Enacting Transformative Innovation Policy: A Comparative Study

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TRANSFORMATIVE INNOVATION POLICY CONSORTIUM

UNIVERSITY OF SUSSEX | SPRU SCIENCE POLICY RESEARCH UNIT

Transformative Innovation Policy Consortium

- Aim is to explore the future of STI policy, its foundation, formulation and governance, responding to World in Transition.
- This is recognized by EU, OECD, UN and other international organizations as important new agenda
- Focus is on how to deliver on transformative STI policy, so on implementation, experimentation, new policy practices, evaluation, training, and mutual learning

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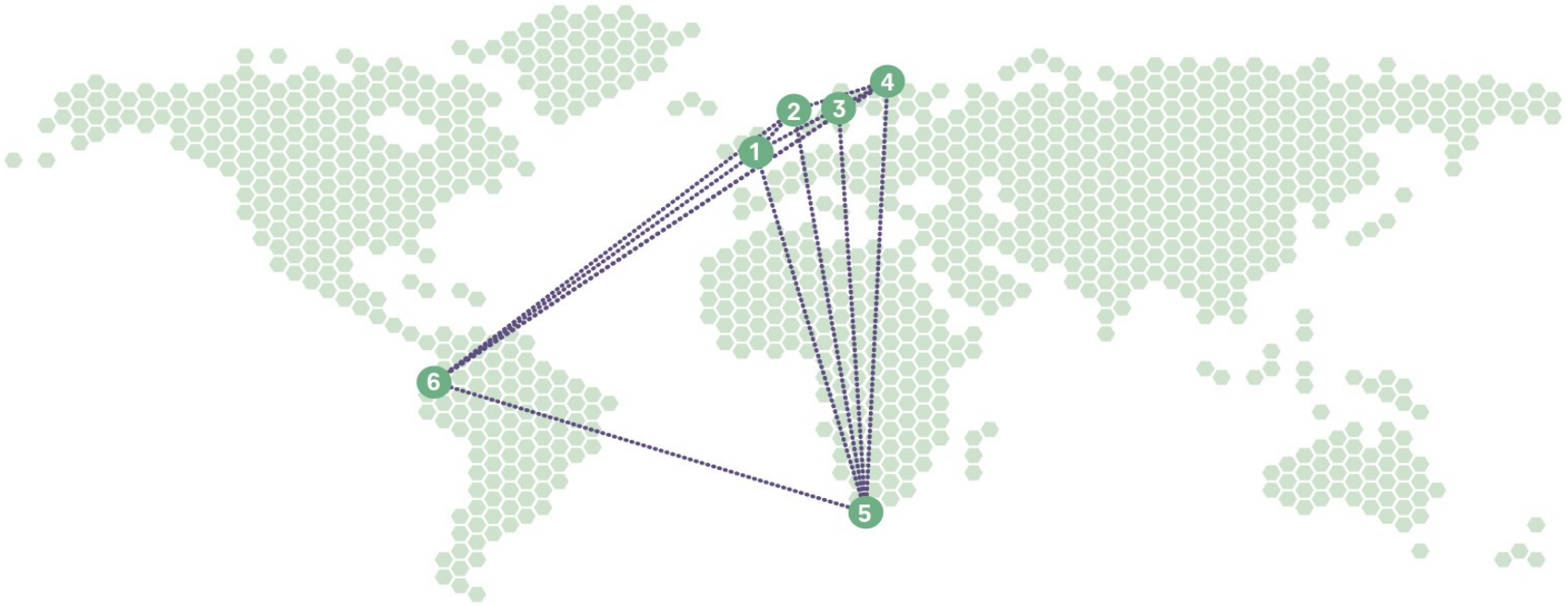

1. Science Policy Research Unit, University of Sussex
2. Swedish Governmental Agency for Innovation Systems – VINNOVA
3. Research Council of Norway
4. Finnish Funding Agency for Innovation – Tekes
5. The South African National Research Foundation
6. Colombian Administrative Departmentof Science, Technology & Innovation – Colciencias

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VINNOVA

The Research Council of Norway

Tekes

NRF National Research Foundation

COLCIENCIAS

www.johanschot.com/transformative-innovation/

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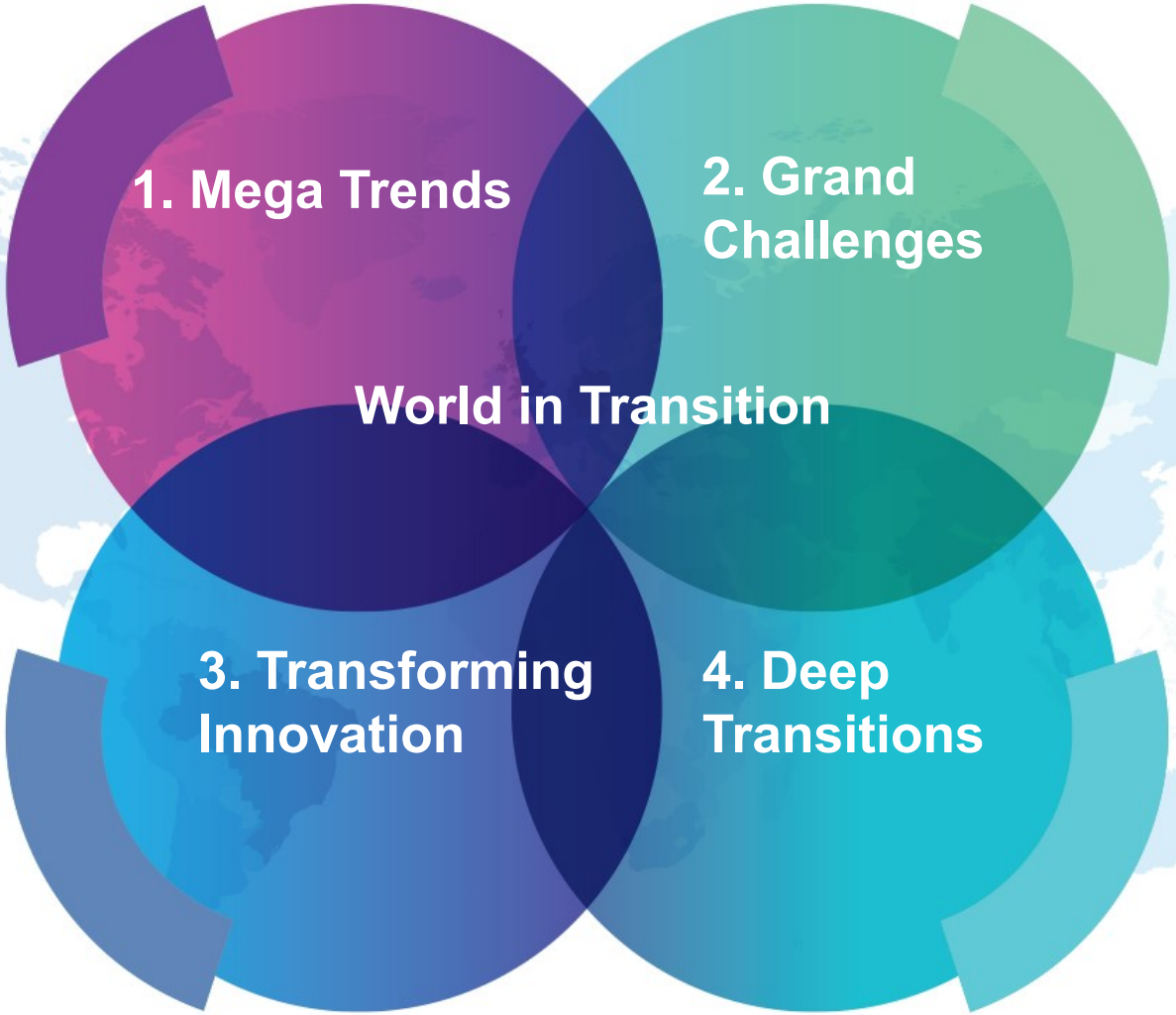
Expressions of a World in Transition



1. Mega Trends

Growing Unemployment

Megacities

Climate Change

Multi-polar world

Growing Inequality

Migration

Globalisation

2. Grand challenges

3. Transforming Innovation

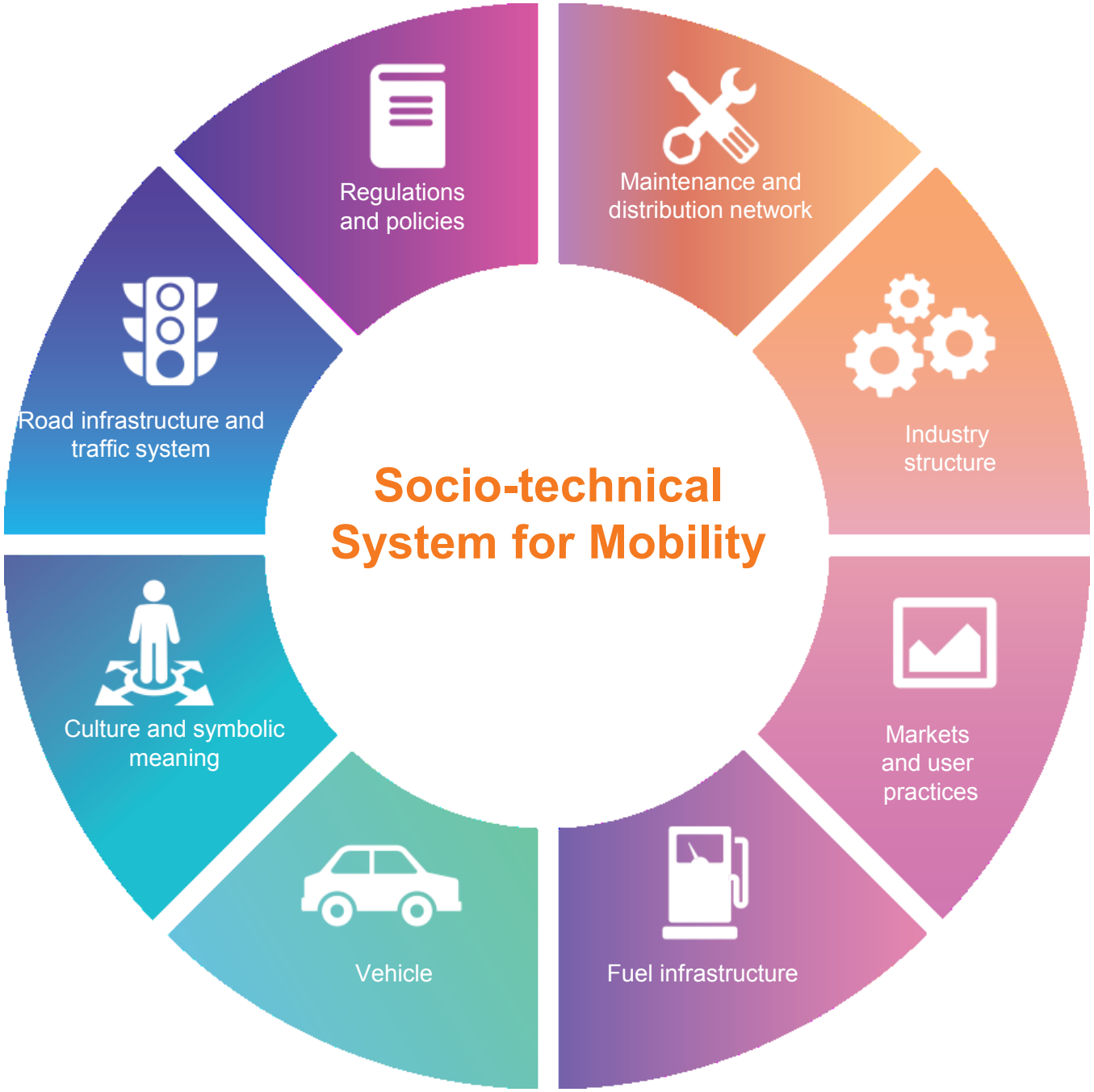
Creative Destruction or Destructive Creation?

4. Deep Transition

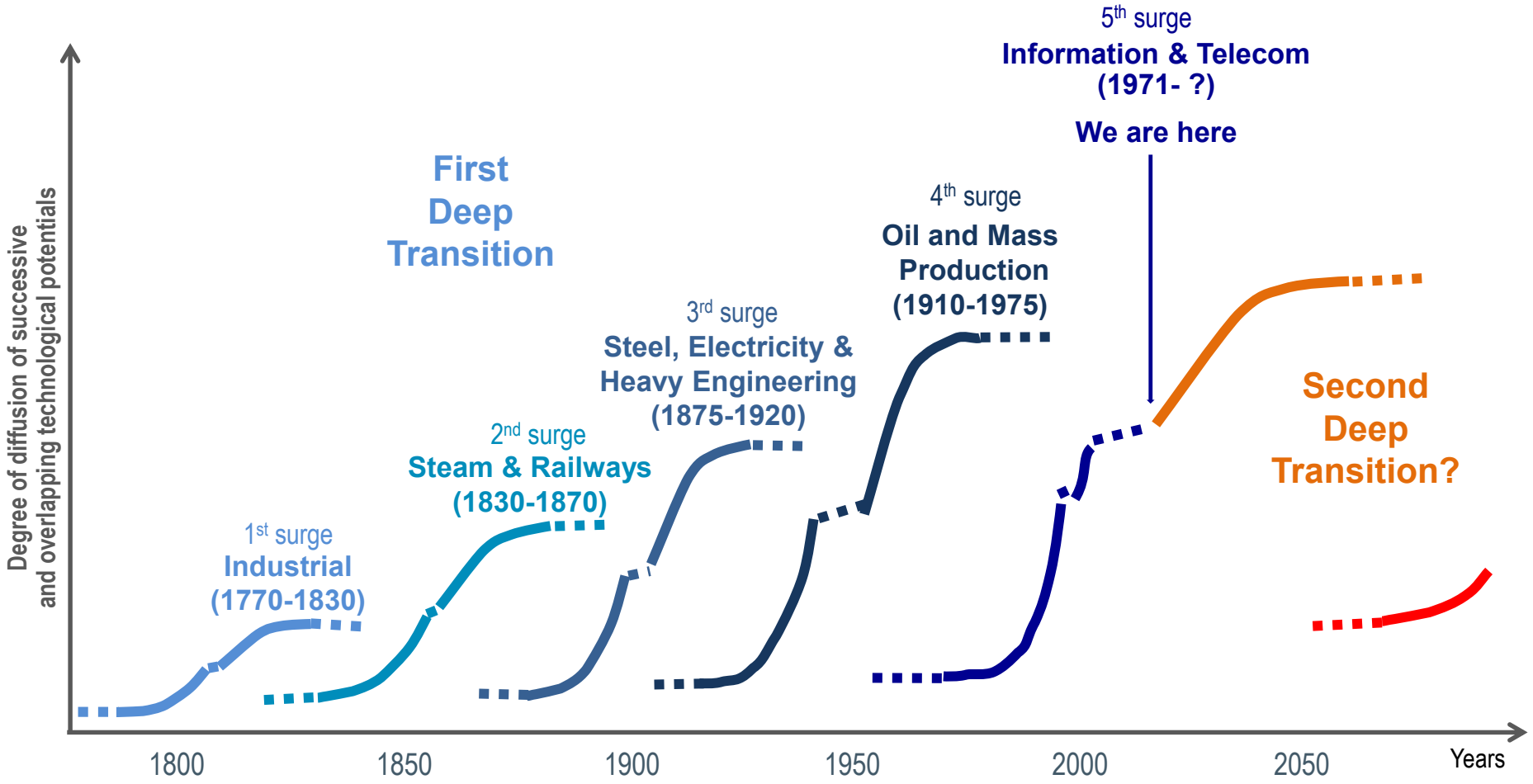
Transitions in multiple sociotechnical systems…

…Moving in a similar direction

Deep Transitions: Emergence, Acceleration, Stabilization and Directionality
Johan Schot, Laur Kanger 2016. Available at **www.johanschot.com**

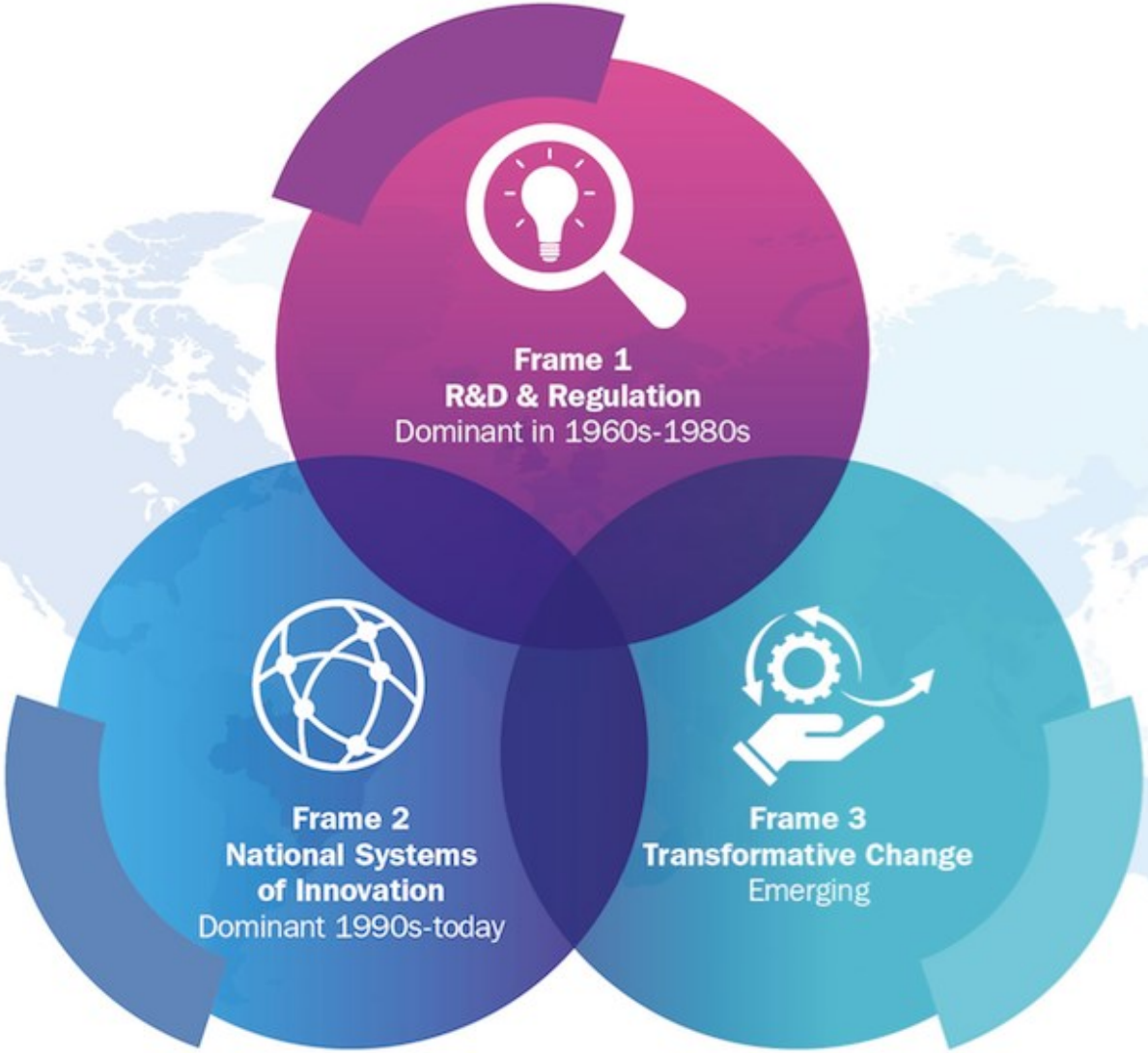

Regulations and policies
Maintenance and distribution network
Industry structure
Markets and user practices
Fuel infrastructure
Vehicle
Culture and symbolic meaning
Road infrastructure and traffic system
Socio-technical System for Mobility

First and Second Deep Transitions



Source: Adapted from C. Perez (2002)

Three Frames of Innovation Policy



R&D & Regulation: Policy Activities

- R&D stimulation (subsidies, tax credits, procurement, mission oriented programs)
- Intellectual Property Rights
- Improve knowledge base
- Education Policy on Science & Engineering
- Science for Society Communication
- Foresight & Technology Assessment

National Systems of Innovation: Policy Activities

- R&D, IPR, Education Policy, Foresight, Regulation
- Spaces for interaction on various levels, for example technology platforms
- Use of demand stimuli, e.g. procurement
- Building Regional & National System of Innovation
- Ability to absorb knowledge, e.g. capability building, skills development
- Programs to stimulate entrepreneurship, incubators

Transformative Change: Policy Activities

- Building transition arena's: supporting diversity & opening up for alternatives, pathways to sustainability
- Technology forcing, through regulation and/or procurement
- Building on social innovation, inclusive innovation, frugal innovation, pro-poor innovation
- Setting up large scale societal experiments & scaling-up (use or creation of intermediaries) Strategic Niche Management
- Enhancing anticipation, adaptability, reflexivity capabilities
- Constructive Technology Assessment & Responsible Research & Innovation (participation)
- Bridge Science/Engineering & Social Sciences & Humanities in Education system
- New institutions for coordination between various policies, integrating of STI into other policies (energy, housing, agriculture, healthcare, transport, and city policies); seeking policy mixes

Transformative Innovation Policy Consortium

Pilot Period: Articulation and co-development of main ideas & Mobilising more actors

- Step 1 Sep16-February 17: visits, exploration of three frames for each country, workshop in Sweden
- Step 2 March-Jun 17: Exemplary case-studies of Transformative Innovation Policy, & workshop in Colombia
- Step 3 January-August 17: Definition of 5 year program, policy experimentation, research, competence building and communication, evaluation for transformative change & stakeholder engagement
- Step 4 January-December 2017: Building up Consortium, finding more partners; develop research network
- Step 5 Sep 19-21: Consortium conference in South Africa, with founding and (potential) new members
- Step 6 Jan 2018: Long-term programme established with current & new cohort of global partners

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Thank you.

Papers and more details on the Consortium:

www.transformative-innovation-policy.net

See also www.sussex.ac.uk/spru

Conclusion 1 – 3 frames can be recognized

1. Elements of all three frames are present in each country, yet in a very different way.

- Norway: move to knowledge economy & making science more responsible to societal demands
- Sweden: restructuring industrial base using green as business opportunity
- Colombia: peace process & regional divisions
- South-Africa: overcoming apartheid, exclusion & unemployment of black people
- Finland: overcoming economic crises, finding new opportunities

Conclusion 2 – Frame 3 is marginal

Frame 3 is mainly aspirational, misses strong narrative; Frame 1 and 2 are quite strong, embedded in institutional structures and in regulations.

Yet at the same time there is sense of urgency, sense that frame 1 & 2 are not delivering, STI is under pressure to deliver not only economic development but also contribute to societal and environmental goals

Question about relationships between frames is not addressed.

Conclusion 3 - how to do Transformative Innovation Policy is unclear

Gap between narrative and implementation of transformative innovation policy. The following instruments are used:

- Responsible Research and Innovation (Norway)
- Procurement (South-Africa and Finland)
- Challenge- led/Strategic R&D programs (Sweden, Finland)
- Demand articulation with public involvement (Norway, Finland, Colombia)
- Social innovation, grassroots innovation (Colombia & South Africa)
- Technology Forcing regulation (Finland)

Conclusion 4 - need for theory of change

- Underlying theory of change/transformative is missing. There is an expressed need for more experimentation.
- Transition perspective could fill this gap with focus on experimentation, niche development, regime destabilisation, and policy mixes
- This is recognized in Finland and Sweden, including first try-outs of mapping instrument onto transition dynamics (MLP dynamics)

Conclusion 5 - notion of transformation is unclear

- What is called transformative is different in each context; transformation of research system, industry structure, resource economy, exclusion patterns, integrating informal economy in innovation system, but not sociotechnical system change.
- How to move from identifying challenges to transformative change?
- How to move from individual policy programs, experiments to a broader change process?
- How to anchor learning & change including capacity building is not addressed

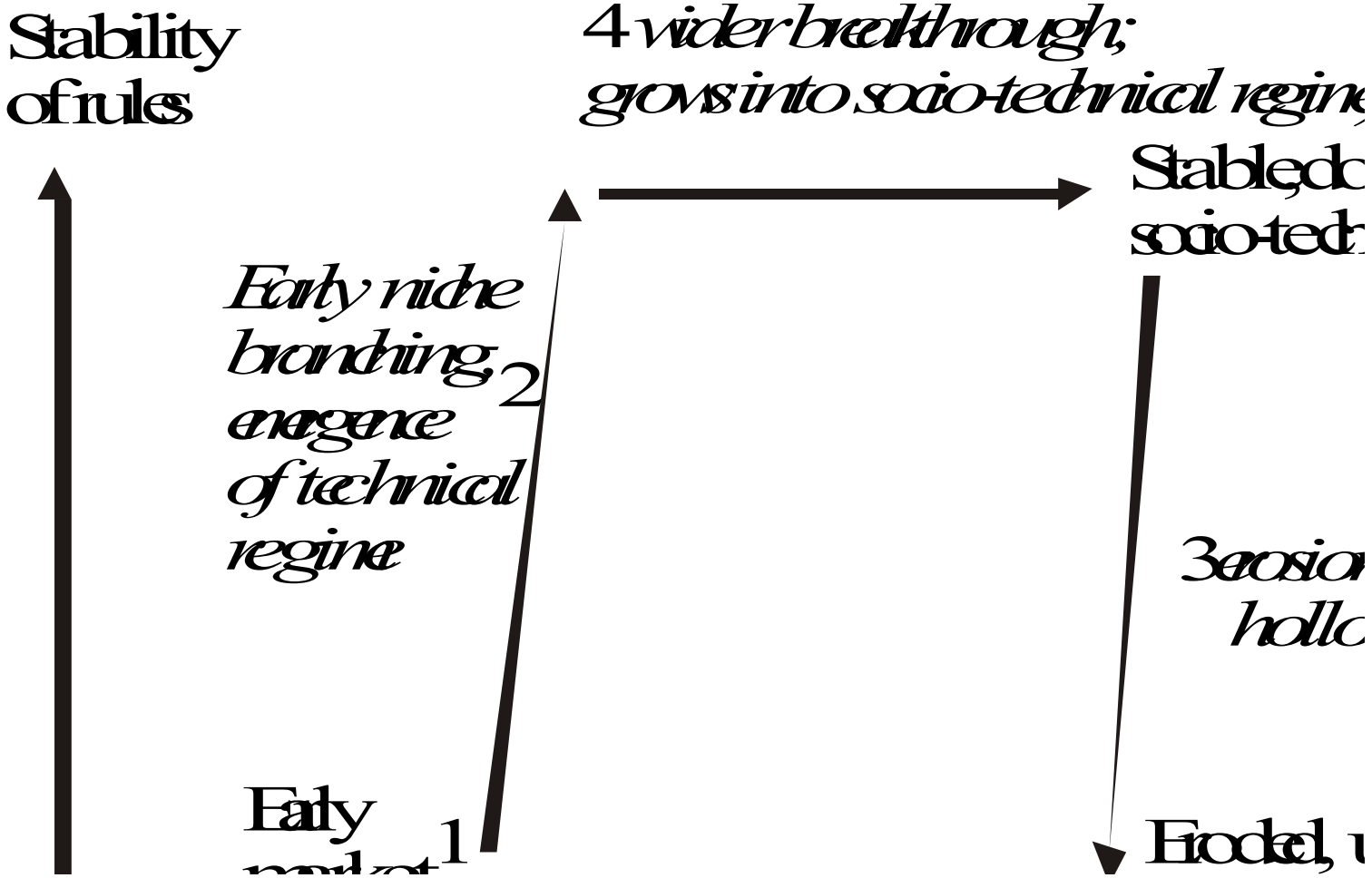
Conclusion 6 - moving from funder to change agent is difficult

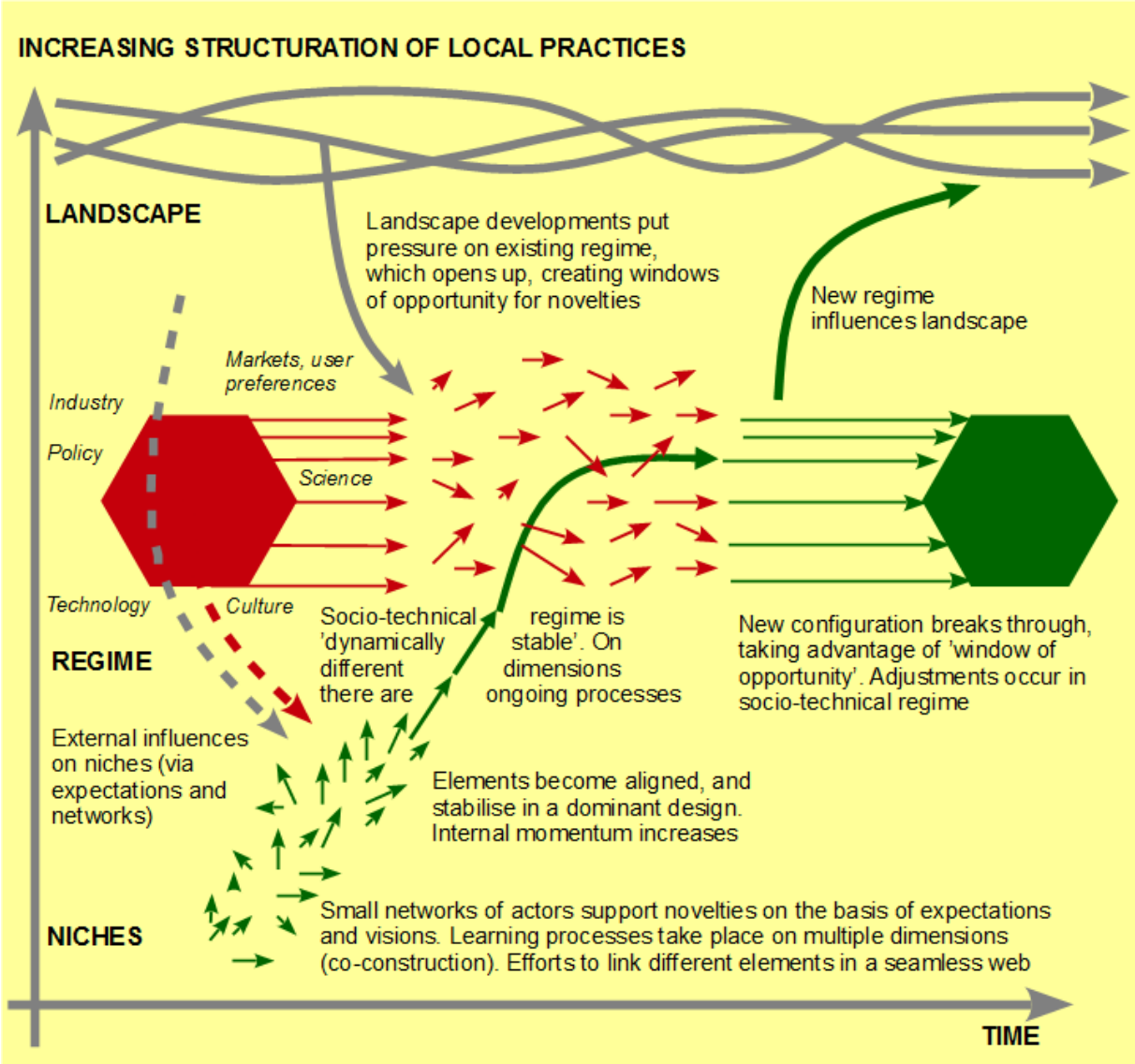
- Founding members are research funders. They struggle to combine role of funder and strategic change actor. In the latter role they become mobilisers & facilitators and enter the areas of other ministries and actors, this adds complexity, leads to questions about their mandate, and their capacity to do the job. In a deeper sense the institutional context is missing, there is a lot of fragmentation in the research system & lack of coordination. How to overcome this is unclear. Question is whether an experimental approach might help.

Conclusion 7 - research evaluation for transformative change is lacking

Research evaluations are input and output oriented, focus on audit element; process oriented evaluation focusing on transformative change and provide input in the process itself (formative evaluation) is totally lacking

Representation of a transition of a single system





Geels, 2002, Geels and Schot, 2007, Schot and Kanger, 2016