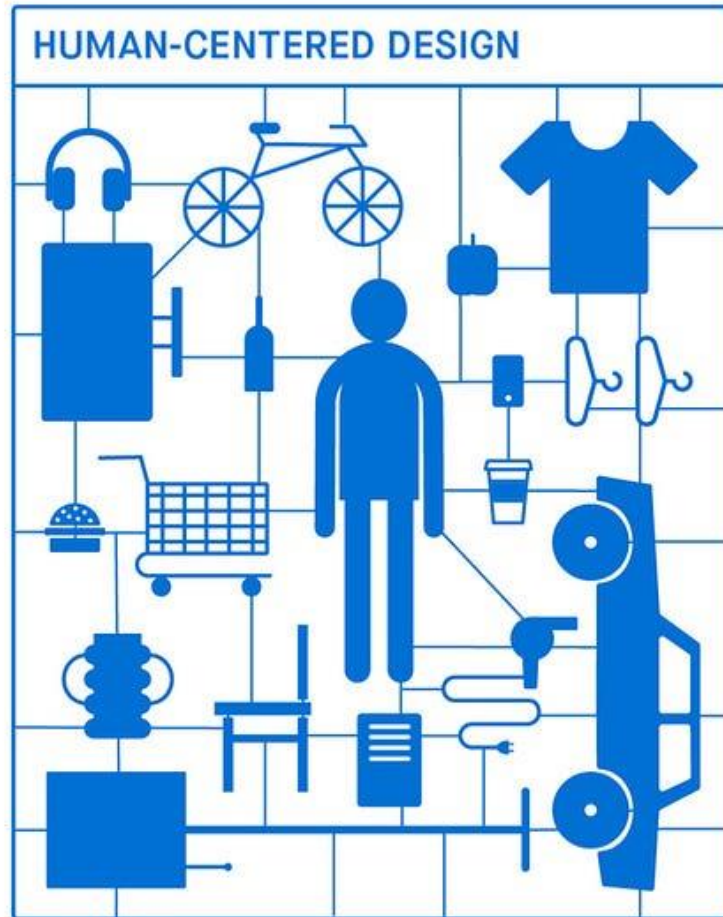




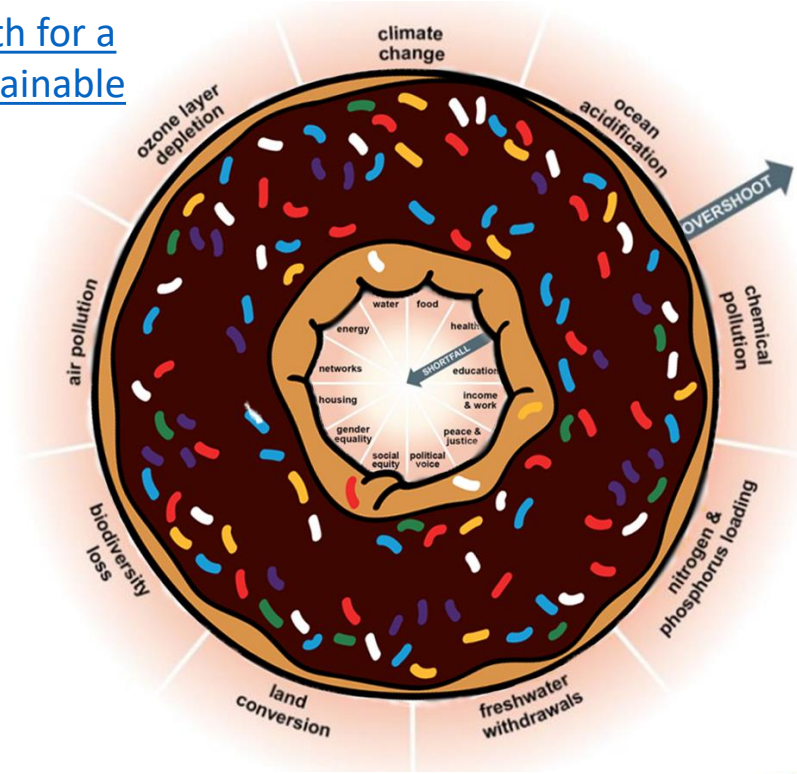
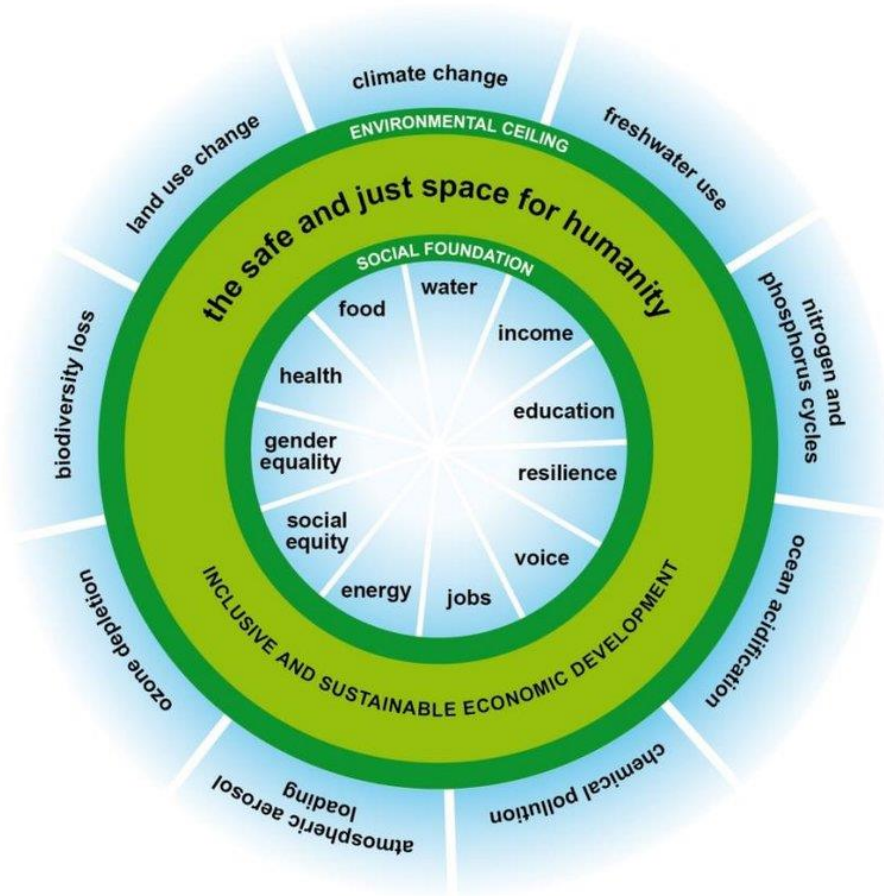
HUMAN-CENTERED
DESIGN



EARTH-CENTERED
DESIGN

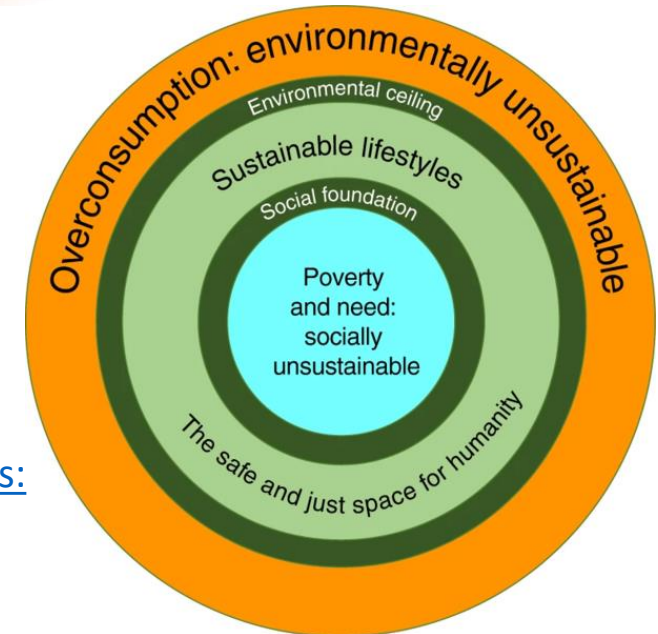


Doughnut Economics



Simplified version of the doughnut : a safe space within social and environmental limits

[The Doughnut Economics: definition and critical analysis \(bonpote.com\)](#)

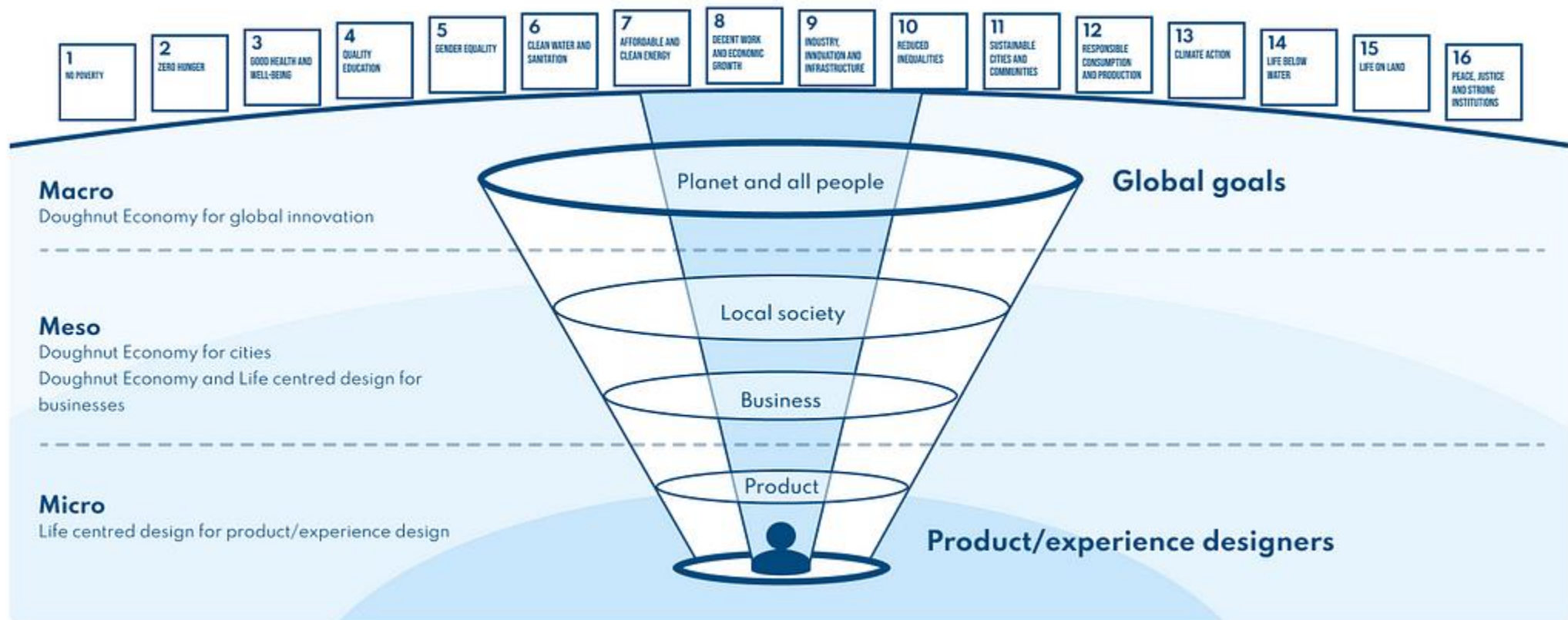


Life Centred Design

It connects micro-level design (UX, product engineering, etc.) to global goals by increasing the stakeholders from just '*user and business*' to '*user, non-user, local and global communities, ecosystems, and planetary boundaries*'.

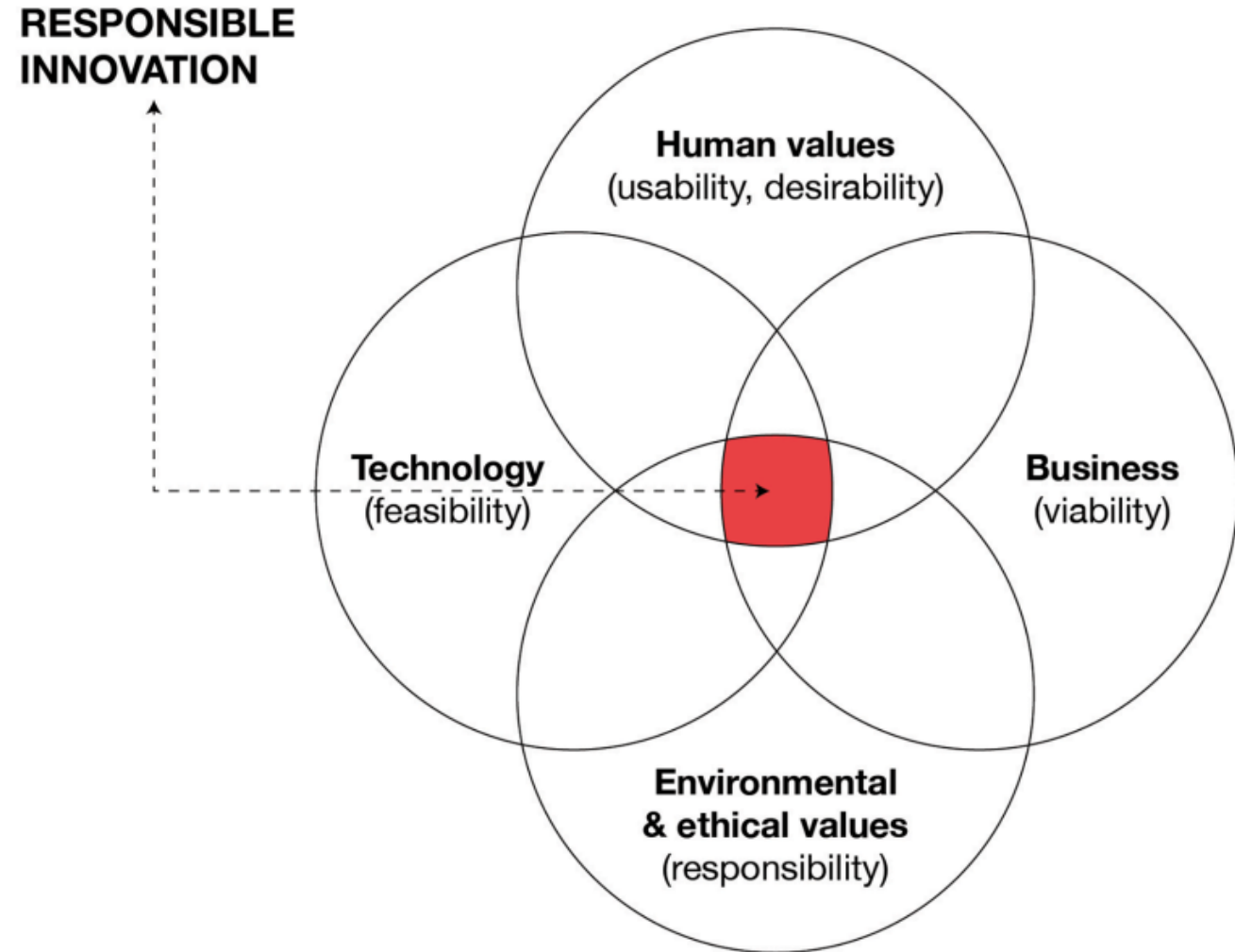
[What is Life-centred Design? - lifecentred.design](https://lifecentred.design)

- Life-centred design is an emerging design approach that expands human-centred design to also include consideration of sustainable, environmental, and social implications.



Background

- The lens of life-centred design expands the human-centred model of innovation (as originally published by IDEO) by adding considerations about what is environmentally and ethically responsible (from Borthwick et al., 2022).



How do we define this?

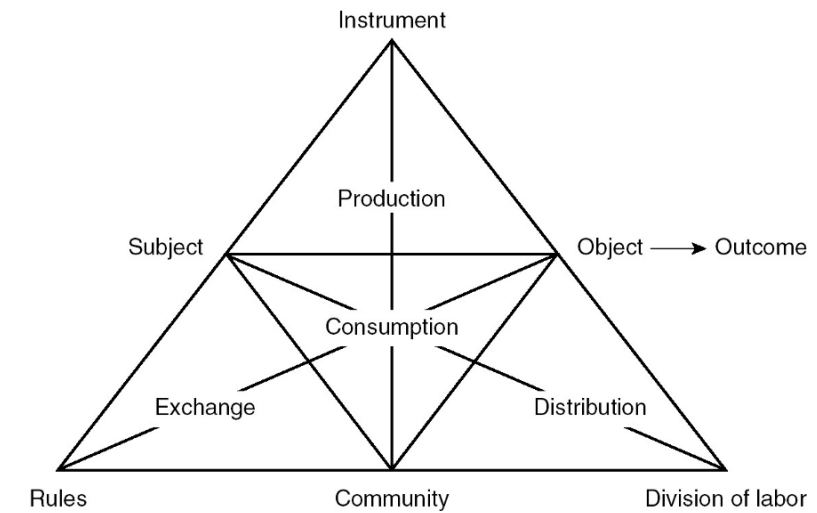
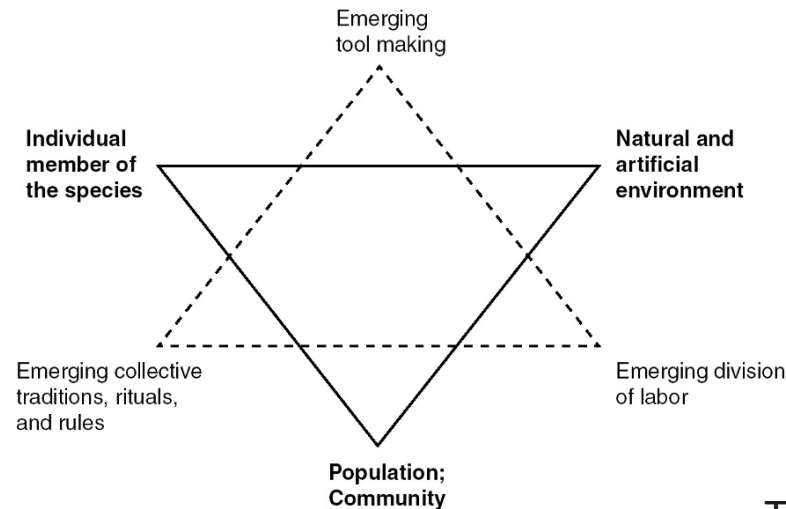
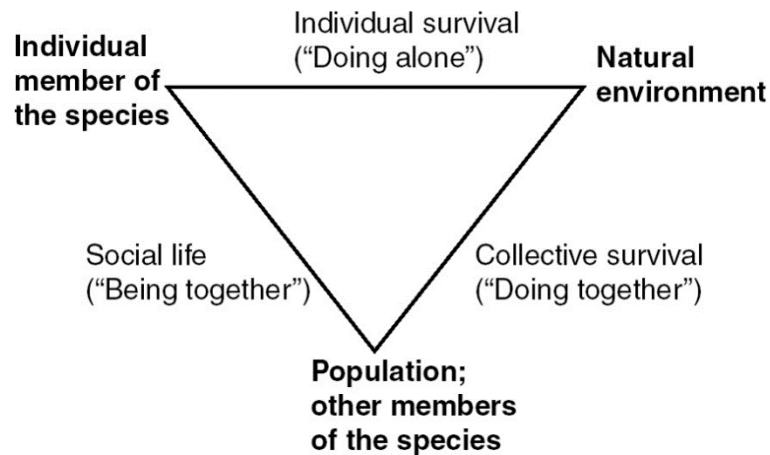
Non-human and non-user personas

Non-human and non-user personas represent the animals, environments, and 'invisible' humans (factory workers, miners, farmers, and communities, etc.) impacted by our product lifecycle so that we may design to protect and respect them.

A lifecentred.design Initiative | Damien Lutz 2022

Theory from Activity

- Activity theory
- Actor-Network-Theory (ANT)



The several versions of Activity Theories in Psychology concentrate on goal-oriented activity as a crucial part of human behavior.

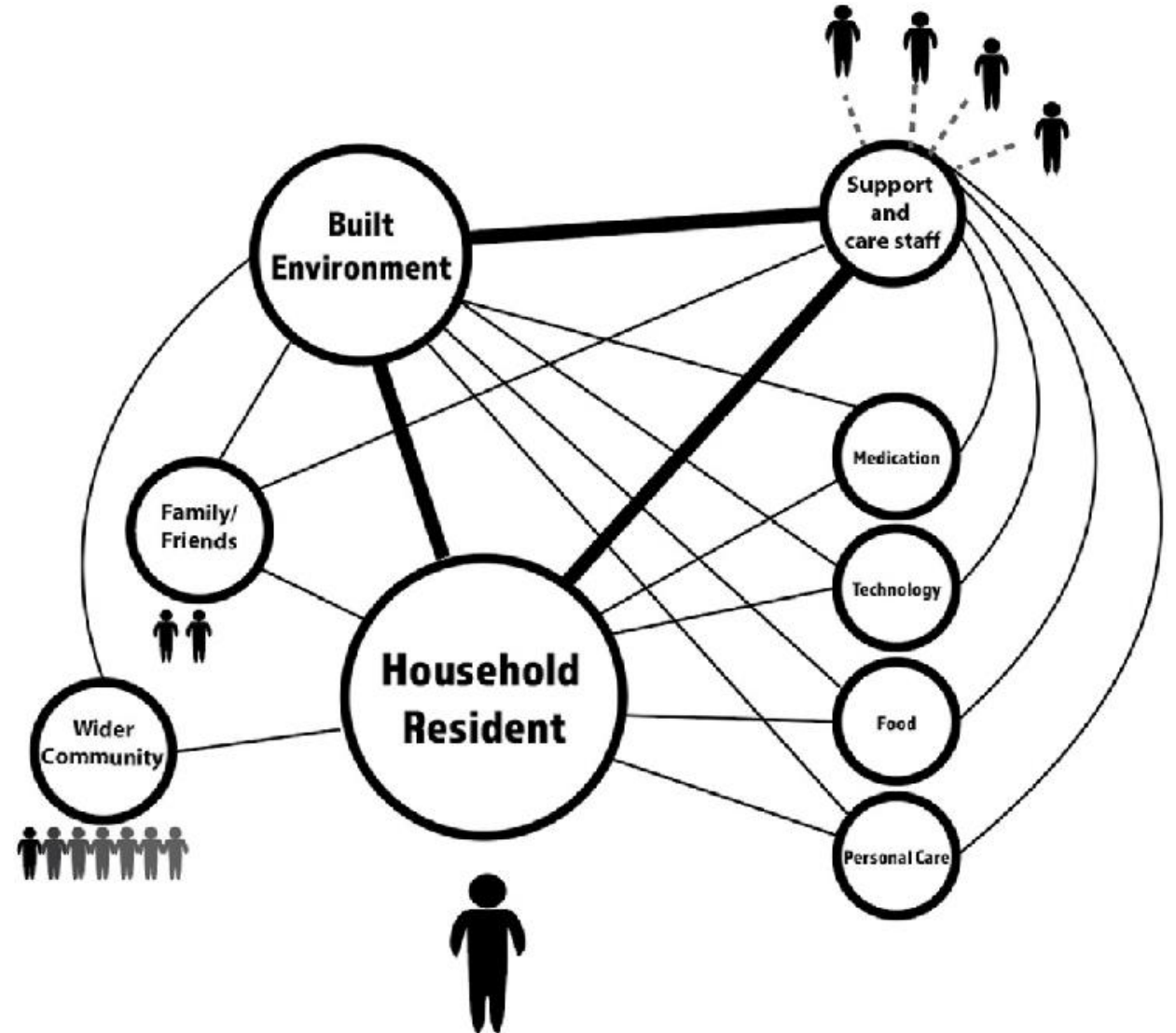
[The Evolution of Activity \[Activity Theory\] \(activityanalysis.net\)](http://activityanalysis.net)

Theory from Activity, to ANT

- Actor-Network-Theory (ANT)

In ANT, humans and non-humans have agency, whereas in activity theory, only humans have agency.

Actor-Network Theory as known as “**ANT**” was pioneered by Michel Callon (1986) and Bruno Latour (1987).



Example of simplified ANT from carehome (Carnemolla at al., 2021).

Theory from Activity, to ANT

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Table 1 Summary of Some Key Concepts in Actor-Network Theory.

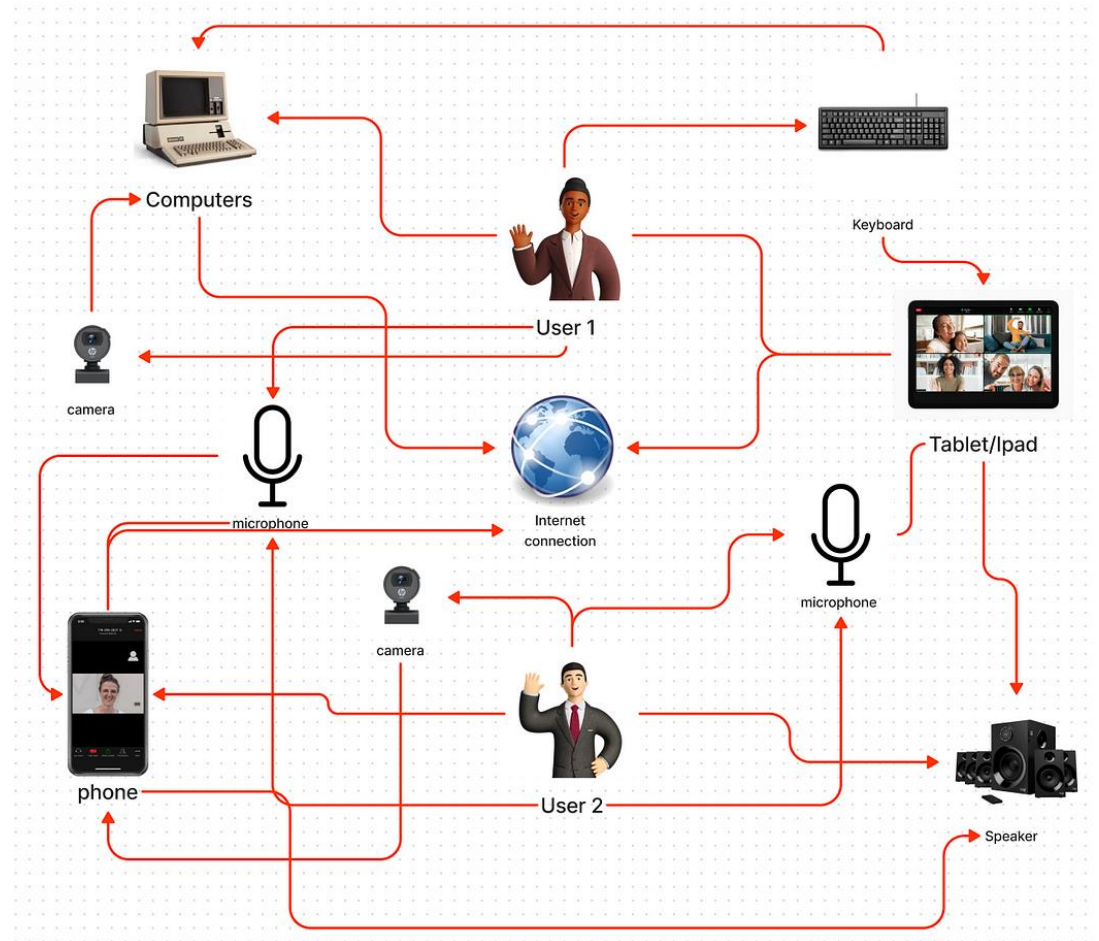
Concept	Description
Actor (or actant)	Both human beings and nonhuman actors such as technological artefacts
Actor-network	Heterogeneous network of aligned interests, including people, organizations and standards
Enrolment and translation	Creating a body of allies, human and non-human, through a process of translating their interests to be aligned with the actor-network
Delegates and inscription	Delegates are actors who “stand in and speak for” particular viewpoints which have been inscribed in them, e.g., software as frozen organizational discourse
Irreversibility	The degree to which it is subsequently impossible to go back to a point where alternative possibilities exist
Black box	A frozen network element, often with properties of irreversibility
Immutable mobile	Network element with strong properties of irreversibility, and effects which transcend time and place, e.g., software standards

Theory from Activity, to ANT

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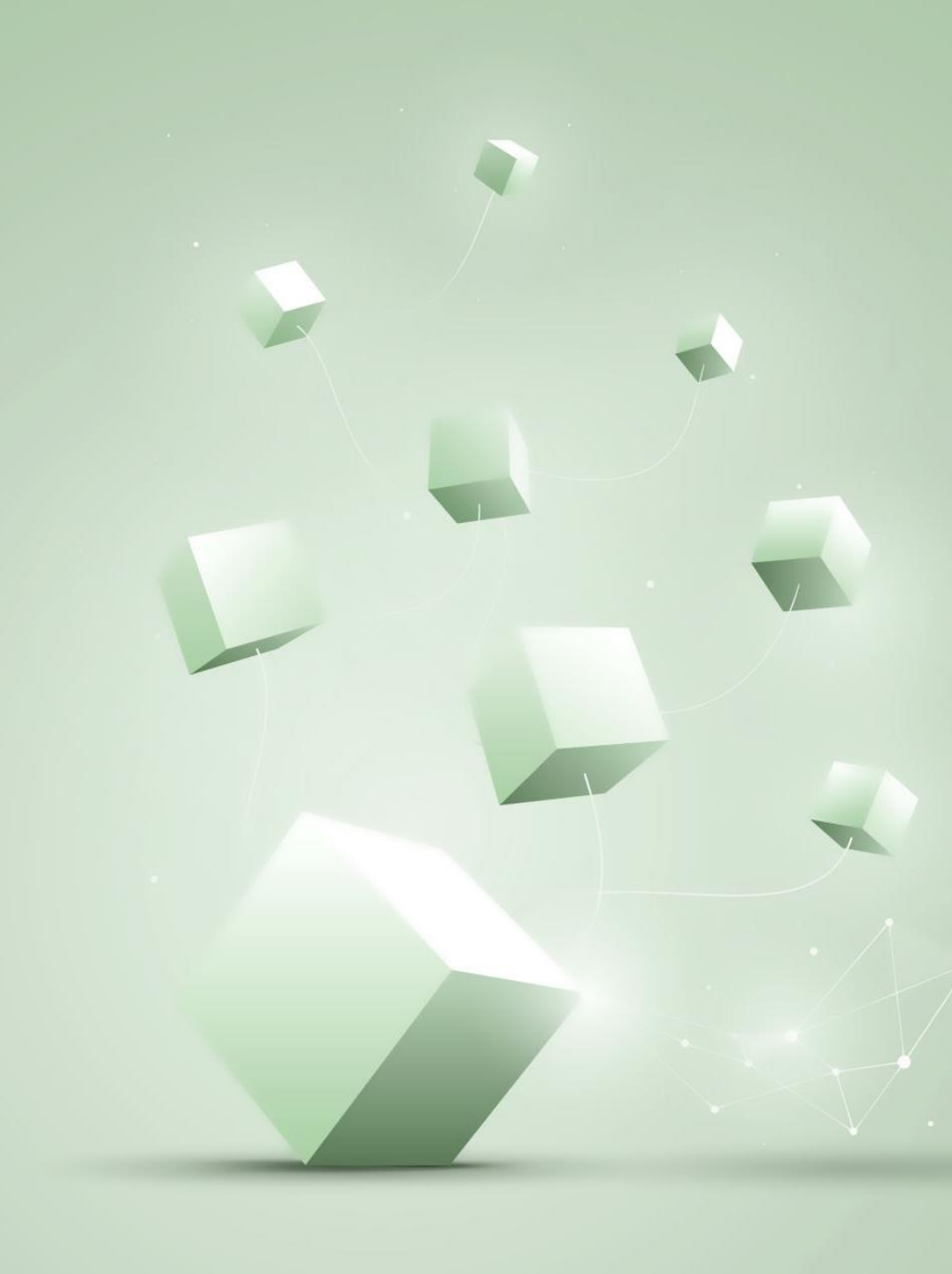
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[A Brief Explanation About Actor-Network Theory | by Erron Lolha | Medium](#)

Embedding non-human and non-user impacts

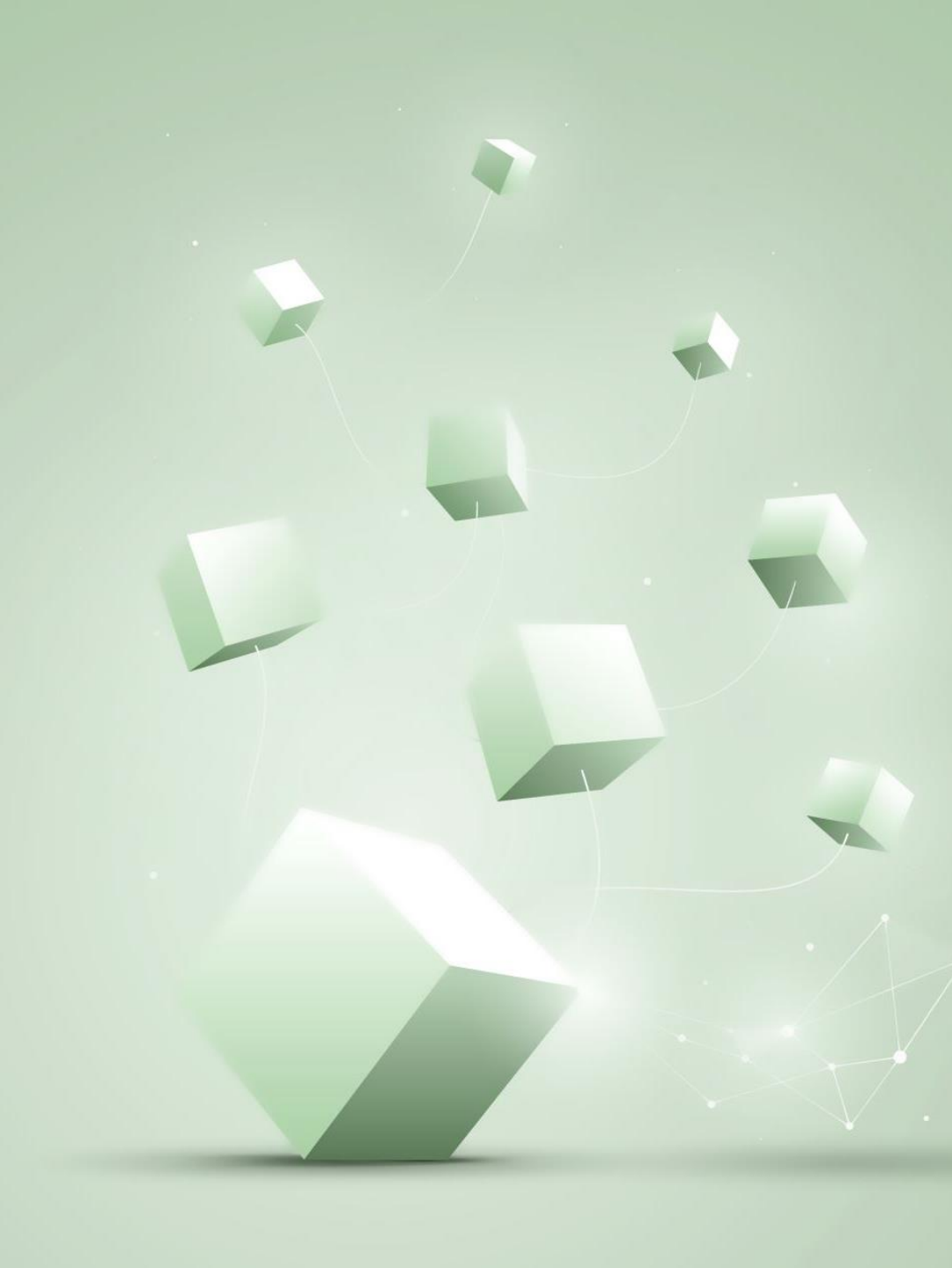
- 1. Explore the impact of a physical thing
- 2. See things from a different perspective
- 3. Innovate design solutions—Use circular design strategies to reduce harm



Today's Activity

In your company, you have spotted a sustainability challenge inside your existing product or service and want to address it by including non-human stakeholders (“actants”), along with their limitations, needs, and preferences, into the redesign process.

If the goal of human-centered design is to maximize empathy felt towards the people we design with or for, then the goal of environment-centered design is to extend this empathy towards both the human and non-human stakeholders of our designs.

An abstract illustration on the left side of the slide. It features several 3D cubes of varying sizes, some light green and some white, floating in a light green space. Thin white lines connect some of the cubes, suggesting a network or flow. In the bottom right corner, there is a small, faint geometric pattern of dots and lines.

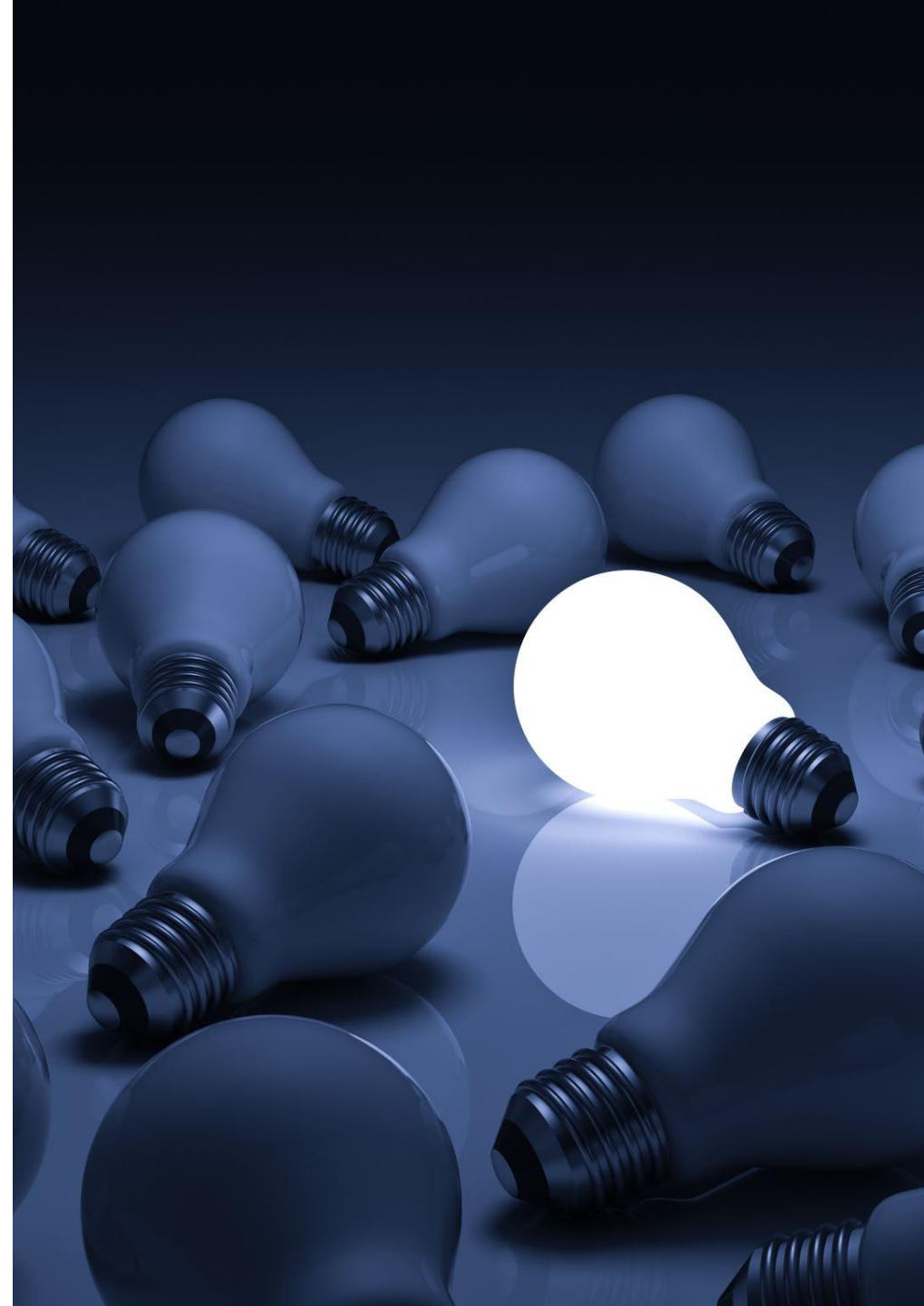
Instructions

1. Your company is experiencing a challenge / problem from the following:
 - Our target audience values truly green and sustainable products more than ever before. They know what an ecological footprint is!
 - Our production plant scored very low during the latest sustainability audit.
 - Our designers and engineers are protesting the company's air pollution practices.
 - There is more and more plastic in our oceans, that is threatening the livelihood and survival of our coastal communities.

Please choose 1 that applies to your chosen business.

2) Mapping your direct actants

- In pairs **mapping your direct actants** of the stated challenge or problem. Direct actants are those human and non-human actants that will be or could be directly impacted by the challenge or problem that you're aiming to solve.



Mapping your direct actants

Your **direct human actants** could be: particular segments of your target audience, product designers, supply chain specialists, product owners, but also scientific organizations or NGOs that are working on tools for measuring the stated environmental footprint as well as strategies on lowering businesses' environmental footprint.

Your **direct non-human actants** could be different environmental or ecosystem elements that have a direct impact or are being impacted by your product development process, such as: lakes and rivers near your production plant, local fauna forced to breathe, drink or eat pollutants you're emitting, or the enormous amount of water that you use to produce whatever you produce (the same water that is crucial to the survival for human and non-human beings).

3) Mapping Indirect Actants

- Once you've mapped your direct actants, it's time to move on to mapping **less obvious, indirect actants**.
- This requires adopting a science-driven **“everything is connected” mindset**. This can be developed step-by-step by exposing yourself to scientific resources covering the state of different elements of our global and local ecosystems.
- Other resources that can help you understand the “interconnectedness” of environmental, social, economic and cultural factors shaping our Earth-based reality, and therefore **extend your designer empathy onto non-human actants**, are for instance:



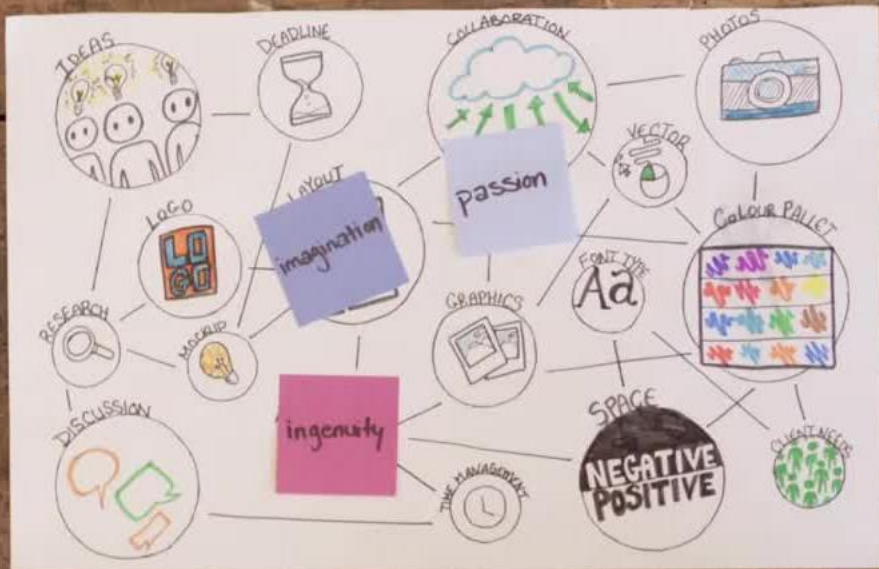
4. Cause and Effect Relationships

Once you have finished your mapping activity it's time to **search for cause-effect relationships** between various human and non-human actants.

This will help you realise said “interconnectedness” of human and non-human actants and their impact on your project/product/service.

Ask yourself: How will your target audience be socially and economically impacted by the blackouts and the lack of electricity caused by hurricanes or severe droughts?

How will these so-called non-business-factors impact the stability and performance of your business? How can you adapt to these volatile and unpredictable circumstances?

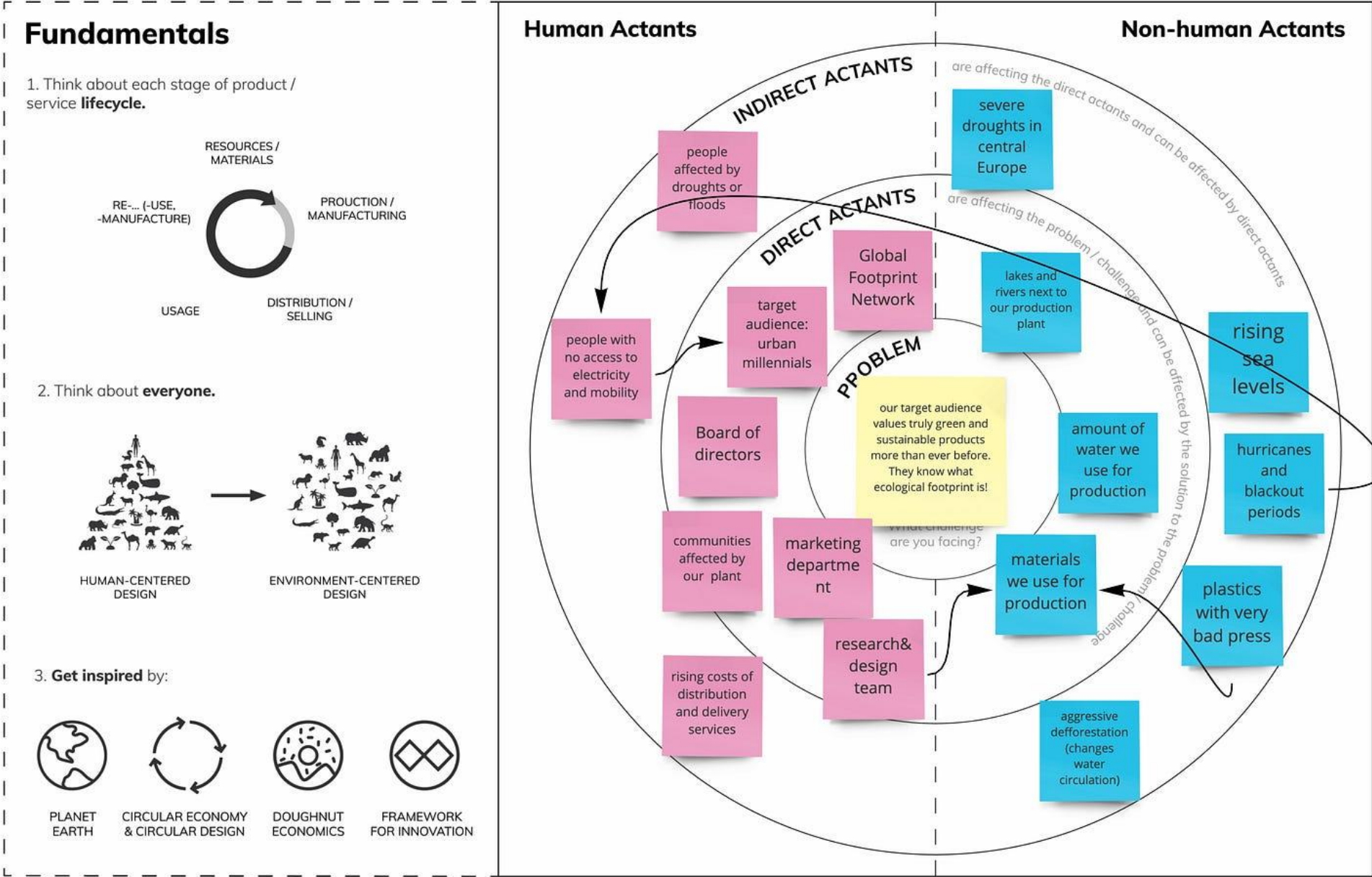


Actant Mapping Canvas

Will help you include non-human actants into environment-centred design process.

Project name:

Example



[Tools for environment-centered designers: Actant Mapping Canvas | by Monika Sznal | UX Collective \(uxdesign.cc\)](#)



Embedding non-human and non-user impacts

- 1. Explore the impact of a physical thing
- 2. See things from a different perspective
- 3. Innovate design solutions—Use circular design strategies to reduce harm

Non-human and Non-user persona identification

- Non-human and non-user personas represent the animals, environments, and 'invisible' humans (factory workers, miners, farmers, and communities, etc.) impacted by our product lifecycle so that we may design to protect and respect them.
- In your groups, using the provided template and examples, expand on your non-human and non-user persona identified in the last activity.

Non-human and Non-user persona identification



Bees

“ I may only live six weeks at times, but I pollinate plants to enable them to reproduce—70% of the world's agriculture and flowering depends exclusively on me. Without me, fauna would begin to disappear, impacting environmental health and human food supply. Humans can not live without me. ”

PROTECT	HABITAT We thrive in natural or domesticated environments, but we prefer gardens, woodlands, orchards, meadows and areas of abundant flowering plants. Within our natural habitat, we build nests inside tree cavities and under edges of objects to hide from predators.	NEEDS & JOYS We need water, pollen, and shelter to thrive. Grow more flowers, shrubs and trees, let your garden grow wild, don't use toxic pesticides, and leave water out when it's hot.	CHALLENGES Overuse of toxic pesticides are killing us. Climate change and overuse of land is destroying or safe places to live and breed.	
	☒ Material extraction	☐ Supply chain	☐ Product in use	☐ 2nd life

ENGAGE	ANIMAL EXPERIENCE	HUMAN WORLD		
	Navigation <i>Senses, etc.</i> We use the sun, landmarks, and colour to navigate, and our sensitivity to polarised light allows us to 'see' the sun in poor weather. We can also sense the earth's magnetic field with a magnetic structure in our abdomens.	Communication <i>Sound, posture, etc.</i> We use body language and eye contact, and some vocal patterns. Our two primary methods are movement and odor. We use these to send messages throughout the colony, locate nearby food, and share other information.	Interaction <i>Climbs, bites to pull, etc.</i> We have 5 eyes, 6 legs, and fly 20mph. Our bodies allow pollen to stick so we can transfer it. We have stingers for protection but die if we use them. Some of us make honey using a proboscis to suck liquid found in plant nectary.	Barriers/exclusion ☐ Physical Destruction of habitat ☐ Social Threatening behaviour from humans ☐ Cognitive

Non-human Animal Persona, Damien Lutz 2022, www.futurescouting.com.au/ncd. NonCommercial 4.0 International (CC BY-NC 4.0)



Green Sea Turtle

“ I am a useful member to the ocean ecosystem. I feed off coral reefs and help to control the number of jellyfish in the ocean. When I nest, the shell that my babies leave behind provides important nutrients for dune vegetation. (Sadly) I help to feed sharks and orcas and important to the entire food chain - but I can live up to 80 years! ”

PROTECT	HABITAT We usually frequent the coral reefs that are rich in seaweeds, and in coastal seagrass pastures in tropical and subtropical areas worldwide.	NEEDS & JOYS once we reach a certain age and size range, we leave the open ocean and travel to nearshore foraging grounds, where we shift to being primarily herbivores with a diet mainly consisting of seagrasses and algae, while we usually come to shore to nest, we are also known to come ashore and bask in the sun on Hawaiian beaches. The females of our species always return to the same beach that they hatched at regardless of distance. We each jellyfish and we hate catfish.	CHALLENGES Avoid plastic waste in my life, don't like face masks in the sea Fishing and pollution Poaching and global warming.	
	☐ Material extraction	☐ Supply chain	☐ Product in use	☐ 2nd life

ENGAGE	ANIMAL EXPERIENCE	HUMAN WORLD		
	Navigation <i>Senses, etc.</i> We cheekily use the Earth's magnetic field as a source of navigational information during our epic transoceanic migrations and while homing.	Communication <i>Sound, posture, etc.</i> Various visual and physical signals (like touching) allow female and male green sea turtles to understand each other during courtship.	Interaction <i>Climbs, bites to pull, etc.</i> we swim and crawl. We love to flap our arms into the sand while sunbathing.	Barriers/exclusion ☐ Physical Species endangered and losing habitat ☐ Social Non life - centered mind, harming actions ☐ Cognitive

Non-human Animal Persona, Damien Lutz 2022, www.futurescouting.com.au/ncd. NonCommercial 4.0 International (CC BY-NC 4.0)

**More about
non-human
dimensions?**

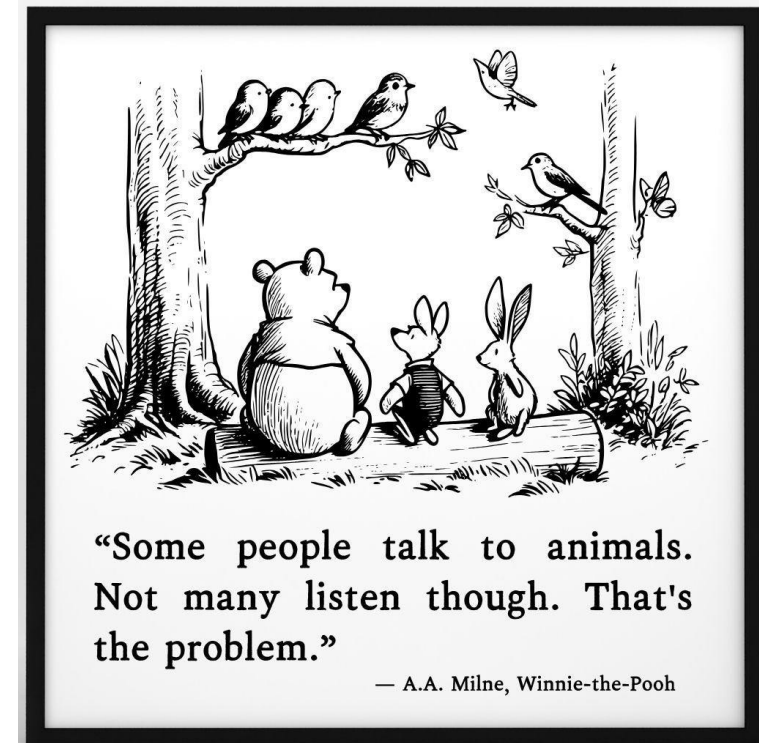


What about non-human dimensions?

There is a growing recognition of the importance of embracing the 'more-than-human' world. This perspective acknowledges that humans are just one part of a vast interconnected web of life that extends beyond human existence.

What about non-human dimensions?

By understanding our place within this complex system and the interplay between the more-than-human world and the Anthropocene offers us insights into the importance of recognising the interconnectedness, agency, and resilience of non-human entities in our collective efforts to shape a sustainable future. By reimagining our relationship with the natural world, we can navigate the Anthropocene era with greater harmony and sustainability.



Reading for next week:

Multispecies Sustainability (Rupprecht et al, 2020). The paper is uploaded on the Moodle site. Be prepared for a paper discussion

[S2059479820000289jxx 1..12 \(uwtsd.ac.uk\)](#)