

# **Extending RIS3 governance beyond science and technology: Working Group on Industrial Transitions**

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Sevilla, 25<sup>th</sup> July 2019

# Summary

- Background
- Challenges of lagging regions
- A unique window of opportunity
- The JRC Working Group
- Conceptual Framework
- Transition Review Pilots
- Expected Outcomes

# Managing Industrial Transitions

- Addressing the challenge of deindustrialisation (DG REGIO Pilot Action: *Regions in Industrial Transition*)
- Exploring the central role of RIS3 strategies in responding to deindustrialisation
- How best to support regions in better tailoring RIS3 to the specific challenges of industrial transitions?
- How to frame coordination for industrial transformation beyond RIS3?

# Challenges of Lagging Regions

→ Regions with low growth / low income per capita

Long-term challenges:

- Industrial decline and mass emigration
- Structural change: low-productivity agriculture/tourism
- Lacking large-scale production and business innovation
- Barriers to investment
- Societal and environmental challenges
- Large infrastructure gaps

**Pressing need to develop knowledge-intensive production capabilities**

→ Problem: no framework available for full-blown industrial policy!

# Global impulses present a unique window of opportunity

- Global impulses: climate change and massive investments in renewables, batteries and electric mobility. Circular economy. AI.

## Paradigm shift in electric mobility (a technological revolution?):

- strong backing from global finance
- consumer shift + old comparative advantages nullified = massive business opportunities
- massive implications for infrastructures
- strong synergies with other global impulses (renewables + AI + circular economy)

→ *Example*: RIMAC in Croatia (est. 2011). 500+ people, producing world's fastest (until last year) sports car.

# The JRC Working Group: "Understanding and Managing Industrial Transitions"

*How to mobilise efforts from all levels/portfolios to develop knowledge-intensive production capabilities*

Contribute to the development of:

- An integrated policy framework in support of industrial transitions
- Appropriate lessons for the revision and extension of S3

Central to the approach:

- Credible vision
- Interdependencies
  - Sequences
- Cross-portfolio coordination

# Conceptual framework

Literature on system innovation/  
"Transition management"

Not the same as "*innovation system*"!

Builds on:

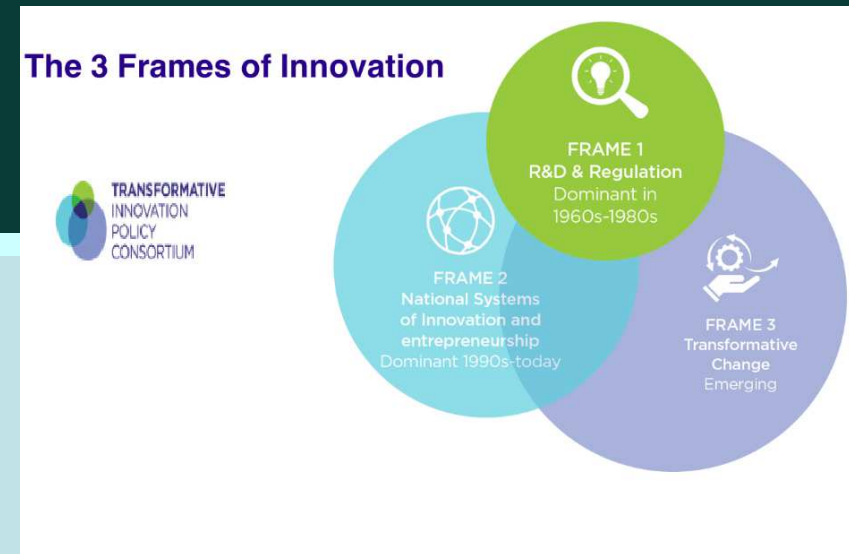
- Socio-technical transition experiences (mostly in NL)
- Multi-level perspective

See links below::

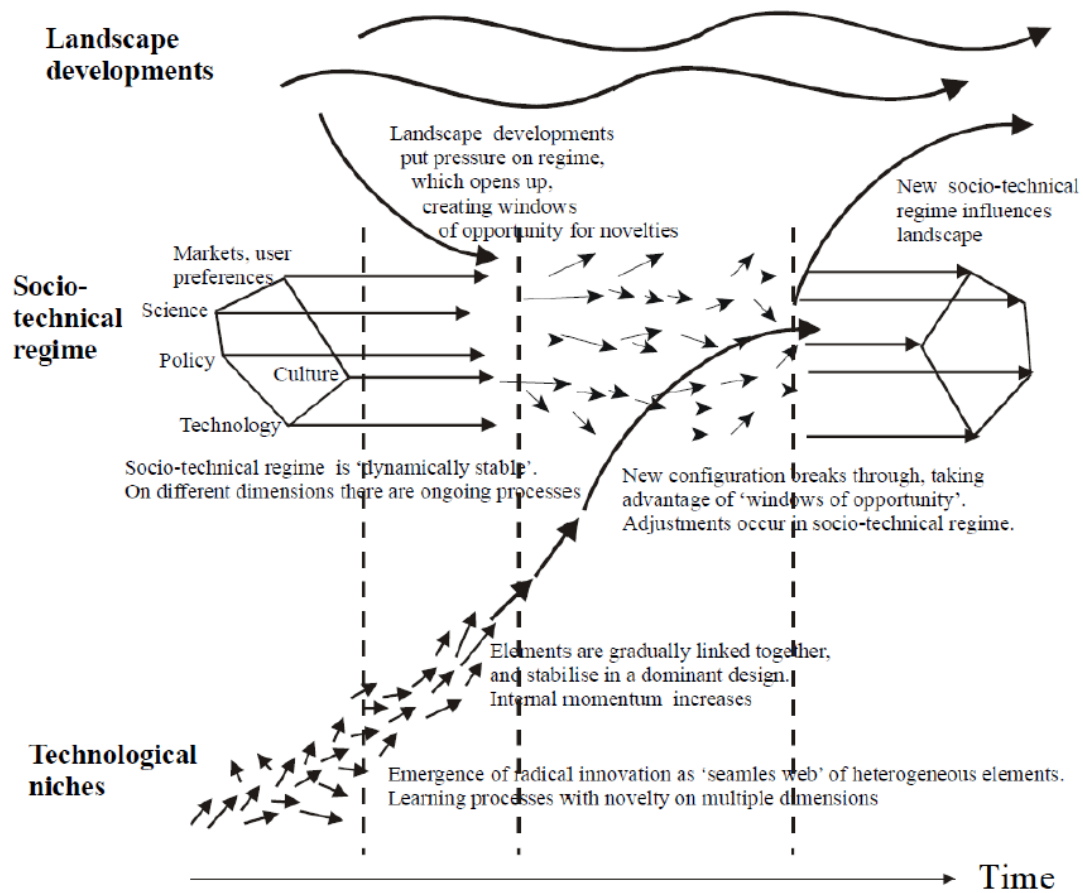
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<http://www.tipconsortium.net/>

<https://www.sciencedirect.com/science/article/pii/S0048733302000628>



**Figure 1.3 A dynamic multi-level perspective on system innovations**

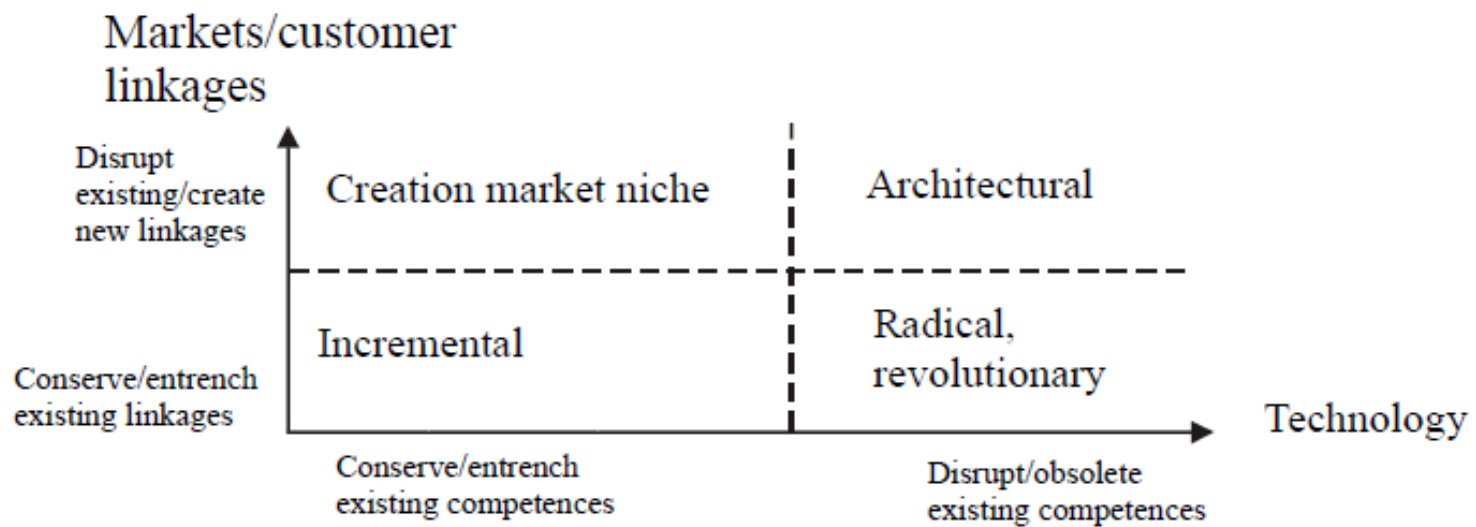


Source: OECD (2013), adapted from Geels, 2002: 1263.



# What is "transformative"?

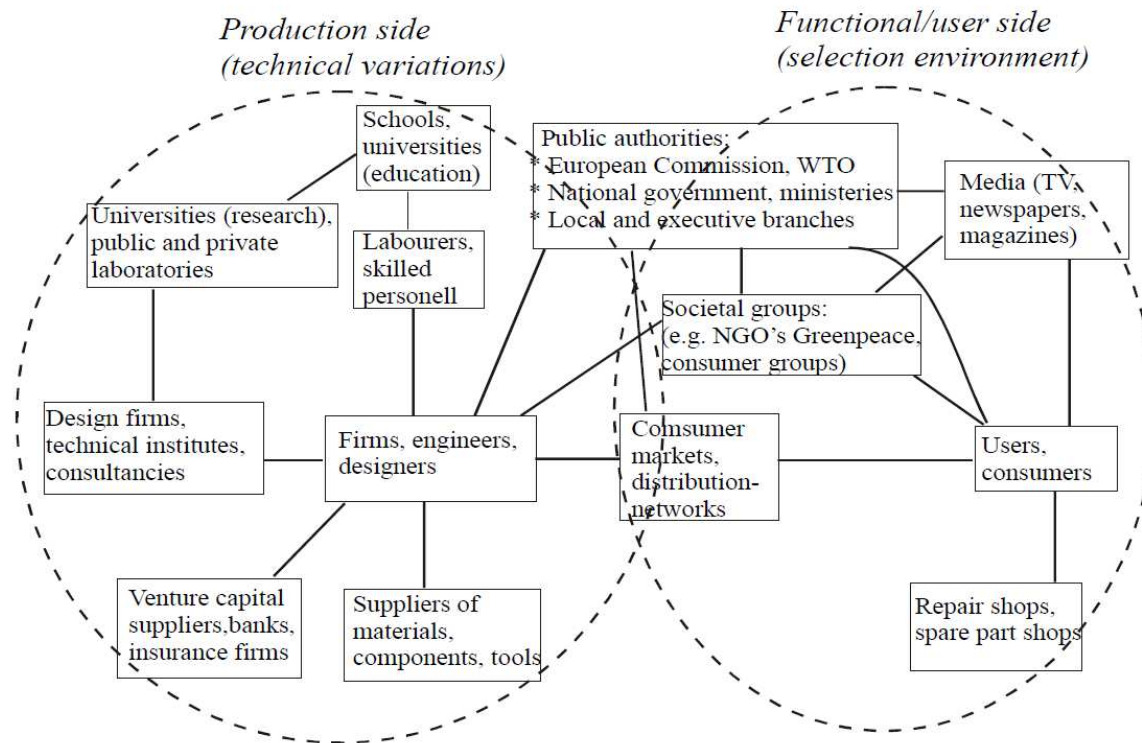
Figure 1.1 Typology of innovations



Source: Abernathy and Clark, 1985: 8.

# Not just R&I, not just '3-ple/4-ple helix'

Figure 1.2 Societal groups involved in system innovation



The root causes of failure to solve the environmental sustainability problem probably lie somewhere in the upper loop, because if change resistance was low the problem would already be solved, and because resistance cannot originate in the lower loops.

Here's what classic activists don't see. Since they don't see that systemic change resistance due to a feedback loop driven response must be considered, they assume it's a minor issue and easily solved by overcoming individual change resistance. This is attempted with step 4 of Classic Activism.

This is all the problem solving process of Classic Activism sees. Since that's all it sees, that's what it assumes will solve activist problems. When solutions fail, all classic activists can do is try the same things again, but this time somehow better and harder. Since that doesn't include resolving the root causes of the problem, such efforts will have only modest or temporary effect.

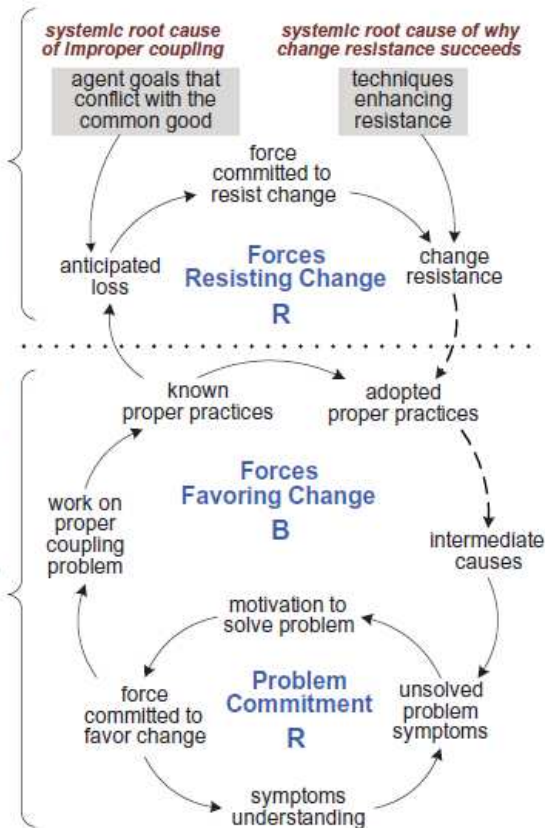


Fig. 2. Causal loop diagram of the process of Classic Activism. Solid arrow is a direct relationship; dashed arrow is an inverse relationship

## Resistance to change:

- Can be adaptive (not passive)
- Can (has) cancel(led) out sustainability efforts

## 44 System Dynamics Review

Table 1. Places to intervene in a system (in increasing order of effectiveness)

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12. Constants, parameters, numbers (such as subsidies, taxes, standards)
  11. The size of buffers and other stabilizing stocks, relative to their flows
  10. The structure of material stocks and flows (such as transport network, population age structures)
  9. The length of delays, relative to the rate of system changes
  8. The strength of negative feedback loops, relative to the effect they are trying to correct against
  7. The gain around driving positive feedback loops
  6. The structure of information flow (who does and does not have access to what kinds of information)
  5. The rules of the system (such as incentives, punishment, constraints)
  4. The power to add, change, evolve, or self-organize system structure
  3. The goal of the system
  2. The mindset or paradigm that the system—its goals, structure, rules, delays, parameters—arises out of
  1. The power to transcend paradigms
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Reproduced from *Leverage Points: Places to Intervene in a System*, by Donella Meadows, 1999. Available: [sustainer.org/pubs/Leverage\\_Points.pdf](http://sustainer.org/pubs/Leverage_Points.pdf).

Of interest is the last page, where Donella writes: “The higher the leverage point, the more the system will resist changing it...”

# Working Group on Understanding and Managing Industrial Transitions

- **Regional responses** to global impulses for change  
e.g. the electrification of transport, renewable energy, climate change, circular economy and digitisation
- Thorough **understanding of the relationships and interdependencies** within/between *existing vs desirable* systems.
- Extend S3 governance: **whole-of-government mobilisation**
- Development of **novel instruments (experiments)** that reinforce legitimacy and foster virtuous cycles between emerging and declining sectors

# Transition Review Pilots

- ~50-page reports, product of thorough expert review
- First wave: Andalucía, Greece, Bulgaria
- Catalonia participates with own resources (possibly NL)

## Steps:

- Select 1-3 themes with authorities and set targets
- Map existing production and consumption systems
- Envision future configuration of systems that meet targets
- Develop recommendations across 4 axes

# Review outcomes

Guidance along 4 axes of actions

- Governance of government
- Support coalitions
- Managing resistance to change
- Experiments, reforms, policies and instruments

→ to address both opportunities and threats (downside of the transition)

→ Co-define a policy experiment

- Low total cost/quick signalling
- In area with high spillovers
- Potentially scalable / replicable

# Outputs and outcomes

First meeting 9 July.

Next meetings December 2019, March 2020.

Advisory Board with distinguished experts

Expected outcomes by June 2020:

- up to 4 **transition reviews** in lagging regions/countries
- co-develop **policy experiments** (scalable/replicable)
- A horizontal **synthesis report**