
COLLABORATIVE NETWORKS - WHICH WAYS TO GO?

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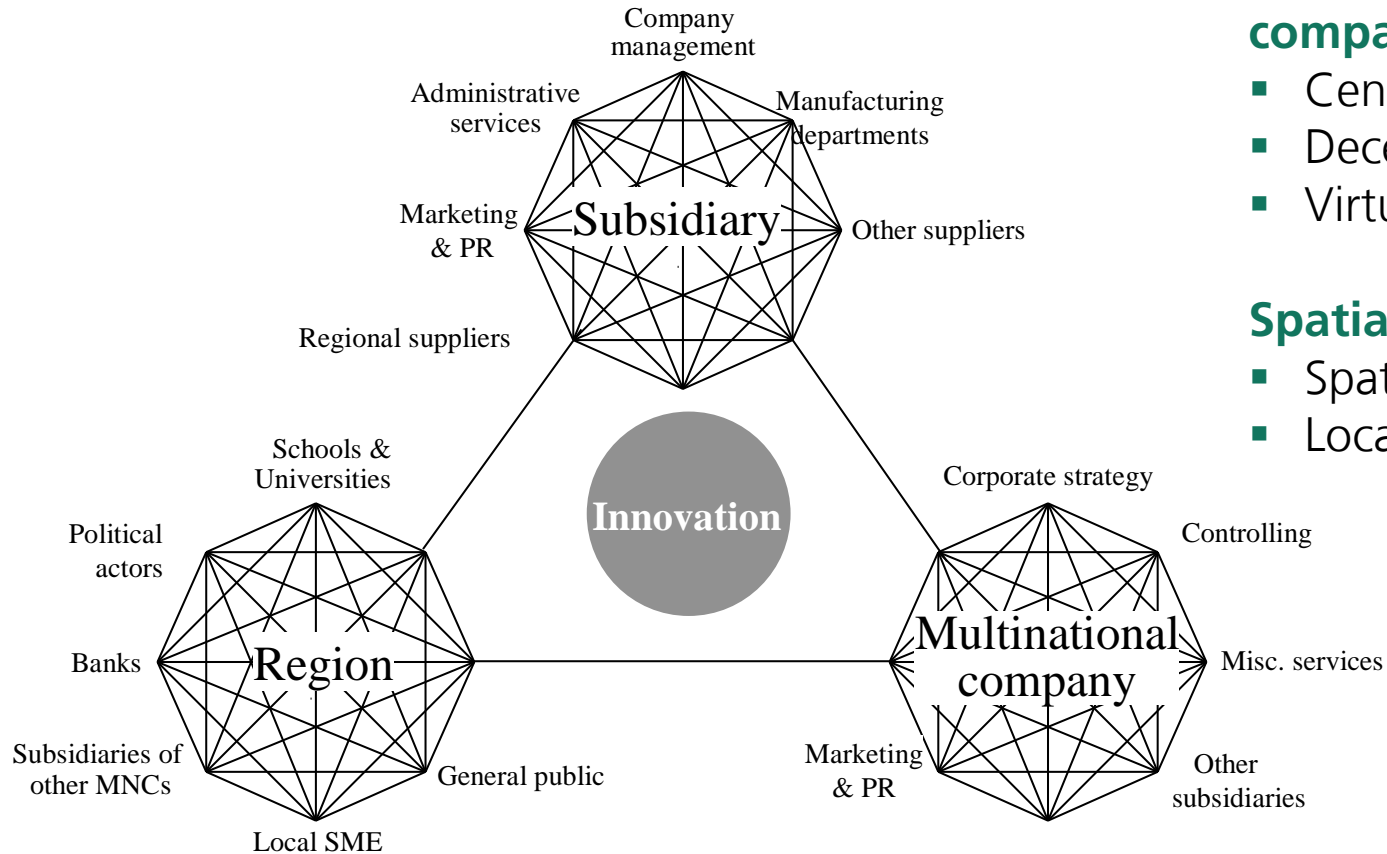


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Distributed innovation processes

- Innovation can be interpreted as a **distributed knowledge sourcing and combining process between different agents**.
- Knowledge generation and implementation processes are supposed to result from **social interaction** between economic actors.
- Distributedness of innovation depends on: the **modes** of interrelationships between agents (knowledge base and specialization), the **dynamics** in the distribution patterns of the agents (changes in the distribution patterns), and the **scales** which address the levels of innovation (incremental steps <--> fundamental changes) (Coombs et al. 2003, p. 1126).
- The advantages of distributedness depend on the **absorptive capacity** of firms (Cohen/Levinthal 1990) and on a proper **gatekeeper function** in the firm (Tushman/Katz 1980).
- **Larger firms** have a higher propensity to collaborate with external partners.

Embeddedness and distributedness of networks



Trends on company level

- Centralization →
- Decentralization →
- Virtualization

Spatial organization

- Spatial dispersal →
- Localization

Source: Heidenreich et al. (2005)

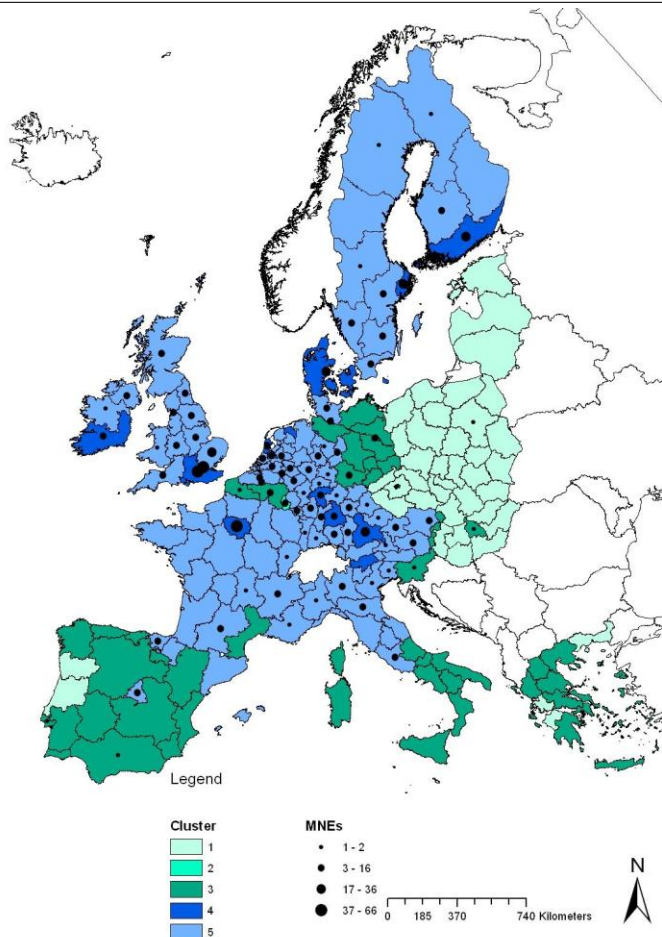
Findings from empirical studies

- MNEs exploit and utilize **different location-specific and market-related factors**.
- Through internationalization MNEs attempt to **access and use specific competences**.
- MNEs combine the advantages of globally-coordinated product and production strategies with the **advantages of local proximity and specific locational factors**.
- Applied strategies depend on the necessity to get **access to specific localised knowledge and skills**, on the direct access to specific markets, and on the necessity **to become a player in a regional innovation system or a cluster**.
- Regional environments must offer **strategic advantages**.



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Regional environment and headquarter location of research-oriented MNEs



Source: own draft based on Eurostat data

- The highest number of MNEs are found in **technology oriented industrial regions**.
- **Research and service oriented regions** rank 2nd.
- The lowest absolute number of headquarters are found in lagging regions at the periphery of Europe.
- MNEs favor regions with a **favorable innovation potential, a strong technological base and good economic conditions, as well as a strong university research and service orientation**.

Changes in the industrial sector

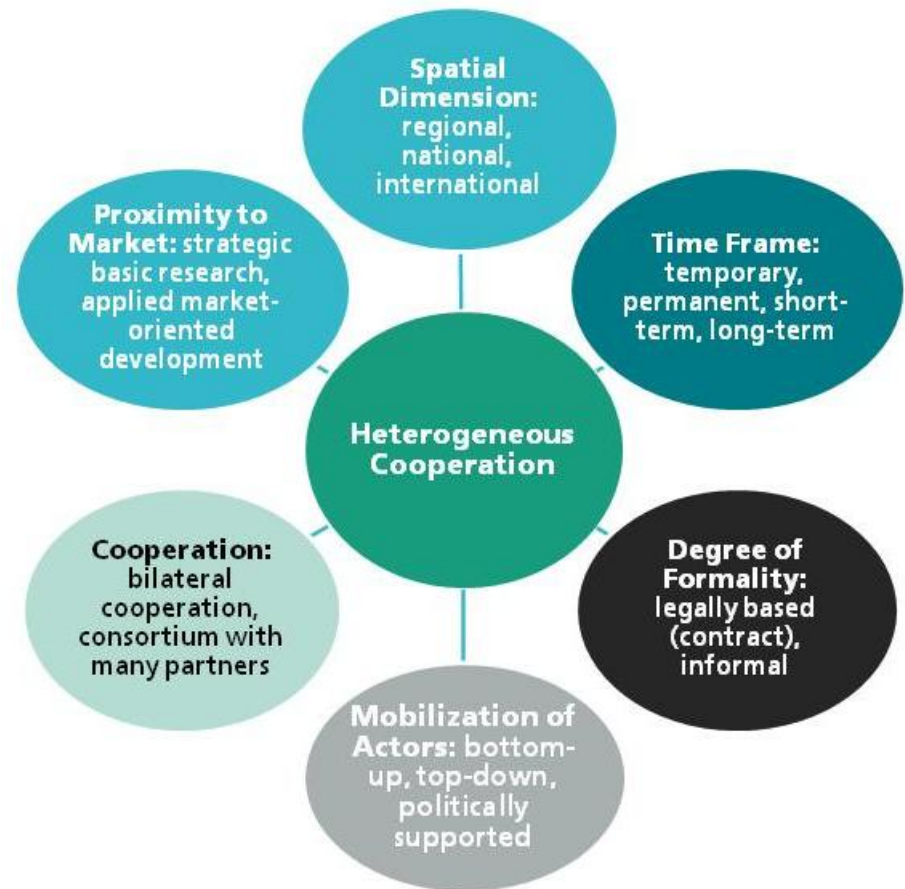
- In the course of globalization and the science orientation in technological development, the **complexity in technology and product development** increases further.
- Own entrepreneurial **resources** (knowledge, capital) **are often insufficient** to master this complexity.
- This results in **changes in the interface between science and industry** - (large) companies are looking for access to long-term strategic research.
- Universities and non-university research institutes are attractive **research partners** in this context.



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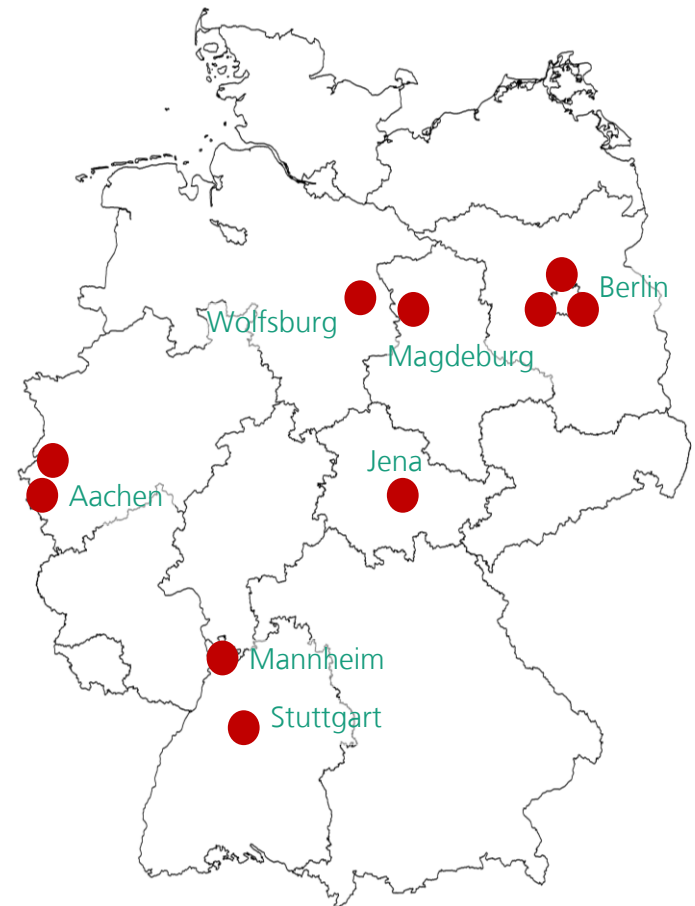
Starting points for the establishment of new forms of collaboration

- Increasing **freedom and** levels of **autonomy of public research organizations** and increasing flexibility of institutional structures.
- In addition to contractual bilateral relations **new structures and organizations** at the interface between science and industry emerge.
- Starting points: collaborations in which actors from different, previously separate organizations **interact and explore new forms of cooperation** ("Heterogeneous cooperation").



Source: Koschatzky (2013)

- **Major characteristic:** Collaboration "under one roof" on a university campus.
- Access to specific knowledge combinations.
- Partnership between large firms, SMEs and research organizations.
- Utilization of national/international networks of the partners.
- **Distributed innovation with the ResearchCampus, but spatially localized.**

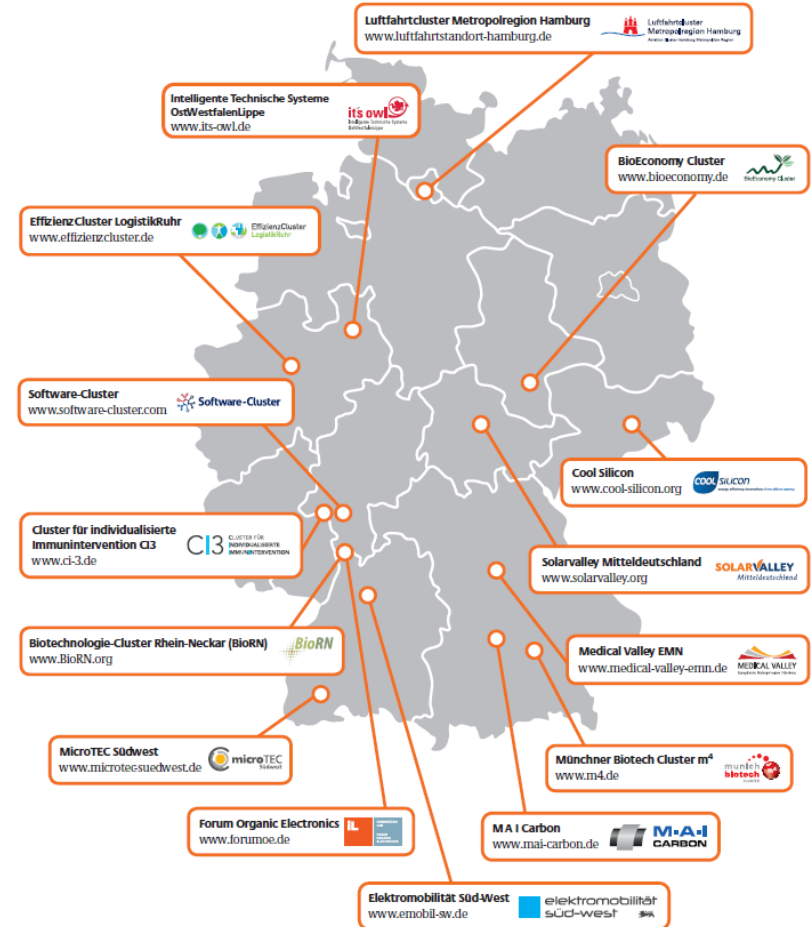


Source: own draft

Germany: Leading-edge clusters



- **Objective:** generation of innovations in future technologies by establishment of strategic partnerships between science and industry.
- **Starting point:** spatial proximity between already excellent partners (picking the winners strategy).
- **Collaboration pattern:** Spatial hubs (access to specific knowledge and competencies) and international linkages (spokes).



Source: BMBF

Conclusions

- Clear indications for a **reorganization of the division of labour in strategic R&D** between industry and the research sector.
- **New flexible collaboration patterns** in the way of clusters or on-campus models.
- Besides advances in communication technologies, **spatial and cultural proximity** are still necessary in collaboration.
- Necessities exist to **tap into locally bound knowledge**, especially in emerging, still uncertain technologies or market niches.
- Localized relationships are **complemented and enlarged by collaborations in global research, production and marketing networks ('hubs and spokes')**.



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Thank you for your attention!

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