

For a Sustainable Future – History Matters

Internationalisation
and the „Spitzen“-cluster MicroTEC Südwest
in the “associational innovation system”
of Baden-Württemberg

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Cluster Policies (and??) Internationalisation – balancing place-based and “tech” perspectives

- Regional cluster support – a place-based policy focus strengthening local development “tools”?
- Cluster internationalisation – strengthening local nodes in global value chains?
- Multi-governance-level cluster support and S3
- “Critical” mass? Regional cluster portfolio? CM?
- BW government cluster policies today (in synergies with national/EU): supporting bottom-up approaches, structural support, support towards sustainability incl. capacity building, qualification, internationalisation, ...

- Before 1806: many territories - (very) small, (often) poor and difficult to access
- 19th Century: Baden, Württemberg, Hohenzollern
 - Progressive “internationalisation” mobility of resources and brains
 - Cluster policies
- 20th century
 - Intercontinental outreach
 - The 1949 Federal Constitution
- The EU integration, CoR, etc.



Baden-Württemberg (BW) - “Where Ideas Work“



THE REGIONAL
STRATEGIES &
INNOVATION
GROUP
(RSI-SEZ)

STRATEGIC POLICY & BUSINESS INTELLIGENCE (SPI)

Countries
& Regions
SPI organisations

European
Union
DG RTD
STOA
IPTs

**Linking
strategy advice &
innovation support**

SEZ
REGIONAL
STRATEGIES &
INNOVATION

Steinbeis
Foundation
Steinbeis-Centres

European
Commission
enterprise
europe
network centres

DIRECT
INNOVATION
SUPPORT

Dr. Clar, SEZ, Stuttgart

The German National Context

- Excellence Initiative: Cutting-Edge Research at HE Institutions
- Internationalisation Strategy for Science & Research
- High-Tech Strategy 2020
 - Assessing R&I support policies and develop new ones
 - Supporting top-level research on key technologies focused on lead markets of the future to develop convincing answers to the “Grand Challenges”

“Spitzen“-Cluster Competition

ca. 100 mio EUR each (50 % pub/priv)
(4 out of 15 in BW)



- Strengthening the R&I potential of the best German Consortia (bottom-up)
Objective: generating jobs by massive R&I investments aiming at achieving a key position internationally, and transferring ideas faster in ‘products’ and services
- Supporting innovative approaches to long-term R&I boosting strategies, optimised for both, place-based AND ‘sector’ dimensions

S3 (the EC definition)

Place-based economic transformation agendas, that

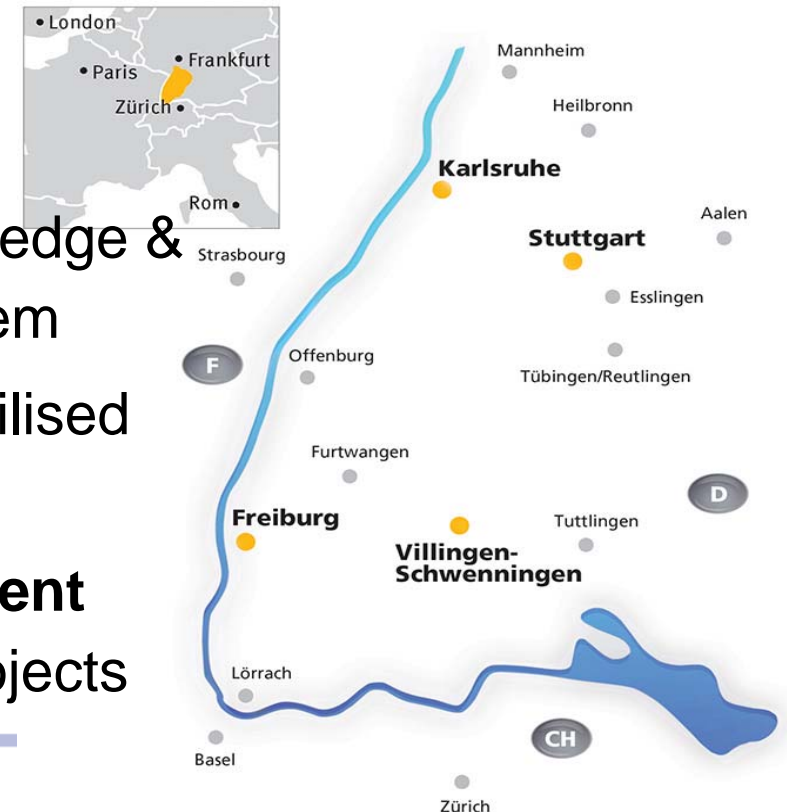
- focus policy support and investments on key nat./reg. priorities ... for knowledge-based development;
- build on strengths, competitive advantages, potential for excellence;
- support innovationstimulate private investment
- get stakeholders involved;
- are evidence-based & include monitoring mechanism;
- take strategic view of ESIF/H2020 synergies.

Microsystems Technologies (MST) – a Key Enabling , General Purpose Technology (KET, GPT)



Microsystems Techn. in BW, MicroTEC Südwest

- **Strong regional economic base, globally competitive:**
 - 6 % of global production, 15 % of all related patents worldwide
 - ca. 180.000 employees in 1.500 enterprises ranging from 'home-grown' multinationals to strong SMEs,
 - approx. €18 bn annual turnover
- Large, diverse application potential
- Embedded in the **differentiated BW** knowledge & technology transfer and management system
- **MicroTEC Südwest:** >300 STI actors mobilised
> € 100 mill in a PPP with nat. + reg. funds
- Comprehensive **regional & STI development** approach in 25 RTDI and 13 'structural' projects



Platforms and Structural Projects

- SSI : (small system) integration
- Pronto : prototypes, zero, small series
- Increasing methodological & process competences
- Speeding-up innovation
- MicroTEC Academy: Human Resource Development
- Internationalisation
- Strategic cluster development



Elements of the internationalisation strategy for boosting smart specialisation

Aim: enlarge existing & develop new markets worldwide

- International benchmarking
- Increasing international visibility and attractiveness
- Developing strategic alliances between different actors, consortia, parts of clusters
- Deepening and developing new research cooperations
- Exchanging staff, training and recruiting technical and scientific personnel from abroad

Approach: integral part of all activities as well as specific actions



A strategy process involving actively a broad spectrum of public and private stakeholders,

- both communicating strategic knowledge from global sources, and integrating actor-/region-specific knowledge,
- elaborating on this basis optimised and preferred development paths in/for global value chains – for the cluster & actor groups,
- thus creating synergies AND committment for implementation

- reduces the risks of S&T&I investments
- for the participating actors
 - and for 'external' investors.



Developing Strategies & Roadmaps, increasing strategic regional capacities, and strategic capabilities of actors

for better informed, broadly accepted, and less risky R&I investments



Cluster-Foresight
Perspectives & Scenarios

**Cluster-Audit,
International Benchmarking**

**Monitoring,
Controlling**

Impact Assessment, ex-ante Evaluation

Agenda with Priorities

Strategic Learning Cycle

Roadmapping

**Cluster- &
R&I-
Roadmaps**

Action & Implementation

**Operational
Learning Cycle**

Initial Position

**MicroTEC Südwest
AGENDA 2020+**

Application-oriented Fields (national priorities)

**R&I-related Priority Fields
for smart systems - based solutions**

**Businesss &
Innovation**

Cross-Industry Innovation

Health



Mobility

Energy

**Communi-
cation**

Security



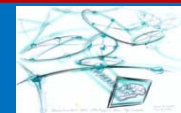
Production

**Research &
Development**

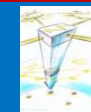
Human-Technology Interaction
Providing Meaningful & Usable Smart System



System-of-Systems (CPS, ...)
Operating Increasing Complexity



Micro Energy from Environment
Energy Transducers & Self-Sustaining Systems



Prosumer 2.0
Micro Systems for (mass-)customized Products



Cradle-2-Cradle
Resource Efficient Production & Consumption



**Education
& Training**

Based on the Cluster Strategy: concretizing strategies & developing joint activities of actor groups in prioritized fields

“Fachgruppen“

- Smart systems
- Energy efficiency
- Energy supply for microsystems
- Surface-related topics
- Printing technologies
- Intelligent tools
- Intelligent implants
- In-vitro-diagnostic
- Cooperative innovation processes

Smart Specialisation, Internationalisation – local jobs through success on world markets

- S3 : more forward-looking, more strategic outward-looking, more focusing resources
- Optimising use of emerging general policy concepts
 - restructuring STI communities as well as ‘de-centralised coordination’ by empowered regional actors to increase overall performance
 - balancing place-based and “tech-focused” approaches
- Focusing on a regionally strong “technology” field with a view to addressing societal challenges (KETs, General Purpose Techn.)
- Organising a broad variety, and a large number of competent STI actors and interested stakeholders on selected priorities, mobilising nat. & reg. support (not only financial!), and optimizing use of resources available in the EU

Integrated Use of the STI resources in the EU to increase Return on Investment, and to optimise impact for society

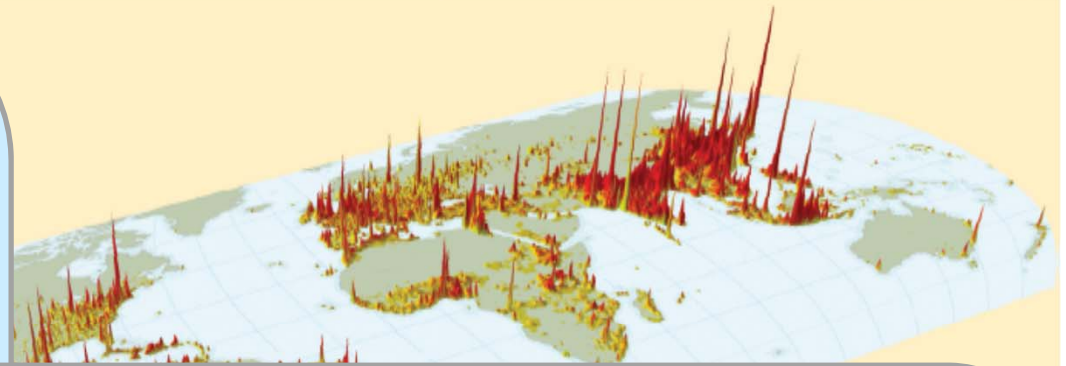
Strategic positioning of own resources AND networks vis-à-vis regional, national, EU strategies and support programmes:

- In addition to individual participation in regional, national, EU projects, advisory bodies or expert groups,
- focused participation / integration (of selected groups of actors)
 - in EU-wide policy and strategy processes (SRAs, SIPs, OPs ...)
 - in RIS3 regionally and trans-regionally,
 - and in large (P2P or P2B) STI networks – “technology“ or societal-challenges-focused.

The world is NOT flat

... and, to stay with the winners, a whole range of strategic as well as R&I support initiatives have to be optimally put in place

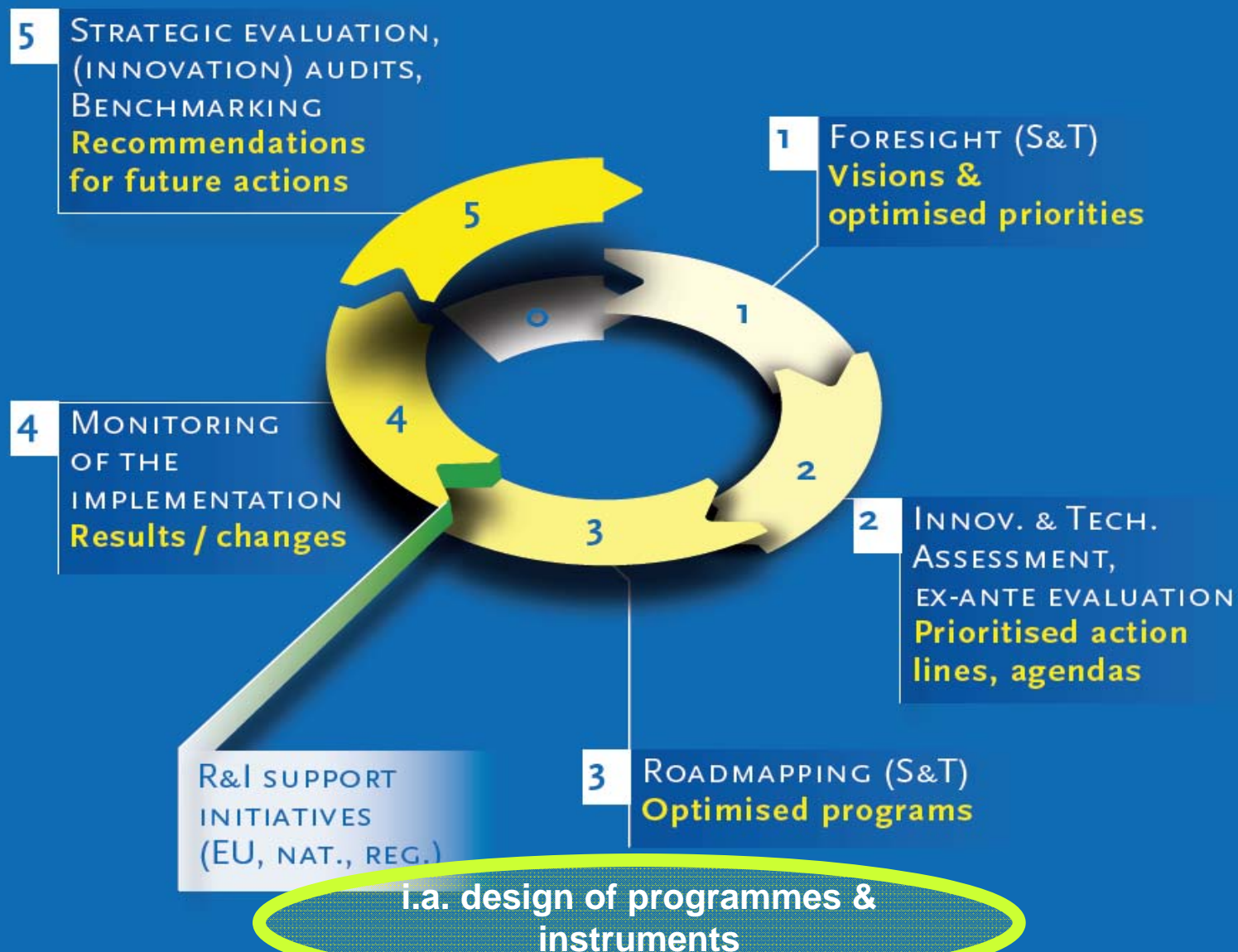
- strategic capability building so that innovation actors can better cope with complexity and uncertainty
- strategic information exchange and trust building to understand conflicting interests and conflicting strategies by facilitating prioritization
- translating politically prioritized Societal Challenges into research programs, and aiming at technologically successful solutions accepted by society



Optimally connect to EU-, nationally-, and/or regionally-supported R&I initiatives, e.g.

- (regional/sector) innovation strategies
- wider measures (education, infrastructures, etc.)
- research / innovation support programmes
- specific innovation support (SMEs, clusters, trans-border coop, multi-stakeholder networks ..)
- new technology & knowledge management and T&K - transfer schemes

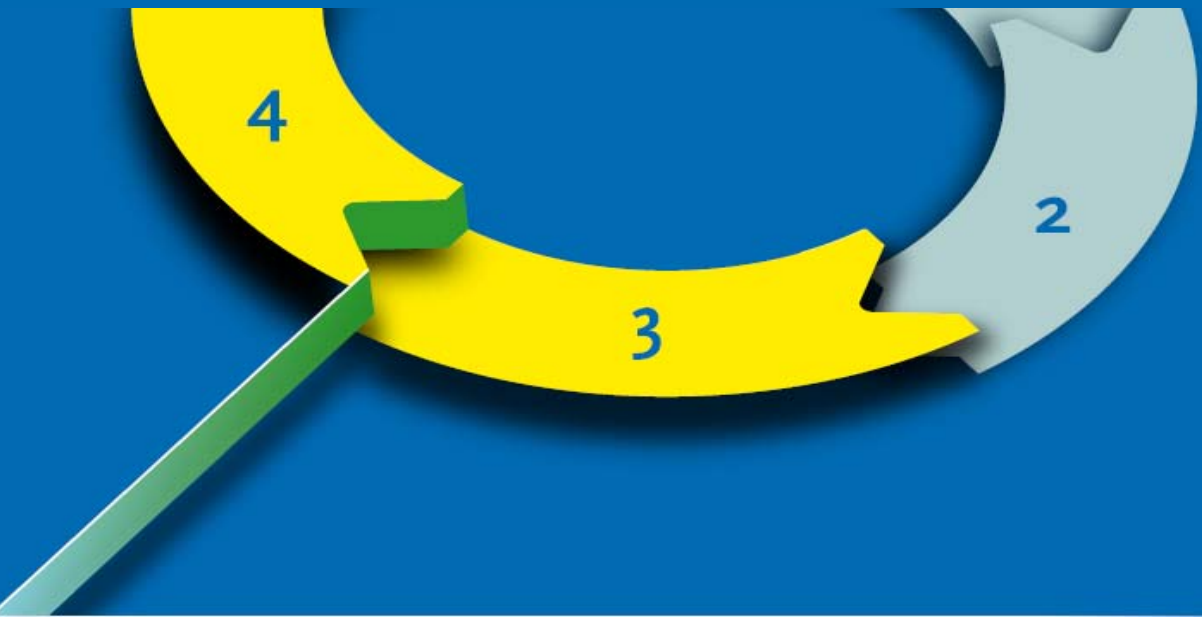
From strategy to implementation to future strategies



THE REGIONAL STRATEGIES & INNOVATION GROUP (RSI-SEZ)

Strategic Policy Guidance & R&I Support

Dr. Clar, SEZ, Stuttgart



R&I SUPPORT INITIATIVES (EU, NAT., REG.)

- innovation strategies (regional / sector)
- wider measures (education, infrastructures, etc.)
- research / innovation support programmes
- specific innovation support
(SMEs, clusters, transborder cooperation,
multi-stakeholder networks, etc.)
- new technology & knowledge management
and T&K-transfer schemes