Design Approaches to Sustainable Consumption

Session 7: From design ideas to experimentation

Tatu Marttila & Philip Hector
Tuesday 31.1.2023 (13:15–17:00)

Agenda today

13:15–13:50   Recap & context for the session
  - *Recap of previous session*
  - *Transition Management framework*
  - *From design ideas to experimentation; Reading for the session*

14:00–15:00   Negotiating food systems experiments (Philip Hector)

15:15–16:00   Exercise in case groups

16:00–16:45   Discussing results

16:45–17:00   Closing session

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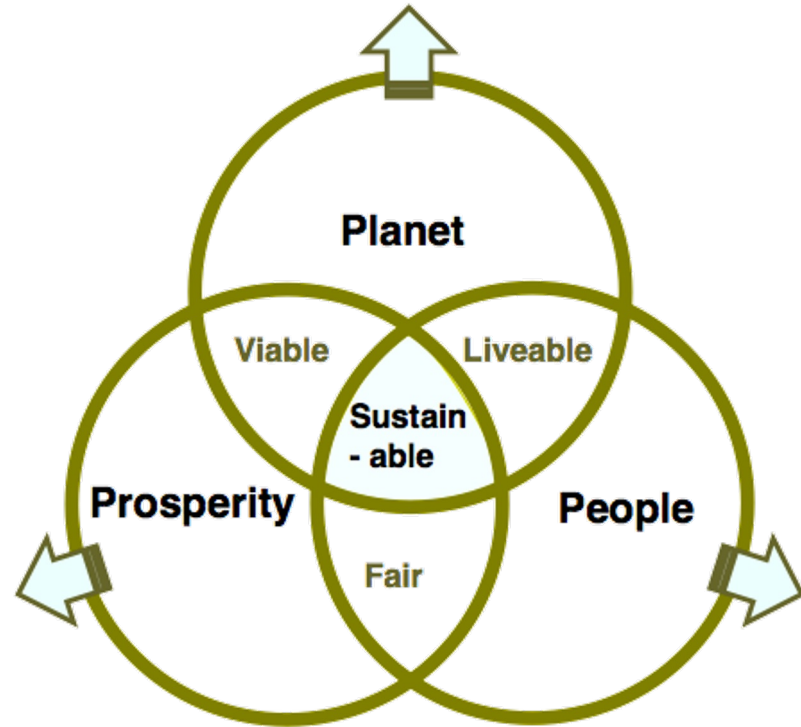and Architecture**

Previous session recap

Sustainability – complex to assess…

Prioritization: "Sustainability" vs. "Sustainable development"?
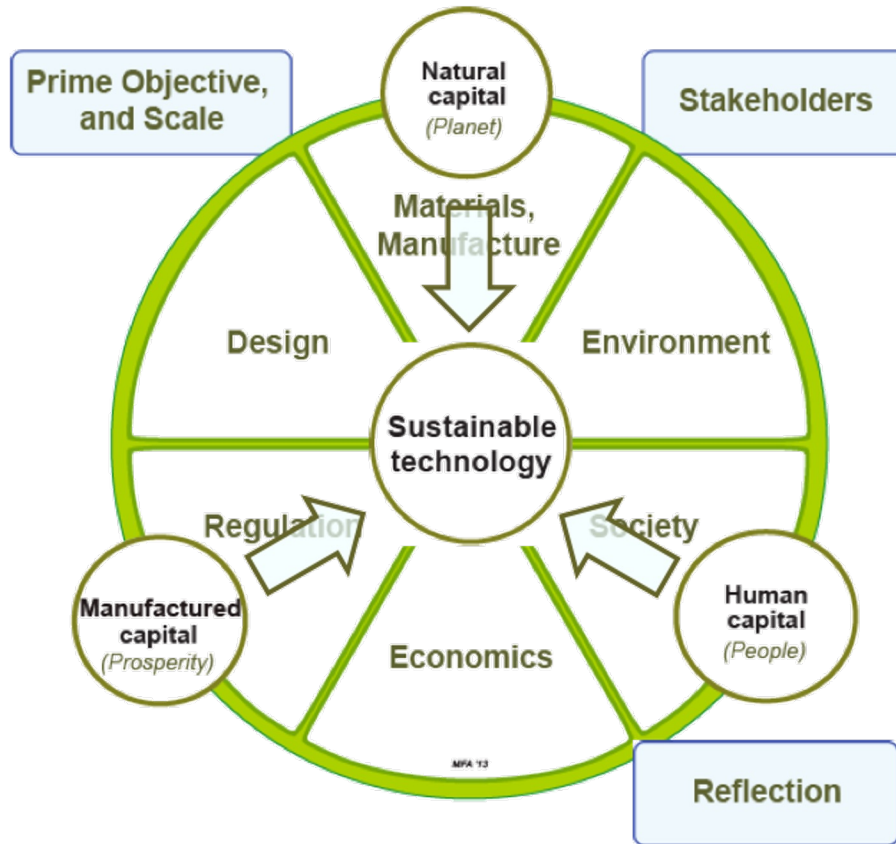
Triple-bottom line reporting:

- Financial bottom line
- Social / ethical performance
- Environmental performance

Decouple the circles
– unpack their meaning…

Source: Ashby et al. (2013) Materials & SD

Process for assessing sustainability of a product-system/technology:

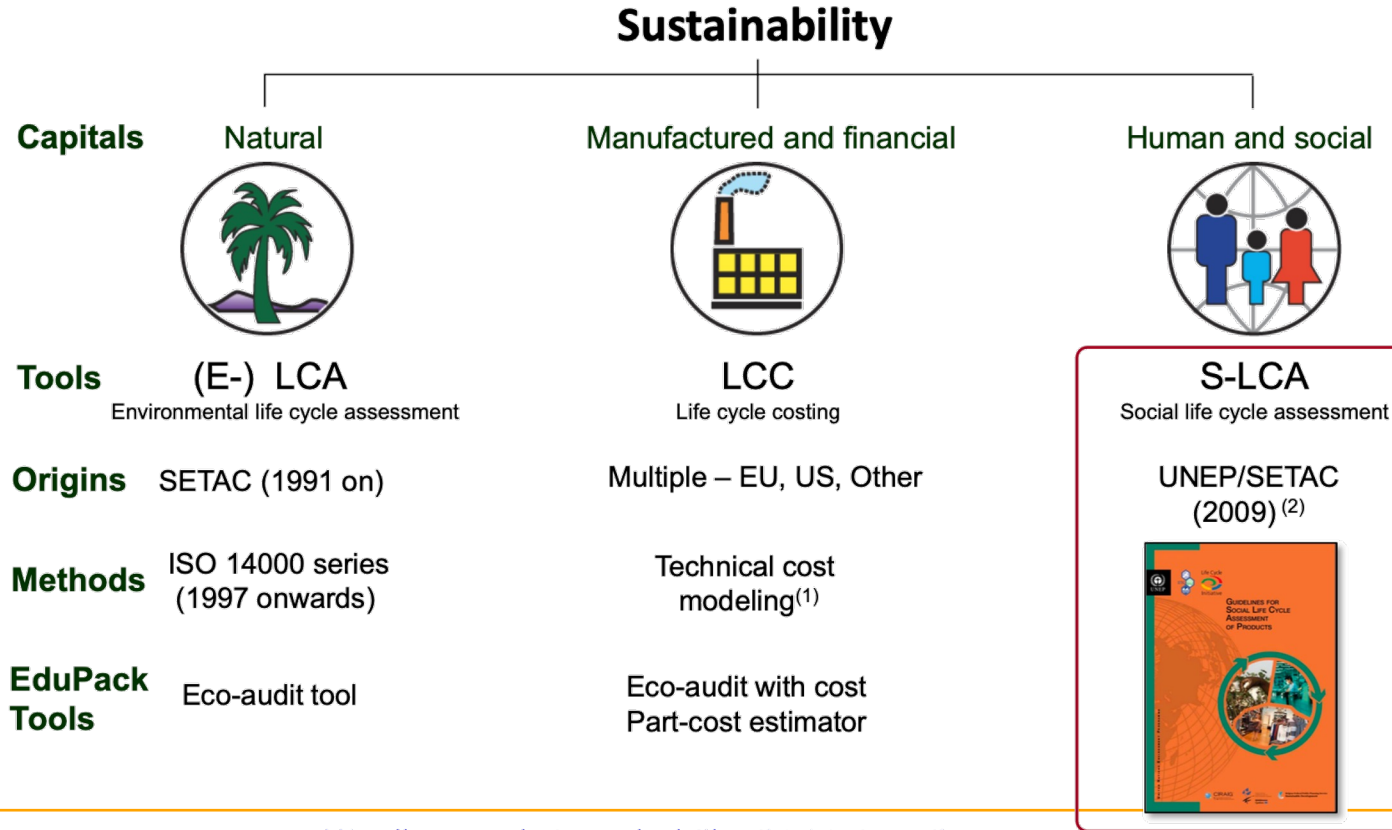**Step 1:** Clarify Objective

Step 2: Stakeholders

Step 3: Fact finding
- *objective*

Step 4: Integration
- *subjective*

Step 5: Reflection

Source: Ashby, M. (2012) Materials and the Environment: Eco-Informed Material Choice

Golden standards for sustainability assessment

Sustainability

Capitals	Natural	Manufactured and financial	Human and social
Tools	(E-) LCA Environmental life cycle assessment	LCC Life cycle costing	S-LCA Social life cycle assessment
Origins	SETAC (1991 on)	Multiple – EU, US, Other	UNEP/SETAC (2009) [2]
Methods	ISO 14000 series (1997 onwards)	Technical cost modeling [1]	
EduPack Tools	Eco-audit tool	Eco-audit with cost Part-cost estimator	

(1) http://ec.europa.eu/environment/gpp/pdf/WP-LifeCycleCosting.qx.pdf

(2) http://www.unep.fr/shared/publications/pdf/dtix1164xpa-guidelines_slca.pdf

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30.1.2023

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Communicating sustainability impacts (…with design action)

Different 'units of analysis' to assess and communicate:

- Environmental/social input (investments) vs. output (impacts), throughout product life-phases
- Environmental/social input/output per 'functional unit' that a product-service system offers (e.g. washing a shirt; driving 1 km etc.) -> Material Input per Service (MIPS)
- Other type of sustainability impacts?

Different audiences for communication:

- Communicating value in design proposal/product/service idea to several actors with visual representations, materials, abstract connections

Design amplifying and scaling-up sustainability considerations and solutions, and enabling connecting to action!

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This week sessions

Tuesday (31.1.):
Negotiating food systems experiments

Guest: Philip Hector

Lecture reading:

- Ceschin, F. (2014). How the Design of Socio-technical Experiments Can Enable Radical Changes for Sustainability. *International Journal of Design.*

Remember to begin to reflect on weekly topics and progress in your learning diary!

Thursday (1.2.):
Scaling-up design ideas

Lecture reading:

- Irwin, T. (2018). The Emerging Transition Design Approach. DRS 2018 Proceedings.

Course and case work schedule

Working days	Tuesdays (13-17)	Thursdays (9:15-12)
Week 1 (10. & 12.1.)	Introduction to course; DfS introduction (F101)	**Case introduction: Food system sustainability** (Q201)
Week 2 (17. & 19.1.)	Systemic (PSS) design and circular economy (Q201)	Design for sufficiency (Q201)
Week 3 (24. & 26.1.)	**Presenting case work ideas** (F101)	Assessing and communicating sustainability impacts (Q201)
Week 4 (31.1. & 2.2.)	Negotiating food systems experiments (Q201)	Scaling-up design ideas (Q201)
Week 5 (7. & 9.2.)	One planet game session (L1–241, Puunjalostustekniikka 1)	**Case work tutoring** (Q101) *Concept poster by Friday!*
Week 6 (14. & 16.2.)	**Final presentations** (F101)	Summary discussion (Q101)

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From design ideas to experimentation and action

Multilevel focus for design
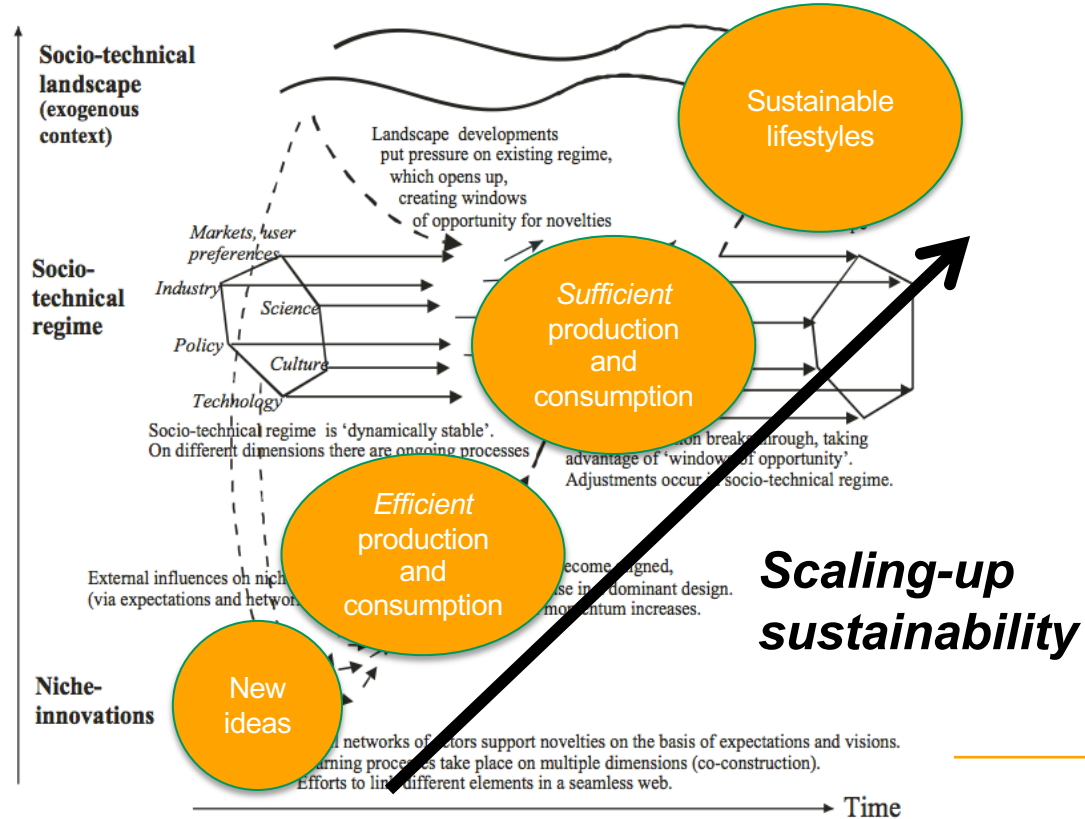
Multilevel perspective adapted to design:

"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."

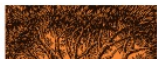Multilevel Design Model (MDM) by Joore & Brezet (2014)
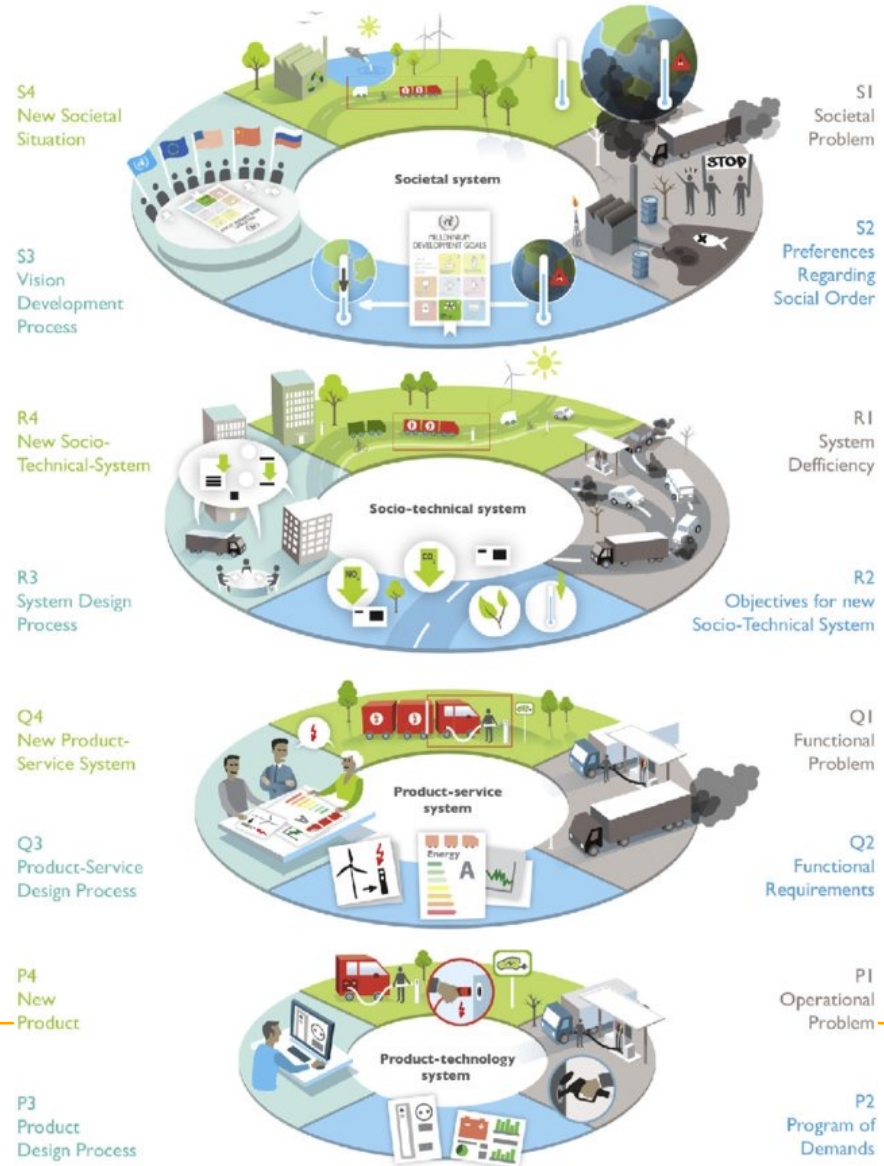
Design connecting with potential for scaling-up

Scaling-up sustainability transitions within the socio-technical context:

Source: Geels, F. (2011) Multi-level perspective on sustainability transitions

State award 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.

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)**
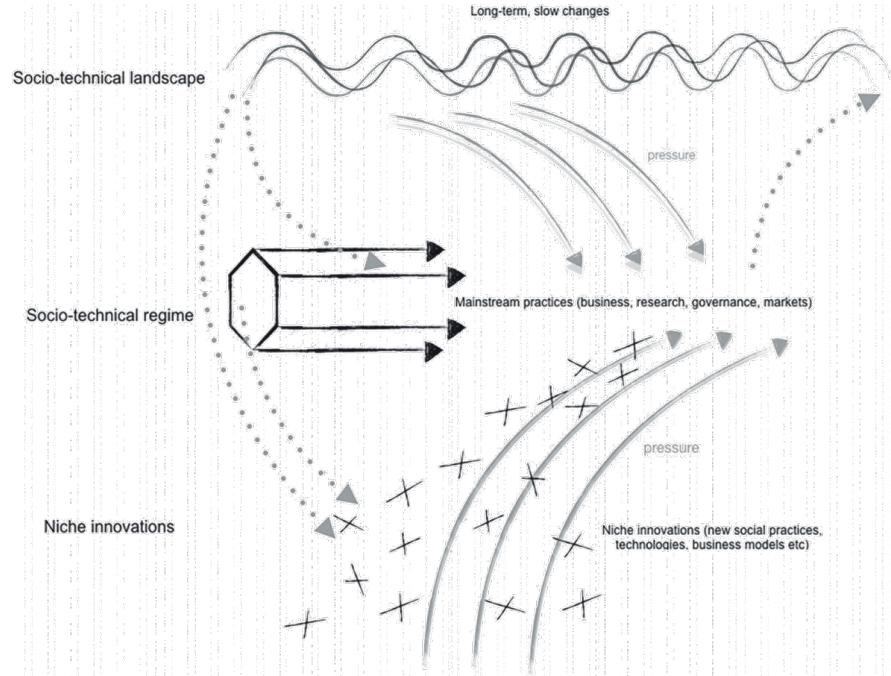
- **Micro-level (niches)**

Figure 11.1 The MLP of system innovations model

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

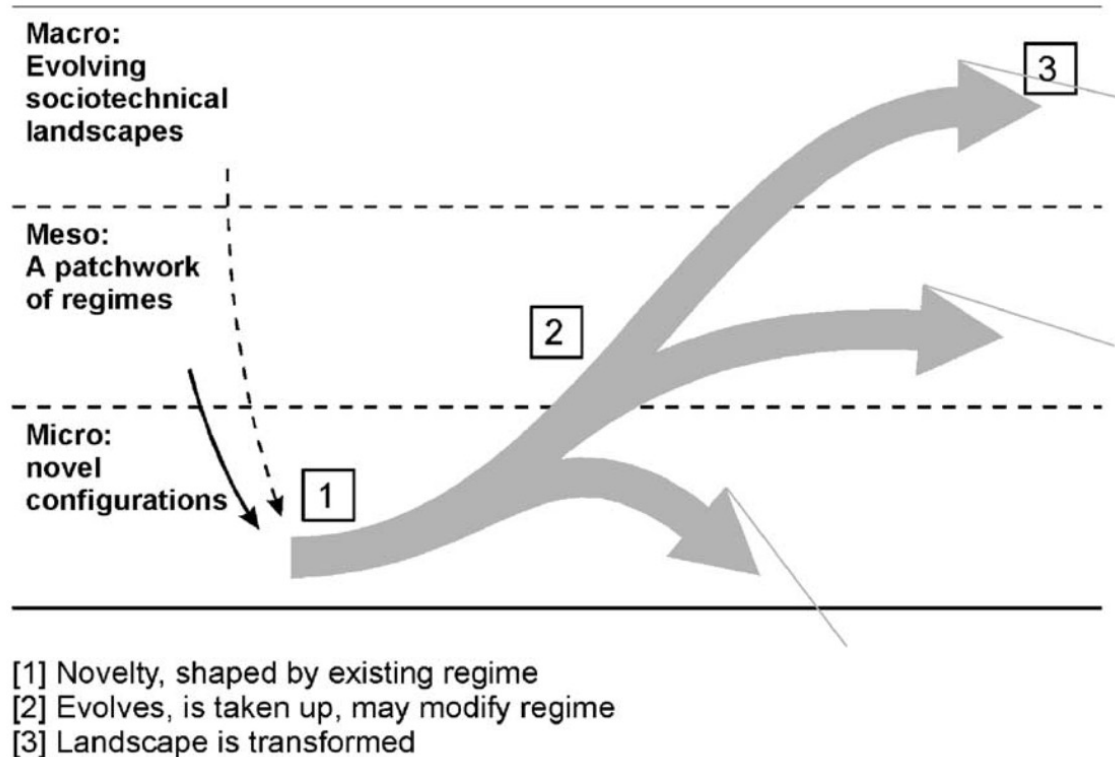# The dynamics of socio-technical change:

Fig. 4. The dynamics of sociotechnical change (Rip and Kemp, 1996; Kemp et al., 2001).
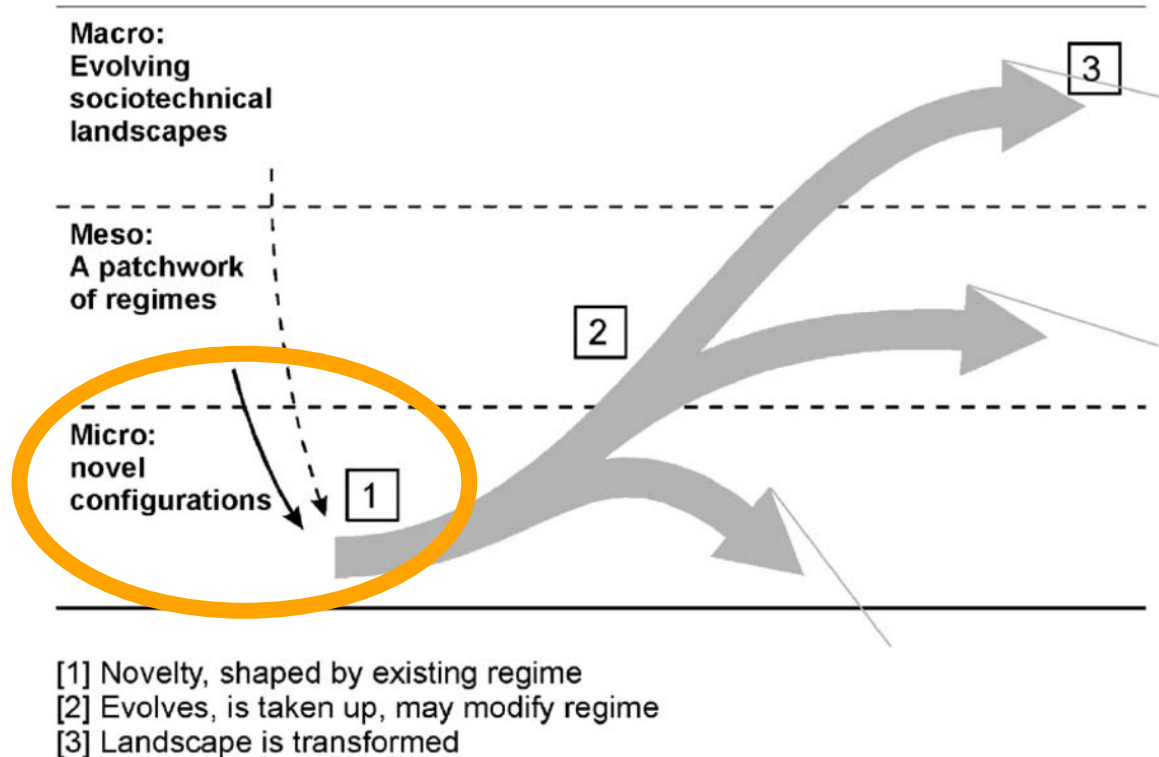
The dynamics of socio-technical change:

Fig. 4. The dynamics of sociotechnical change (Rip and Kemp, 1996; Kemp et al., 2001).

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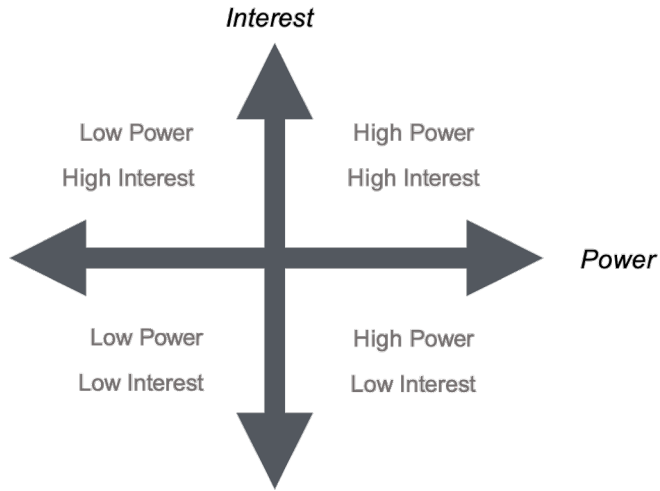
Primary stakeholders:
- A group without whose "continuing participation the corporation cannot survive as a going concern" (Clarkson 1995).
- Typically include: investors, shareholders, employees, customers, suppliers and communities
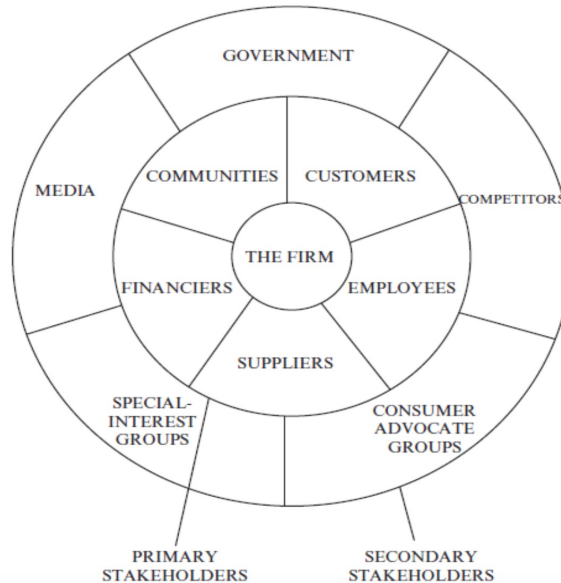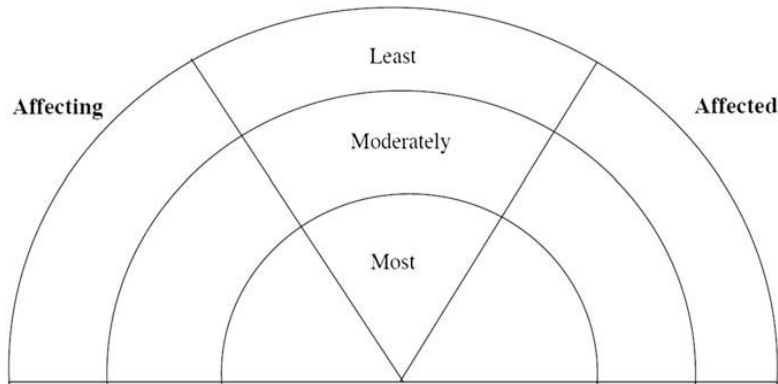
Secondary stakeholders:
- "Those who influence or affect, or are influenced or affected by, the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival" (Clarkson 1995)
- Typically include: media, special interest groups, government

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Considering different stakeholder assessment & engagement approaches:

Interest

Low Power High Interest	High Power High Interest
Low Power Low Interest	High Power Low Interest

Power

Affecting and Affected

Affecting — Least / Moderately / Most — **Affected**

STAKEHOLDERS

SECONDARY STAKEHOLDERS

School Groups

Ski School

Police

PRIMARY STAKEHOLDERS

Lodges

Ski Rental Company

Ski Lift Company

Snowboarders

PARTNERS

Resort Management Lift Company

Competitors

Bike Riders

Hospitals

Parks Victoria

Skiers

Restaurants
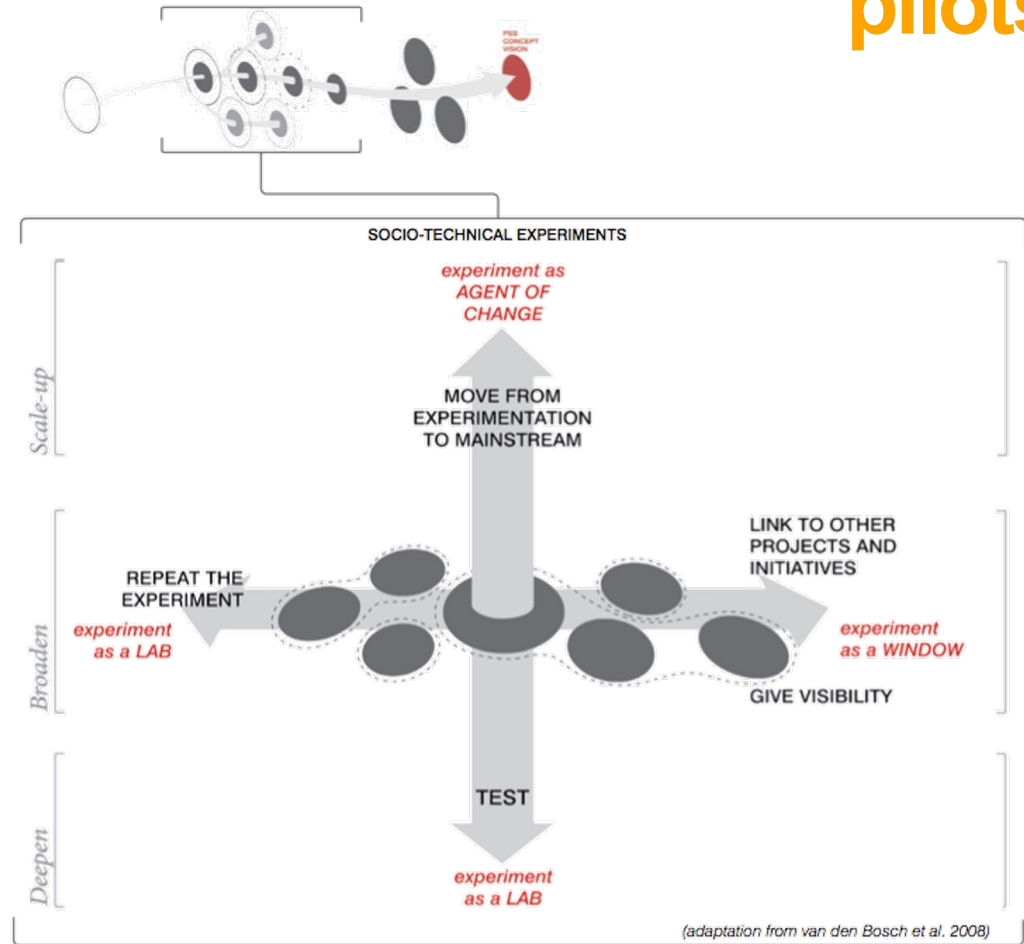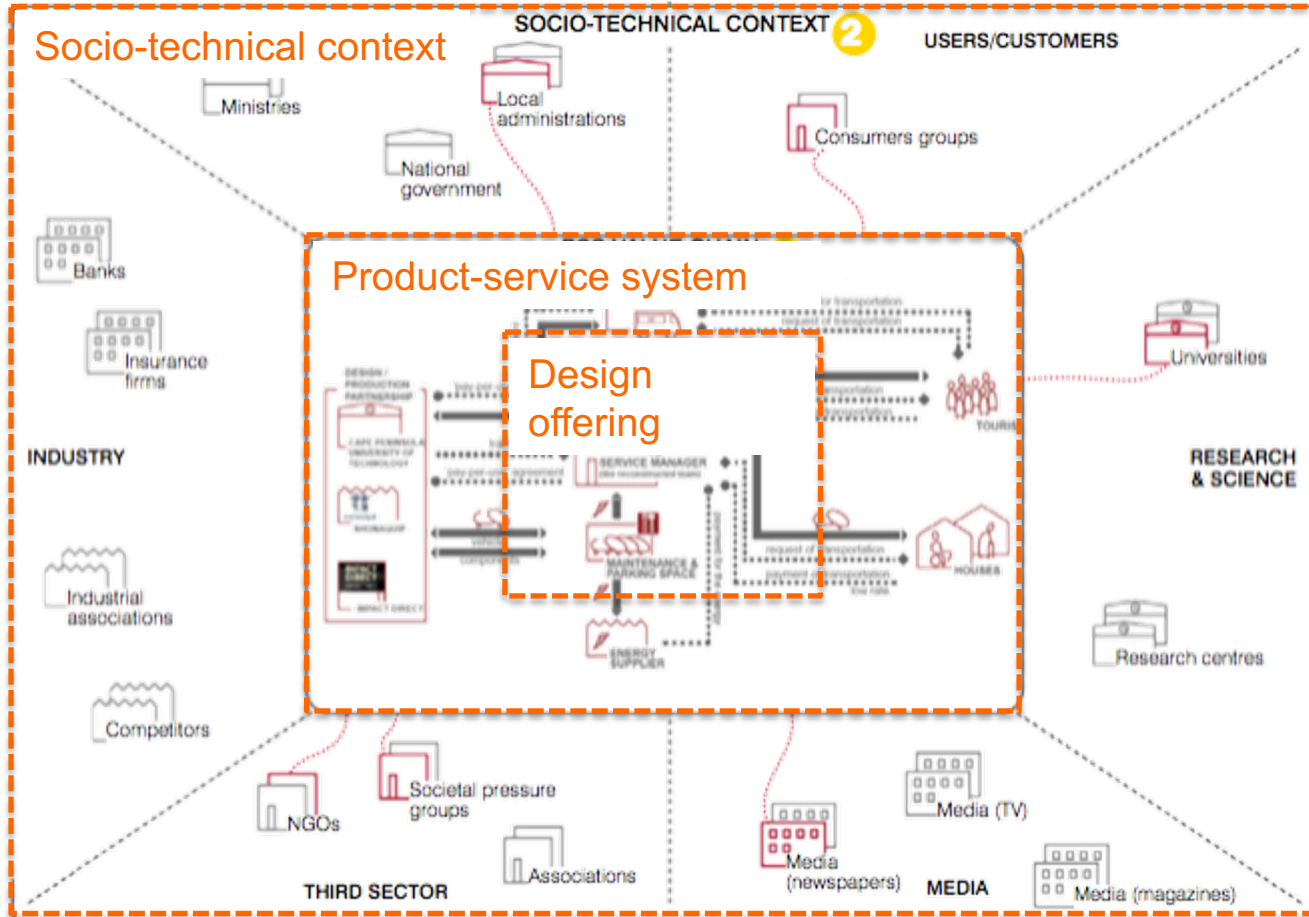
- PARTNERS
- PRIMARY STAKEHOLDERS
- SECONDARY STAKEHOLDERS

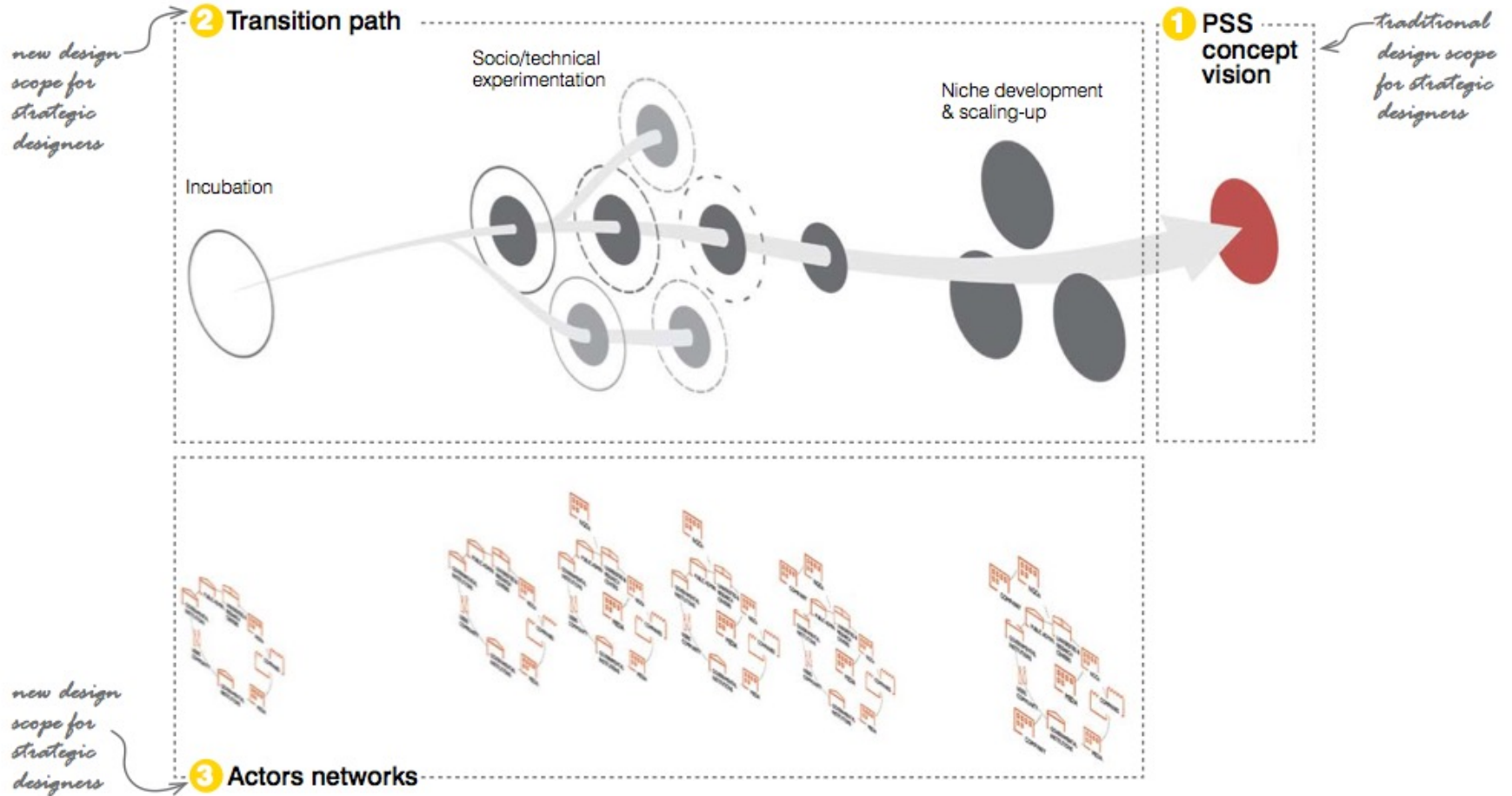# Designing socio-technical experiments and pilots

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
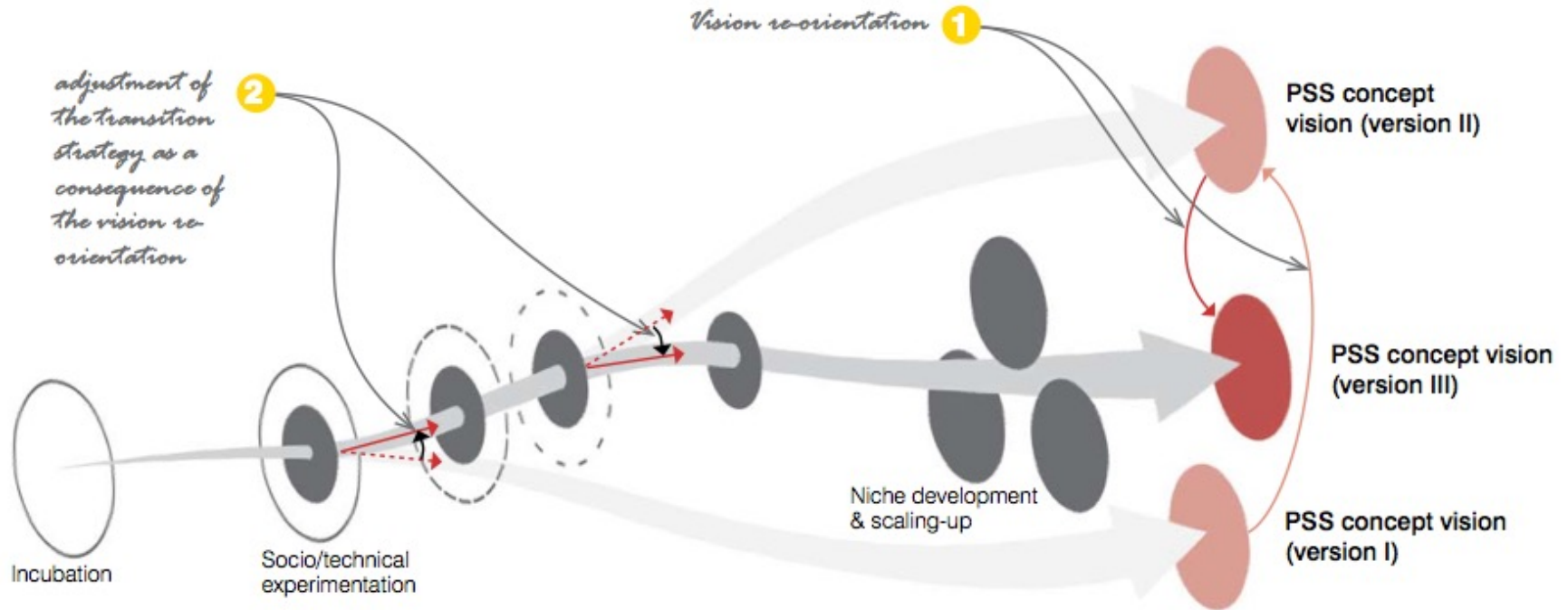*move it towards the mainstream.*

SOCIO-TECHNICAL EXPERIMENTS

experiment as
AGENT OF CHANGE

Scale-up

MOVE FROM EXPERIMENTATION TO MAINSTREAM

Broaden

REPEAT THE EXPERIMENT

experiment as a LAB

LINK TO OTHER PROJECTS AND INITIATIVES

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

Designing the *transition path*:

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

PSS concept vision (version I)

Incubation

Socio/technical experimentation

Example: Ceschin (2014) – Design of Socio-technical Experiments

Focuses 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 product-service idea

- Building local network

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

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).
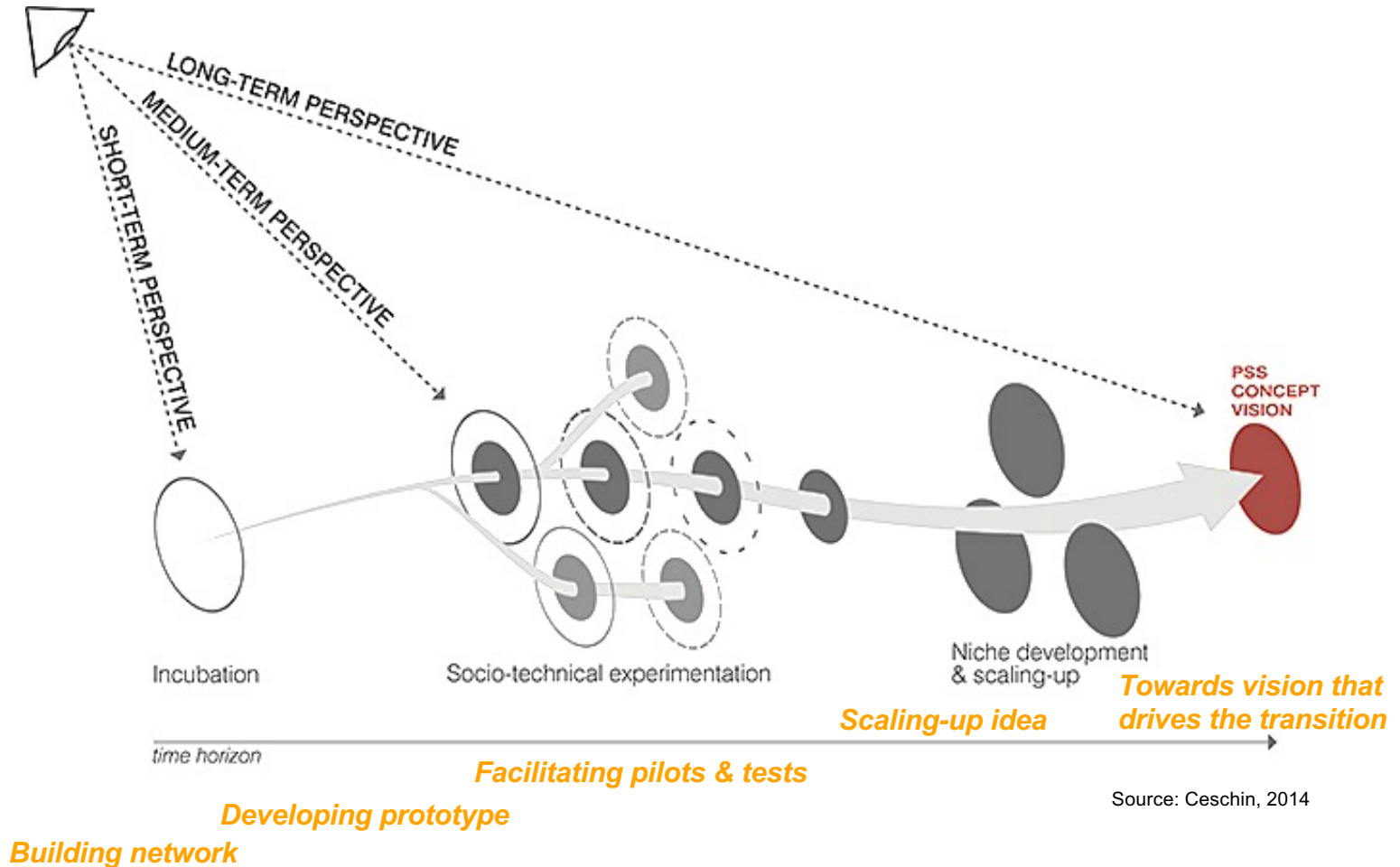
Managing the societal embedding of transition ideas:
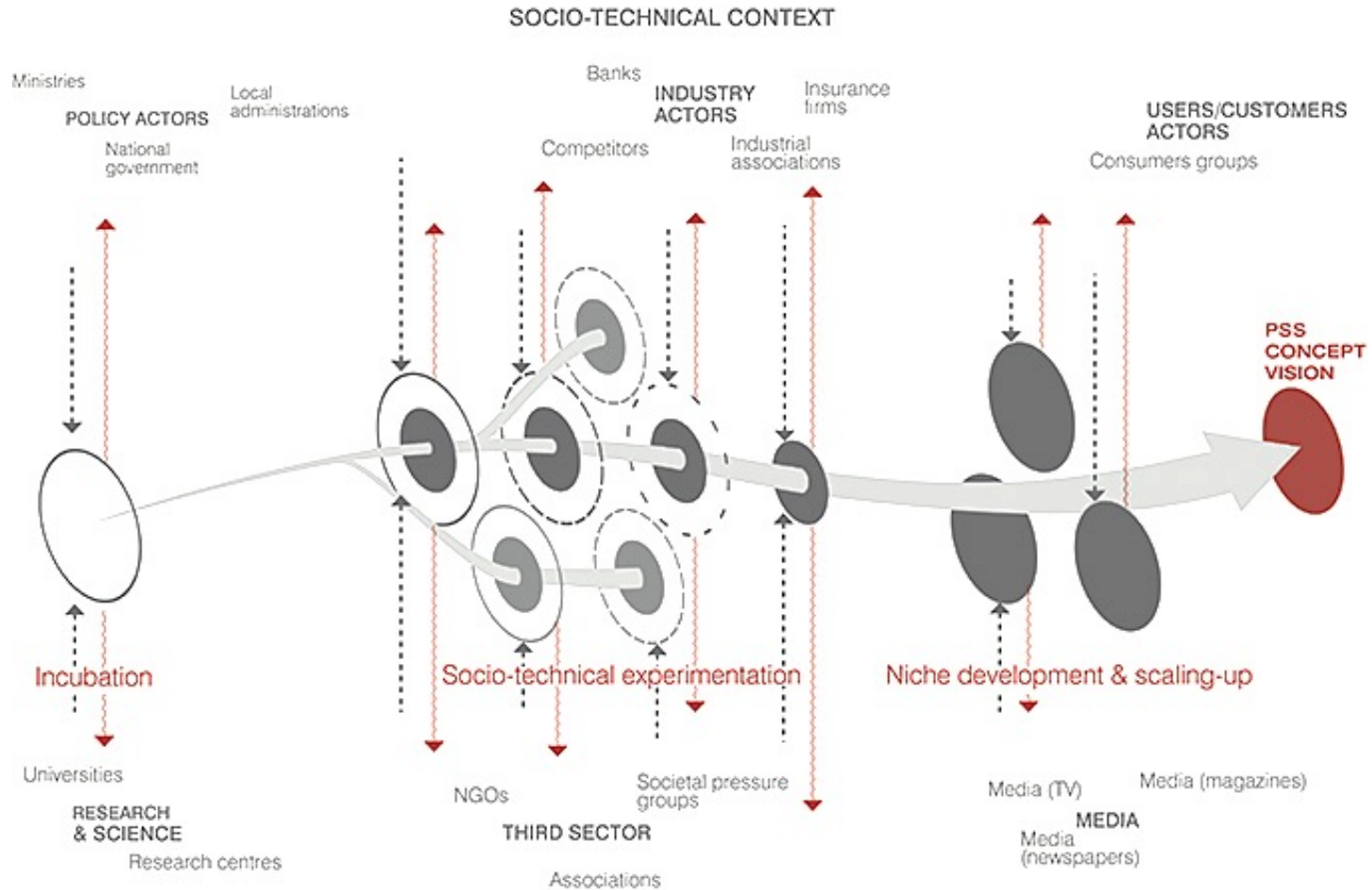
Source: Ceschin, 2014

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

Source: Ceschin, 2014

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

Source: Ceschin, 2014
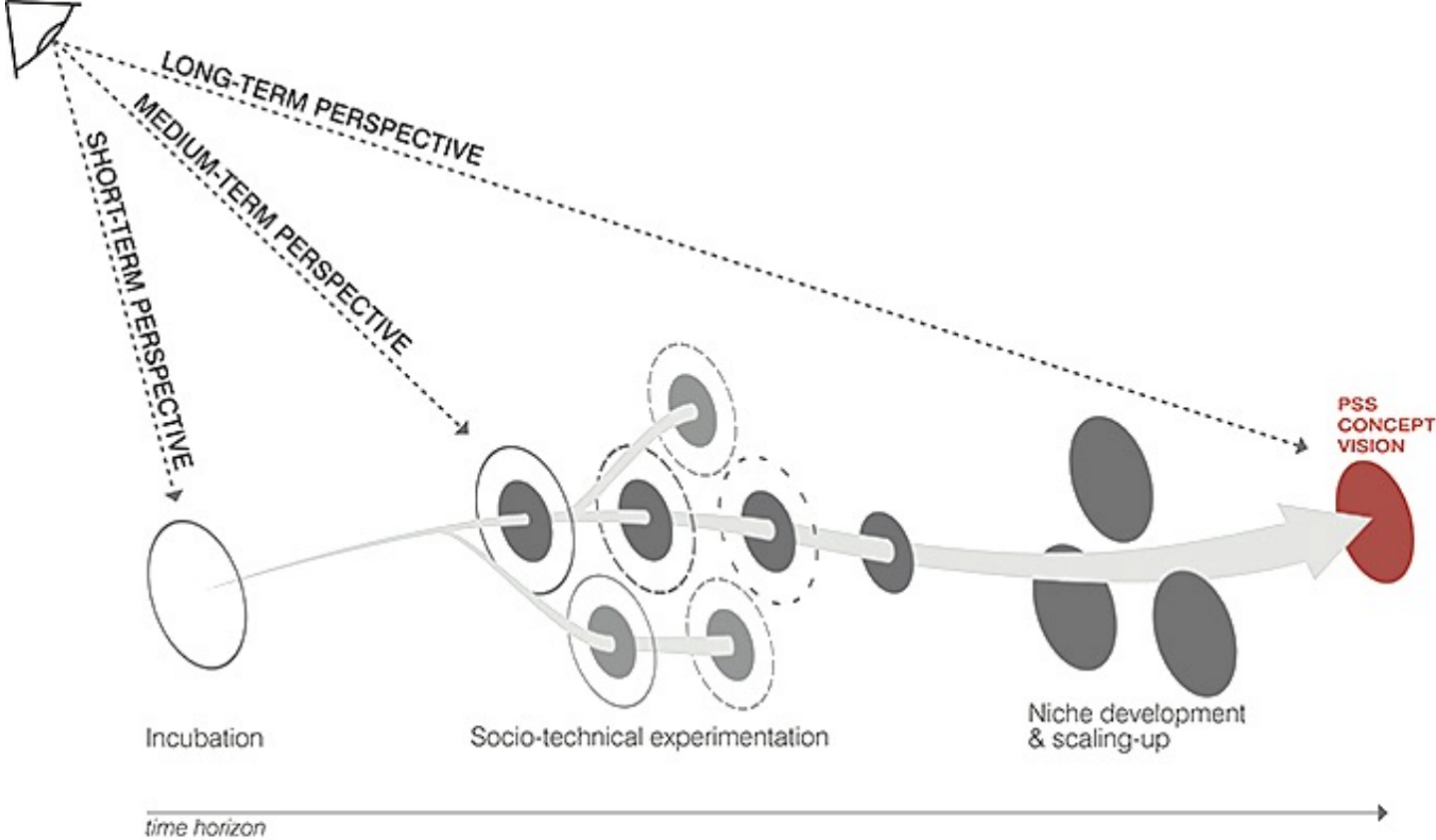
Negotiating food system experiments

Guest: Philip Hector

Thank you!
Continues on Thursday (2.2.)...