

Transformations in science and innovation policy

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Transformations?

- Are drawn out over longer-term periods, some streams have been visible early on
- Streams get entangled and add up to larger and more visible change
- Specific events can mark this, and accelerate the process (think of the oil crisis in 1973, linked to the concern about economic depression in the later 1970s)
- Pushed Framing 2 (national systems of innovation), seeds of Framing 3 (sustainability)

Present situation

- Concern about structural problems where earlier science and innovation policy which was focused on exploiting the potential of science and technology seems helpless
- Interest in so-called Grand (Societal) Challenges, not just with governments, but also with research funding agencies (UK Research Councils), firms (e.g. about “green energy”) and private foundations (like Bill and Melinda Gates Foundation)
- Notion of “challenge orientation”

Example of European Union

- The European Union, in its Framework Program Horizon 2020, is focusing on six Grand Challenges:
- Health, demographic change and wellbeing;
- Food security, sustainable agriculture, marine and maritime research and the bio-economy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, resource efficiency and raw materials;
- Inclusive, innovative and secure societies.

Analysis and diagnosis

- Science and innovation policy analysts consider a “next generation” of innovation policy, with new constellations of actors (Kuhlmann and Rip)
- Or call for innovation policy for transformative change (Schot and colleagues from SPRU) and push for it in new alliances
- How can SciSTIP play a role?

Next generation science and innovation policy

- Occasion: the challenge of addressing Grand Challenges
- They're not like missions (Man on the Moon, Human Genome Project) because open-ended, system-wide and transformative
- Learning as you go, also about what goals could be and should be
- New constellations of actors: public-private, but also including civil society, charitable foundations
- New approaches, like assemblage

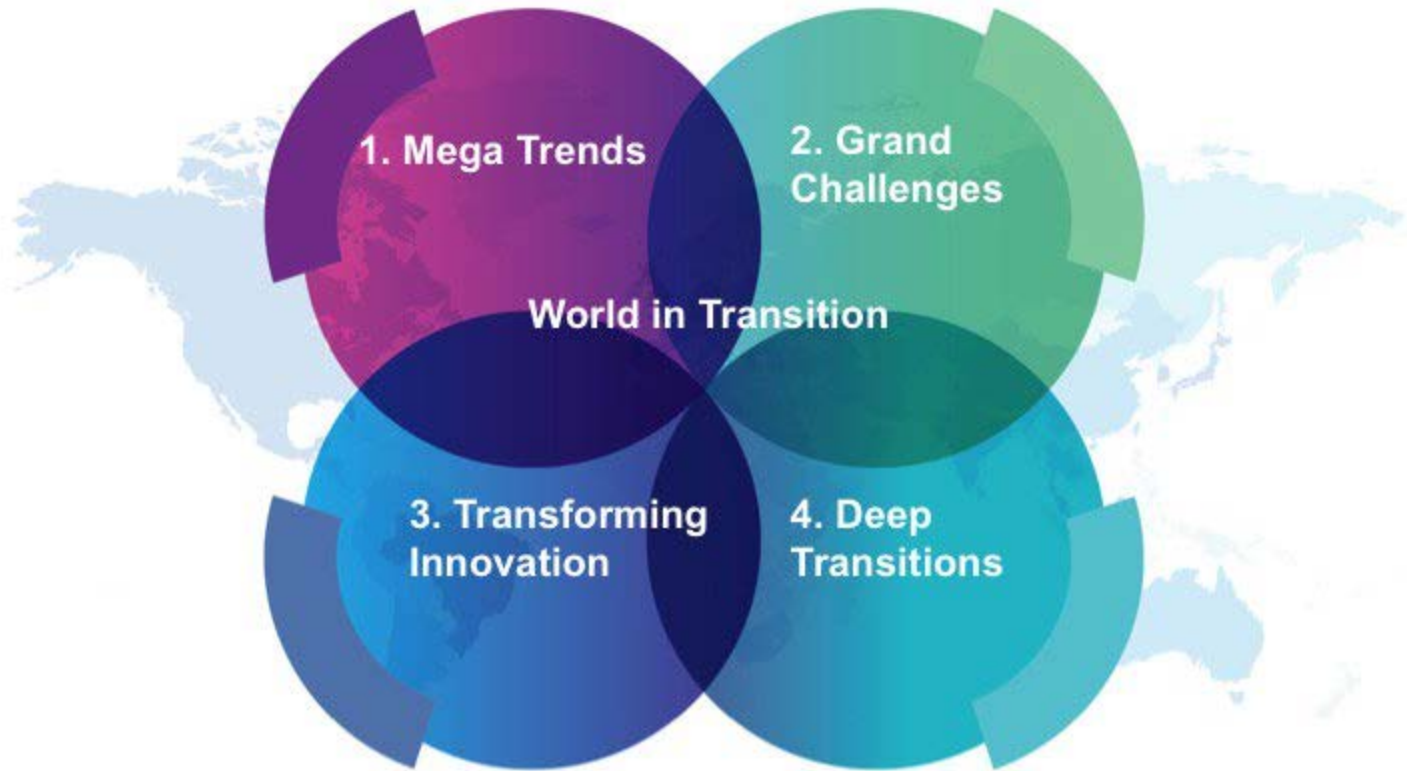
Challenge consortia

- Reduced role of Government, next step in public-private interactions
- Delegation of government responsibility (together with fewer funding obligations)
- Led by a charitable foundation
- Scenario: UK government was the first to do this
- ‘Assemblage’ as new approach (cf. our discussion with Norwegian Research Council: requires new competencies!)

Three framings of innovation

- Cf. Schot and Steinmueller (submitted)
- <http://www.johanschot.com/transformational-innovation/>
- 1. Explore and exploit potential of science and technology [linear model, since 1945]
- 2. National systems of innovation [interactive model, since 1980s]
- 3. Transformative change/ address negative externalities [by anticipation, experimentation, learning; is in the making]

Expressions of a World in Transition



Ambitious!

- Programmatic, but attempts to be concrete, and include the Global South
- Cf. Transformative Innovation Policy Consortium, including Norway, Colombia, and South-Africa (Dept Science and Technology)
- Involvement of SPRU in South-Africa (see folder SPRU)
- SciSTIP could collaborate, while doing its own things (building on its strengths)

Some ideas (of mine)

- Focus on micro- and meso-level, and trace what is happening there in order to build on them, modulate them
- ‘Innovation journeys’ in the real world
- Dynamics of intersecting and evolving product value chains: mutual entanglements and dependencies, and opportunities to do better
- Constructive technology assessment and inclusive innovation

Modest?

- Yes, but an important complement to ambitious (and mobilizing) visions
- Trace transformations as they actually happen
- But understand them as building blocks of a larger (“Grand”) Societal Experiment
- Diagnosis of this Societal Experiment (and the struggles that go with it) allows us – and others -- to identify directions to go (and negotiate them)