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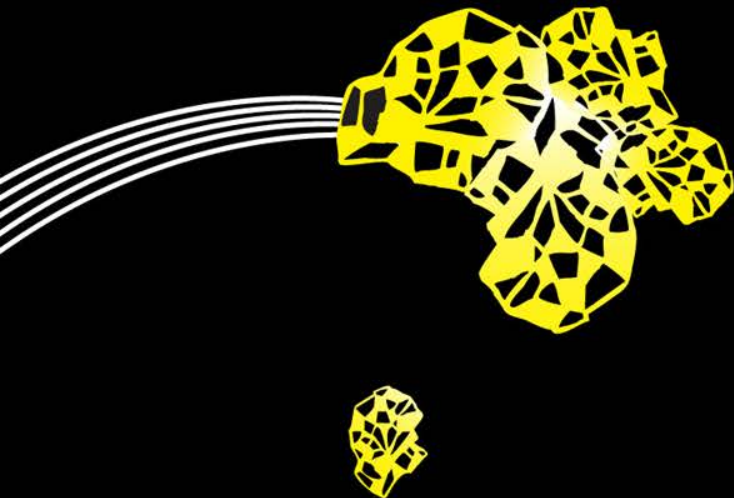
What makes it so difficult to implement policies that address societal challenges and how should such policies look like?

CROSSING BOUNDARIES FOR TRANSFORMATIVE INNOVATION: HOW?!

KATRIN HAHN & STEFAN KUHLMANN - EUSPRI CONFERENCE 2018 PARIS

DATA BASE – RESEARCH PROJECTS

EU-Project "IIT" Industrial Innovation in transition (No 649351, 2015-2017)

50 semi-structured interviews with German representatives from industry companies, about 90 min.

GEFÖRDERT VOM

Bundesministerium
für Bildung
und Forschung

BMBF-Project AntEx "Offene Innovationskulturen schaffen. Kollektive Antizipation und Experimentieren als Herausforderung und Möglichkeit für Innovationspolitik (16OIK001)" (2017)

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TACKLING SOCIETAL CHALLENGES: OPPORTUNITIES

- **Social:** reduce inequality, improving health systems,…
- **Environmental:** learn how to use our natural resources in a sustainable way
- **Economic:** technology development and innovation
- **Political:** rethink policy measures, priorities and agendas
- **Scientific:** keep us working in the coming years **;-)**

Schot/Steinmueller 2016;

Kuhlmann/Rip 2018)

TRANSFORMATIVE INNOVATION CHALLENGES
SOURCES OF COMPLEXITY

- **Time: Uncertainty about the outcome**
  - High radicalness and novelty
  - Cannot be pre-defined, contested
  - Might change over time (implementation) or even fail

- **Diversity: Diverse actors & contested interests**
  - Different backgrounds, expectations and interests

- **Knowledge: Leaving established paths of knowledge creation**
  - Changing routines and practices of knowledge creation

OUR IDEA OF "CROSSING BOUNDARIES"

„**experimental space**" to cross boundaries

- **Crossing boundaries of time**
  Co-operative anticipation: Explore socio-technical futures

- **Integrating diversity**
  Inclusiveness: Integration of diverse actors from science,
  business and society for development and implementation

- **Creating paths**
  Experimentation: Opportunities for **co-operative experimentation**
  of new ideas without prejudging the outcome

How elaborated are the conditions in industry and public funding to cross boundaries?

Germany, a European „Innovation Leader"!?

CROSSING BOUNDARIES IN GERMAN INDUSTRIES

Anticipation (time)

- foresight conducted by most industry companies → sector focus
- some networked foresight

Experimentation (knowledge)

- Highly structured (stage gate 69%) incremental innovation (> 80%)
- Often market and customer driven (65%)
- Time pressure, no room for failure: "Kill early – kill cheap"
- Space for experimentation in R&I departments of large MNC

Collaboration (diversity)

- Classical collaborations with a selective, limited amount of partners high division of labour
- ownership of knowledge clearly defined, IP-protection important

CROSSING BOUNDARIES IN INDUSTRY
ANTICIPATION, INCLUSIVENESS AND EXPERIMENTATION

- Innovative industry companies:
  well connected, acting strategically in their IES, successful and stable

However,

- Concern about losing knowledge blocks

- Limited openness for new actors

- Distinctive division of labour when developing innovative knowledge

- Spaces for co-operative experimentation and anticipation are missing

THE "NEW HIGH TECH STRATEGY"

"In Germany's case, the country's innovation base needs to be expanded, if Germany is to be successful in key technologies and in lead markets. That expansion process, in turn, **will call for a comprehensive dialogue between science, industry, society and policy-makers. Only collaboration and participation by all stakeholders will make it possible for curiosity to lead to ideas and for ideas to lead to innovations for competitive, sustainable products and services.** *With such a participatory framework, new solutions to significant social questions will be able to emerge – and to meet with societal acceptance." (BMBF 2014, p. 10)*

3 MAIN FUNDING SCHEMES

- **Innovative Hochschule – innovative university**

  - Focus on universities transferring knowledge and technologies to regional companies, cultural and societal organisations (5 years)

  - Open question: where does the creation of knowledge take place?

- **Spitzencluster – top cluster**

  - Regional value chain cluster with highly innovative, close-to-market ideas (max. 5 years)

- **Forschungscampus – research campus**

  - PPP between academia and economy with local shared lab

  - Max. 15 years

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CROSSING BOUNDARIES IN 3 MAIN COLLABORATIVE FUNDING SCHEMES?!

- **Knowledge/experimentation:** realising innovation rather than exploring future opportunities

- **Diversity/inclusiveness:** the inclusion of societal (or cultural) actors is only realised in very few cases. Often the projects include „traditional" co-operation partners (industry/research)

- **Time/Anticipation:** collaborative forms of anticipating socio-technical futures not explicitly required or practiced

→ **Neither industry nor public funding schemes provide sufficient opportunities to cross boundaries for transformative innovation**

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POLICY MAKERS AS CHANGE AGENTS
ROLE OF POLICY MAKERS

Change agent, who navigates through the transformation process (Kuhlmann/Rip 2018)

- Creates **"experimental spaces"** in which heterogeneous actors can meet, anticipate and explore socio-technical futures
- Defines these common action schemes for public/private consortia
- Creates long-term perspectives: networking, support, advice, moderation and anticipation
- → **Most important:** distance themselves from the economic idea that innovation policy needs to have an immediate return on investments

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EXPERIMENTAL SPACES AS POLICY MEASURE
INNOVATIVE UNIVERSITY

	Research Campus	**Experimental space**
Initiation	Call	Open call
Time frame	Up to 15 years	
Project character	Social relevant research question	Anticipating & exploring new socio-technical opportunities
Objective	Implementation desired	No implementation required
Actors	Fixed, mainly researchers and companies	Researchers, companies & societal actors (semi-flexible group)
Location	Common lab	Experimental space ($\rightarrow$ lab, living lab…)
Communication	Scientific	Science with public

EXPERIMENTAL SPACES – THE DIFFERENCE