



# Experience from Germany on Clusters for SMEs

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# Agenda

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1. Regional Innovation and Cluster Policies in Germany
2. Overview of main policies since the mid 90s
3. Basic principles
4. Pre-conditions and main requirements
5. Points for discussion

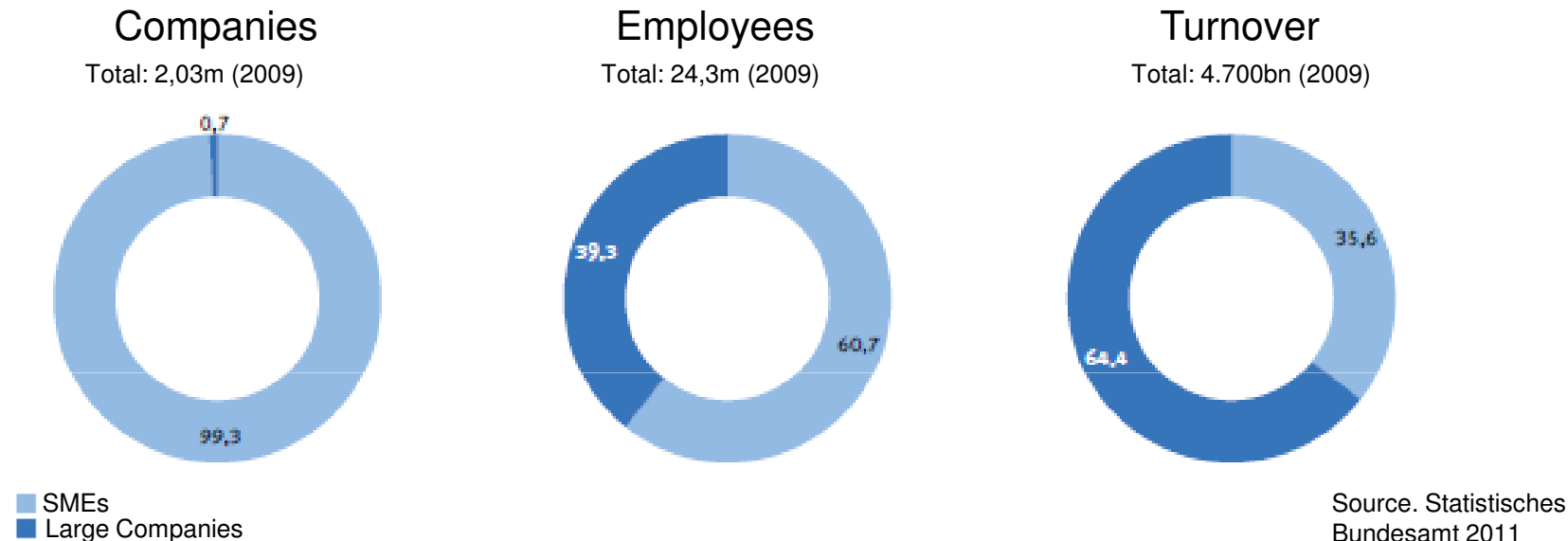
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# Regional innovation and cluster policies in context: legal aspects

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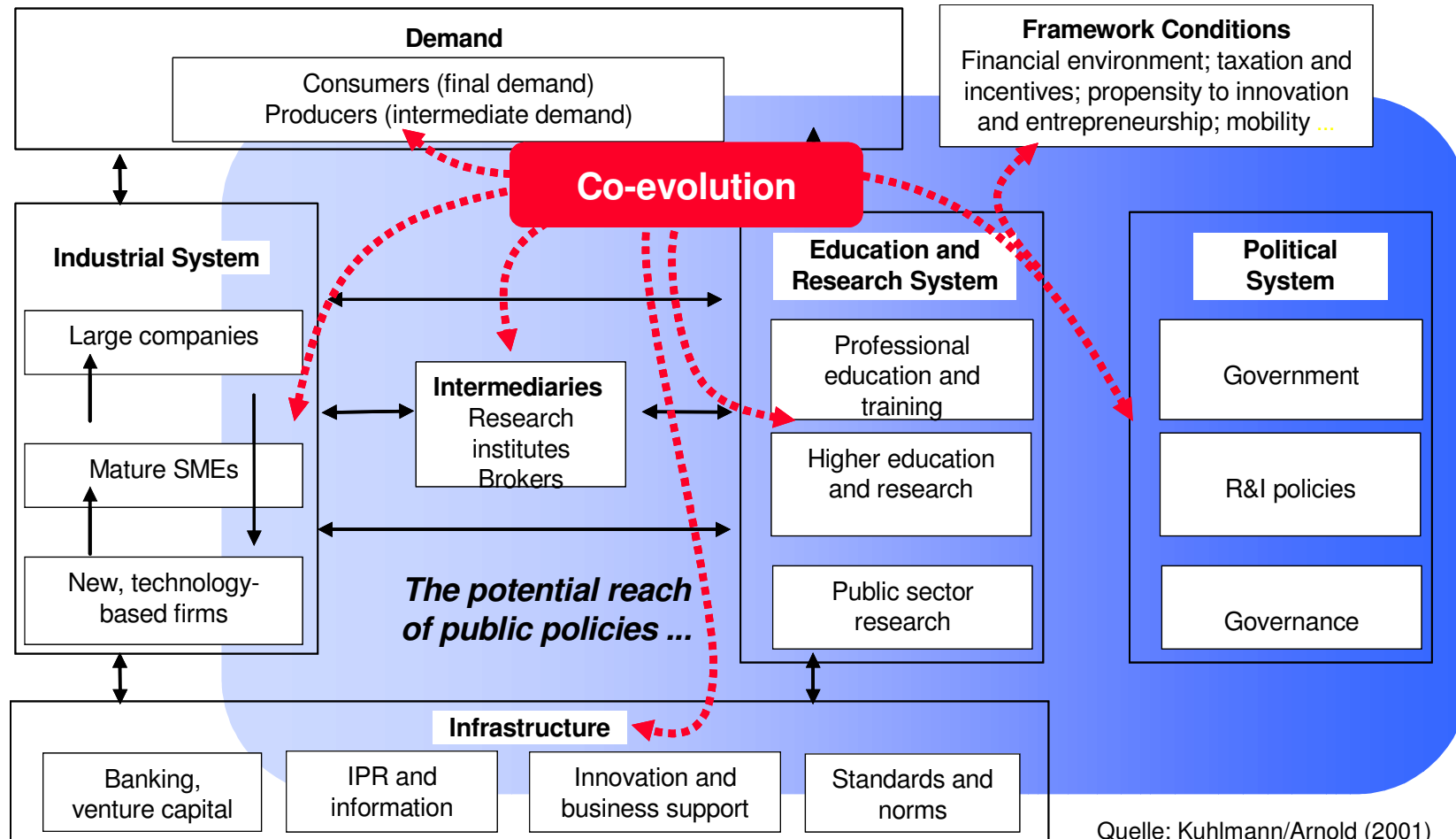
- Federal state with decentralized powers and quite autonomous federal states, particularly in the field of education, research & innovation
- However, national state important player in shaping the national innovation system (e.g. institutional funding of research organizations), but also in triggering/supporting regional innovation systems (e.g. by using the regional level as implementation platform for national objectives) → “multi-level” governance of quite complex system
- Federal states (regions) themselves are shaping their RIS → mixture of RIS triggered by the national government and the federal states
- Public intervention- be it on national or federal states level – has to be in line with regulative policies (RIS and cluster policies justified by market failures & systemic failures → “*Structural disadvantages of SMEs*”)

# Significance of SMEs in Germany

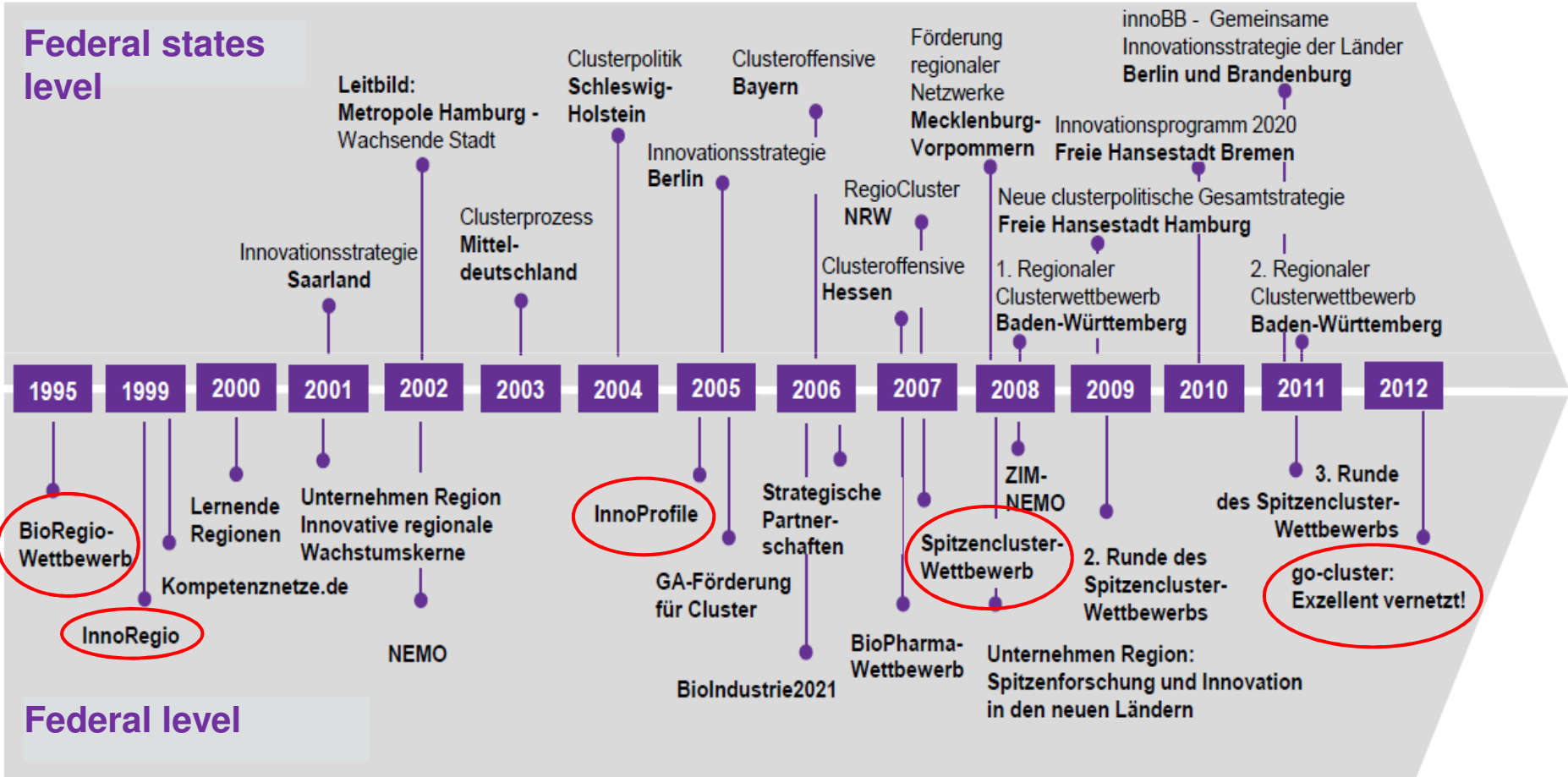


- SMEs as drivers of economic growth, innovation and employment
- Many policy initiatives focus on the improvement of the framework conditions for SMEs
- Combination of different approaches: improvement of financing conditions, support of entrepreneurship and start-ups, innovation & technology support (joint research, exploitation and commercialization, network and cluster support, systemic approaches)

# Innovation system heuristic



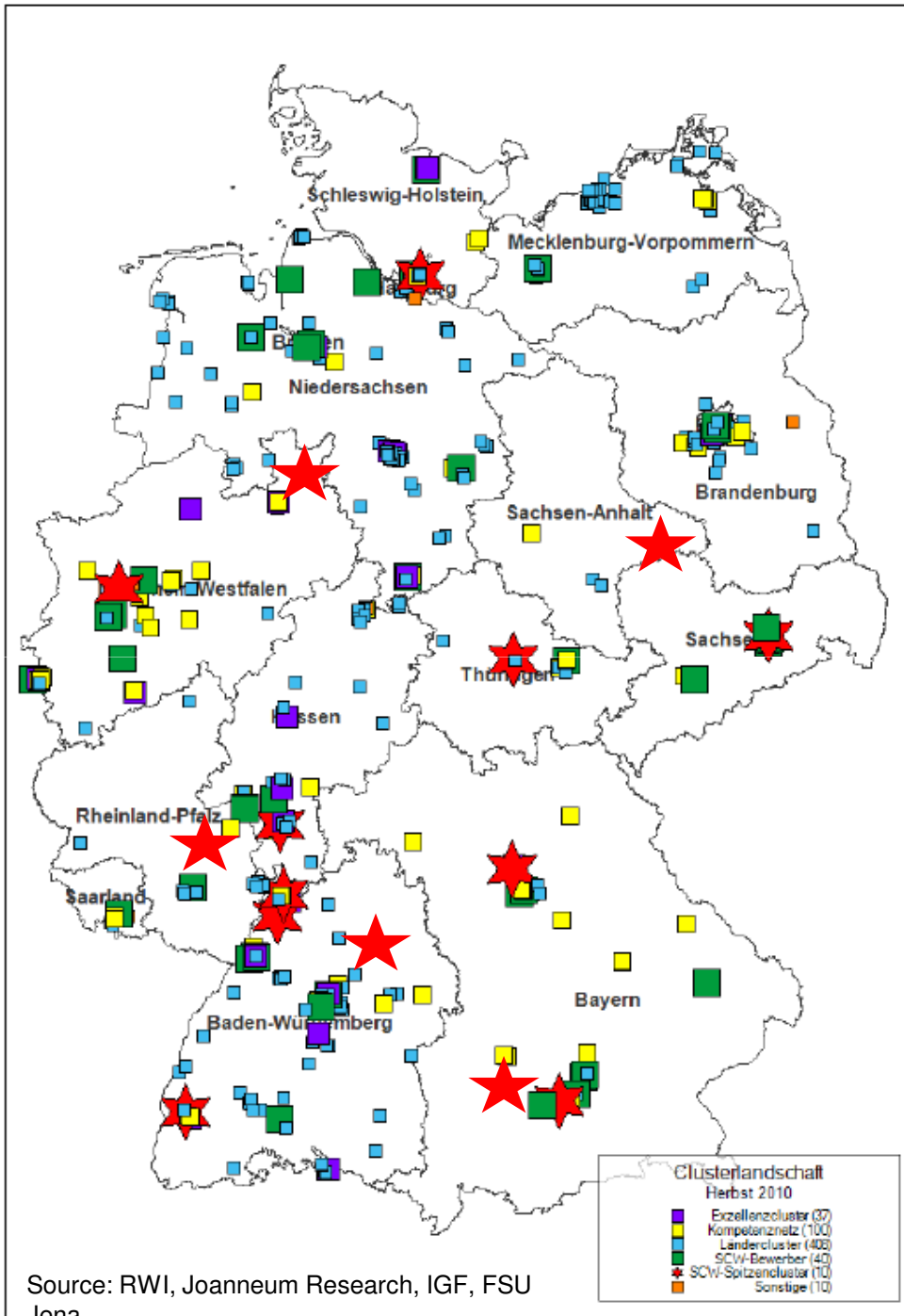
# Overview Cluster/RIS policies in Germany



Source: VDI/VDE IT

# Cluster and RIS policies in Germany

- Various structures established on the basis of different programmes of the national and federal states
- Large heterogeneity both regarding their thematic orientation as well as the quality/intensity of their implementation
- Financially well endowed “leading-edge-clusters” stand vis-à-vis several less financially endowed clusters/networks by the federal states
- Open question: sustainability



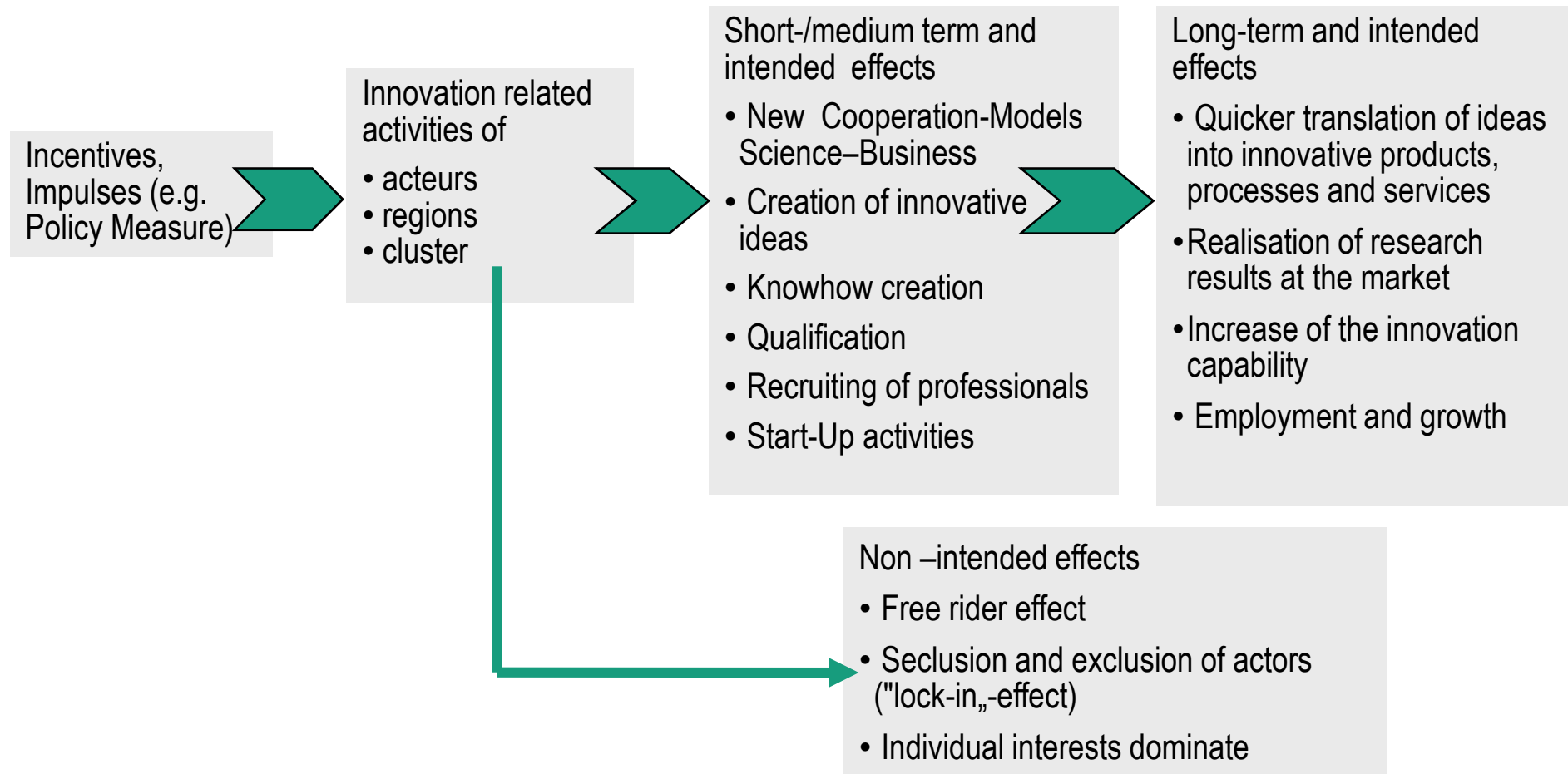
# Examples of selected Cluster/RIS measures

	Period	Budget (public)	No. of clusters	Type of cluster	Feature of the initiative	Strategic elements of governance
Leading Edge Cluster Competition (Federal Ministry of Education and Research)	2008-2015	~ 600 Mio. Euro	15 (to be selected in three phases)	Research- /technology - driven cluster	Competition; Selection of leading edge cluster by high-level jury in two steps	Jury Advisory Board Accompanying Evaluation
ResearchCampus (Federal Ministry of Education and Research)	2012-2017 (up to 15 years in total)	~ 200 Mio. Euro	10 (divided into pre- and main phase)	Technology-driven: „grand challenges“	Industry-on-campus model, competition, involvement of high-level jury	Jury Scientific support measure
Bavarian Cluster Offensive (Bavarian Ministry of Economic Affairs)	2006-2015	45 Mio. Euro (2006-2011)	19 (first period; probably to be reduced for second period)	Research-, Industry-, Service-, and cross-section cluster	Top-down selection of cluster	Taskforce Evaluation

Source: own compilation



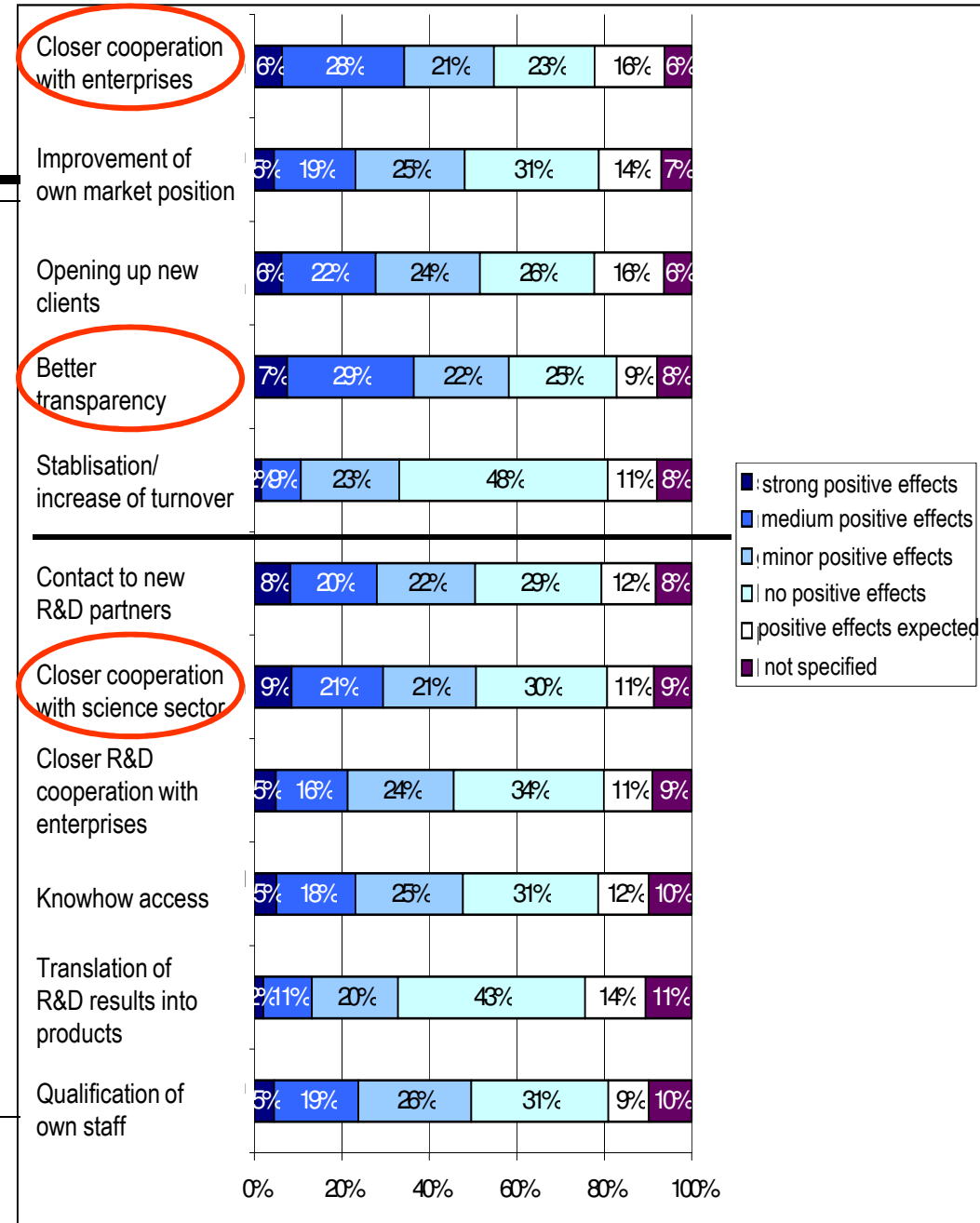
# Basic model of cluster effects



# Cluster effects: the example of CO Bavaria

Most important effects for cluster companies:

- Better transparency of actors and business fields
- Closer cooperation with other companies
- Closer cooperation with the science sector
- Contact to new R&D partners



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# Basic principles of CluSter/RIS policies in Germany

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- Stimulation of organisations of specific (future) technology-fields or branches towards more socially rooted vertical and horizontal interaction; increase of **collective innovation** and national and regional technological competitiveness
- Design of most (national and regional) programmes: initiating of **regional competitions** (e.g. BioRegio, InnoRegio, Leading-Edge Cluster-Competition, ResearchCampus, Federal States initiatives)
- Self-organizational process within the regions for application (“**bottom-up process**”): actors, strategies, structures, projects
- Role of policy: **initial funding** over a 5-year period rather than endless subsidiaries
- **Independent jury** which identifies the “winners” (crucial: composition of jury members)

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# Basic principles of Cluster/RIS policies in Germany

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- Focus on **high-technology fields**; Funding of: R&D projects, technical infrastructure (buildings, laboratories, equipment), management, networking and coordination capacities;
- **Co-Funding principle**: companies have to co-finance R&D projects
- Implementation: establishment of **management offices** (non-profit-making legal forms), steering committees, monitoring, self-evaluations
- **Strategic scientific support** measures right from the start: on-going evaluations or scientific support: “Learning programmes” with constant knowledge transfer of good practices and routines
- Achieving **self-supporting and sustainable financing** – either via private or other public funds – one of the key aspects

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# Pre-conditions and main requirements

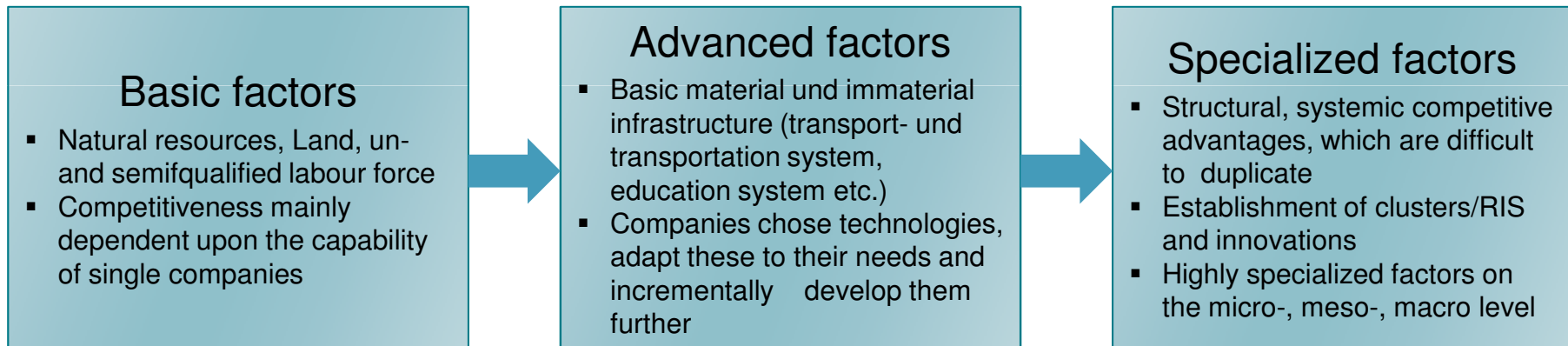
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- **Stakeholder Process** regarding innovation **strategies** ;“High-Tech-Strategy for Germany” inter-ministerial approach
- Clear and realistic **objectives**: National vs. regional objectives; high-tech vs. low-tech innovations; consideration of endogenous potentials; world-market vs. national/regional markets
- Elaboration of realistic **mile-stones** and respective **action plans** – especially under given financial constraints
- Differentiation: buildup or institutional funding of scientific or technological **infrastructure** or design of **specific programmes**
- Consideration the **degree of regional autonomy** : Which role can and should a region play?
- Take into consideration the phase towards national **competitiveness**

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# Steps on the path towards national/regional competitiveness

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Source: on the basis of Messner 1995

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# Pre-conditions and main requirements

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- Cluster approaches as examples for policies focussing on **systemic elements** (competitive advantages) and specialized factors
- Pre-Condition for systemic approaches: advanced factors are existing or have been established
- **Scientific and technological potentials** at public institutions (universities, non-university research centers)
- “Critical mass” of **companies** in specific industries/technological fields possessing the capability to innovate – “**absorptive capacity**”
- Capability of **intermediary system** and public institutions implementing RIS instruments (human resources and qualification)
- **Incentives** for entrepreneurs and public institutions (role of individuals)
- Transparent and professional **funding guidelines**, principles and comprehensible decision process (reasons for failed applications)

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# Pre-conditions and main requirements

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- Funding competition (bottom-up-principle): “Strategic intelligence” of stakeholders in the regions (role of key persons)
- How to pick the winners? Independent jury with experts representing the different target groups (however, conflicts of interests have to be avoided)
- Good balance between administration of measures and actual funding topic (e.g. R&D or innovation project)
- Political will to “learn within the funding process” and adapt/modify the guidelines and funding procedures
- Evaluation & scientific on-going support measures delivered by independent institutions appear to be important learning-instruments in complex RIS programmes
- Communicate clear “exit-strategies” rather than boosting a mentality of on-going public subsidies (market principle)



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# Points for discussion

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- Strengthen **regional autonomy** in the field of innovation policy and (budget lines for innovation funding, decentralized responsibility)
- At the same time national government to **increase applied R&D activities** at national universities (research universities) and think about incentives for young researchers to transfer technologies, innovate or start a company
- National government should implement far-reaching initiatives focussing on national objectives and challenges; select priorities (“**pick the winners**”) rather than using innovation policy as a balance oriented tool (cluster = growth orientated)
- Regional governments to professionalize their **support for possible applicants/concepts** for national initiatives and support the “second best” concepts

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# Thank you!

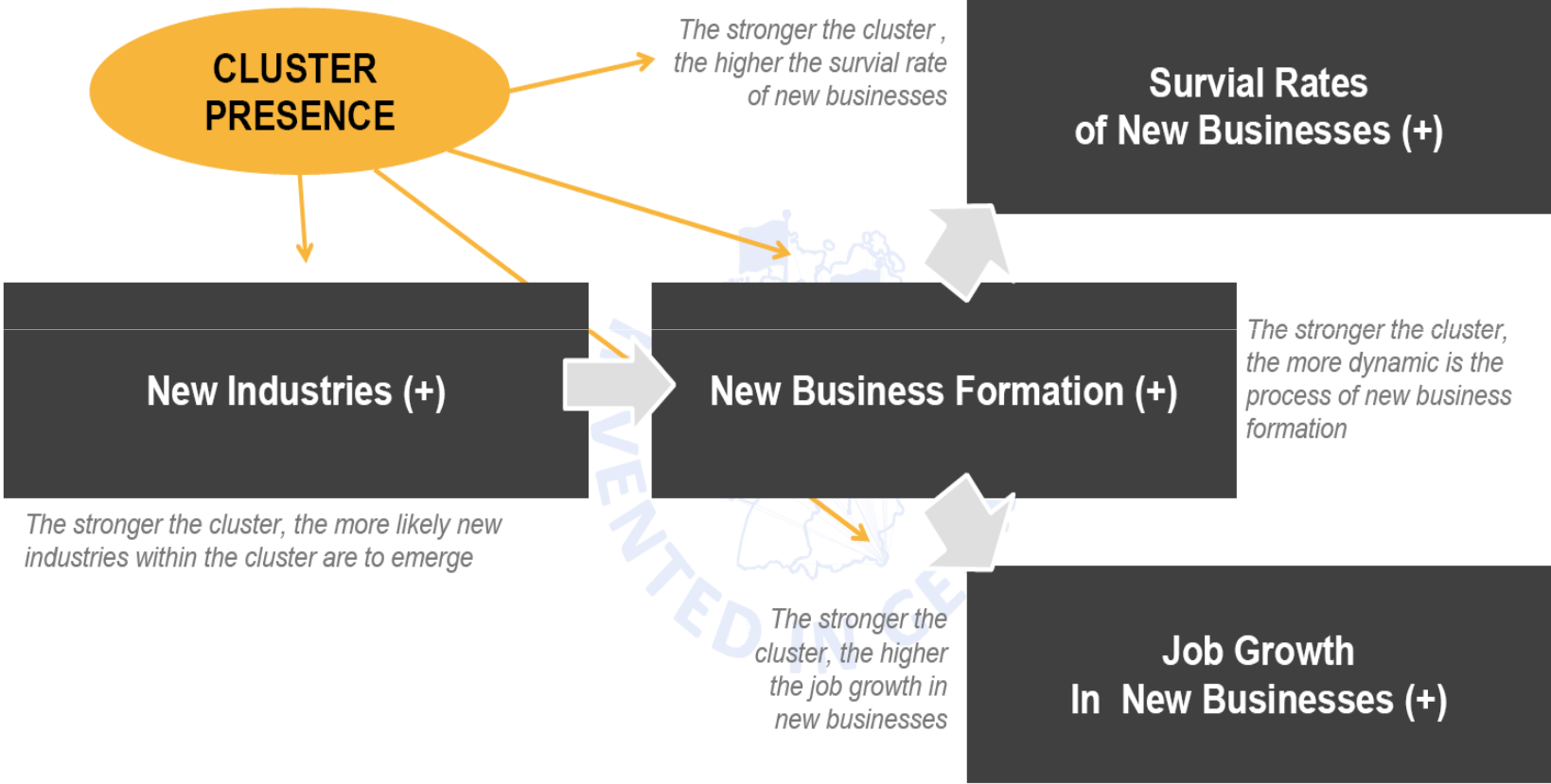
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# Regional systemic approaches in practice

Federal level	Objective
Leading-edge cluster competition	<ul style="list-style-type: none"><li>• Supporting science-business interaction</li><li>• Create lead-markets in technological fields</li><li>• International visibility</li></ul>
Research Campus	<ul style="list-style-type: none"><li>• Public-private partnerships at the interface of public and private research</li><li>• Support of long-lasting strategic research</li></ul>
„Enterprise Region“	<ul style="list-style-type: none"><li>• Focus on Eastern German states</li><li>• Support of different phases in the innovation process</li></ul>
EXIST – Science-based start-ups	<ul style="list-style-type: none"><li>• Creation of a culture of entrepreneurship in science, administration and business</li><li>• Networks to support young entrepreneurs</li><li>• Focus on entrepreneurship education, mobilisation and sensibilisation of graduates and scientists</li></ul>

Federal states level	Objective
Diverse measures/instruments to complement national measures or implementing own policies	<ul style="list-style-type: none"><li>• Funding of basic research</li><li>• Co-funding of scientific organisations</li><li>• Science-business interaction, clusters, technological development, start-up support, regional measures etc.</li></ul>

# Cluster policies: Anticipated Effects



Source: Ketels 2012

# Cluster effects: the example of CO Bavaria

Most important effects for **scientific organisations** within cluster:

- Information on user needs
- Closer R&D related cooperation with other companies
- Contact to new R&D partners
- Closer cooperation with scientific sector/gain in reputation

