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Strategic Capacity Building in Clusters to Enhance Future-oriented Open Innovation Processes

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Purpose

For the purpose of increasing and sustaining business and regional long-term competitiveness, information and training modules were developed to enrich cluster development policies with tools that give incentives for and facilitate 'outward-looking' (open innovation) and forward-looking (foresight, technology assessment) activities and thus provide strategic guidance for developing future-proof, open innovation processes. After testing the tools in ICT, mechatronics and life sciences clusters, they are now being applied in a trans-regional foresight approach to develop a joint research agenda for clusters in the economically more and more important creative industries.

Regional Cluster Development to Systematically Boost Innovation

In the globalising knowledge economy, regional clusters are increasingly understood – in particular with respect to their 'non-regional' dimensions – as local nodes in global knowledge flows. The Innobarometer 2006 on clusters' role in facilitating innovation in Europe confirmed that companies situated in clusters are more innovative and competitive than companies outside. In strategically guided and well-managed clusters, the enhanced innovativeness and competitiveness at the firm level finally results in sustainable regional economic development. Thus, policy-makers at all administrative levels use cluster support instruments to systematically boost innovation and competitiveness of both businesses and regions.

The cluster concept captures current discussions of managing (regional) innovation systems and open innovation processes at both the regional and business level. At the business level, management professor H. Chesbrough claims a fundamental shift in

innovation paradigms from closed to open innovation and advocates collaborative and open innovation strategies and open business models to take the full benefit from collaborating with external partners. More and more, (in particular multinational) enterprises take into account, in addition to internal resources, the competences of external partners to meet the challenges of increased complexity of research, technological development and innovation (RTDI), growing global competition leading to shortened 'time to market' etc. Regional clusters as 'innovative hot spots' and local nodes in global innovation networks play an important role for companies looking for external partners to form strategic RTDI collaborations.

The business strategy of collaborative and open innovation at the micro-level poses considerable challenges for macro-level innovation policy. For example, new complex interactions and relationships emerge and continue to evolve between public research organisations and industry, which in turn lead to new ways of organising and managing R&D and innovation by all stakeholders in an innovation system. Thus, horizontal and vertical coordination of policies and support of cross-sectional linkages and networks are imperative for systemic and interactive



RTDI policy making. In this respect, (trans-) regional cluster development is broadly seen as an adequate and effective instrument to enhance and coordinate knowledge flows and collaboration between regional stakeholders coming from industry, science and public administration.

Linking Forward- & Outward-looking Approaches

Both the discussions on open innovation business strategies and on systemic regional innovation policies emphasize the vital role of strategic intelligence for innovation and point to the value added of linking forward-looking and open-innovation-focused approaches.

To develop and implement successfully future-oriented collaborative and open innovation processes, businesses rely on strategic economic and business intelligence in order

- to generate common visions about longer-term market and technological developments,
- to derive promising new products and services and define future business models, and
- to develop and agree on joint innovation projects with external strategic partners.

Thus, in a world of open innovation, future-oriented technology analyses – comprising foresight and technology assessment activities – are decisive for strategic knowledge generation and transferring it into new products and services. The faster and easier businesses gain access to strategic knowledge and integrate it in their company strategy, the more successful they will be. This becomes evident in ‘business ecosystems’ where businesses co-evolve their capabilities around new technologies and jointly design a kind of ‘mass customization’ of new products and services to satisfy individual customer needs and to succeed in the worldwide ‘competition for the future’.

Though, many enterprises (in particular SMEs) mostly rely on more easily accessible, short-term market information (e.g. from their clients). They often do not know how to sustainably realise their full market potential by

- thinking and acting more in a longer-term perspective and
- developing strategic alliances and networks.

Due to restricted internal resources, most of them would have to use external strategic knowledge if they realise the need to change their business-as-usual approaches.

In this context, strategic cluster support instruments can help these enterprises meet future challenges and support strategic capacity building in the region. Strategic cluster support combines forward- and outward-looking approaches (e.g. in cluster foresight type activities) to facilitate knowledge creation processes contributing to long-term competitiveness and sustainable

economic development. Specifically, it

- promotes knowledge exchange and strategic learning processes between cluster stakeholders in order to create a localised and unique knowledge stock,
- facilitates cross-cluster, trans-regional and trans-disciplinary knowledge flows and strategic business linkages to enrich and refresh the local knowledge pool with external impulses and to leverage complementary assets and capabilities of clusters in different regions, and
- enables cross-cluster policy learning and pursuit of common aspects of strategic cluster policies.

Orchestrating Business and Cluster Strategies

The sustainable success of cluster development depends substantially on the concerted actions of many different actors – multiple levels of government and public agencies, companies, educational and research organisations etc. In this context, it is crucial to develop a common vision and to implement a cluster strategy that

- reflects the specific needs of the cluster stakeholders,
- focuses on the most promising international technology and market development perspectives, and
- integrates a broad range of (European, national and regional) public policies and private sector activities.

Combining forward- and outward-looking approaches also means

- to provide the regional stakeholders with strategic longer-term orientation by taking stock of available strategic knowledge from both public (e.g. regional foresight) and private actors (e.g. from corporate foresight or roadmapping activities in large companies) and
- to align business strategies and longer-term regional cluster strategies.

To summarise, succeeding in linking forward- and outward-looking approaches and creating a multi-actor, multi-level coherence of strategies and congruent activities means leveraging synergies. Multiplier effects can be achieved (e.g. bundling forces to boost innovation effectively), and better – because broadly based and mutually strengthening – economic decisions lead to increased and sustained business and regional competitiveness.

These positive impacts can be made sustainable if, in addition to facilitating access to external strategic knowledge, the strategic capacities of the innovation actors themselves are systematically built up in a way that takes into consideration their different absorptive and knowledge management capabilities.

The Connect2Ideas Approach – Strategic Capacity Building in Clusters

The FP6-funded project Connect2Ideas (June 2006 to May 2008) aimed at fostering trans-national technology transfer – mainly between multinational enterprises (MNEs) and SMEs – by enhancing future- and open-innovation-oriented thinking and acting in SMEs, related business networks and clusters.

In this context, the Steinbeis-Europa-Zentrum (SEZ) developed a series of two consecutive workshops on *Strategic Capacity Building & Open Innovation* and tested it in three regional clusters in Baden-Wuerttemberg, Germany with varying open innovation regimes and institutional settings (ICT, mechatronics and life sciences clusters).

The strategic experience and knowledge of MNEs, for instance through corporate foresight, strategic planning and open innovation, should be used to improve strategic capacities also in their business environments (clusters, regions and institutions)

- to overcome mostly short-term orientation by recognising the strategic relevance of future-oriented collaborative and open innovation activities,
- to develop common visions concerning future trends and challenges (using horizon scanning techniques with a time horizon of ten years) and, based on these results,
- to derive joint innovation projects aiming at sustainable long-term cooperation.

Target groups and participants were MNEs (e.g. Siemens, IBM, SAP) with deep roots in the region, SMEs, research and education organisations and other regional stakeholders including representatives from public RTDI funding agencies and public administration.

The preparation phase included

- identifying and mobilising MNEs, company networks and business clusters and
- analysing in an innovation audit type approach the strengths and weaknesses of the cluster-related innovation system with specific focus on the barriers to open innovation processes.

Common Vision about Trends and Challenges

The first workshops introduced various methods, concepts and approaches to strategic ‘future management’ and then focused on the development of a common vision about future trends and challenges using specific foresight and TA elements and techniques such as

- SWOT (strengths, weaknesses, opportunities, threats)/STEEPV (social, technological, economic, environmental, political and values) analyses to identify key global trends

- and (based on local strengths and weaknesses identified in advance) to discuss common longer-term challenges and opportunities, and
- impact analyses to assess the impact of the most relevant trends with a specific focus on business perspectives: for instance, future markets (customer needs), business models, innovation and value creation processes, requirements with regard to human resources (qualifications, skills) etc.

Future-oriented Open Innovation Processes

Based on the results of the first workshops, the subsequent workshops and follow-up activities focused on the development of joint innovation projects aiming at sustainable long-term cooperation using techniques such as

- technology watch/scouting to identify existing or wanted technologies in the international business environment,
- value chain analysis to identify potential international cooperation partners in the respective global value chain and innovation network, and
- partner search and search for funds to identify potential strategic cooperation partners for the cluster stakeholders including relevant funds (e.g. FP7, CIP, ERDF, national, regional) for subsidising the strategic collaboration.

Success Factors and Outcomes

Critical success factors of the workshop series included the comprehensive preparation in close coordination with the responsible cluster organisations (e.g. preparing a draft SWOT and value chain, motivating the relevant cluster stakeholders, attracting high-reputation external experts for keynote speeches etc.). The quality of the introductory statements of the keynote speakers was also important to stimulate a constructive debate on future trends, specific impacts and open innovation processes. These workshops could only prepare the ground for forward- and outward-looking thinking and acting. Thus, interested cluster actors and stakeholders were provided with ongoing advice and assistance for implementation.

The pilot workshops in Baden-Wuerttemberg contributed to increasing the strategic capacity at the firm level as well as at the level of regional economies and decision-makers:

- They provided a basis for collaborative innovation projects with regional and international partners in the specific cluster and regional value chain (e.g. in the context of the German ‘Excellence Cluster’ competition).
- The involved ministry decided to continue the workshop series in the framework of its participative regional innovation and new cluster policy. In this respect, the workshops served as a trigger for further cluster foresight activities in Baden-Wuerttemberg.

Outlook: From Connect2Ideas to CReATE

The Connect2Ideas approach highlights the fact that strategic guidance enriches traditional regional RTDI policy instruments by generating a creative atmosphere and a seedbed for ongoing learning processes. Thus, it provides – independent of different local open innovation regimes and institutional settings – a genuine value added – both for businesses and cluster policies.

The *Strategic Capacity Building & Open Innovation* workshops demonstrate how linking forward-looking and open-innovation-focused approaches can support strategic capacity building in clusters and thus enhance future-oriented open innovation processes at the business and regional levels:

- Businesses overcome their mostly short-term orientation by recognising the strategic relevance of longer-term perspectives and collaboration with external partners.
- Regional RTDI policy-makers take into account the specific needs of the cluster stakeholders with respect to future challenges and opportunities, and, on this base, create long-term, sustainable competitiveness perspectives and framework conditions for the innovation systems.
- Aligning future-oriented business strategies and longer-term regional cluster strategies lead to better, broadly based and mutually strengthening innovation processes contributing to increased and sustained competitiveness.

Based on the Connect2Ideas experience and in the context of the German (national) ‘Excellence Cluster’ competition, SEZ developed specific training modules for facilitating and improving strategic cluster development at multiple levels:

- cluster level: developing a common vision and strategy for the cluster and defining an action agenda that reflects the unique needs and capacities as well as the most promising international technology and market development perspectives;
- ‘sub-cluster’ level: refining the cluster strategy, adopting the strategy and agenda to the specific needs and capacities of the respective ‘sub-cluster’ network and implementing concrete joint actions;

- single firm level: training in future-oriented strategic innovation management results in an endogenous base for competitive, business specific roadmaps and strategies.

This triad in developing innovation-related strategies in clusters leads to aligned innovation processes and therefore increases the impact of coordinated RTDI actions. To avoid negative rigidity and lock-in effects and to create a climate conducive to visionary, out-of-the-box thinking, the knowledge exchange with external partners is an important element in all strategy processes.

In this respect, SEZ took up the Connect2Ideas approach and elaborated for the FP7-funded ‘Regions of Knowledge’ project CReATE (March 2008 to October 2010) a methodology to develop a trans-regional joint research agenda for clusters in creative industries sectors. Creative industries already contribute substantially to economic value creation and employment, and their importance is expected to grow further. So far, however, only some regions benefit from the economic stimuli of creative industries. In addition, enterprises in this sector highly depend on trans-regional and trans-disciplinary collaboration. Addressing both issues, CReATE aims at boosting the sector as a whole in Europe, especially by stimulating future-oriented open innovation processes between the stakeholders of creative industries clusters.

The CReATE methodology uses a modified Connect2Ideas approach to define research priority areas decisive for the future innovativeness and competitiveness of the clusters. Agreeing first on regional priority areas (based both on regional excellence and ‘aspirations’), a trans-regional joint research agenda will be elaborated in a coordinated process of interlinked regional and trans-regional phases. By integrating the broad spectrum of stakeholders (including funding bodies), regional and trans-regional project ideas will be developed. The impact aimed for is to improve the innovativeness and international competitiveness of the creative industries in the participating regions, but also to stimulate growth beyond them in the EU. Processes of learning from and dissemination of the approach and findings beyond the project frame will be secured by tailored training workshops on future-oriented strategy development for companies and cluster managers.

Sources and References

Project website Connect2Ideas: www.connect2ideas.com

Project website CReATE: www.lets-create.eu

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