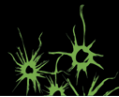


Meso-level Governance of International Research Collaboration

Stefan Kuhlmann,
Inga Ulinicane-Ozolins,
University of Twente



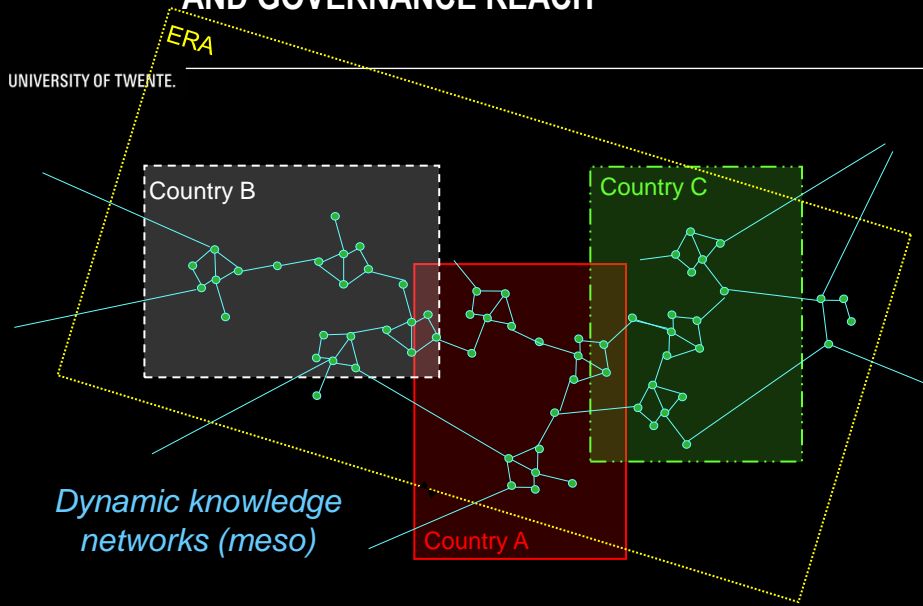
DIVERGING LOGICS OF ACTION: RESEARCH COLLABORATION VS. GOVERNANCE

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- **New international research collaboration** due to
 - **Scientific reasons** (specialization, interdisciplinarity, complementarity, synergy)
 - **Facilitating technical conditions** (ICT, transportation)
- **Governance of (public) research**
 - **Political and economic** globalization & integration ("Grand Challenges"; activities of transnational organizations and multinational enterprises)
 - Historical **national and institutional diversity**
 - **Management** of public research organizations; various models: market, participatory, flexible & deregulation

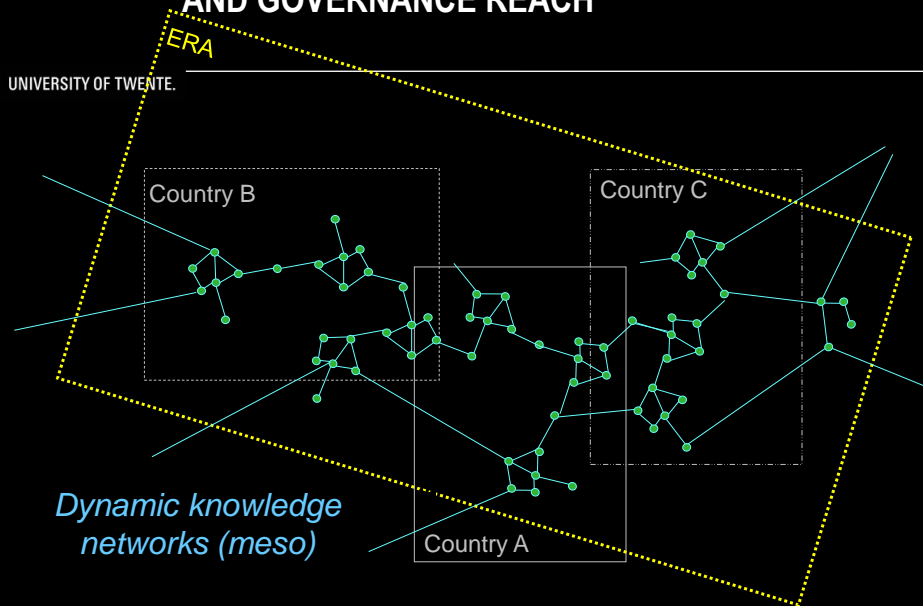
KNOWLEDGE DYNAMICS AND GOVERNANCE REACH

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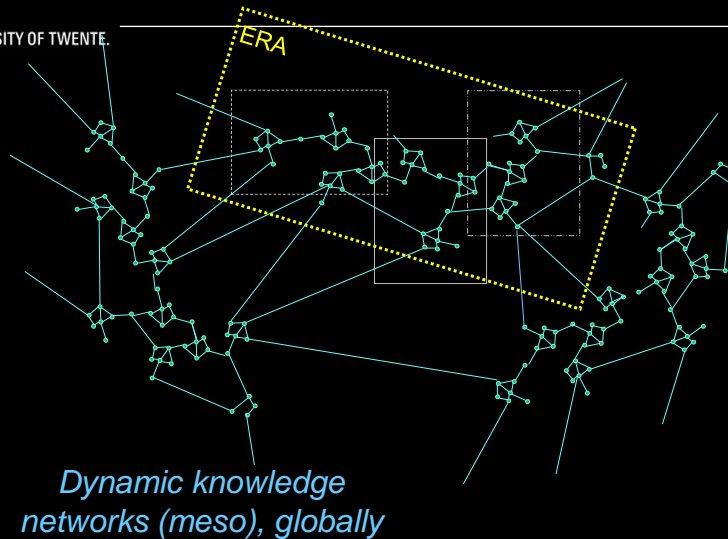
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RESEARCH PROBLEM: HOW DOES DIVERSITY OF GOVERNANCE INFLUENCE INT'L RESEARCH COLLABORATION – ON MESO-LEVEL?

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Meso-level:

- Many **positive effects** associated with international research collaboration: advancement of research, higher quality, benefits from specialization, increasing research capacities...
- ...however, **high transaction costs** due to diverse governance of research institutes, i.e., different legal regulations, reward systems, management styles, organizational routines, funding modes.

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RESEARCH QUESTIONS

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*How does the governance of **public research institutes** influence common governance of international research collaboration?*

- How do various governance characteristics of public research institutes influence **motives** to collaborate internationally?
- Which **governance** characteristics *facilitate* and which – **hamper** common governance of international research collaboration?
- How do **changes in governance** of public research organizations since the 1990s influence international research collaboration?

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FOCUS OF THE STUDY

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- Governance of international research collaboration among public research institutes in **nano S&T**
 - German: Max Planck, Fraunhofer, Leibniz & Helmholtz
 - French: CNRS units, CEA, ONERA
 - Belgian, Dutch & UK: university departments & applied research institutes

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METHODOLOGY, RESEARCH DESIGN, EMPIRICAL SCOPE

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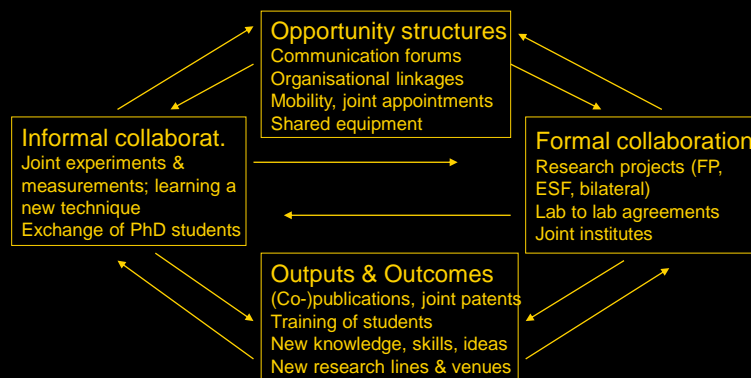
- Methodology: qualitative, exploratory research
 - Case study research (Yin 2003; Eisenhardt 1989)
 - Process tracing (George & McKeown 1985)
 - Contextualized comparisons (Locke & Thelen 1995)
- Research design and empirical scope
 - 4-8 in-depth case studies of IRC in nano S&T, cutting across D, NL, B, F, UK planned (2 more developed at the moment)
 - Multiple sources of evidence: documentation (databases; reports; scientific publications), semi-structured interviews (Rubin & Rubin 2005), other (CVs; websites)
 - 35 interviews so far; 80 planned

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CONCEPT: COLLABORATION ON MESO-LEVEL

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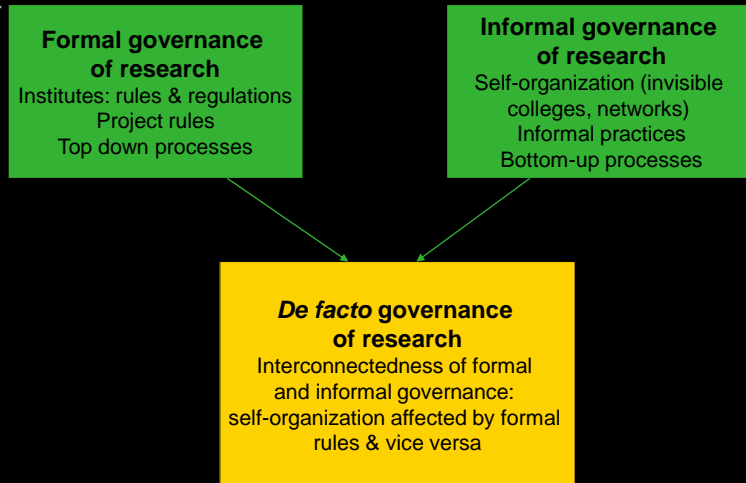
Process of IRC at research institute level



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CONCEPT FORMATION: *DE FACTO* GOVERNANCE OF RESEARCH

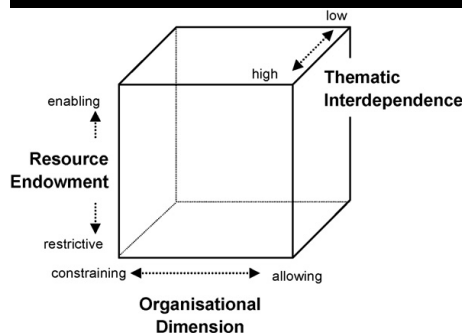
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CONCEPT FORMATION: GOVERNANCE OF IRC

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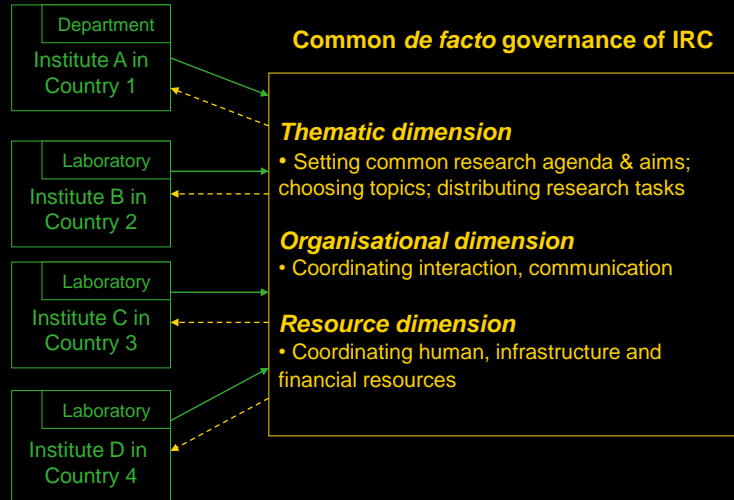


- Governance of international research collaboration on level of research units understood along three governance dimensions of research collaboration (Heinze & Kuhlmann 2008):
 - Thematic interdependence
 - Organisational dimension
 - Resource endowment

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COMMON GOVERNANCE OF INTERNATIONAL RESEARCH COLLABORATION

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CONCEPT FORMATION: PROPERTIES OF GOVERNANCE DIMENSIONS

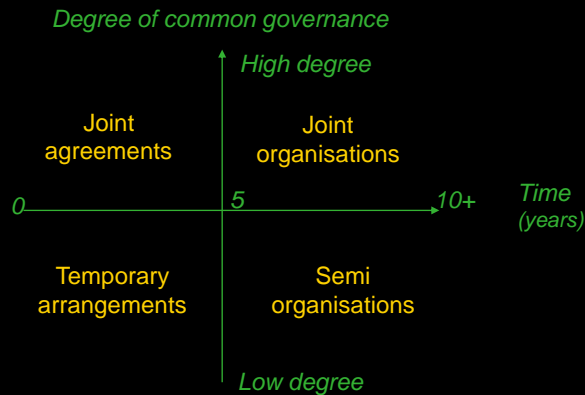
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Properties of governance dimensions	Characterization of properties
<u>Thematic interdependence</u> 1. Common research agenda, choice of topics 2. Specialization, cognitive complementarities 3. Ways of doing collaborative research 4. Scientific quality, reward systems	<u>High vs. low</u> 1. Shared, negotiated vs. ad hoc 2. Strong vs. weak 3. Iterative, interactive vs. separate 4. Similar vs. different
<u>Organisational dimension</u> 5. Decision making 6. Coordination & leadership 7. Interaction & communication 8. Organisational/ individual strategies 9. Common rules, norms, practices, routines	<u>Enabling vs. restrictive</u> 5. Flexible, transparent vs. rigid 6. Supportive vs. unsupportive 7. Hierarchical vs. participatory 8. Expansion, diversification, novelty 9. Shared vs. incompatible
<u>Resource endowment</u> 10. Personnel: scientific, technical, administrative; recruitment & employment 11. Equipment & infrastructure; technical complementarities 12. Funding: institutional, project; other	<u>Allowing vs. constraining</u> 10. Supportive vs. unsupportive; competitive; empowering vs. restrictive 11. Uniqueness, availability, newness; strong vs. weak 12. Balanced, supportive vs. restrictive

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FORMS OF COMMON *DE FACTO* GOVERNANCE OF IRC AT INSTITUTE LEVEL I

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INTERMEDIARY FINDINGS: **MOTIVES** TO COLLABORATE INTERNATIONALLY

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- *Thematic*
 - Need to develop further or **expand** in-house research; to do research faster and at higher **quality**; to develop new scientific **ideas**; to join specialized **expertise**
- *Organizational*
 - Visibility and **reputation** of research institutes; strengthening of **new research groups**
- *Resources*
 - Mobilization of **resources** to develop **new** research topics and groups; access to specialized **equipment**; training of **young scientists**

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INTERMEDIARY FINDINGS: FACTORS **FACILITATING** INTERNATIONAL COLLABORATION

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- *Thematic*
 - Specialized expertise and broader **understanding of collaborator's research**; **negotiated aims** of collaboration; high scientific **quality**
- *Organizational*
 - Involvement and support from **leadership**; **empowerment of early career researchers**; active interaction among PhD students
- *Resource*
 - Personnel with track record of **international mobility**; specialized **infrastructure**; availability of **diverse** (institutional, national, project, bilateral, international) **funding sources**

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INTERMEDIARY FINDINGS: FACTORS **HAMPERING** INTERNATIONAL COLLABORATION

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- *Thematic*
 - **Inertia**; dominance of **narrow organizational self-interests**; strong delineation of research fields (nano & bio)
- *Organizational*
 - Different **regulatory frameworks** (e.g. **career paths/incentives**)
 - **Lack of leadership** and commitment
- *Resource*
 - Difficulties in **recruitment**; lack of up-to-date **equipment**

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OUTLOOK: GOVERNANCE OF MULTILATERAL COLLABORATION

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- Different collaboration subjects and purposes ...
- ... and different characteristics of collaboration partners (organizational, regulatory, institutional, ...) ...
- ... create complex mix of *de facto* governance patterns in publicly supported multilateral research collaboration ...
- ... with long-term repercussions on governance of partners “at home” – change agent.

- Designs on governance of multilateral research collaboration (OECD project: “principles and good practices”):
 - Understand idiosyncrasies of scientific research
 - Allow for meso-governance learning loops

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