Design Approaches to Sustainable Consumption

Session 5 (Tuesday 23.1.): Socio-technical experimentation and social innovation

Tatu Marttila
Tuesday 23.1.2024

Agenda

13:15–13:55   **Recap & status reports**
- *Recap of previous week sessions*
- *Idea presentations on Thursday*
- *Status report of project work*

14:05–15:00   **Socio-technical experimentation and social innovation**
- *Design for Social Innovation*
- *Designing stakeholder interaction*
- *Socio-technical experimentation*

15:15–16:00   **Group work continues**

16:15–17:00   **Closing session**

Recap of last week & status of project work

Course and project work schedule

Please note the change in location for several sessions to A-Grid Mordor!

Working days	Tuesdays (13:15-17:00)	Thursdays (9:15-12:00)
Week 1 (9.1 & 11.1.)	Introduction to course; DfS introduction (F101)	Designing for sufficiency (visitor: Mikko Jalas) (Q201)
Week 2 (16.1. & 18.1.)	**Project work: Kick-off** (A-Grid Mordor)	Sustainable PSS design & systems design (Q201)
Week 3 (23.1. & 25.1.)	Socio-technical experimentation & social innovation (F101)	**Presenting case work ideas** (A-Grid Mordor)
Week 4 (30.1. & 1.2.)	Design for sustainability transitions (Q201)	Communicating and scaling-up sustainability (visitor: Michael Lettenmeier) (A-Grid Mordor)
Week 5 (6.2. & 8.2.)	Sustainability games (visitor: Tommi Vasko) (A-Grid Mordor)	**Project work tutoring & finalisation** (Q101)
Week 6 (13.2. & 15.2.)	**Project work: Final presentations** (F101)	Feedback session (A-Grid Mordor)

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Recap of last week

Multilevel focus for design

Multilevel perspective adapted to design:

"The role of designers is broadening, from the creators of physical arte-facts to the potential role of facilitators of complex societal change processes. To support the widening role of the designer, there is a need for a design supportive model."

Multilevel Design Model (MDM) by Joore & Brezet (2014)
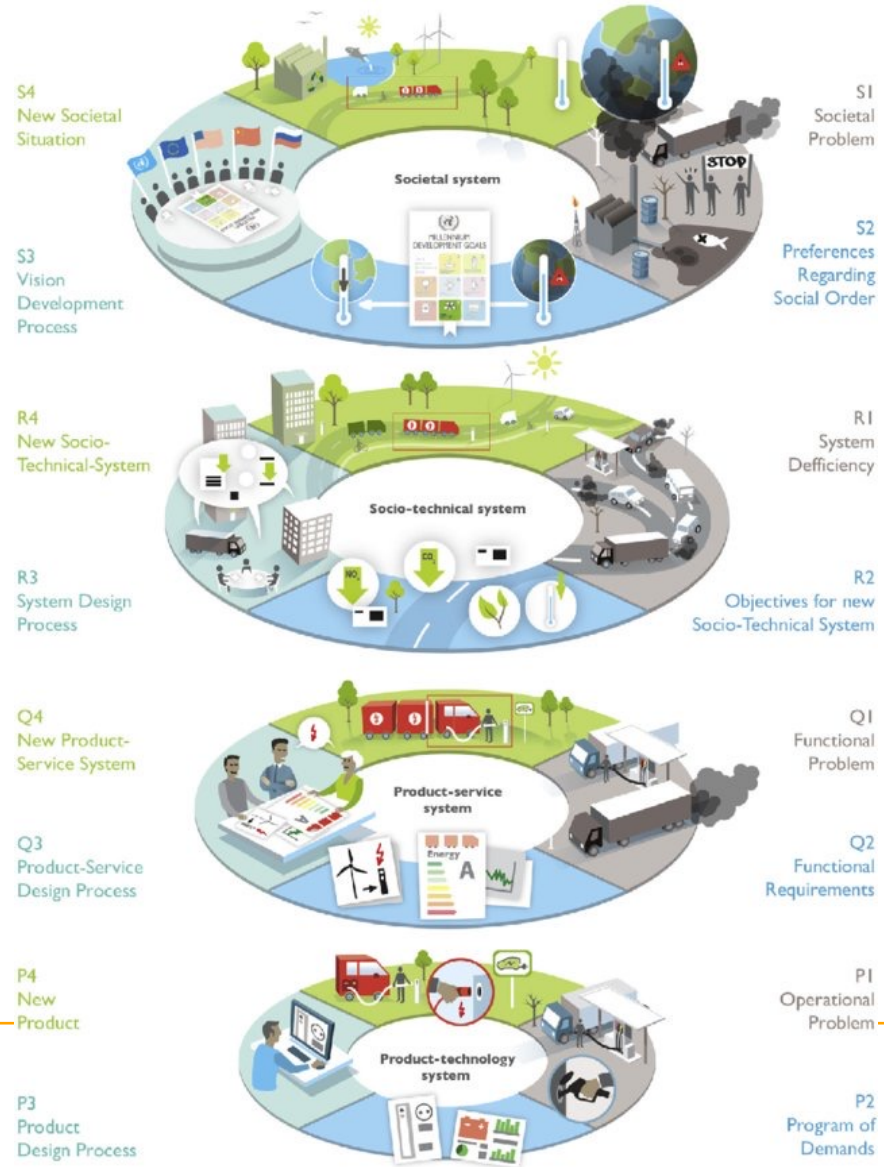
Product-Service System (PSS) design

Products as artifacts offer interfaces to functions and services they provide. Product-Service System (PSS) design moves the focus of design action towards the whole system of service provision, and systemic efficiency and/or value addition within it.

➢ Assess impacts per service-unit rather than product
➢ Assess and enhance system sustainability

PSS design considers alternative business and service systems by adjusting ownership and revenue models, and adding more stakeholders into the process.

➢ Changing product ownership: services instead of products
➢ Co-governance in design and management

Different types of PSS solutions

There are different types of PSS depending on how and where the value is created:

- **Product oriented PSS** focuses mainly to extend the existing product-offering

- **Use oriented PSS** covers various models of leasing/sharing/pooling of products

- **Result oriented PSS** focuses to deliver a (novel) service with a 'functional result' (i.e., satisfy user need without product/material ownership)
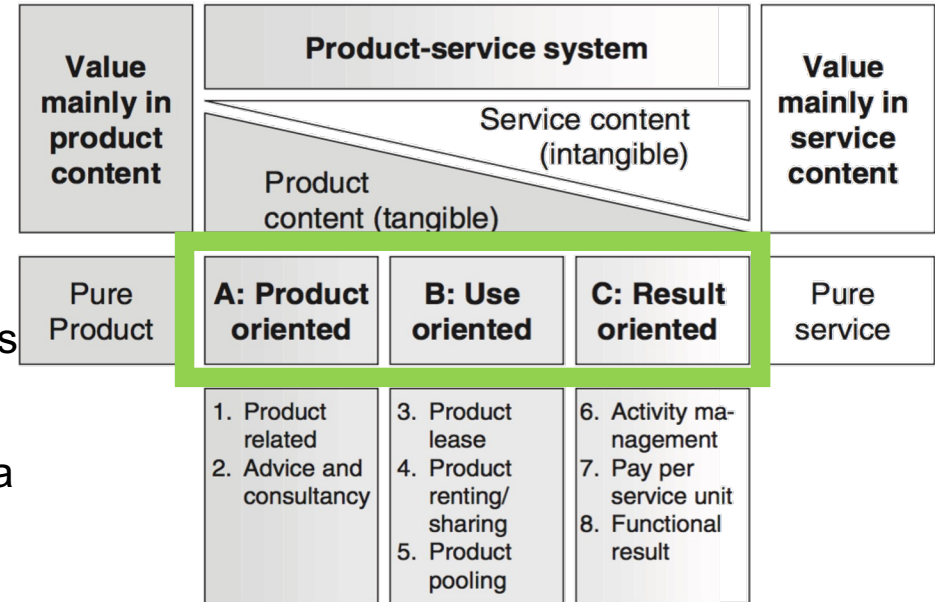

Figure 1. Main and subcategories of PSS

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The process and methods for PSS design

The PSS design process conforms to the conventional design process, starting from strategic analysis and opportunity exploration to ideation and system design, and to the further iteration and prototyping of the (PSS) design concept.

Methods and tools for PSS design cover various ecodesign and service design tools, and also the facilitation of strategic co-design and prototyping:
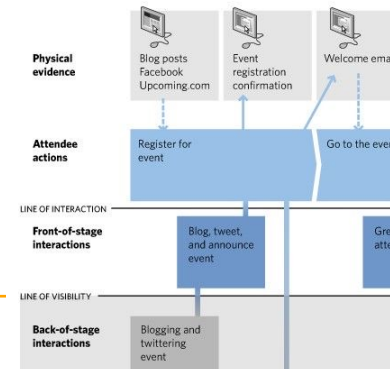
(Systemic) impact assessment

Stakeholder and system mapping
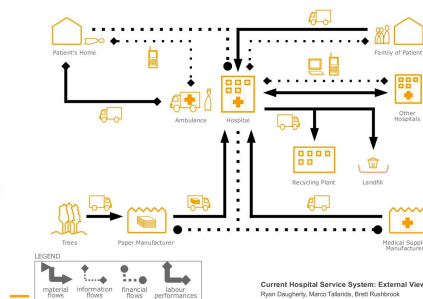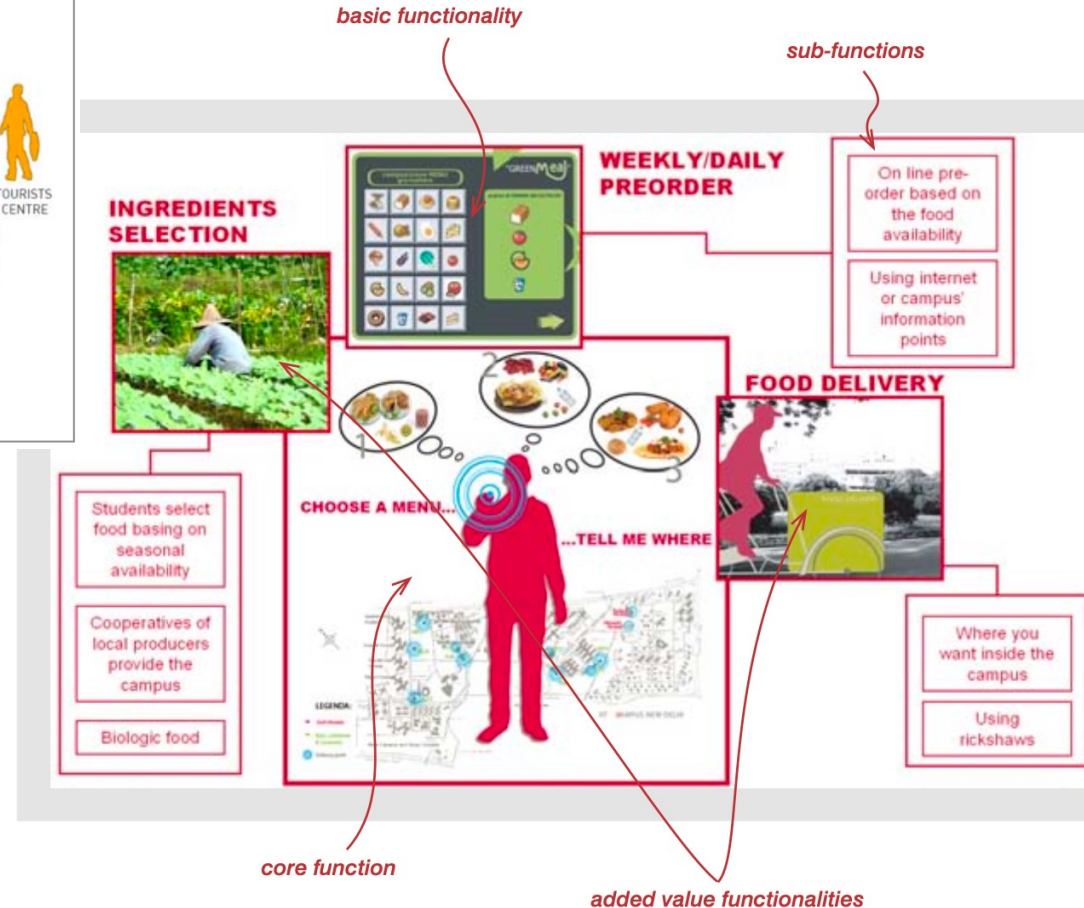

Service interaction blueprinting

Strategic co-design, collaborative prototyping

Assessing the service-offerings, products, and elements of interaction with 'offering diagrams':

- Communication on system value and focus stakeholders
- Identification of system components, functionalities
- Identification of elements of PSS-offering

Mapping the PSS system:

- Identification of connections to broader socio-technical setting
- Identification of system elements, interactions, flows (materials, products, information etc.)

Source: Ceschin, 2013

Current Hospital Service System: External View
Ryan Daugherty, Marco Tallarida, Brett Rushbrook
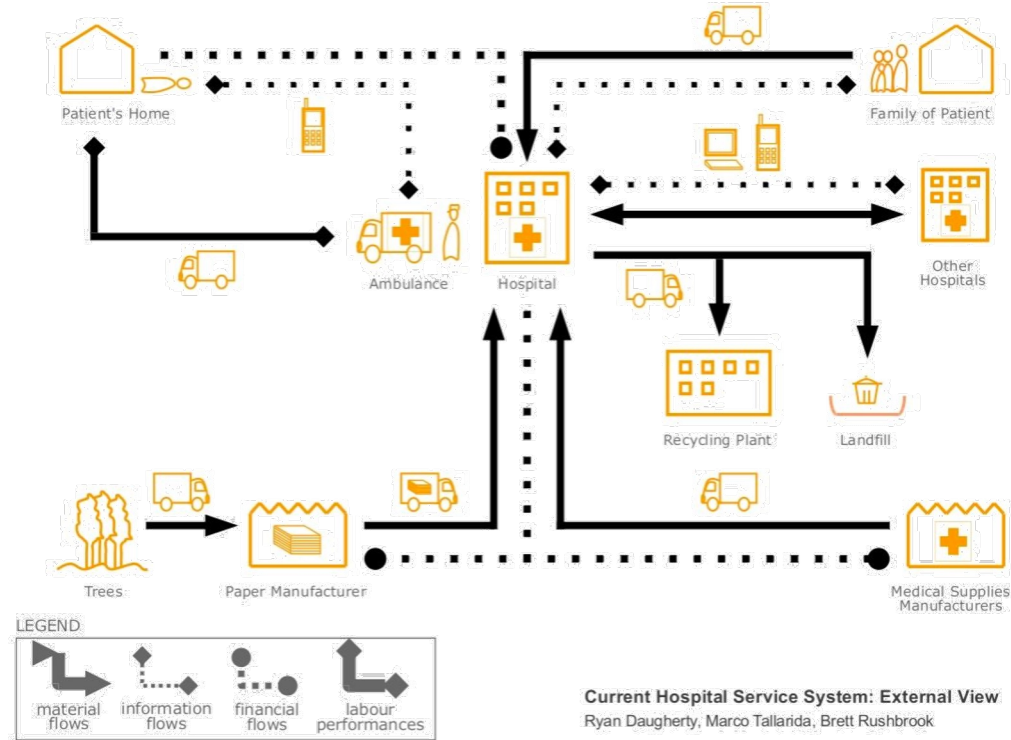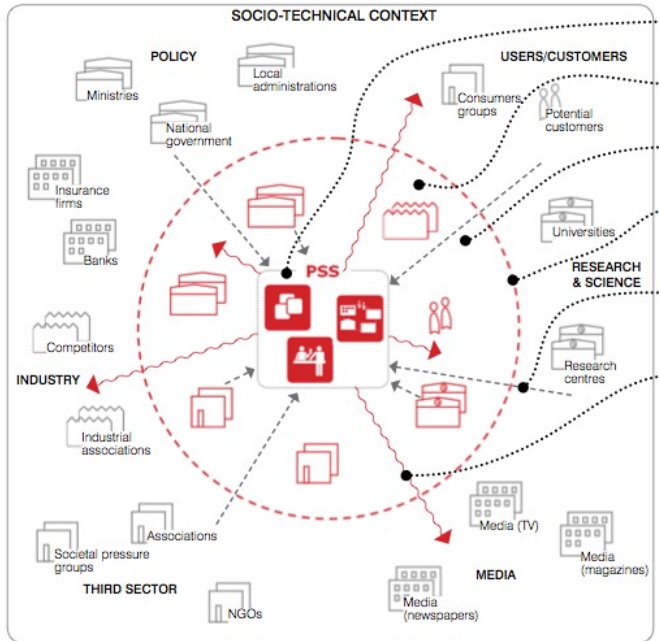
Assessing progress and refining details:

- Assessment and communication of progress and improvements
- Detailed design of PSS interactions and elements
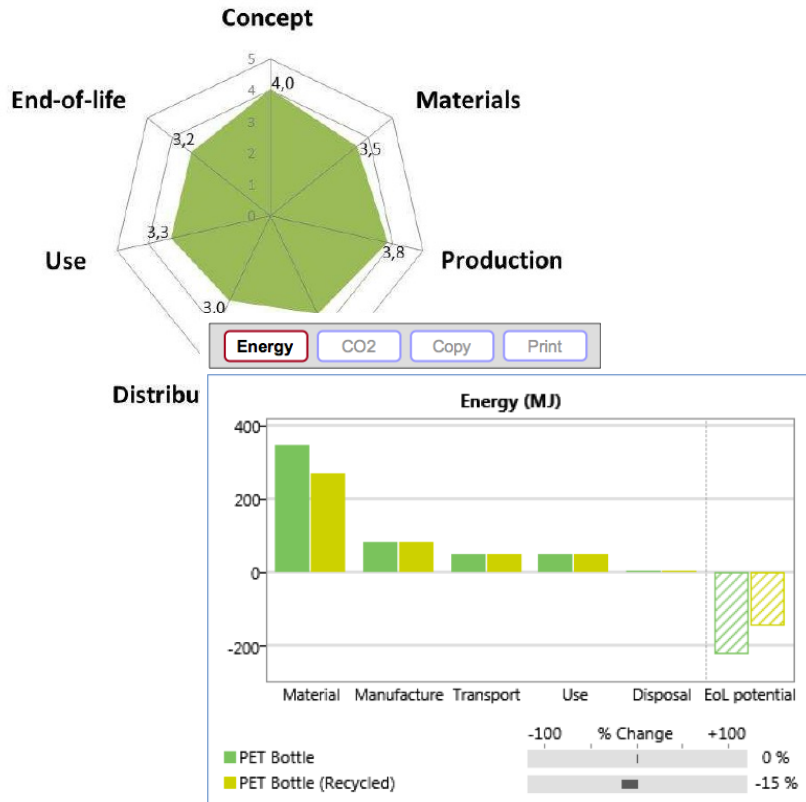
Summary of PSS design approach

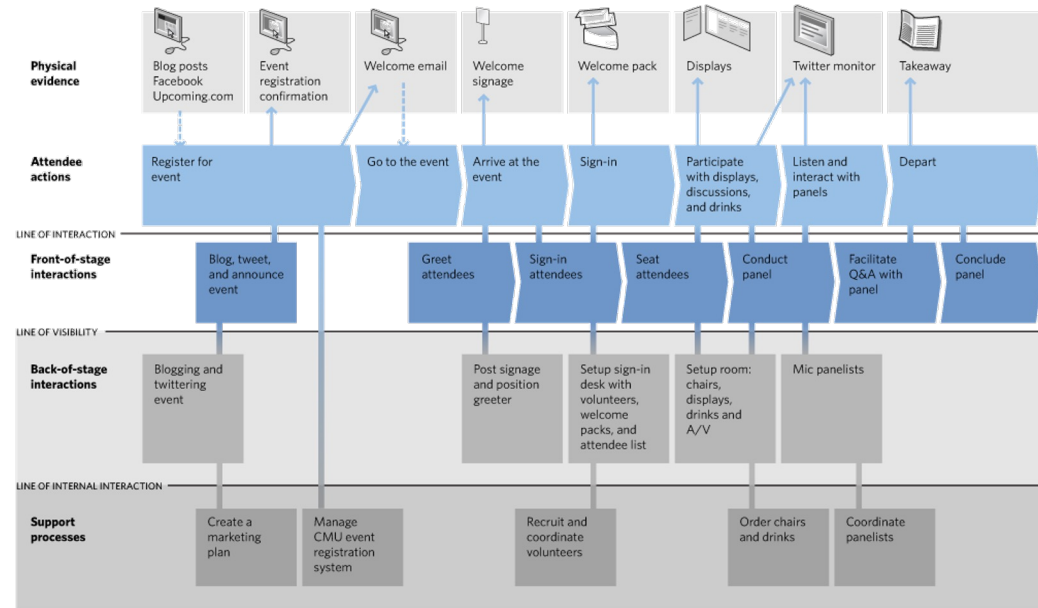- **Product-Service System (PSS) design focuses** to restructure stakeholder roles and interactions to increase the systemic efficiency in delivering a 'functional offering' (i.e., access to a selected service)

- **Types of PSS** range from product oriented, to use oriented, and to result oriented solutions

- **In the CE context, PSS design emphasis** is on efficiency in material use and circularity, and in extending product life, promote sharing, and providing efficient end-of-life systems.

- **Not all PSS designs are sustainable:** sustainability transition in production and consumption calls for further restructuring of the producer and consumer roles

- **Remember a critical perspective** in considering sustainability improvements!

Project work progress

Project work – redesigning socio-technical dynamics

Design action can focus to:

- Redesigning system interactions and connections
- Connecting new stakeholders within the problem context
- Communicating system interaction and value propositions

Source: Ceschin, 2013

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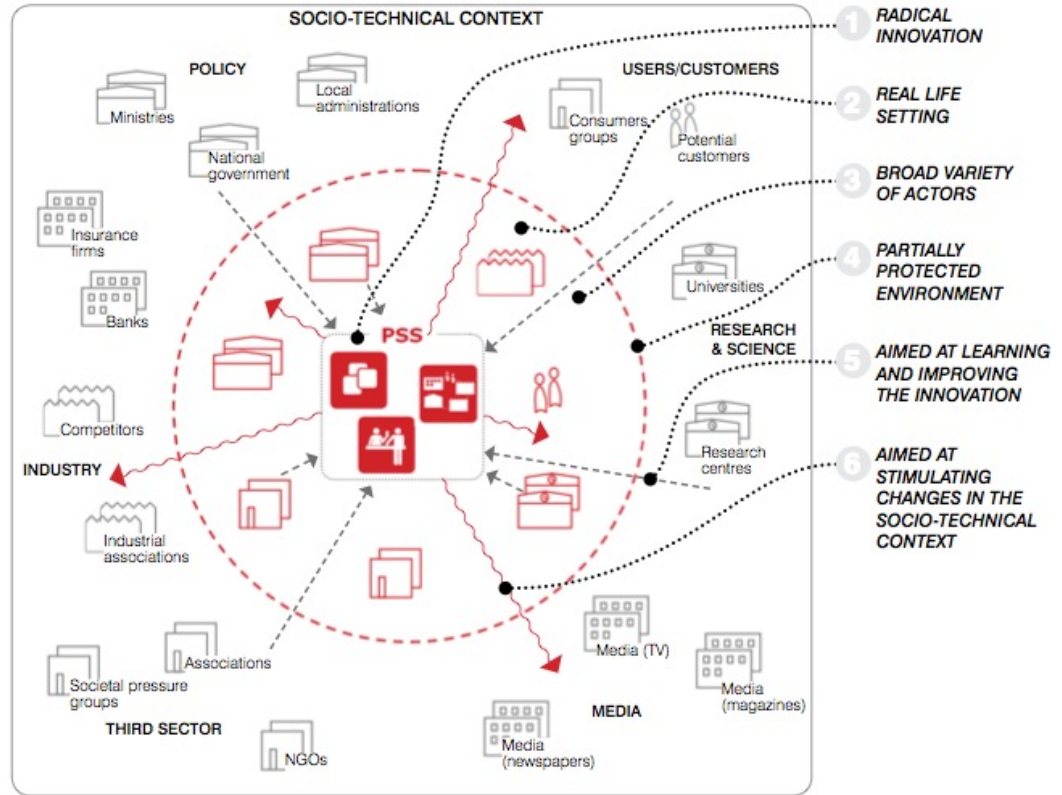
Project work – different SCP and DfS focus

Each group has a theme of SCP and also preferred DfS approach(es)

Focus themes of sustainable consumption and production:

Food systems and services	Mobility systems and services	Housing and buildings	Textile, clothing, fashion	ICT & domestic appliances

Focus DfS approaches for the project work:

Ecodesign & PSS design	Behavioral communication and information design	Participatory and collaborative design	Strategic and transition design	Speculative, critical, radical design

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Focus location: Aalto campus

Aalto campus as the focus site and starting point to think of your focus theme.

For campus map and legend details:
https://www.aalto.fi/sites/g/files/flghsv161/files/2019-02/020419_aalto_campusmap_a4_web_0.pdf

Groups for the project work:

Group 1:
**Food systems +
Ecodesign & PSS**
 	
1. Miina Heikkinen
2. Trine Leisso
3. Minerva Laitinen
4. Aqib Javed
5. Petra Salkoviiri
6. Nina Sirén
	Group 2:
	**Food systems +
	Strategic/transitions**
	
	1. Veera Parkkonen
	2. Devayani Mohanraj
	3. Ni Luh Nyoman Shita
	   Sekar Padmi
	4. Jimin Hong
	5. Salla Kyyrö
	6. Eeli Haapala
		Group 3:
		**Food systems +
		Speculative/strategic**
		
		1. Vilma Ylösjoki
		2. Elli Törnqvist
		3. Manuel Díaz Tufinio
		4. Valeria Escobar
		   Molina
		5. Dinah Ellen Coops
		6. Freja Schalin
			Group 4:
			**Mobility systems +
			Strategic/transitions**
			
			1. Beste Polatkal
			2. Tianyi Yu
			3. Roosa Laakso
			4. Sonja Mäkelä
			5. Ilmari Olavi Hieta
				Group 5:
				**Mobility systems +
				Participatory/strategic**
				
				1. Nathan Pottier
				2. Laura Pohto
				3. Chin-Ying Chu
				4. Leevi Kangas
				5. Regina Kazanjian
				6. Siiri Aaltola

Group 6:
**Housing & buildings +
Ecodesign/strategic**
 	
1. Sandra Sonneborn
2. Yury Tupikin
3. Lien Pham
4. Anna Farrell
5. Sofia Pascolo
6. Jenni Lehtinen
	Group 7:
	**Housing & buildings +
	Ecodesign/speculative**
	
	1. Dumindu Fernando
	2. Kamilla Gramer
	3. Tuomas Laakkonen
	4. Niilo Tenkanen
	5. Jason Selvarajan
	6. Dorottya Füleki
		Group 8:
		**Housing & buildings +
		Participatory & collab.**
		
		1. Jaana Pippola
		2. Callisté Mastrandréas
		3. Mayu Matsuyama
		4. Meri-Tuuli Moilanen
		5. Annette Asplund
		6. Skye Van Thanh
		   Pham
			Group 9:
			**Textile & fashion +
			Ecodesign & PSS**
			
			1. Thekla Weißkopf
			2. Jan Kulhánek
			3. Monika Kokko
			4. Tiia Kiuru
			5. Saara Luukkainen
			6. Shuyi Liu
			7. Ada Tola
				Group 10:
				**ICT & appliances +
				Strategic/transitions**
				
				1. Md Asadur Rahman
				   Khan
				2. Jeanne Lallemand
				3. Martina Maci
				4. Ronja Chydenius
				5. Atte Kuparinen
				6. Topias Elg

- **Please inform of possible changes in groups!**

Reflections on last Thursday exercise?

Based on Thursday work in project work groups, reflections?

- What could be the main 'offerings' you aim at with your concept idea

- What are the (sub-)systems under your thematic focus? What are the possible sustainability improvements?

- What are the system elements and interactions? Who are the meaningful stakeholders to connect with?

- Any other important matters of project work progress?

- We will continue the exercise today afternoon…

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This week sessions: Topics & readings

Tuesday (23.1.):
Socio-technical experimentation & social innovation

Lecture reading:

- Ceschin & Gaziulusoy (2020) Design for Sustainability, Chapter 9: Social innovation

- Supplementary reading (if you feel like it): Ceschin (2014) How the Design of Socio-technical Experiments Can Enable Radical Changes for Sustainability

- Another supplementary reading on on PSS tools: Emili et al. (2016) Visualising Product-Service Systems applied to Distributed Renewable Energy

Thursday (25.1.):
Project work: Idea presentations

Session agenda:

- Groups present their initial ideas for their SCP challenge; Each groups has 15 minutes slot including feedback

  Schedule for the session:
  9:15–9:20   Welcome!
  9:20–10:35   Groups 1–5 (15 min slots)
  10:35–10:45   (break)
  10:45–12:00   Groups 6–10

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Socio-technical experimentation and social innovation

Supporting social innovation with design

Design connecting with potential for scaling-up

Scaling-up sustainability transitions within the socio-technical context:
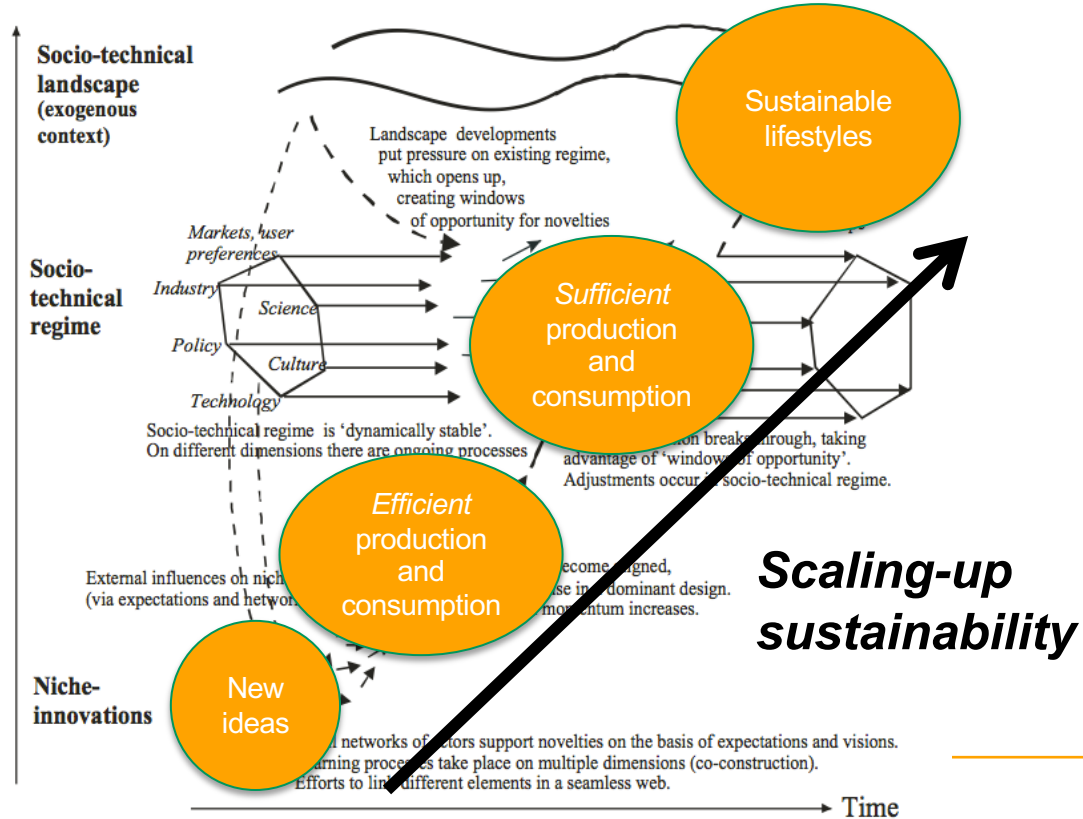
Source: Geels, F. (2011) Multi-level perspective on sustainability transitions

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Finnish state award 2020 for designing crowd sourcing platforms & projects:

Yhteismaa ry:n ja Mesenaatti.me-joukkorahoituspalvelun perustajajäsenelle Tanja Jänickelle myönnettiin tänään 24.11.2020 muotoilun valtionpalkinto.

Ainutlaatuisen palkinnosta tekee se, että muotoilun valtionpalkinto myönnettiin koko Suomen historian aikana ensimmäistä kertaa palvelumuotoilijalle!

Palvelumuotoilija, sisustusarkkitehti Tanja Jänicke (s. 1968) on yhteiskunnallisesti merkityksellisiin hankkeisiin erikoistuneen Yhteismaa ry:n ja Mesenaatti.me-joukkorahoituspalvelun yksi perustajajäsenistä.

Hän on yhdessä kollegoidensa kanssa kehittänyt mm. yhteisölliset Siivouspäivä- ja Illallinen Helsingin taivaan alla -kaupunkitapahtumat sekä Nappi Naapuri ja Kokeilun paikka -verkkopalvelut. Jänicke toimii myös luovien alojen yritysten ja tekijöiden sekä näiden palveluita hyödyntävien julkisen sektorin toimijoiden kouluttajana, konsulttina ja sparraajana.

Hankkeet joita Jänicke on ollut toteuttamassa ovat innostavia esimerkkejä uudenlaisesta, perinteisiä raja-aitoja rikkovasta luovasta työstä, joka etsii vastauksia yhteiskunnallisiin kysymyksiin muotoilun menetelmiä hyödyntäen. Niiden yhteisenä nimittäjänä on osallisuus – jokaisen oikeus elää itsensä näköistä elämää, vaikuttaa itselleen tärkeisiin asioihin ja osallistua yhteisen hyvän tuottamiseen ja jakamiseen.

Palkinto on kunnianosoitus kaikille meille

Koko Yhteismaan ja Mesenaatin tiimi on innoissaan asiasta. Vaikka palkinto myönnettiin Jänickelle henkilökohtaisesti, niin pitää Jänicke sitä kunnianosoituksena koko perustajatiimin yhteiselle 7-vuotiselle ponnistukselle:

Tämä kalustesuunnittelijana, sisustusarkkitehtina ja rakennuttajakonsulttina 20-vuotta toimineen Jänicken ja yhteiskuntatieteilijä Pauliina Seppälän sekä yhteiskuntatieteilijä ja WEB-kehittäjä Marko Tannisen kolmikko on tehnyt uraauurtavaa palvelumuotoilutyötä Suomessa.

"Olemme yhdessä hypänneet muotoilemaan jotakin, mitä ei vielä edes ollut olemassa; tunnistaneet yhteiskunnassa puutteita tai tarpeita ja lähteneet pelottomasti ratkomaan niitä", toteaa Jänicke.

Tämänkaltaista yhteiskunnallista palvelumuotoilua on aivan mahdotonta toteuttaa yksin.

Design for Social Innovation

Social innovation refers to product and process innovations with a social purposes; It also connects with "Design for Bottom of the Pyramid" and developments between the global North and South.

Social innovation stems from the grassroots and often operates in niche, but needs support from selected regime actors (e.g. local communities, institutions, regulation).

Social innovation can be supported with for example:
- Community-oriented toolkits and other resources to support emergent action
- Process guides and manuals to support project work in various contexts
- Platforms for exchange of knowledge and to support interaction

Role of design for social innovation?
- Development of tools, guidelines, processes, platforms for social innovation
- 'Social franchising' of social innovation support (Manzini, 2015)
- Promoting social innovation as an approach to develop solutions for sustainability

Examples of Design for Social Innovation – projects/platforms *(from readings):*

Prendi in Casa Uno Studente (Host a Student)
- Project facilitates the co-habitation of self-sufficient retirees with spare rooms and young non-residents in need of accommodation in Milan, Italy
- Platform for developing accommodation services for students with a set of tools to enable compatible host–guest matches, thus ensuring good relationships

Nappi Naapuri (Nifty Neighbour)
- Finnish online platform to enable exchange help/guidance, share tools, find friends etc.
- Platform established by Yhteismaa ('common ground' in English), a non-profit organisation in Helsinki which aims to contribute to a participatory culture
- See: https://www.nappinaapuri.fi/home

Open Food Network
- Open Food Network is an opensource (hosted on GitHub) online platform that directly connects food producers and food hubs with buyers
- Organized by non-profit, registered charity Open Food Foundation (Australia), with the aim of developing fair and sustainable food systems
- Since then, local networks developed in the UK, Canada, France and Scandinavia

Examples of Design for Social Innovation – toolkits *(from readings):*

The Young Foundation's *The Open Book of Social Innovation*
- Guidelines and project tools to support social innovation in different organizations
- Downloadable book from: https://youngfoundation.org/publications/the-open-book-of-social-innovation/

NESTA DIY toolkit
- Guidelines and tools targeting social innovators working in different projects
- Downloadable from: https://www.nesta.org.uk/toolkit/diy-toolkit/

The European Social Innovation Toolkit 2018
- Based on the six generic phases of social innovation proposed in *The Open Book of Social Innovation* (see above)
- The book can be downloaded from: www.kl.nl/en/publications/the-european-social-innovationtoolkit-2018/

'Living Labs' for Social Innovation

Living Labs and Transition Labs as places to experiment change:

- Urban Living Labs (ULL) and Urban Transition Labs (UTL) are "sites in cities deviced to design, test, and learn from social and technical innovation in real world settings" (Voytenko et al. 2016)

- They can be defined as the locus within a city/area where (global) persistent problems are translated to the specific characteristics of the city and where multiple transitions interact across domains (e.g. energy, mobility, built environment, food, ecosystems).

- Connects also rather naturally with other design labs and maker spaces…

- *Aalto Test Site as an example?*

- For ULL examples and more information, see video by Timo von Writh from the DRIFT institute (https://drift.eur.nl/): https://www.youtube.com/watch?v=0qhLODs0rlM

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Urban Living Labs – promise of sustainability?

Designing for stakeholder interactions

Stakeholder mapping for sustainability

Business management primarily use stakeholder analysis to mobilize, neutralize or defeat stakeholders, to meet the strategic objectives of firms. But increasingly also as partners for R&D.

Within policy, development, and natural resource management, stakeholder analysis is seen as an approach that could empower marginal stakeholders to influence decision-making processes.

Primary stakeholders:
- A group without whose "continuing participation the corporation cannot survive as a going concern" (Clarkson 1995).
- Typically include: investors, shareholders, employees, customers, suppliers and communities
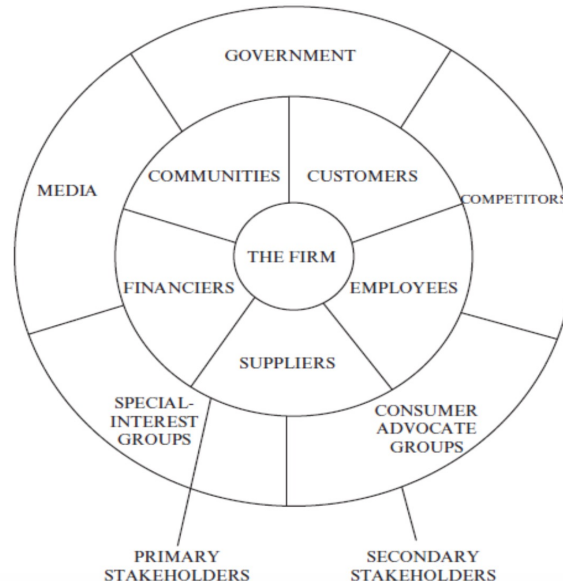
Secondary stakeholders:
- "Those who influence or affect, or are influenced or affected by, the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival" (Clarkson 1995)
- Typically include: media, special interest groups, government

Considering different stakeholder assessment & engagement approaches:

Interest

Low Power
High Interest

High Power
High Interest

Power

Low Power
Low Interest

High Power
Low Interest

Affecting and Affected

Least

Moderately

Most

Affecting

Affected

SECONDARY STAKEHOLDERS

School Groups

Police

Ski School

PRIMARY STAKEHOLDERS

Lodges

Ski Rental Company

Ski Lift Company

Snowboarders

PARTNERS

Resort Management Lift Company

STAKEHOLDERS

Competitors

Bike Riders

Hospitals

Parks Victoria

Skiers

Restaurants

PARTNERS

PRIMARY STAKEHOLDERS

SECONDARY STAKEHOLDERS
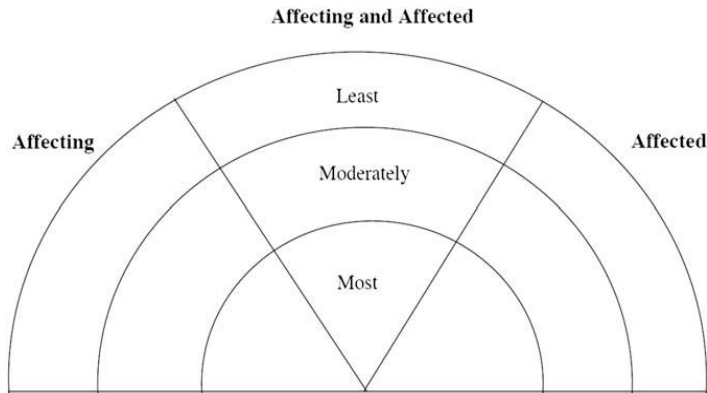
Assessing stakeholder impacts of production and consumption:

- Assessment of societal impacts along the lifecycle phases of a product/material
- UNEP Social LCA as the baseline (2009)

Five Stakeholder groups
- S1 Workers
- S2 Consumers
- S3 Local community
- S4 Society
- S5 Value-chain actors

31 Impact categories - *examples*
- Human rights, equity
- Health and safety
- Social support / Benefits
- *(more)*

Data inventory
- At National level – national statistics
- At Enterprise level – requires on-site data

Impact assessment
- Identify "social hot-spots"
- Options for actions

4. Transcribe Hotspots to Hotspot table

High stakeholder hotspot density

Trace back to source from which data came

Life phase	NATION	S1 Workers	S2 Consumers	S3 Local community	S4 Society	S5 Supply chain (others)
Material 1	AUS				X	
Material 2						
Manufacture	BGD	XXXXX	XX	XXXX	X	X
Transport	**PAN**	X	XX	XXXX		
Use	**SUI**				X	
End of life	KEN	XXXX			XX	X

5. Examine by column and by row. Assess risk to product and brand image

6. Consider actions

Developing *stakeholder interactions:*

- Mapping stakeholders and redesigning stakeholder-system interactions
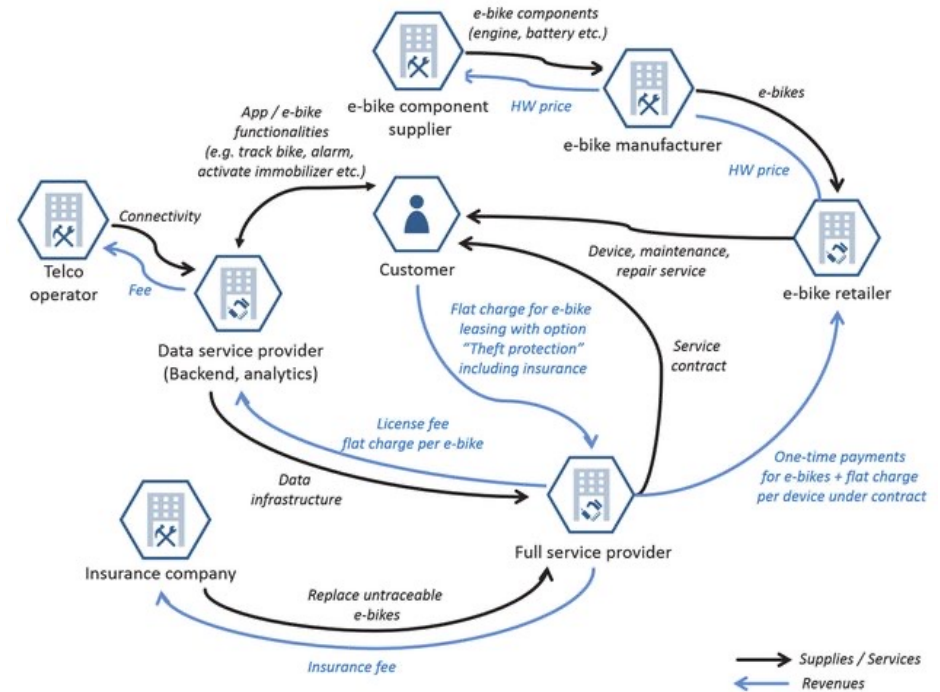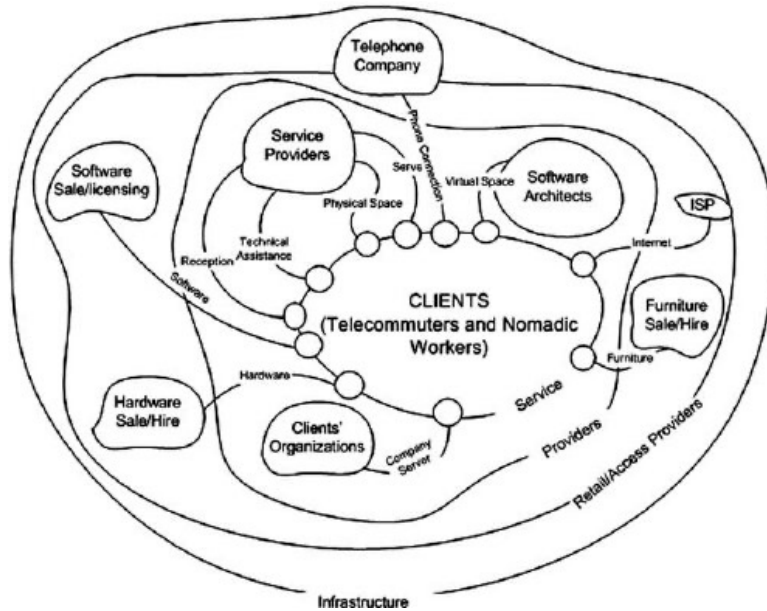
Morelli, Nicola. (2006). Developing new product service systems (PSS): methodologies and operational tools. 10.1016/j.jclepro.2006.01.023.

Bilgeri, Dominik & Brandt, Veronika & Lang, Marco & Tesch, Jan & Weinberger, Markus. (2015). The IoT Business Model Builder.

Socio-technical experimentation

Socio-technical systems and sustainability transitions

Transition Management (TM) methodology is based on a *multi-level perspective* on sustainability transitions within the socio-technical system context, with focus on:

- **Macro-level (landscape)**

- **Meso-level (regimes)**

- **Micro-level (niches)**
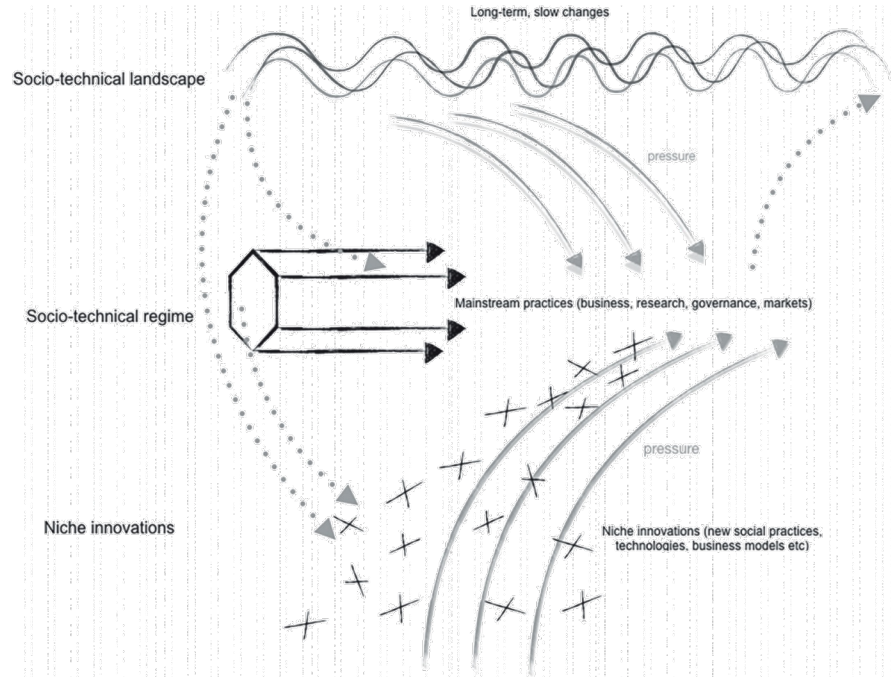
Figure 11.1 The MLP of system innovations model

Source: Adapted from Geels (2005a, 2005b) and Geels & Schot (2007).

The dynamics of *socio-technical change:*

Macro:
Evolving
sociotechnical
landscapes

Meso:
A patchwork
of regimes

Micro:
novel
configurations

[1] Novelty, shaped by existing regime
[2] Evolves, is taken up, may modify regime
[3] Landscape is transformed
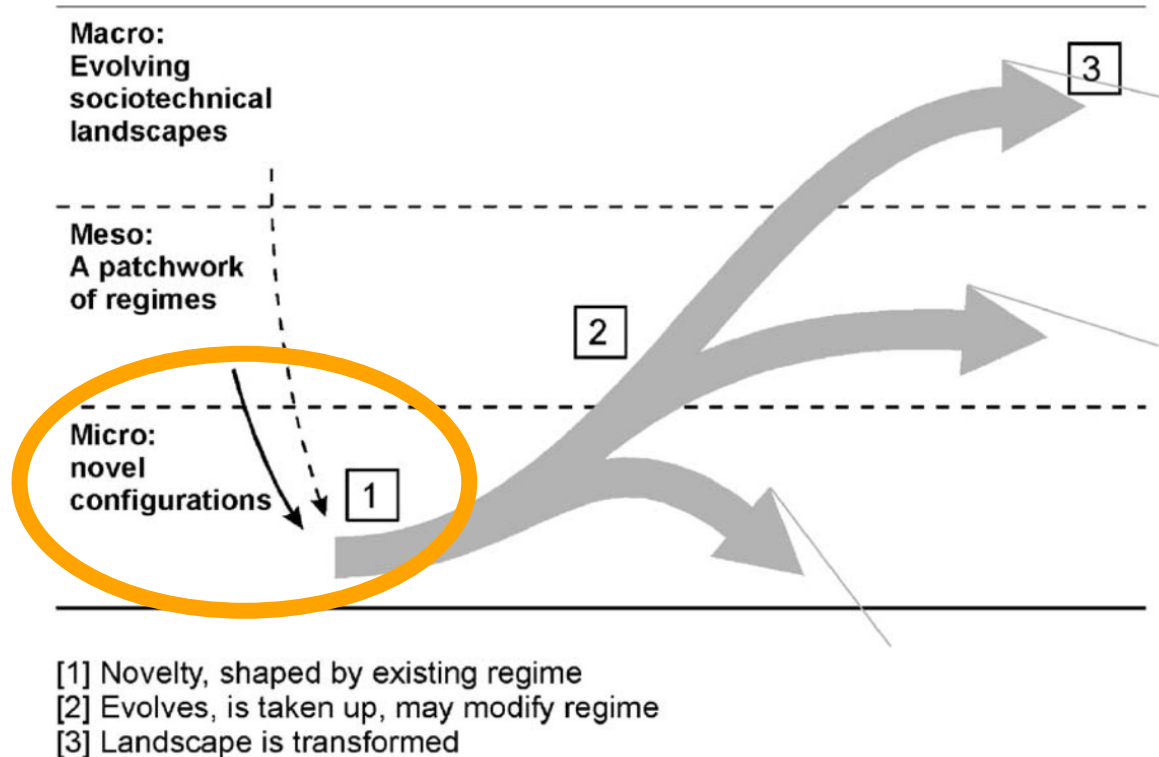
Fig. 4. The dynamics of sociotechnical change (Rip and Kemp, 1996; Kemp et al., 2001).

Experiments in Transition Management

Transition arenas do not (necessarily) have the formal powers of (mainstream) policy developers (e.g. Frantzeskaki et al., 2012) but aim into experimenting different ways of change.

Transition experiments (governance, technological, social) are expected to create outcomes through three different mechanisms:

- *deepening* (learning as much as possible from the transition experiment),
- *broadening* (repeating an experiment in an adjusted form in a different context)
- *scaling-up* (embedding an experiment in the existing structures of the incumbent regime)" (Grin et al., 2010, p.146).

Designing socio-technical experiments and pilots

In the testing, piloting and scaling-up phase the design process has an emphasis on creating **socio-technical experiments** that help to *test* and *link* the design idea and to *move it towards the mainstream.*

SOCIO-TECHNICAL EXPERIMENTS

Scale-up

experiment as
AGENT OF
CHANGE

MOVE FROM
EXPERIMENTATION
TO MAINSTREAM

LINK TO OTHER
PROJECTS AND
INITIATIVES

Broaden

REPEAT THE
EXPERIMENT

experiment
as a LAB

experiment
as a WINDOW

GIVE VISIBILITY

Deepen

TEST

experiment
as a LAB

(adaptation from van den Bosch et al. 2008)

Source: Ceschin, 2013
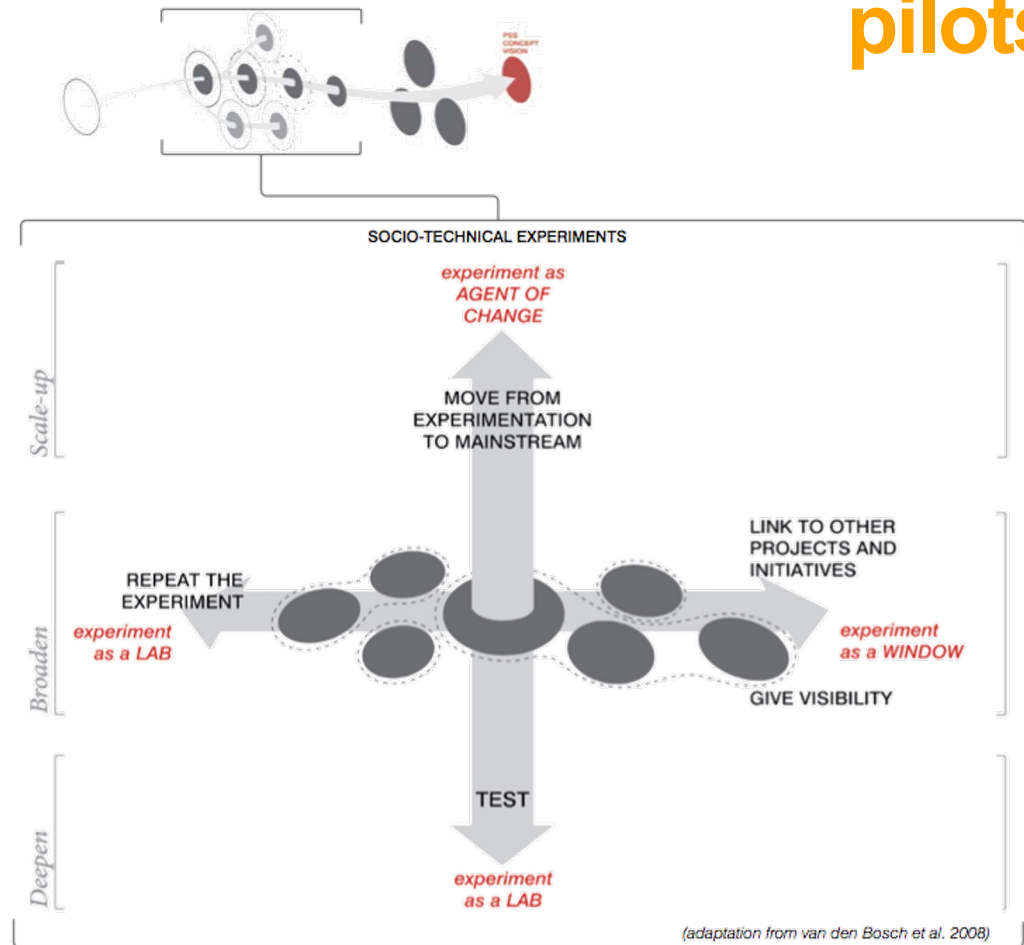
Working with system level to redesign *system interactions* and the *design offering*:

Socio-technical context

Product-service system

Design offering

Source: Ceschin, 2013
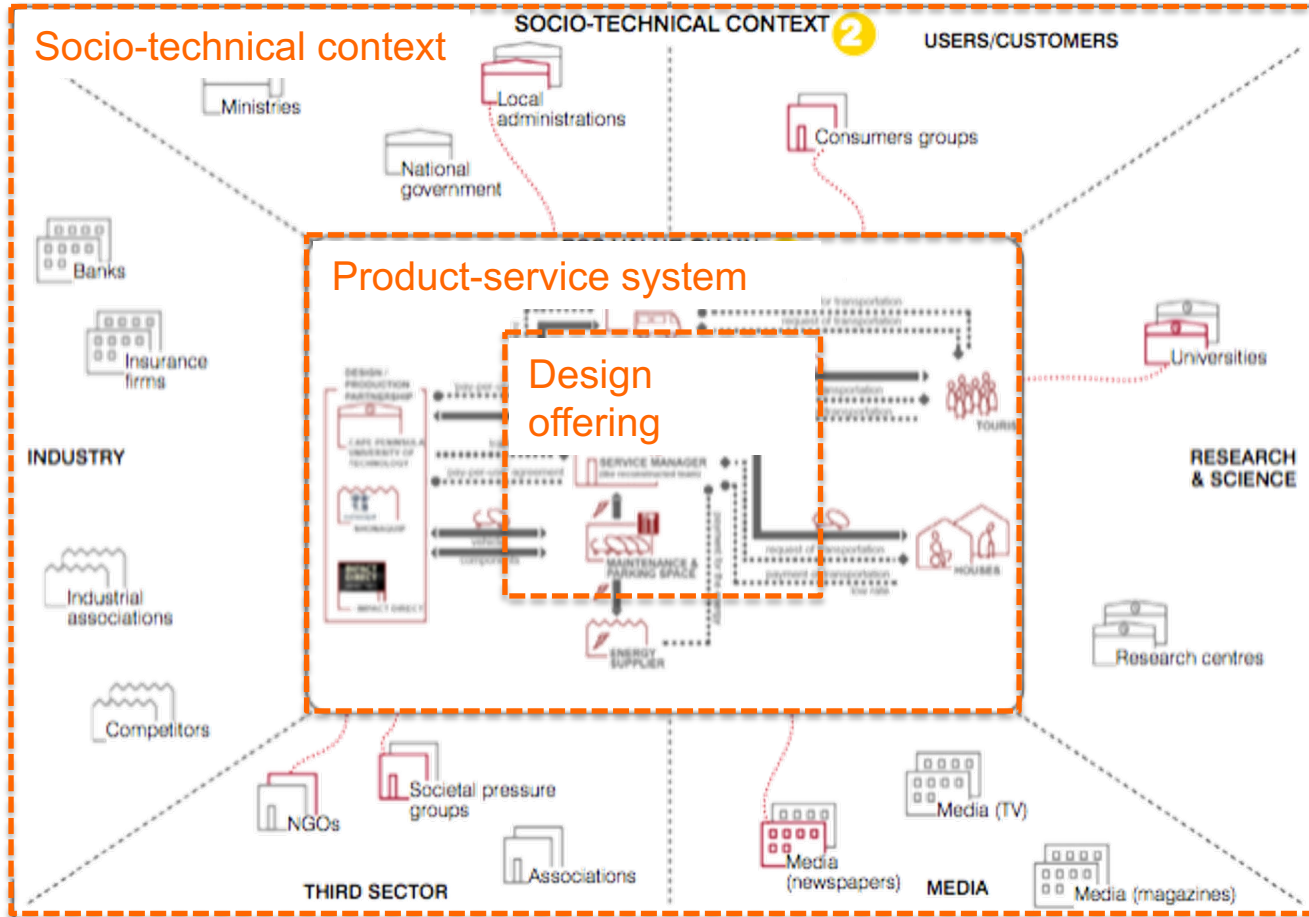
Designing the *transition path*:

new design scope for strategic designers

2 Transition path

Socio/technical experimentation

Incubation

Niche development & scaling-up

1 PSS concept vision

traditional design scope for strategic designers

new design scope for strategic designers

3 Actors networks

Source: Ceschin, 2013

Adjusting concept vision *iteratively and collaboratively*:

Vision re-orientation ①

adjustment of the transition strategy as a consequence of the vision re-orientation ②

PSS concept vision (version II)

PSS concept vision (version III)

Niche development & scaling-up

Incubation

Socio/technical experimentation

PSS concept vision (version I)

Source: Ceschin, 2013

Adjusting concept vision *iteratively and collaboratively*:
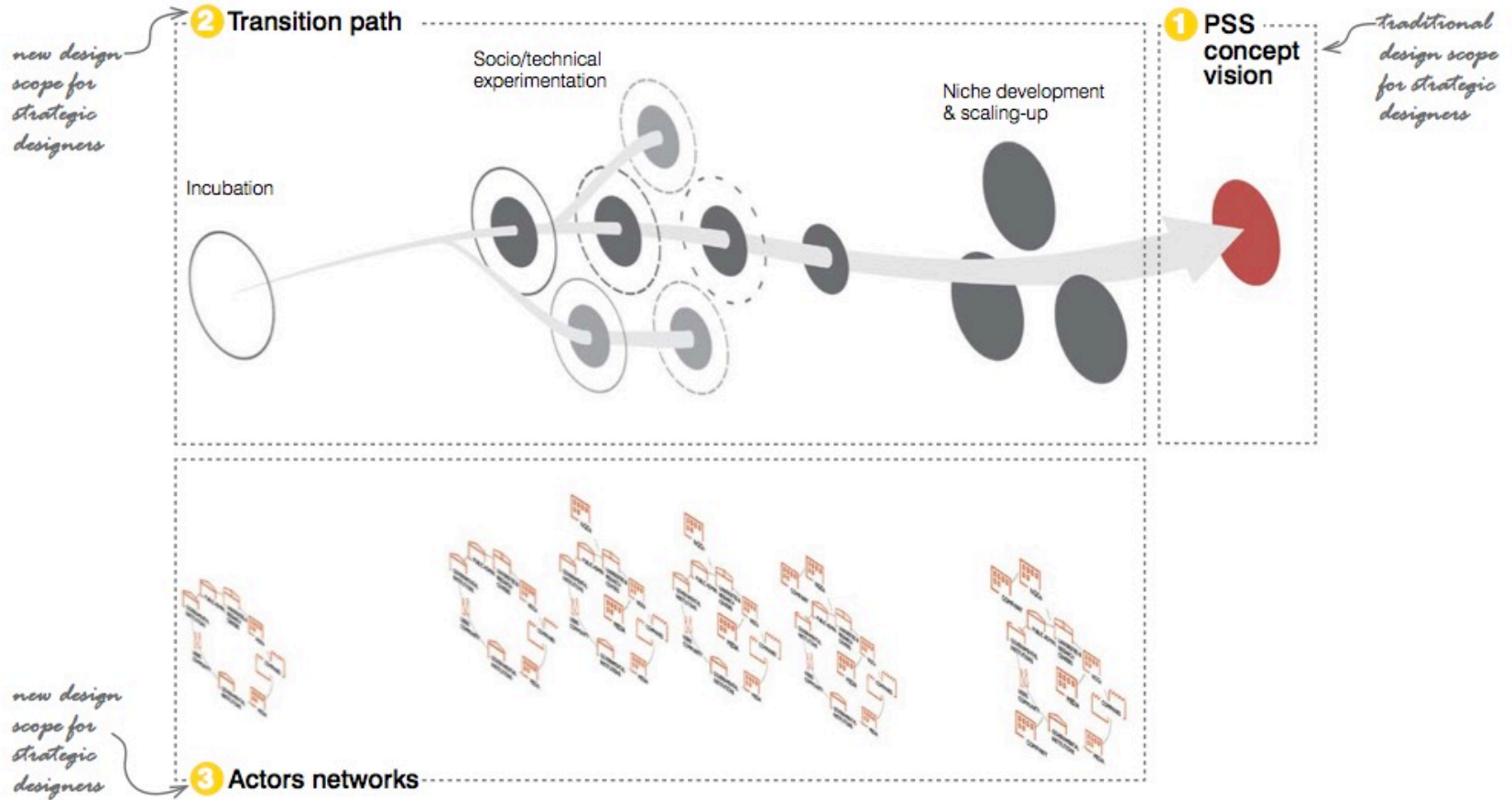
Adjusting concept vision *iteratively and collaboratively*:
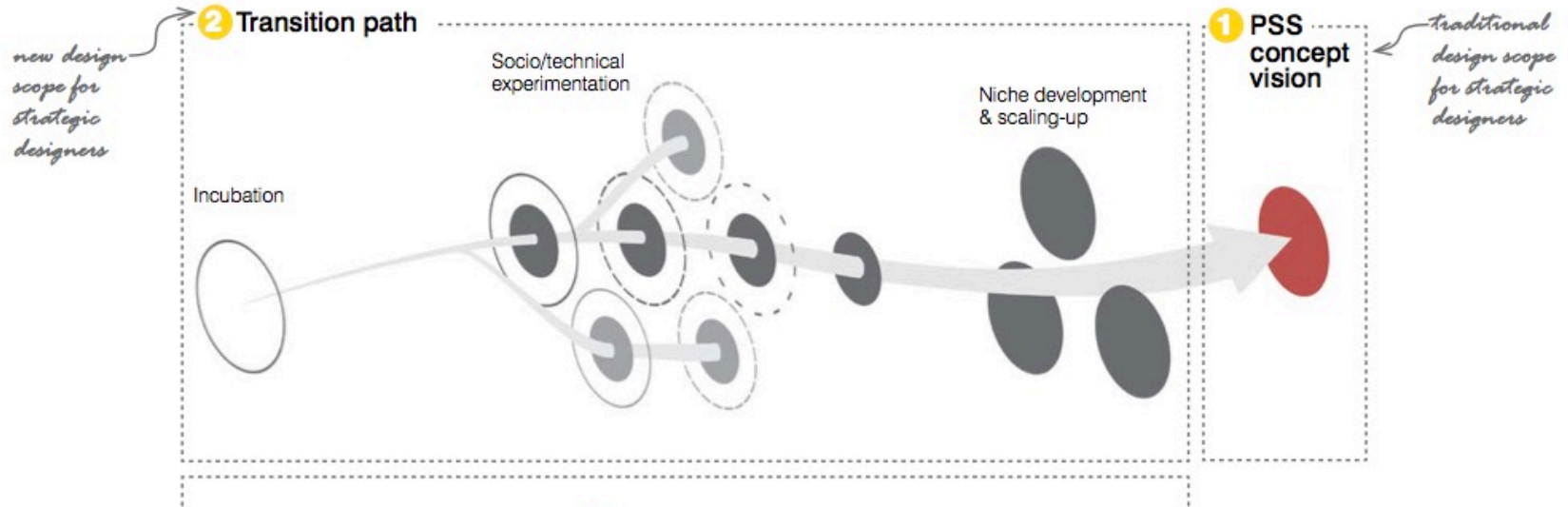
Transition management process:

| *Initiate Transition arena* | *Discuss starting points:* Current situation, drivers, and first steps | *Develop vision and its elements:* Transition targets and goals | *Design and prioritize different steps on the timeline:* Actor networks, interactions, connections to further action | *Getting into action* |

Source: Ceschin, 2013

Adjusting concept vision *iteratively and collaboratively*:

new design

2 Transition path

Socio/technical

1 PSS concept

traditional design scope

Develop understanding on existing stakeholder and actor-networks

Ideate changes to stakeholder and actor-networks in relation to transition pathway

Present stakeholder and actor-networks in relation to vision of your work
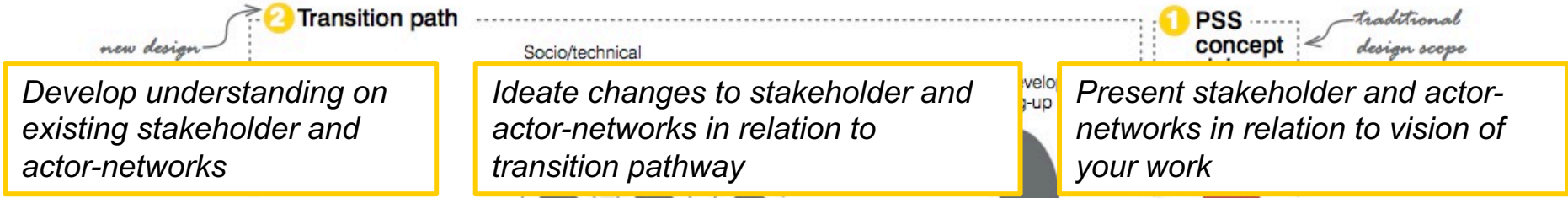
Besides system and actor mapping , consider:
- *Materials (supportive tools, products, services, processes)*
- *Competences (necessary and evolving skills and abilities)*
- *Meanings (values that are connected to processes and things)*

Transition management process:

Initiate Transition arena

Discuss starting points: Current situation, drivers, and first steps

Develop vision and its elements: Transition targets and goals

Design and prioritize different steps on the timeline: Actor networks, interactions, connections to further action

Getting into action

scope for strategic designers

3 Actors networks

Source: Ceschin, 2013

Optional reading #1: Emili et al. (2016) – PSS mapping for energy systems

Article exemplifying the use of PSS system mapping to find alternative business models:

- Describes PSS stakeholder system mapping tool and its use

- Developes system elements for co-designing (business offerings for) renewable energy system services
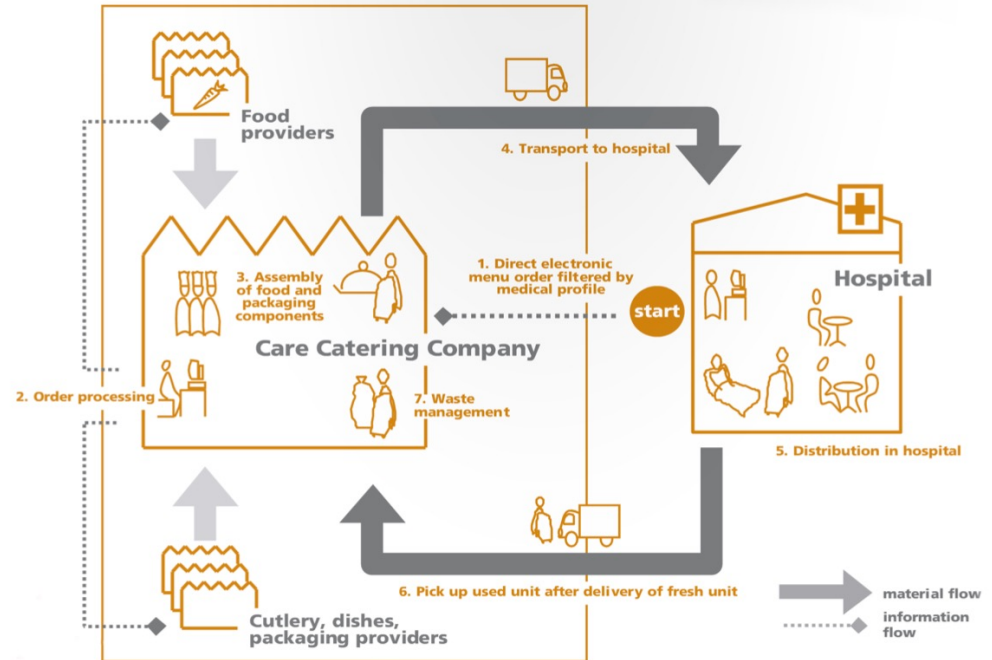
Figure 1 - Food Delivery Solutions system map. Manzini et al. 2004

Elements for mapping energy systems:

ENERGY SYSTEMS

Mini kit	Individual energy system	Charging station	Isolated mini grid	Connected mini grid

ENERGY-USING PRODUCTS

Lantern	Battery	Bulbs & lights	Mobile charger	Radio	TV	Fan	Computer & IT device

RENEWABLE ENERGY SOURCES

Biomass	Solar	Wind	Hydro	Human	Hybrid

SERVICES

Financing	Installation	Training	Maintenance & repair	Product upgrade	End-of-life

NETWORK OF PROVIDERS

Private enterprise	Technology manufacturer	Local entrepreneur	Community	Cooperative	NGO	MFI	National grid supplier	Public and gov entity

CUSTOMERS

Individual household	Local entrepreneur	Productive activity	Public building	Community	Public and gov entity	Mix of customers

OFFER

Pay to purchase	Pay to lease or rent	Pay per energy consumed	Pay per unit of satisfaction

PAYMENT CHANNELS

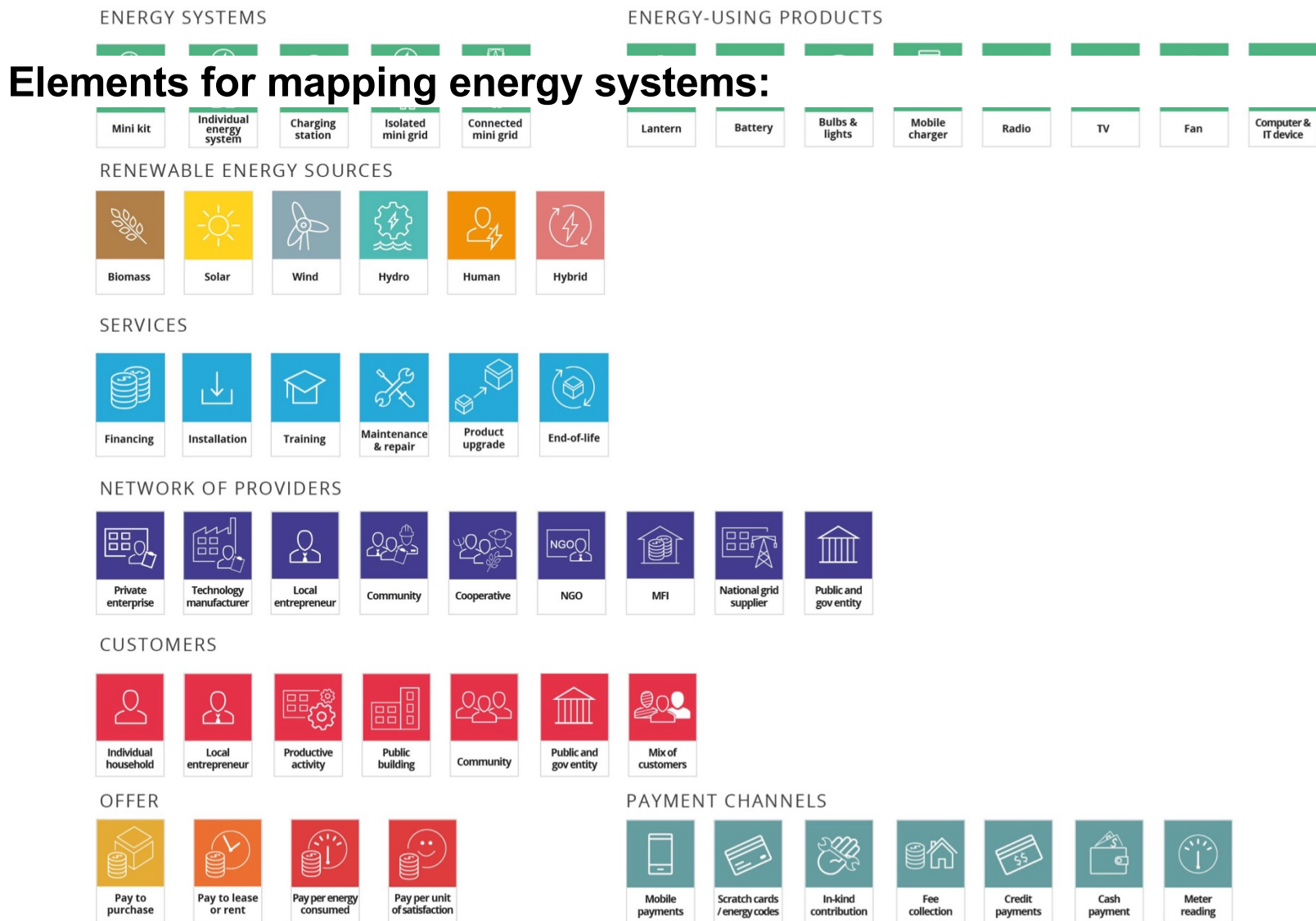| Mobile payments	Scratch cards / energy codes	In-kind contribution	Fee collection	Credit payments	Cash payment	Meter reading

Figure 2 - Icons describing elements of PSS+DRE offers

Case study of use of the tool:

A company provides communities with mini grid systems that can be connected to the main electricity grid. The community becomes owner of the system and receives training in operation, maintenance and management of the mini grid. A community committee is responsible for collecting payments from households according to the agreed tariff.

Thanks to the grid-connected system, the committee is able to sell extra generated electricity to the national grid supplier.
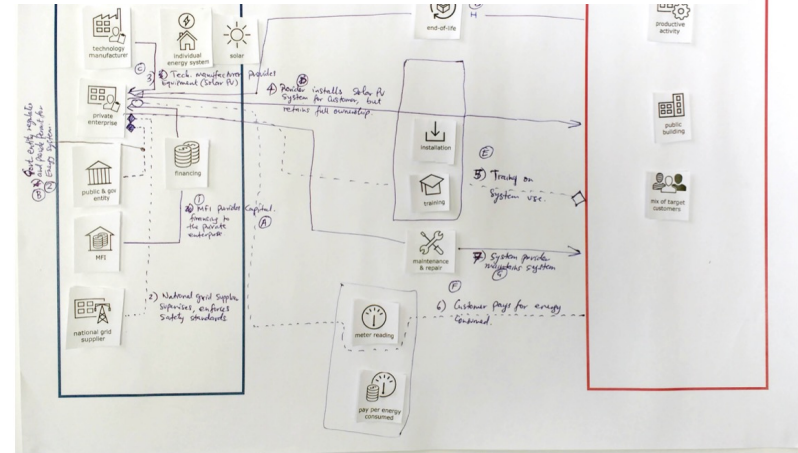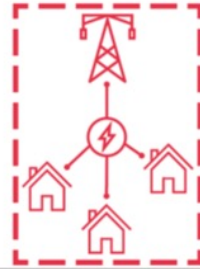
Figure 6 - Energy System Map designed during the course

1) provider sells and installs connected mini grid

2) provider offers community training on operation, maintenance and management

3) community pays to purchase product

4) customers pay the agreed tariff

5) community provides extra generated energy

6) national grid supplier pays for the energy provided

Energy solution provider

National grid supplier

Committee

End-users

Optional reading #2: Ceschin (2014) – developing socio-technical experiments

Article focus on sustainable mobility product-service idea idea in Cape Town, Africa:

- Social, economic, environmental issues in local small-scale mobility (e.g., deliveries etc.)

- Developing a PSS idea

- Building local network of actors

- Series of experiments from initial testing to piloting at local transport hubs

- Socio-technical experiments capable to act as *Labs, Windows* and *Agents of change*
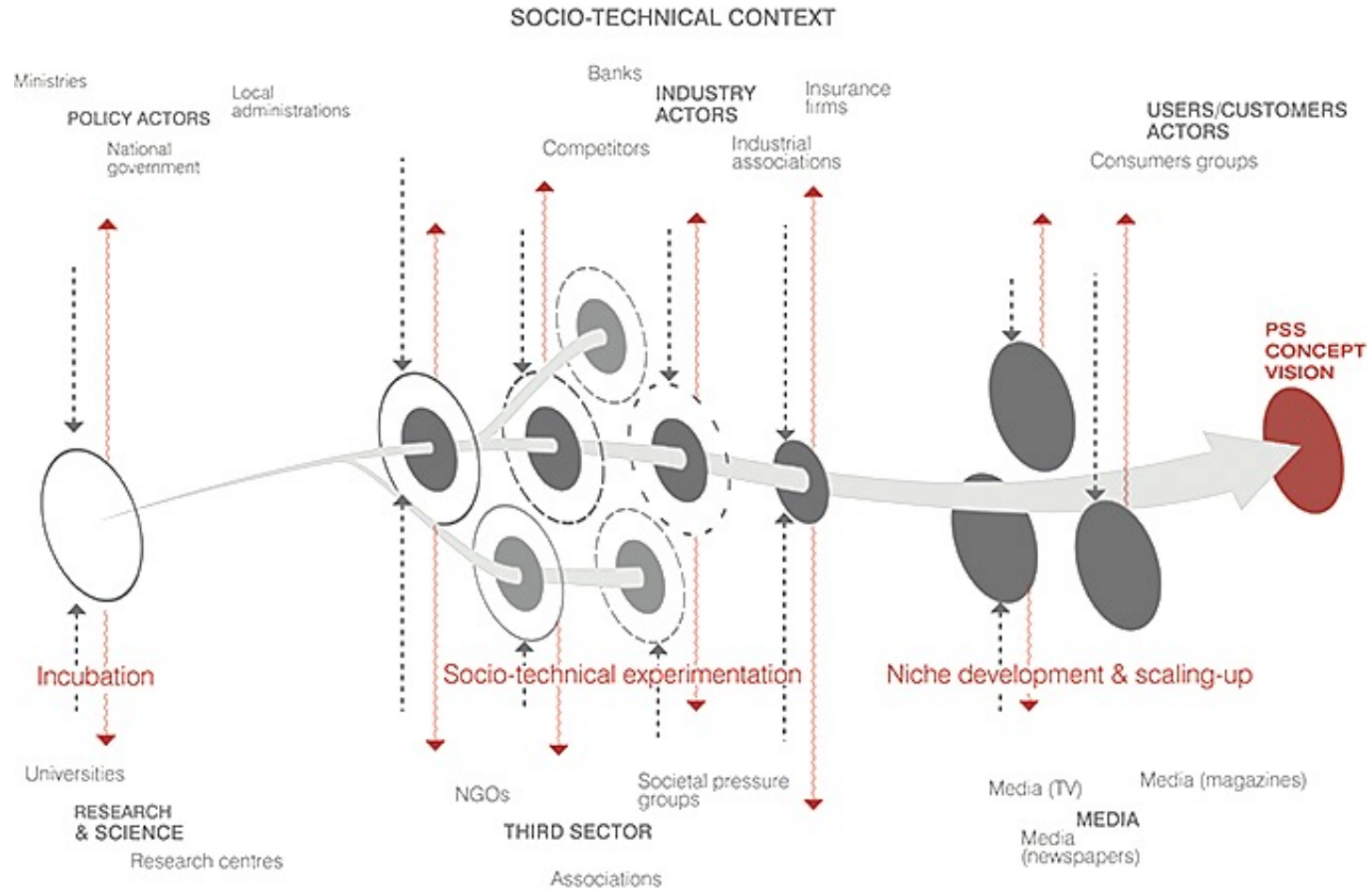

Figures 3, 4. First socio-technical experiment. These photos were taken by the author during the service test (July 2011).

Figure 5. First socio-technical experiment. It's taken by the author during technical test of the vehicle (August 2011).

Managing the societal embedding of transition ideas:

Source: Ceschin, 2014

***Multi-term design attitude,* with focus simultaneously on different time perspectives:**

SHORT-TERM PERSPECTIVE

MEDIUM-TERM PERSPECTIVE

LONG-TERM PERSPECTIVE

PSS CONCEPT VISION

Incubation

Socio-technical experimentation

Niche development & scaling-up

time horizon

Source: Ceschin, 2014

***Multi-term design attitude,* with focus simultaneously on different time perspectives:**

Source: Ceschin, 2014
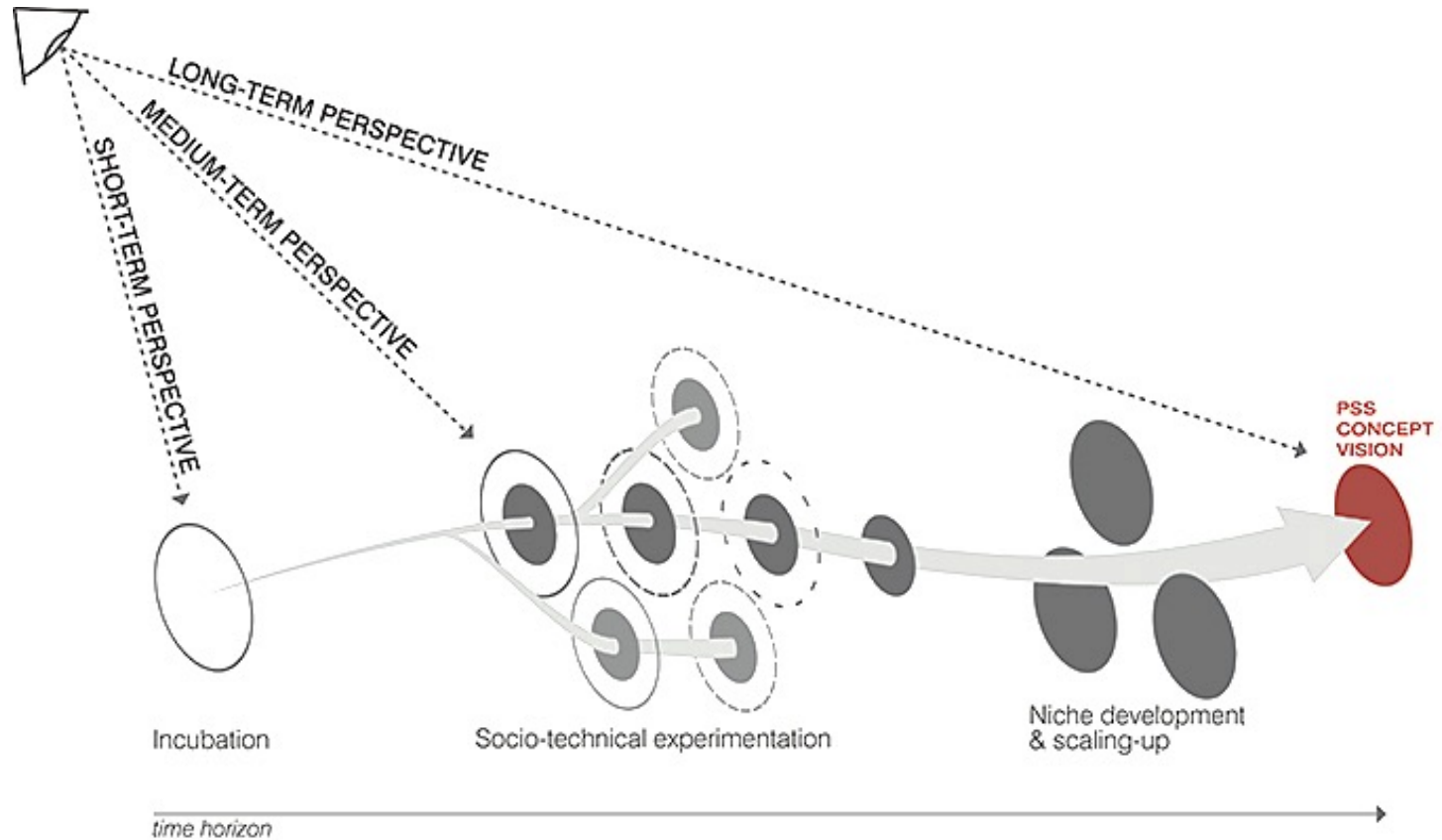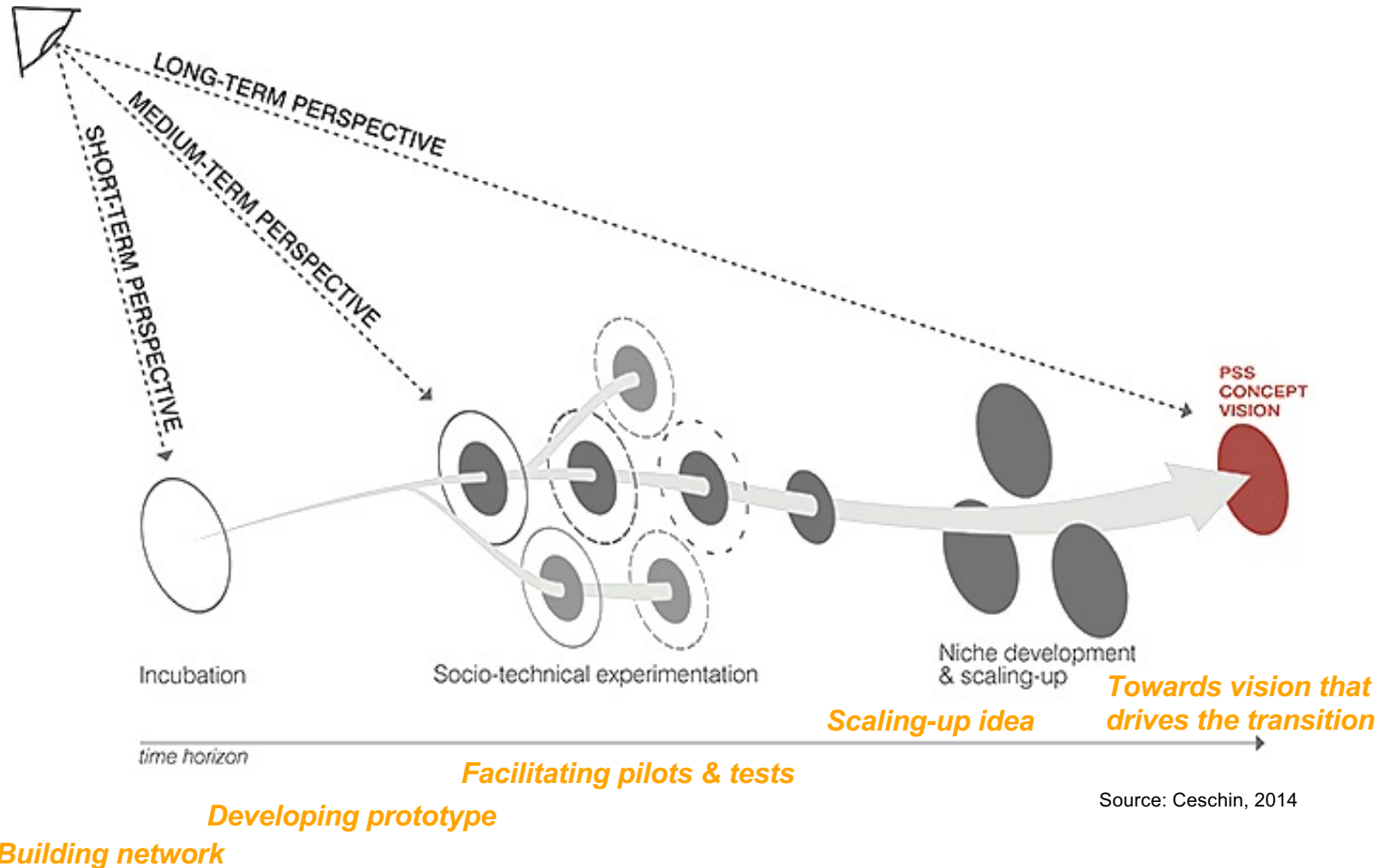
Multi-term design attitude, with focus simultaneously on different time perspectives:

The Cape Town Sustainable Mobility project:

Phase one: Developing the vision and PSS concept with local actors

Phase two: Socio-technical experiments with local actors

Phase three: Establishing local networks & dissemination

LONG-TERM PERSPECTIVE

MEDIUM-TERM PERS

SHORT-T

PSS CONCEPT VISION

Incubation

Socio-technical experimentation

Niche development & scaling-up

Scaling-up idea

Towards vision that drives the transition

time horizon

Facilitating pilots & tests

Developing prototype

Building network

Source: Ceschin, 2014

Group activity

Activity in project work groups

Continue exercise from last Thursday:

- Think of your focus theme of SCP, and start to think of the system elements (and sub-systems) from the user perspective

- Consider physical elements and material flows, but also service components and elements of communication and interaction

- **Proceed to more detailed mapping of the stakeholder network and the PSS**

- **What are main materials and products in the system? Who are the main stakeholders (actors) and how are the interactions designed?**

- Continue on platforms that you have been working so far…

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Activity in project work groups

After initial system mapping, discuss in your project work groups:

- **Who are the main stakeholders (focus actors) that you interact with? What type of actions, interactions and interventions could be needed?**

- **What stakeholder interaction, surveying, experimenting, and communication activities you might be able to incorporate to your design concept?**

- Present short reflections on the system mapping and stakeholder assessment exercise at the end of session…

- **Let's gather back to class at 16:20 to reflect and conclude session…**

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Project work next steps…

Idea presentations on this Thursday (25.1.)

In this Thursday session, groups present their initial ideas for their SCP challenge. Each group has a 15 minute slot including the feedback.

In your idea presentation, briefly discuss your interpretation of the theme and challenge, and ideas that you'd take forward. No strict format but needs to be short (<10 min) to leave room for comments/feedback by teacher and other students (>5 min).

Possible structure for the presentation:
- Introduction of your group members and your thematic focus
- Interpretation of your group's focus theme and how it comes forward at the campus
- Reflections on design approaches to pursue improvement
- Results of initial research, arguments and justifications for your choice of focus in ideation
- Visualizations of your focus system and stakeholder-system mapping and assessment
- Initial idea(s) – you can present one idea or a few…

Idea presentations on this Thursday (25.1.)

Time: This Thursday 25.1. 9:15-12:00

Place: A-Grid, Mordor

Schedule for the session:

9:15–9:20   Welcome!

9:20–10:35   Groups 1–5 (15 min slots)

10:35–10:45   (break)

10:45–12:00   Groups 6–10

Everyone, please be there on time!

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Next week sessions: Topics & readings

Tuesday (30.1.):
Design for sustainability transitions (Q201)

Lecture reading:

- Ceschin & Gaziulusoy (2020) Design for Sustainability, Chapter 11: Design for sustainability transitions

- Supplementary reading (if you feel like it): Irwin, T. (2018). The Emerging Transition Design Approach. DRS 2018 Proceedings

Thursday (1.2.):
Communicating and scaling-up sustainability (visitor: Michael Lettenmeier) (A-Grid Mordor)

Session agenda:

- Michael Lettenmeier (visitor) introduces examples of work to scale-up sustainable lifestyles; Michael is one of the leading experts of resource efficiency and dematerialisation in Finland and alumni of Aalto ARTS

- Communicating sustainability in design

Thank you!

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