Good Practices on Regional Research and Innovation Strategies for Smart Specialisation

Network Initiative Industrial Services in Mechanical Engineering

Stuttgart Region, Germany

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1 Basic Data of the Practice

1.1 Title of the practice

Network Initiative Industrial Services in Mechanical Engineering
is a regional network initiative that promotes the development and marketing of industrial services as a way of exploiting new sources of revenue for mechanical engineering companies.

1.2 Precise theme/issue/policy tackled by the practice

☒ Clusters
☐ Innovation friendly business environments for SMEs
☐ Research infrastructures, centers of competence and science parks
☐ Universities
☐ Digital Agenda for Europe
☐ Key enabling technologies
☐ Cultural and creative industries
☐ Internationalisation
☐ Financial engineering instruments
☐ Innovative public procurement
☐ Green growth
☐ Social innovation

Process of regional change initiated:

☐ Transition	☐ Modernisation
☒ Diversification	☐ Radical foundation of a new domain

1.3 Geographical range of the practice

Stuttgart Region (between NUTS level 2 and 3)

1.4 Contact details

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1.5 Sources of information

http://maschinenbau.region-stuttgart.de/services/industrielle-dienstleistungen.html (in German)
Guide “Industrial services: success factor for the mechanical engineering sector in the Stuttgart Region” (in German)

2 Introduction: Regional Smart Specialisation Background

The Stuttgart Region certainly is one of Europe's innovation hubs, having a strong industrial base and a service sector gaining importance and providing many products and services geared to the needs of the manufacturing industry. Knowledge-intensive sectors account for 39% of all employment, with the industrial sector even exceeding this figure with 53% of its workforce employed in knowledge-intensive domains. The most important industrial clusters, automotive and production technology, evolved over decades and today show a high level of integration comprising OEMs, suppliers and specialised service provider as well as educational and research institutions. Neighbouring sectors like ICT, electrical engineering, creative industries or financial services play an important role, too. A recent study proved the optimal orientation of the regional innovation system towards the major key sectors.

Mechanical engineering
The Stuttgart Region is a leading centre for mechanical engineering, which plays an important role also for the automotive sector as well as in new sectors, like environmental technology. Together with sector related engineering services, research institutes, networks and regional Competence Centres the sector forms a globally leading production technology cluster. Many world market leaders and hidden champions are located in the region, such as Festo, Stihl, Trumpf, Kärcher, Dürr or Schuler, just to name some. In figures the sector has grown in importance over the last years with a turnover of 17.9 bn Euros in 2010, making up 10% of total German turnover in this sector. In the Stuttgart Region 62% of this turnover is generated abroad, with 84,000 persons directly employed in the sector (2010), accounting for 28% of total employment in the industrial sector.

In terms of smart specialisation several topics have been identified as important for future economic development. With its production technology cluster the Stuttgart Region is home to an economic agglomeration with worldwide relevance. Many companies are world market leaders in their specific field of activity and so-called hidden champions. The sector is very heterogeneous with many specialised firms being SMEs. The regional strategy tends to raise the innovation capacity of regional companies to keep the high level of competitiveness as the global competition is increasing. Energy and resource efficiency is seen as an important future business opportunity and will therefore be promoted. Developing new fields of activity like industrial services is seen as a possibility to open up new sources of revenue. Specialties exist furthermore in packaging technology – which is presented here as a good practice – and industrial component and surface cleaning.

Other sectors of specialisation

- Automotive engineering (regional automotive cluster, sustainable mobility, electric mobility, aeronautics)
- Green tech
- ICT (business software and solutions, open source software, virtual reality, simulation and visualization, satellite communication)
- Creative industries (publishing, animation and visual effects, corporate media, software and computer games, advertising, popular music)
- Financial services (securitised derivatives, corporate bonds)

3 Description of the Practice

3.1 Executive summary

The product-supporting service business, which is seen as a promising and growing market, provides companies in the mechanical engineering sector profitable sources of additional income with high profit margins. Those companies very often suffer from decreasing margins in their traditional fields of activity and face a growing competition on global markets. Development and marketing of industrial services can generate additional income and raise the competitiveness of mechanical engineering companies.

In 2009 the Stuttgart Region Economic Development Corporation (WRS) designed the Network Initiative Industrial Services in Mechanical Engineering as part of its cluster management activities for the mechanical engineering sector in the Stuttgart Region. The target group are small and medium-sized companies. Based on the findings of studies and a survey on experiences and current status of industrial services offered by regional companies, the concept contains two main formats of events for this initiative. The **Regional Dialogue** is an open network and sectoral meeting opportunity that takes place twice a year. It aims at supporting a personal dialogue between the regional companies and the transfer of know-how between experts (both practitioners and researchers) and beginners in the field, and at exchanging knowledge and experience between decision-makers of the service business units. The **Regional Industry Circle** is a semi-closed network of well-known pioneers in the industrial service business of the Stuttgart Region. All of them are experienced in the field of industrial services and therefore discuss more advanced issues and topics in service business. This network is aimed at stimulating an exchange of experience on a high level and an open dialogue between decision-makers of the regional top firms. The events of the network initiative are supplemented by the participation in research projects dealing with the topic of industrial services and the cooperation with other regional networks that are active in this field.

Assets for the Network Initiative Industrial Services in Mechanical Engineering are the corresponding research facilities located in the Stuttgart Region. The institute of applied research Fraunhofer IAO focuses its research and consultancy on the field of service business; several regional universities have developed new programmes of study related to the industrial service business.

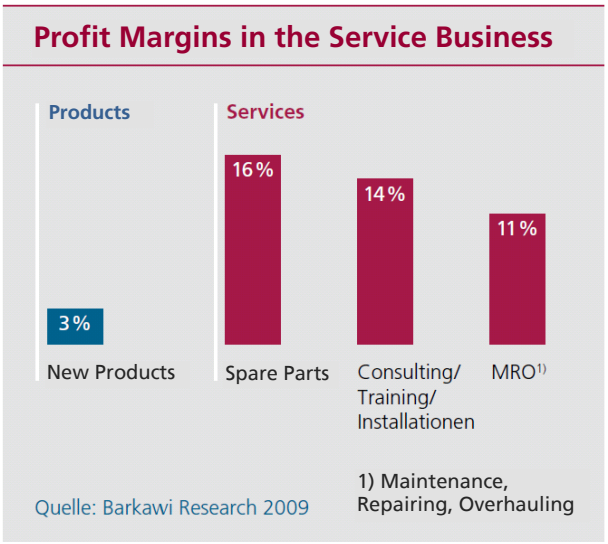
In terms of smart specialisation the sector of mechanical engineering is seen as one of the core sectors for the future economic development of the Stuttgart Region. The economic relevance has been described above and is also recognised in the economic development strategy of the Stuttgart Region by 2020. The importance of industrial services as a measure of business promotion for diversification is mentioned explicitly. The second implementation concept for the regional strategy, adopted by the Regional Assembly in 2011, contained the Network Initiative Industrial Services in Mechanical Engineering as new project to support the companies in the mechanical engineering sector. The implementation of the initiative can therefore be regarded as a result of a continuously further developed strategy of innovation support in the Stuttgart Region.

3.2 Key features of the practice

- Network initiative in the framework of the Stuttgart Region Economic Development Corporation's in-house managed cluster initiative on mechanical engineering
- Series of events and workshops to promote new business models in services for mechanical engineering companies
- Exchange of experience in service engineering, processes and organisation
- Target group are mechanical engineering companies (producing industry, no service companies) in the Stuttgart Region
- Initiative participates additionally in research projects in the field of industrial services

3.3 Detailed content of the practice

The mechanical engineering cluster in the Stuttgart Region has an excellent reputation worldwide due to its innovative capacity and its unique competence to develop high-quality and high-performance solutions for its costumers. Many companies are by tradition internationally active with their foreign activities still growing in importance, particularly in emerging countries and China. The global competition in the mechanical engineering sector has tightened and technical standardisation evens out more and more the differences in quality on international level. Those developments make it much more difficult to distinguish from competitors by the product alone and lead to decreasing profit margins for new machines. Companies need to specialise on premium segments and high end solutions, they need to innovate permanently and they need to offer individual solutions. On the other hand the margins realised with services in the mechanical engineering sector exceed 10 %. Services as an additional offer are therefore seen as a distinguishing feature and as an instrument for customer retention. (Not only) the mechanical engineering companies in the Stuttgart Region are facing the challenge of rethinking their business models and adapting them to changed conditions of competition on national and international markets.



To support the regional companies in exploiting the potential of the service market in their fields of activity, the Stuttgart Region Economic Development Corporation (WRS) started the Network Initiative Industrial Services in Mechanical Engineering. This initiative is organised in the framework of the in-house cluster initiative on mechanical engineering of the WRS. Studies and analyses have revealed that there is still huge potential for growth for service offers in this sector, especially for SMEs. Besides, such offers provide big potential for new and profitable business areas. Another important aspect is the valuable stimulus for product innovations arising from services and the close contact with customers. In addition, services reduce the dependency from capital goods oriented economic cycles. The overall aim is to integrate industrial services in the innovation strategy of mechanical engineering companies.

The service business in the mechanical engineering sector comprises more traditional offers like instruction for use, installation, putting into service or spare parts and maintenance. Many mechanical engineering companies in the Stuttgart Region develop and produce very complex machines and systems, tailored individually to the customer's needs. This requires close coordination with the customer. With their highly qualified engineers the companies have good prerequisites to offer more knowledge-intensive services like engineering services, general counselling services or optimisation of processes or costs for the customer.

To prepare the activities of the network initiative, WRS carried out a regional survey in autumn 2009 and asked mechanical engineering companies of the cluster for their experiences and plans regarding industrial services. A big majority of 75 % stated that they intend to expand their activities in the field of industrial services. Very important for the WRS initiative was another central finding: More than 73 % of the companies responding, offer services demand-oriented or on customer enquiry – but only 15 % use a systematic service engineering approach. To raise this figure is a main goal of the initiative.

The regional survey also asked for preferred support in the context of a network initiative on industrial services. With 84 % finding it interesting or very interesting, the respondents ranked "exchange of experience and knowledge" highest. Second, with 64 %, they stated "presentation of good practices". Also "competence team" – a permanent group of service business professionals that constantly exchange on strategic level and possibly cooperate – got a high rating with 57 %. The initiative was designed with two main formats: the *Regional Dialogue* and the *Regional Industry Circle*, which both started in 2010. Based on the WRS survey they are tailored to the company's demand and needs and enable the participating companies to learn from best practices, to learn from peers, and to exchange experience in the field of industrial services.

The **Regional Dialogue** is a series of events that supports companies in identifying growth potential of industrial services. Its topics are current issues of the service business aiming at imparting specific know-how and present successful good practices of developing and marketing industrial services. The target group of those events are SMEs of the mechanical engineering sector in the Stuttgart Region. The Regional Dialogue is an open format and sectoral meeting opportunity (organised as a business breakfast) that takes place twice a year. Central intention of this format is to raise the company's awareness of the chances of these new business models and to support the personal dialogue between the companies.

The **Regional Industry Circle** as a second format is a semi-closed network of well-known pioneers in the service business of the Stuttgart Region. Initiated by the WRS, they meet to discuss new markets and strategies in the field of industrial services. Currently the network has 25 members. It comprises companies like Bosch, Dürr, Festo, Schuler, Siemens or Trumpf, and other top firms of the regional mechanical engineering cluster. The network aims at stimulating an exchange of experience on a high level and an open dialogue between decision-makers of the regional top firms. Meetings take place once a year at one of the participating companies. For discussing specific topics, external experts are invited.

In addition to these events, the WRS supports different projects and further initiatives in the field of industrial services as a co-operation partner. The research project *AESTIMO* is funded by the Federal Ministry of Education and Research and develops a set of methods for measuring and assessing the productivity of knowledge-intensive services for producers of capital goods. WRS and several member companies of its cluster initiative have substantially contributed to the project's analysis of the status quo. Another initiative is the *Competence Team Services in Packaging Technology*, which started in autumn 2009

in close cooperation with the regional competence center Packaging Excellence Center (PEC; see the corresponding good practice description of the TR3S project). It also supports an exchange of knowledge and experience in the context of current challenges in the service business and compiles a generic concept for the development and marketing of services in the field of packaging technology. Member companies of the Competence Team are at the same time pilot users of the developed strategies. Other interested companies of the Cluster Initiative Mechanical Engineering Stuttgart Region will also benefit from the results as they will be published as guidelines for the professionalization of service business.

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Knowledge-intensive services notably require – next to substantiated practical experience – a distinctive technological and scientific know-how and close contacts to corresponding research facilities. It is therefore an asset for the Stuttgart Region to have one of the most important players in this field located in the region: the Fraunhofer IAO, an institute of applied research in the broad field of technology management. Already in the 1990s the institute focussed its research and consultancy on the field of service business. Today the regional companies benefit from the widespread expertise developed over the years. The increasing importance of services has also led the regional universities to develop new programmes of study. At the University of Hohenheim a new chair for service management has been established, the Baden-Wuerttemberg Cooperative State University in Stuttgart offers the study course Business Administration – Industry with a focus on industry and service management – just to name some.

Currently there are no plans for international cooperation of the network initiative, but best practices in the field of industrial services are welcome from all over the world.

3.4 Bodies and stakeholders involved

The Network Initiative Industrial Services in Mechanical Engineering has been designed and is managed by the Stuttgart Region Economic Development Corporation (WRS). For the implementation and the ongoing activities other stakeholders also became relevant: the Fraunhofer IAO as institute for applied research serves as a “knowledge pool”; the regional Competence Centers in the field of mechanical engineering (e.g. the PEC) as regional innovation networks are a natural partner for the initiative.

Being the target group of the initiative, SMEs from the mechanical engineering cluster of the Stuttgart Region are relevant stakeholders, too.

3.5 Timescale and maturity

The preparative work for the network initiative began in 2009, the first events have been organised in 2010. Since then there have been ongoing activities. The initiative can not yet be regarded as very mature but the participation of regional companies has been promising so far and it has proven its suitability. A network of permanent users of WRS' services in this field has already formed.

3.6 Legal framework

The Network Initiative Industrial Services in Mechanical Engineering is no own legal entity but is part of the cluster management, which is done for the mechanical engineering cluster by the Stuttgart Region Economic Development Corporation.

3.7 Financial framework

For activities in the context of the network initiative there is an annual budget of 10,000 Euros provided by the Stuttgart Region Economic Development Corporation (WRS). It is part of the regular cluster management activities by the WRS for the mechanical engineering sector.

The participation in the research project "AESTIMO" is co-funded by the Federal Ministry of Education and Research. The acquisition of private investment is not planned for this initiative; it is solely funded by public sources.

4 Monitoring and Evaluation

The network initiative started its activities in 2010 with the organisation of first events. The overall results so far are the following:

- 6 events “Regional Dialogue”
- 2 events “Regional Industry Circle”
- 2 regional studies on the status quo of industrial services in mechanical engineering companies in the Stuttgart Region (by using questionnaires)
- 1 series of in-depth interviews with regional companies

The number of participants is collected regularly at every event of the initiative. Altogether there have been 190 professionals from more than 100 companies in contact with the services of the network initiative so far. Those results can be regarded as very promising for a project that is running for three years.

As the network initiative Industrial Services in the Mechanical Engineering Sector is part of the regular cluster management activities of the WRS the monitoring is also secured through the annual plan and report presented to the supervisory board. The events are planned on an annual basis and results are checked against this planning at the end of every year.

Regarding the effectiveness of the policy it is too early to draw comprehensive conclusions after three years of activities. The results so far are promising, even if the nature of the issue addressed has not shifted fundamentally (yet). But the concept seems suitable for reaching the expected goals. Looking at the results in more detail, on the one hand those companies that have participated in the events all continue their participation in the ensuing events. So they must be convinced to benefit from their participation. As their number is quite satisfying, in this respect the network initiative is certainly on a good way. On the other hand difficulties have been encountered in attracting new companies for the events, which have not participated before. In this respect there is still potential for a broader impact of the initiative.

5 Lessons Learnt

Looking at the **success factors** for this kind of network initiative that have been observed so far, the following points can be mentioned:

- Advantageous is a **compact format** of the organized events (max. 2 hours), as for representatives from companies lack of time often is a limiting factor
- Connected with the aforementioned is a **clear focus on a specific topic**
- A database of service professionals/responsible persons at the companies addressed (not only a general contact) with direct contact possibility is very helpful to reach the target group directly
- An asset is the availability of **knowledge pools** like research institutes, which should be conceptually incorporated

During the implementation phase, especially in the course of the organisation of events, specific challenges have been noticed. It can, for example, be difficult to find the right sub-topics that pique the company's interest. For this problem a survey of addressed companies, conducted in advance, could produce relief. Sometimes it is not easy to convince best practices to present their case to other companies. An incentive could be the possibility to make contact to other interesting companies – or to offer the presentation as a marketing possibility. The stimulation of "beginners" in the field of services without any experience can be a tough task. Some basic information that can be offered previously, combined with patience, may pave the way for reaching this aim.