



Regional innovation systems in a federal state: recent experience with systemic approaches in Germany



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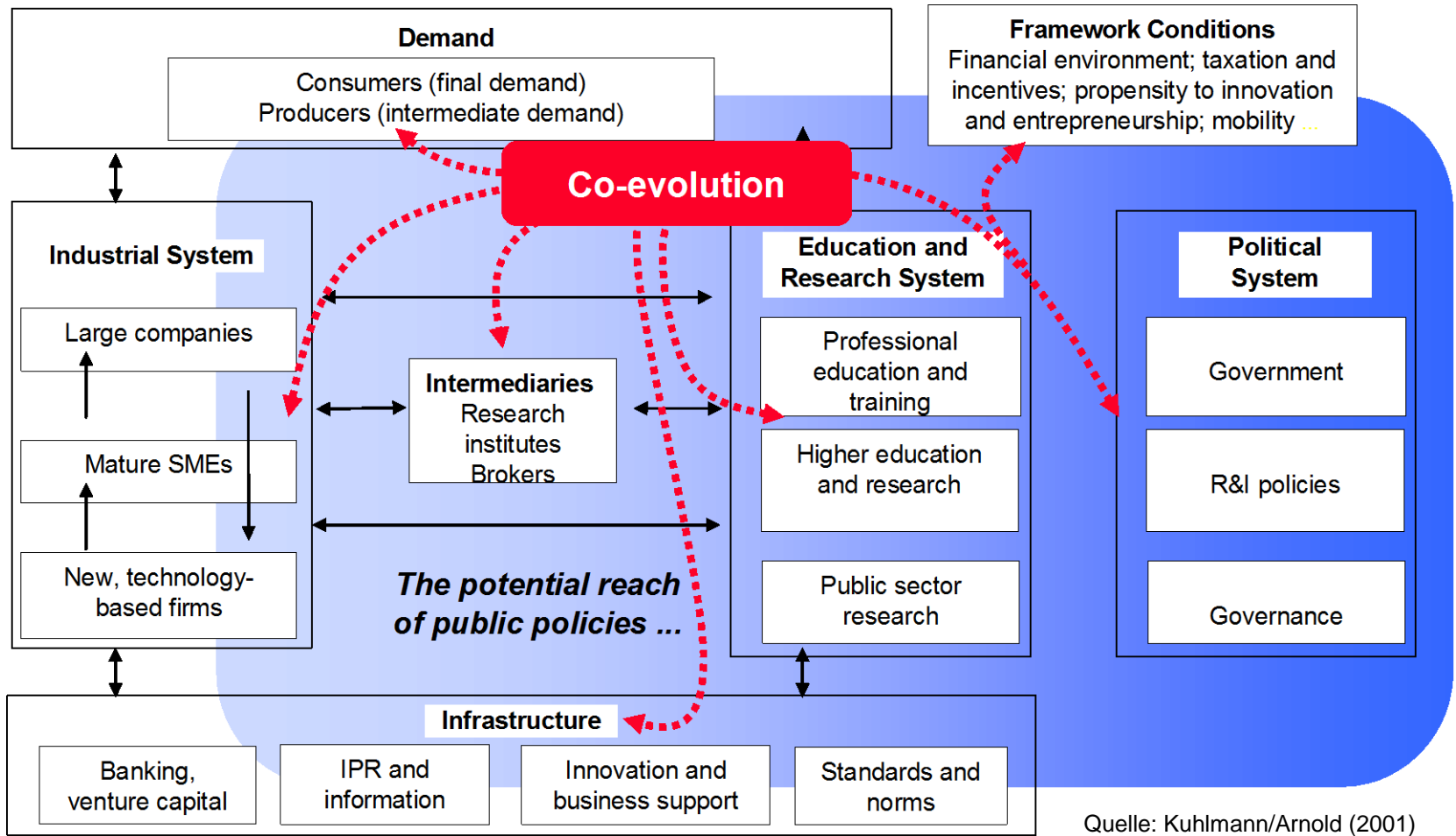
Agenda

1. Regional Innovation Systems in Germany in Context
2. Overview of main policies since the mid 90s
3. Basic principles
4. Pre-conditions and main requirements
5. Possible steps for Belarus

Regional innovation systems in context: legal aspects

- 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.  using the regional level as implementation platform for national objectives) “multi-level” governance  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)

Innovation system heuristic



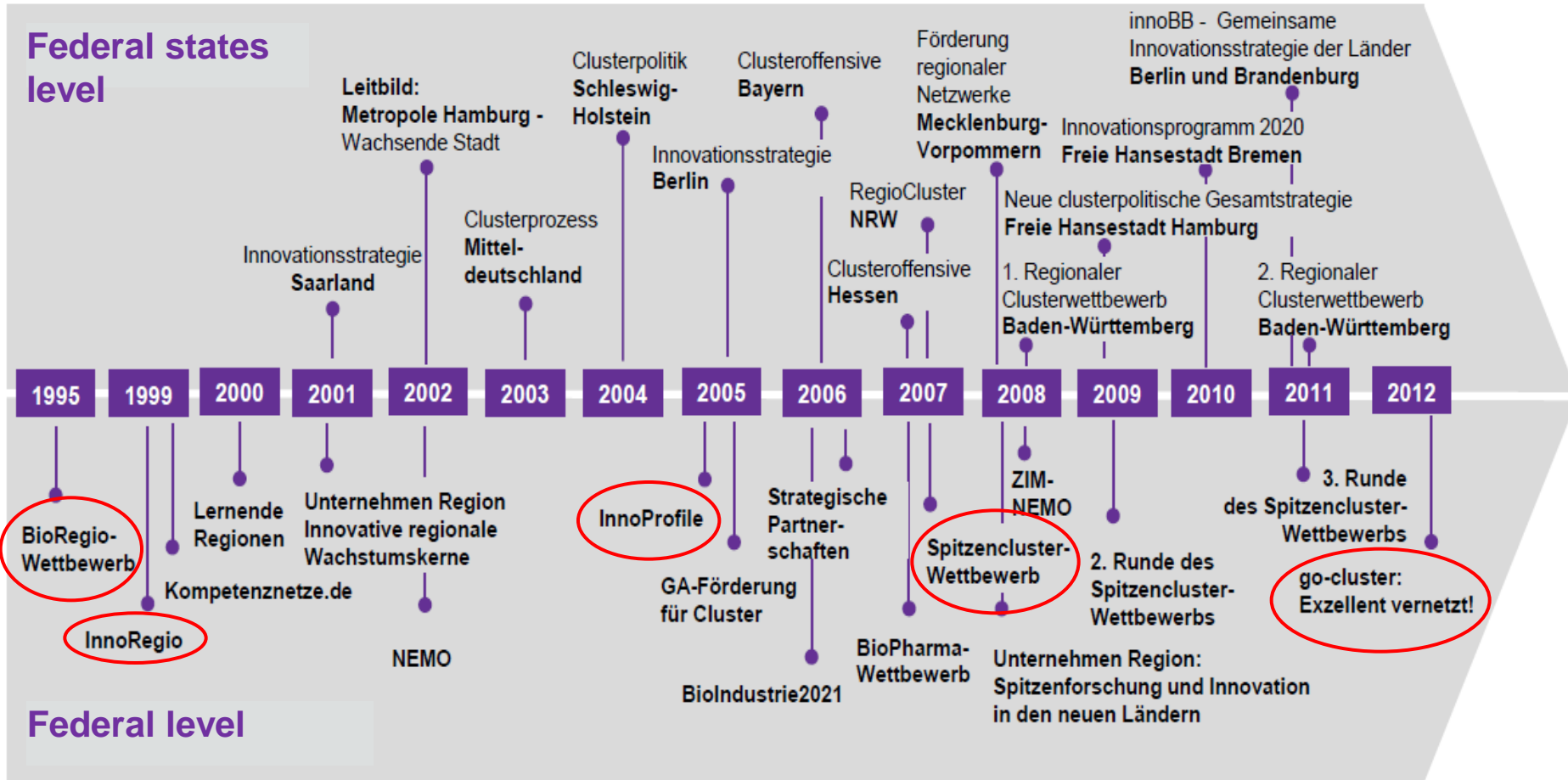
Quelle: Kuhlmann/Arnold (2001)

Regional systemic approaches in practice

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

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

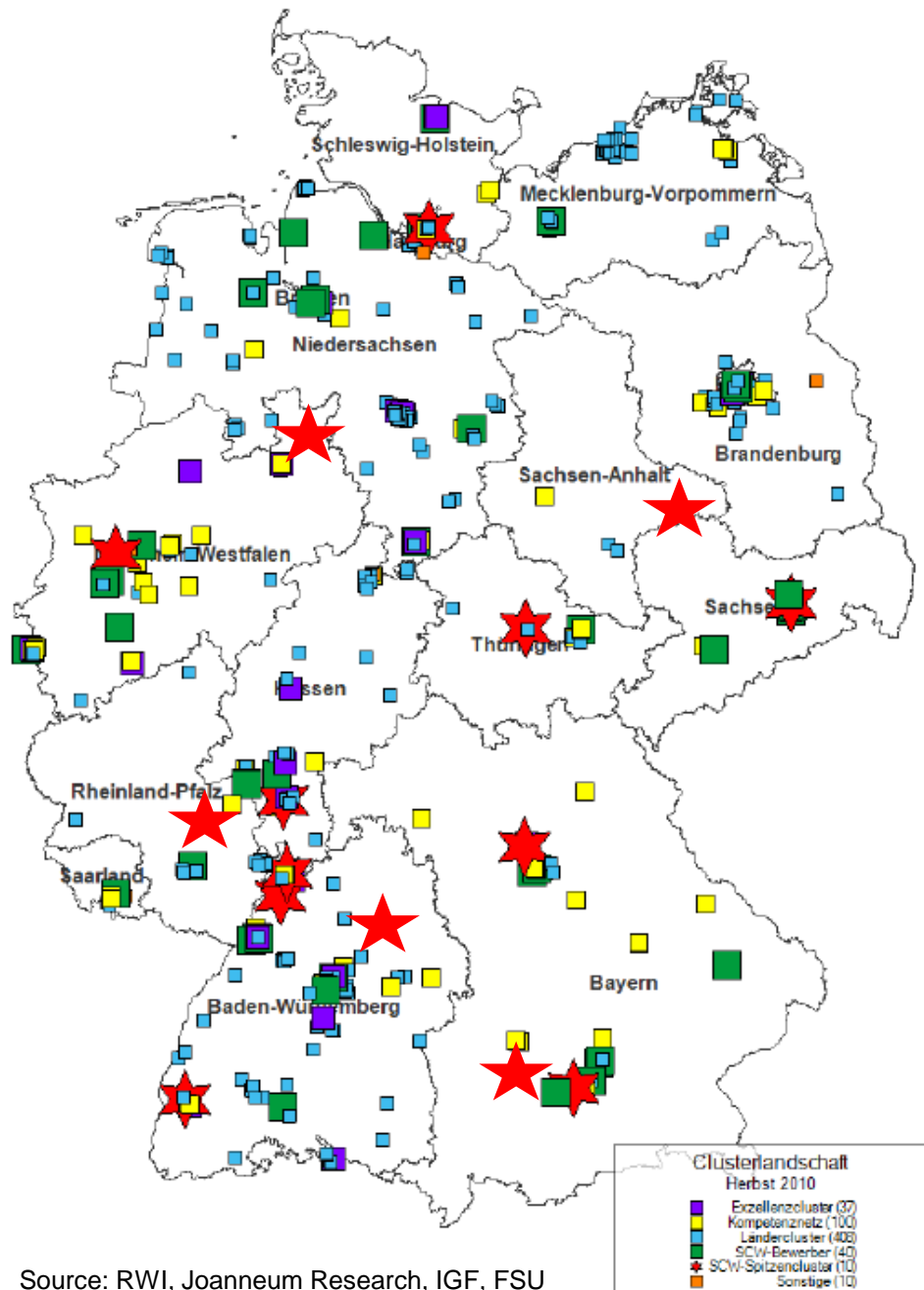
Overview RIS policies in Germany



Source: VDI/VDE IT

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 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 principles of RIS policies in Germany

- 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)

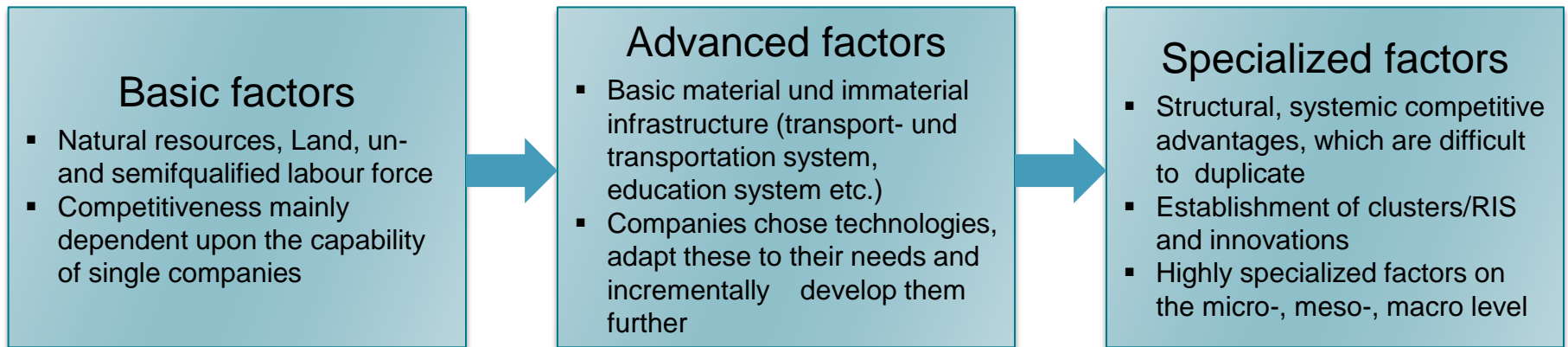
Basic principles of RIS policies in Germany

- Focus on high-technology fields
- Co-Funding principle:
- Establishment of management offices and independent steering committees
- Strategic scientific support
- Achieving self-supporting and sustainable financing

Pre-conditions and main requirements of systemic regional approaches

- Stakeholder Process regarding innovation strategies
- Clear and realistic objectives
- Elaboration of realistic mile-stones and respective action plans – especially
- Buildup or institutional funding of scientific or technological infrastructure or design of specific programmes
- Consideration the degree of regional autonomy
- Phase towards national competitiveness

Steps on the path towards national/regional competitiveness



Source: on the basis of Messner 1995

Pre-conditions and main requirements of systemic regional approaches

- Systemic approaches focus on **systemic elements** (competitive advantages) and specialized factors
- Pre-Condition: advanced factors are existing or have been established
- **Scientific and technological potentials** at public institutions
- “Critical mass” of **companies** in specific industries/technological fields – “**absorptive capacity**”
- Capability of **intermediary system** and public institutions implementing RIS instruments
- **Incentives** for entrepreneurs and public institutions (role of individuals)
- Transparent and professional **funding guidelines**, principles and comprehensible decision process (reasons for failed applications)

Pre-conditions and main requirements of systemic regional approaches

- 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)

Possible steps for Belarus



- 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

Thank you!

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