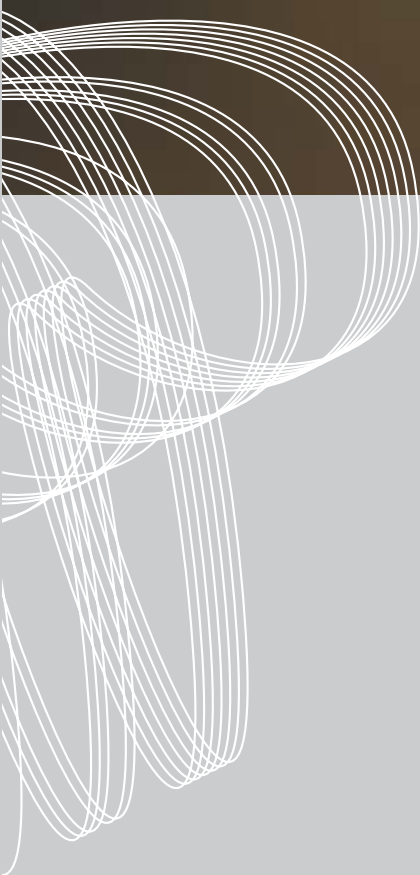


2003

Saarland



# Innovation Strategy Saarland



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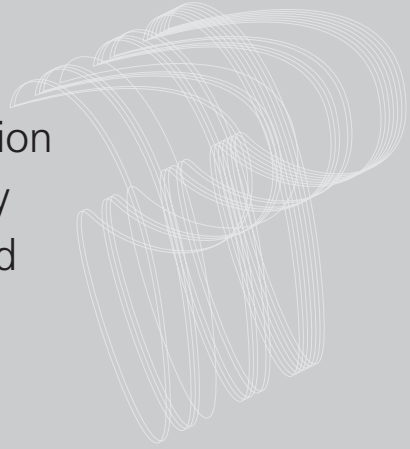
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Saarland, September 2003

Innovation  
Strategy  
Saarland




# Foreword by Minister President Peter Müller

Innovation Strategy Saarland

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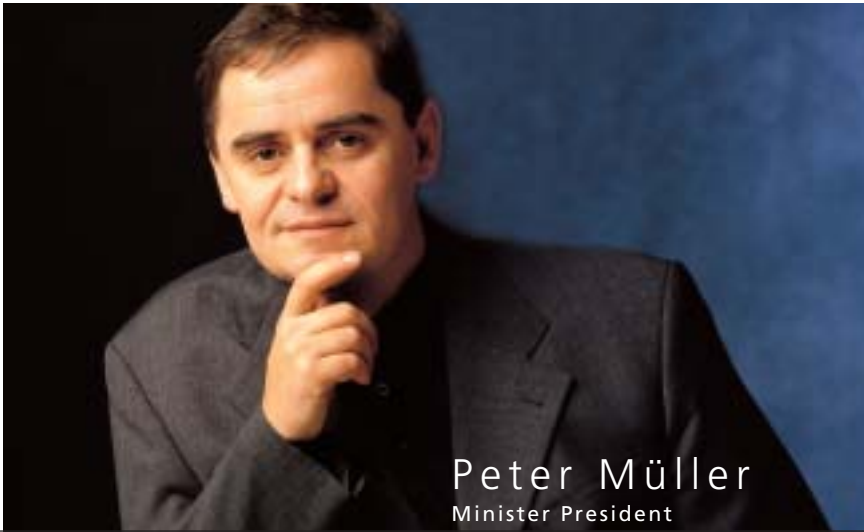
The reason why Saarland has been able to develop itself into a highly attractive location for business and research is that the people from Saarland know that the true treasures of this region are no longer to be found deep under the ground but in people's intelligence and imagination. The region's business and research communities, and indeed its population as a whole, are marked out by their willingness to explore fresh pathways and also by a high degree of readiness to spring into action. These also form the basis for the successful structural transformation that the State Government has set as its central objective, both now and for the future.

To achieve this, we need both: industries, and tomorrow's technologies and services.

Industries such as, for example, the steel and the automotive industries render an ongoing and indispensable contribution to economic growth and to the protection and creation of workplaces. It is therefore essential that these industries receive sustained promotion and

support. Along with this, it is also vital to nurture the region's innovative research landscape, famous for its internationally renowned top-of-the-range facilities in the fields of information technology (IT), nanotechnology and biotechnology, medical technology or production engineering. These industries operate in very close proximity to the world of economics and provide the incentive for new product development, the founding of new enterprises and training qualifications in employees. This also means that our region possesses invaluable reserves of excellence that will stand it in fine stead as we emerge into a new age of business.

The transformation of the region into a prime location for technology and services presents our Saarland with new challenges. Anyone wanting to have a future and a proper perspective in such fields needs to fill the niches in these new technologies and thus distinguish himself or herself from other regions. And this is the course on which we have embarked with our "Innovation Strategy Saarland". Based on technologies and other



Peter Müller  
Minister President

topics, the region's competences in economics, research and education will be grouped together in so-called "clusters". This development of clusters is growing and producing successful results, as you will see from reading the accompanying brochure.

The State Ranking system of the German Institute of Economics confirms this development. This scientifically-based study places Saarland at Number 1 among its fellow States in terms of "Dynamics Ranking" for economic development and political reform over the years 2000 to 2002. This gives substance to the recent transformation in the image of Saarland to one of the most dynamic regions in Europe, an image confirmed by independent observers from outside the State.

The State Government remains committed to its two particular priorities: the use and exploitation of the full potential for innovation present in this State, in both the newer and the more established fields, and the building up and consolidation of a culture of innovation capable of taking us into the future.

Saarland. Others talk – we act.

Peter Müller, Minister President.  
p.mueller@staatskanzlei.saarland.de

Please visit our Internet site for further information:  
<http://www.english.saarland.de>.

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1  
The Development  
of Innovation in Saarland

# 1

## The Development of Innovation in Saarland

The development of Innovation in Saarland

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A particular contribution to the shift in the economic structure of Saarland to a greater emphasis on promising, up-and-coming areas of industry, has come from the investment goods industries. These have developed into one of the fundamental support pillars for the economy and for growth. In particular the fields of metal, automotive and mechanical engineering, and the corresponding supply industries, represent a high proportion of both employment and the potential for innovation, since together they account for more than 60,000 jobs. Since 1990, the tertiary sector has developed significantly, taking on over 20,000 new employees. By contrast, however, the manufacturing industry has shed approximately the same number of jobs.

In the late 80's and early 90's, a strong base of potential for innovation was built up by means of large investments in fundamental, technologically-oriented areas of research and development that were very much directed towards the development of practical applications – a base that in turn

provided the impetus for structural transformation.

Saarland has of course taken further steps forward in this progression towards becoming a location for technology and services. The proliferation of start-ups emerging from universities and from other institutions and areas, the fresh companies thereby generated and the resulting emphasis on research, have all successfully developed further. The university sphere alone has, since 1995, been responsible for more than 110 new enterprises employing more than 750 people.

With the Innovation Strategy for Saarland, the bundling together of competences in the fields of Information Technology (IT) and Business Consulting, and also in nanotechnology and biotechnology, is further accentuated. To this end, so-called "clusters" have been formed, consisting of educational and research organizations networked together in order to co-operate in a purposeful manner on joint projects, products



and value chains. Since then this potential has grown noticeably. In the meantime, the protagonists in the automotive industry and the field of logistics have also begun to operate in cluster structures.

However, the structural transformation needed to move from the traditional dominance of the coal and steel industry into the areas of new technologies and services poses further, exceptional challenges for the Saarland economy and for this German Federal State in general. It is essential that the loss of workforces in the traditional industries be compensated, in the long term, by the creation of new jobs. As the smallest of the German Federal States in terms of surface area, Saarland is in a position to respond positively to developments in the European and worldwide markets, and to take on a leading role in innovation, by means both of focusing in a targeted manner on its most promising research and development areas, and of consistently gearing itself towards the future. And, as well as growing in their own right, these

future-oriented business areas and their high-tech developments contribute to the creation of new jobs in the low-tech segment.

The structural and technological infrastructure of Saarland is therefore oriented towards the requirements of innovative companies and organizations. The Science Parks at the universities offer researchers an ideal environment for the translation of the developments they have achieved into products and start-up companies. Currently stretched to the full, their capacities are now being expanded. The IT Park Saarland sees a core location of the cluster it.saarland being extended in a logical and consistent manner, and has already become one of the key symbols of the structural transformation of Saarland.



# Saarland aufsteigend



2  
Ensuring Growth and  
Enhancing the Region's  
Attractiveness

## 2

# Ensuring Growth and Enhancing the Region's Attractiveness

Ensuring Growth and Enhancing the Region's Attractiveness

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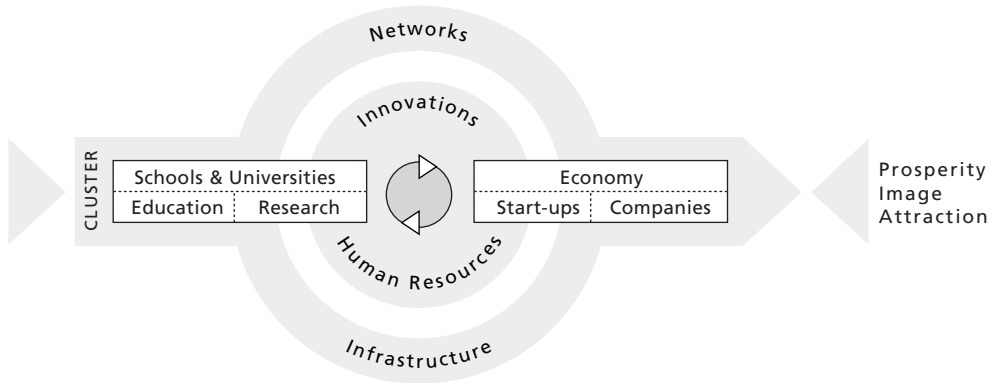


There is a close correlation between technological transformation and the extent to which the protagonists are in physical proximity to each other. A regional base of knowledge and technology generates an innovative environment in which public, semi-public and private resources come together in research and development, along with a well-qualified workforce. Together, these constitute a potential for innovation and thus a powerful determining factor in the development of the region. And with the globalization of production and technology, local aspects of a region's policy on innovation and technology assume ever-greater prominence. After all, in the end a region's economic prosperity is determined by the organizations and people who work and live there.

A region gives companies a structural basis for their development, not merely through "soft" aspects of the location such as its image, quality of life or prices, but also by means of "hard" factors such as its taxation rates, industrial estates or traffic infrastructure.

Innovation does not occur accidentally, but rather through the systematic gearing of all the relevant instruments towards a common goal. If full use is to be made of a region's potential for innovation, networks must be set up and activated within which the four constituent fields of education, research, start-up companies and existing companies are co-ordinated and form a chain of value creation. These networks are also termed "clusters", and relate to specific solutions and/or technologies or the combination of different technologies. One cluster brings together a concentration of research and educational institutes at the universities, together with start-up companies in the vicinity of the universities. Companies arising out of new research, together with the innovative medium-sized companies and large enterprises, make up a cluster in the field of "business".

The aim of a cluster is to form, by means of the close networking of all the protagonists, associations in which innovations can be developed together and efficiently carried



		11

over into the commercial sector. Through the moderated networking of technological supply and demand, co-operative and efficient learning can be achieved in the "cluster-partners" involved. This means that clusters generate benefits for the protagonists involved and thus contribute to an increase in value creation and growth in a region if they help to bring about a lowering in the transaction costs of processes of innovation and a minimization of the risks entailed in innovation.

The development of innovations and new products, and market launches, have to be financed and integrated into national and international markets and value creation chains. Private and public institutions for the financing of innovation therefore assume a vital role for clusters.

The success of a cluster depends not only on the individual efficiency of the organizations and protagonists involved, but also on the appropriate planning and initiation and on skilful management of the cooperation.

The development of a cluster is also affected by endogenous and exogenous cycles that can accelerate the beneficial effects of the success of the individual clusters and thus contribute to the development of a region.

These contributing factors in a cluster's success include the cycle of innovation, the cycle of workforces, the founding of companies, networks and infrastructure.

- ❖ **The cycle of innovation:** Networked cycles of innovation mutually reinforce each other inside a cluster, which means on the one hand that research results are picked up by business enterprises, and on the other that existing products and market innovations are developed further in research and development establishments such as, for example, universities.

- ❖ **The cycle of workforces:** The term "cycle of workforces" describes the fundamental training within the school and university system of qualified workforces for business and science.

For the establishment of a cycle of workforces and qualifications, particularly in relation to high-tech-based clusters, universities play a crucial role. On the one hand, they acquire students regionally, nationally and internationally, instill in them the very abilities that are relevant for the clusters and place them at the disposal of the labour markets in the form of a "core product" – namely, graduates. On the other hand, universities also further expand the range of available further training and, together with private educational enterprises, offer further training schemes that are relevant for the clusters.

moderated not only by the managing body of the cluster in question, but also by its individual members.

- ❖ **Infrastructure:** Clusters are dependent on a modern infrastructure that matches their requirements, and this infrastructure must be shaped not only by governmental policies relating to technology and innovation, but also by private initiatives. This business environment includes all of a region's material, institutional and personal structures, establishments and promotional measures that generate innovation themselves or provide support for persons and institutions in their innovation-generating activities – that is to say, for

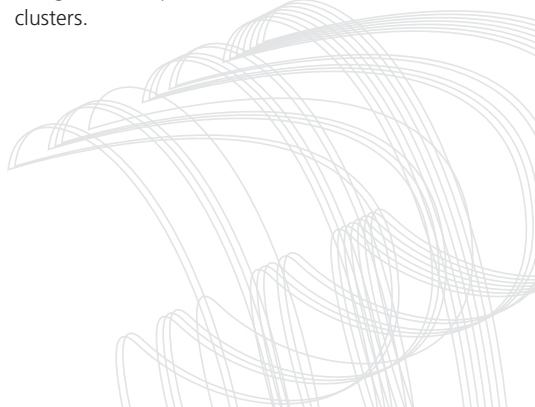
- ❖ **The founding of companies:**

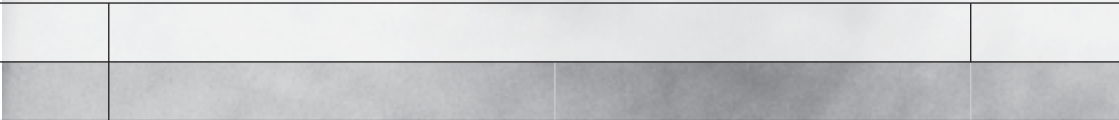
Companies arising out of new research form the link between the cycles of innovation and workforces. Measures for stimulating start-ups and for actively supporting these companies throughout their foundation and growth phases, and also during times of crisis, are therefore among the critical factors in the success and boosting of a system of innovation.

- ❖ **Networks:** Reliable networks that can be trusted, formal and informal exchanges of information and knowledge and the physical proximity of the relevant protagonists are among the basic preconditions for cooperation, both within one cluster and between several. In particular, clusters that are still in the process of being built up need to reinforce the effects of their growth through close-knit solidarity and cooperation, consistently focusing on the cross-regional level and strategic partnerships for growth. This necessary networking must be taken on and

example, office, laboratory and production premises. A precondition for the successful implementation of regional measures to promote innovation is a functioning political and institutional system.

Saarland's Innovation Strategy has seen the most promising areas of competence and fields of technology in the region identified and analyzed. These are to be found in the areas of IT, nanotechnology and biotechnology, the automotive industry, logistics and knowledge. The following pages describe how these future growth areas are being further expanded in the context of clusters.





3  
Innovation Clusters  
in Saarland

# 3

## Innovation Clusters in Saarland



### 3.1. it.saarland

The emphasis on services, products and expertise relating to information technology and software has been constantly on the rise in recent years. Business-related information technology, company software, language technology, security solutions or Artificial Intelligence are fields in which research skills emanating from Saarland have gained international renown. The available education and educational structures in the region's universities and schools are oriented to meet the needs of this cluster. Even early on in their education, the basics of information technology are instilled in those schoolchildren who show an interest at special grammar schools. In addition to the new professions in the field of information technology requiring vocational training, young people have the opportunity to choose between approximately fifteen different courses of study and additional specialist subjects at the universities of Saarland. More than 2,500 students and approximately 830 trainees are currently

availing themselves of these educational opportunities. This creates an extraordinary pool of potential future junior employees for the economy of the region.

The quality in both teaching and research is confirmed by the multitude of national and international awards that have gone to researchers from the Saarland University in recent years. Prof. August-Wilhelm Scheer, Head of the Institute for Information Systems, carried off the Philip Morris Research Award for 2003, while Prof. Wolfgang Wahlster, Head of the German Research Centre for Artificial Intelligence, received the "Deutscher Zukunftspreis" (German Future Award) from the Federal President in the year 2001. And no less than two winners of the "Gottfried Wilhelm-Leibniz-Preis", the research award with the highest endowment in Germany, have been from the Saarland University in recent years: Prof. Hans-Peter Seidel from the Max Planck Institute for Computer Science, in the year 2003, and computer linguistics



expert Prof. Manfred Pinkal, in the year 2000. Furthermore, the International Conference and Meeting Center for Computer Science at Schloss Dagstuhl is considered to be one of Germany's most important research establishments.

The cluster it.saarland has formulated four key areas of competence: Software & Consulting, Language Technology, Mobile Solutions and Security.

### **Software & Consulting**

Together, software development and management consulting make up a vital supporting pillar of the services sector, as well as providing employment for the lion's share of the IT workforce in Saarland. Services on offer range from the optimization of business processes, through the introduction of standard software to the development of individual solutions. A wide range of products and specialist solutions have emerged from these areas of competence. Fields with a particularly high concentration of relevant applications include, among others, the

automotive industry, trade, public administration, the discipline of transport and logistics, and e-learning.

Prominent names in this field, all of whom have found success in international markets, include, among others, well-known companies such as IDS Scheer, SAP Retail, infor business solutions or Orbis.

### **Language Technology**

In the field of language technology, Saarland enjoys worldwide renown thanks to the skills of the research centres of the Saarland University. Language technology covers a range of research disciplines: voice processing, Artificial Intelligence, computer linguistics and psycholinguistics. The objective of the work is to render natural human speech capable of being comprehended and processed by machines.

Several companies have emerged from this field whose products have been successfully deployed in such areas as the automotive industry, medicine and publishing.



### Mobile Solutions

Mobile solutions are based on the availability of fast methods of data transmission via UMTS (Universal Mobile Telecommunications Systems) or Wireless LAN. Such mobile applications are already in use in such fields as financial service provision, trade, tourism or the public utilities sector, helping to reach new customers and to design work processes more flexibly and efficiently.

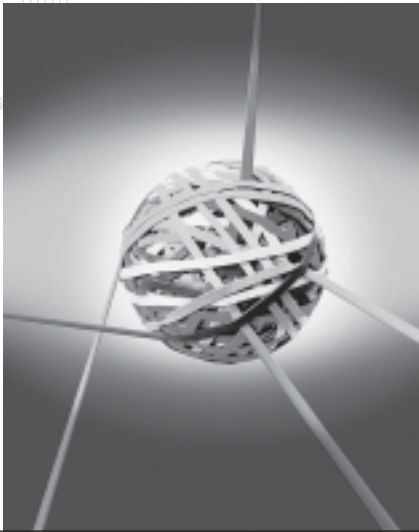
Together with Deutsche Telekom, the State of Saarland has instituted a **Multimedia Initiative** aimed at promoting the development today of innovative products for tomorrow. The promotion funds of this initiative are used primarily to push forward the field of Mobile Solutions. Here, new business models are generated and tested under real conditions, with a view to ascertaining their practical suitability, and then carried over into actual marketable products. A Centre for UMTS Demonstrations and Evaluations was set up for this very purpose at German Research Centre for Artificial Intelligence. As a model region for

developments in UMTS, Saarland is able to play a prominent role thanks to its first-class information technology skills in the areas of competence in Saarland, and is therefore already carving out for itself a position in the worldwide 3G phone market at this early stage in the development process.

### Security Solutions

IT security solutions will determine developments in the years to come. The spectrum ranges from classic areas of security such as cryptography to biometric access control. In this field, research results are just as usable as innovative products and services. At the same time, field-tested research results are already being deployed by companies in Saarland for the verification of software systems. Customers for Security Solutions come from industries such as financial services, automotive, telecommunications or public administrations.

In recent years, the **IT Park Saarland**, in the State Capital of Saarbrücken, has developed into one of the key symbols of the structural



### 3.2. biokom.saarland

The profile of Saarland's scientific expertise in the field of nanotechnology and biotechnology is already clearly defined and has a fine international reputation. Research institutions and institutes, attached to and within Saarland University, work with nanomolecules and biomolecules, concerning themselves with interdisciplinary issues relating to the fields of material research, engineering, process technology, physics, biochemistry, human and molecular biology, medicine, pharmaceuticals and informatics.

This current expertise in biotechnology and nanotechnology springs from on a wide array

transformation of Saarland. The IT Park, founded in 1985 on the site of a disused wire cord factory, is one of the largest and most successful centres for technology in Germany. A total of 1,200 new jobs in more than 50 companies have already been created here, and the coming years should see the creation of a further 1,000 new jobs. The location is tailor-made for the communications-oriented, flexible employment market of the 21st Century. Open, modern architectural styles characterise this location, where founders of new businesses and applied scientific establishments rub shoulders with companies of all sizes, all having considerable experience in this market segment, in the development of services and products. No wonder the IT Park Saarland has become a symbol of the well-thought-out continuation of the successful promotion of technologies for the future in Saarland.

of university and non-university research institutions. The Saarland University has around 40 professorial chairs dealing in intensive interdisciplinary cooperation with related issues. In addition, the University of Applied Sciences has built up a reputation for biological process technology and environmental biotechnology.

In Prof. Günter Fuhr of the Fraunhofer Institute for Biomedical Engineering and Prof. Uwe Hartmann of the Institute for Experimental Physics, we find a further two recipients of the Philip Morris Research Award coming from Saarland. Prof. Fuhr received the Award in 2002 for the results of his research in the field of biotechnology, while Prof. Hartmann received it 1998 for his nanotechnological research.

One mainstay of biokom.saarland is the network **NanoBioNet**, currently the master project initiated by the Saarland state government. Nanobiotechnology is one of the most important up-and-coming interdisciplinary fields of technology.



Innovation Clusters in Saarland

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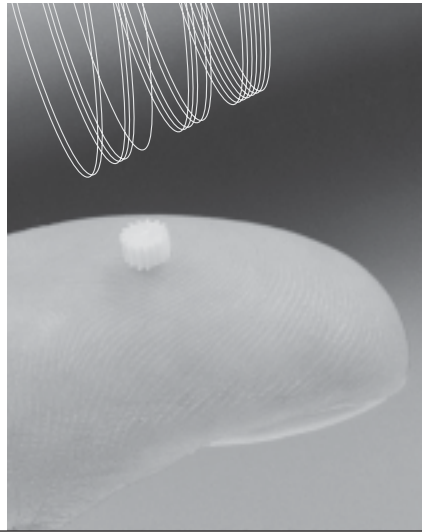
Nanobiotechnology combines the innovative potential of nanotechnology and biotechnology and generates new products and processes for a variety of industries. Above all, the medical, textile and food industries can benefit. Many regions and countries are in the process of setting up infrastructures for the establishment of this new technology. In this respect Saarland is firmly in pole position: not only is the requisite infrastructure already in place, but so are the other structures, and Saarland-based companies are already offering products ready for the market. This network of universities, research institutes, clinics, companies and experts from the fields of the transfer of technology, patents, economics and financing is at work on large-scale, internationally-staffed co-operative projects, such as the EU's Sixth Framework Programme for Research.

Over a short period, the cluster biokom.saarland has developed splendidly, thanks to the considerable engagement of many partners. A fine example in this respect

is the "Trilateral Initiative" agreed between the State Government, the University and the German "Fraunhofer Gesellschaft" (Europe's leading organization for technical and organizational innovations), whereby the three partners established the long-term promotion of biotechnology and nanotechnology in Saarland. The objective of this Initiative is to use targeted basic investment to generate progress in molecular and cellular biotechnology and in nanobiotechnology – and also to forge links between fundamental research, applied research and business. One of the core elements is the Cryo Cell Bank **EuroCryo Saar**, which was set up as a pilot installation at the Fraunhofer Institute for Biomedical Engineering and has already attracted considerable international attention. The firm commitment of the "Fraunhofer Gesellschaft" is proof that biokom.saarland, with its emphasis on nanobiotechnology, is already one of the most highly productive and promising bodies in its field, not just in Germany but also in Europe.

Thanks to a joint initiative between science, business and the State Government, taking the form of a Private-Public-Partnership project, a **Stipendiary Professorship in Pharmaceutical Biotechnology** has been established. Special lectures held for pharmaceutical chemists, bio-information technology specialists, specialists in human biology or chemists help to convey the requisite knowledge for a later professional engagement in the pharmaceutical industry.

Saarland is also now benefiting from the fact that its reputation as a location for scientific activities, and particular its commitment to the field of nanobiotechnology, are held in increasingly high regard by the European



Union. One example of this is the **NanoBioTech-Region Saar** Initiative, promoted by the EU Commission within the framework of the European Fund for Regional Development's Measures for Innovation. Likewise, the "**Nano2Life Network of Excellence**", in which over the coming five years 24 institutions from 12 countries are scheduled to collaborate, will see Saarland playing a leading role. The plan is for Nano2Life to develop eventually into an European Institute of Nanobiotechnology. The integrated "**CellProm**" project is being conducted under the leadership of the Fraunhofer Institute for Biomedical Engineering and in collaboration with other partners from NanoBioNet as well as a whole host of further partners from the rest of Europe. The objective here is the development of a new generation of a nanotool-based instrument for use in biotechnological applications. At the heart of this is the idea of being able to decipher all the relevant information contained in each individual cell through specific contact with tailor-made surfaces.

A significant degree of support also comes from the "Deutsche Forschungsgemeinschaft" (German Research Community), which has for two years been sponsoring the establishment of a **Centre of Excellence for Bio-informatics**, intended to operate on an interdisciplinary level. With the substantial participation of the Max Planck Institute for Computer Science, scientists from a range of disciplines in the fields of biosciences and information technology are involved in this project, in which the emphasis is not only on research, but also on educational concerns.

However, the State Government is concerned not just with the promotion of research, but also above all with the development of products and services derived from the fields of biotechnology and nanotechnology – and of course with the start-up companies and jobs resulting from these. Since the start of the project more than 20 companies with 300 employees have emerged and enjoyed a high degree of success in the marketplace. In response to the increasing needs of the



### 3.3. automotive.saarland

The automotive and supply industry in Saarland is among the best in Europe. Its central position right at the heart of Europe, its proximity to the key locations of Europe's car manufacturers and its service and pricing structure are the main reasons for this. Since the end of the 1960's, the appearance of new companies in the automotive and supply industry has been the most important factor generating structural change in Saarland.

The Ford Industrial Supplier Park is a future-oriented project aiming to bring about a permanent reduction in production costs and

new generation of entrepreneurs, the Science Park of the Saarland University has been expanded. By the end of 2004 there will be two new buildings creating room for new places of work, in particular in the field of biotechnology, one of the new buildings being a specialized laboratory building.

The implementation of further projects and measures in education and training is in full swing. There is already talk of a separate course of studies for nanobiotechnology. In regular and vocational schools, training in the new forms of employment is being stepped up. A cooperative association of laboratories is in the offing. In addition to the three existing "participating laboratories", a **Demonstration Centre for Nanobiotechnology** is being built, with a view to presenting to the interested public nanobiotechnological effects and experiments and to bring them up to date on products, procedures and projects from [biokom.saarland](http://biokom.saarland).

to optimize logistics related to the activities of Ford at its Saarland site in Saarlouis. The core element of the Supplier Park concept is the conveyer belt system, which transports different parts and/or modules from the Supplier Park directly to wherever they are needed in the Ford production process. In addition to the approximately 6,800 persons employed by Ford, about 33,000 other jobs are, according to a study carried out by the Saarland Chamber of Industry and Commerce, currently more or less dependent on the supply needs of the automotive industry. Going on the assumption that the jobs of 40,000 persons are more or less dependent on the automotive sector, this is almost one third of all jobs in the overall industrial sector of Saarland.

The future is expected to bring further growth spurts to our automotive industry. This growth calls in turn for impulses, initiatives and advances in expertise. The cluster [automotive.saarland](http://automotive.saarland) is dedicated to the further development of skills in the



automotive field in car manufacturers, suppliers and service providers in the region – and in particular in smaller and medium-sized companies.

A few examples of the services offered by the cluster to its participants would be a heightened exchange of information and experience, the option of joining forces for a stronger presentation of their combined skills at international trade fairs or on promotional expeditions by delegates. In order to strengthen its competitiveness, on both a national and an international level, the cluster automotive.saarland pursues these goals:

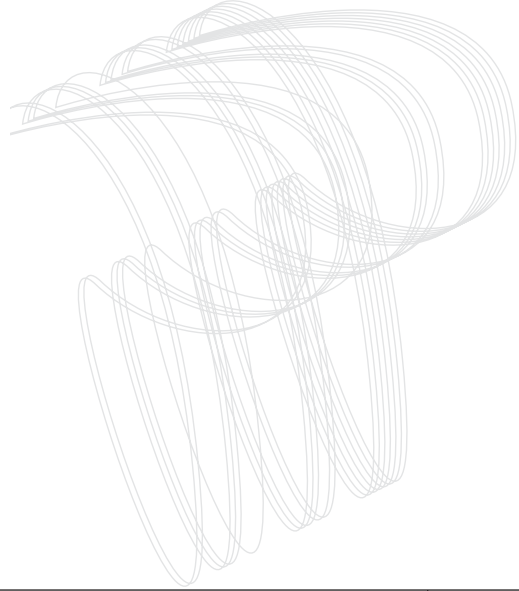
- ❖ Improvements in the infrastructure and the basic conditions for the car manufacturers, suppliers and service providers based in the region
- ❖ A strengthening in research and development expertise at the region's universities, research institutes and establishments for the transfer of technology for the automotive field of application

- ❖ The promotion of research and development expertise in smaller and medium-sized companies, in order to meet the particular requirements of the supply network for the automotive and supply industry
- ❖ Raising the level of skills in the fields of products, processes and performance in companies at all stages of the value creation process for car manufacture

A professional cluster management takes care of the improvement of the transfer of technology and works on concrete projects such as, for example, the setting up of a station for monitoring new trends in technology relating to the automotive field as a central umbrella for companies, or ensuring the availability of network coaches and project management capacities, the setting up of a centralized pool of experts, ongoing scouting for new technologies and innovations in businesses, the nurture of contacts with other clusters abroad, and the initiation of co-operative scientific projects.

### 3.4. logistics.saarland

Thanks to its excellent location in the very heart of Europe, and in particular the fact that it lies between the two largest economies of the new EU (Germany and France), Saarland has always played an important role in European distribution. Setting aside its geographical location, an outstanding traffic infrastructure makes Saarland the ideal location from which to service the European continent. The Autobahn system connects it to every part of Europe. Railway connections are also both efficient and progressive. The new super-fast train system belonging jointly to the French and German railway companies (TGV-ICE),



Innovation Clusters in Saarland

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connecting Paris with Frankfurt and Berlin, will pass Saarland and stop at Saarbrücken, the capital of Saarland. The River Saar joins up with an extensive canal system and is connected to the seaports of Antwerp and Rotterdam via the Rivers Moselle and Rhine. The inland airport of Saarbrücken, as well as the neighbouring international airports of Luxembourg and Frankfurt, provide comprehensive passenger and air freight services.

A large number of international companies, including Villeroy & Boch (ceramics), Festo (pneumatics), Kennametal (tools), Allied Signal (parts for motorcars) and Trumpf (chocolates), have already selected Saarland as the location for their Europe-wide distribution. Of the 30 US companies located in Saarland, a good 50% not only have their European headquarters in Saarland, but also their European warehousing and distribution centres, too. A great number of renowned international and national companies in the transportation and logistics sector are located in Saarland, with subsidiaries or warehouse

facilities. Perhaps the key argument for locating in Saarland is its guarantee of 24-hour delivery throughout most of Western Europe.

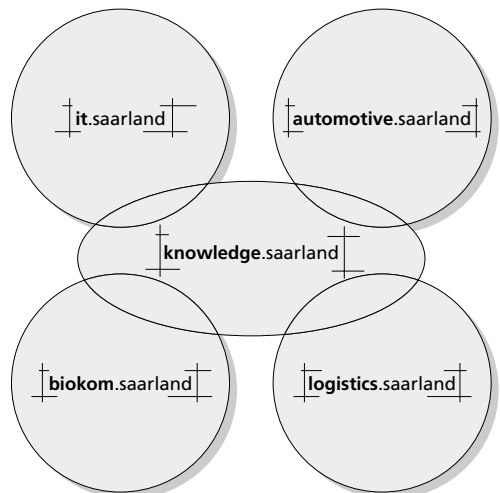
One of Europe's leading logistics conferences – the annual "Logistics and IT" Forum in Saarbrücken – regularly takes place in Saarland: a meeting-point for the entire German and European logistics community, bringing together experts from business and research for an exchange of opinions and experience on topical themes in the field of logistics.

### 3.5. knowledge.saarland

The cluster strategy is geared towards creating for the companies, researchers and developers in Saarland the best possible starting position for working in the national and international markets. One precondition for this is a climate of co-operation and competition between these protagonists, to ensure an efficient flow of knowledge both within the clusters and between them. In order to accelerate the effects of the individual clusters, the initiative knowledge.saarland forms the link that joins together the endogenous and exogenous cycles of success.

Four core measures have been initiated and are currently in the process of implementation:

- ❖ The integration of universities and research establishments as key generators of innovation (appropriate training of workforces, development of innovations)
- ❖ Knowledge and Innovation Management (basic conditions and services for the translation of technologies and innovations into products)
- ❖ Support for those founding new companies (motivation, promotion, finance, service)
- ❖ Growth thanks to international networking



## Universities as Key Generators of Innovations

The universities, in particular the Saarland University and the University for Applied Sciences, are a fundamental supporting pillar for science, research and the transfer of knowledge and technology in Saarland and the surrounding region. They offer highly-qualified training routes and as generators of innovation, they occupy an important position for the structural transformation of the region. To ensure that the universities are fully equal to these challenges and responsibilities, basic legal conditions are being adjusted and systems of financial incentives created. The aim is to grant the education and research system a high degree



Innovation Clusters in Saarland

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of autonomy and to create structures for competition.

In order to strengthen the financial basis of the Saarland University, and to help it become independent from Saarland itself, a target control system and global budgeting was established in 2003. Saarland also supports its universities in initiating strategic projects, including for example their public relations work and the conception of their fundraising campaigns.

The universities are also making concrete contributions to the implementation of the Innovation Strategy, in the following ways:

- ❖ By modernizing the available choice of study options in the light of scientific and technological advances and with due regard paid to the demands of the employment market and to those of the clusters. This process has seen a new and much sought-after area of study emerge at the university, namely the field of bio-informatics. The University for Applied Sciences will offer new courses of study

including Communication Informatics, International Management, Tourism Management and Mechatronics.

- ❖ By concentrating together fundamental and application-based research and further developing its profile by establishing points of emphasis. These are, in particular, information sciences, nano-sciences and bio-sciences and engineering, along with a focus on Europe and in particular on its legal and economic systems and on intercultural skills.
- ❖ By also taking on the role of further education supplier in the process of continuing life-long learning, and indeed becoming highly competitive in this field. To this end, the University of Saarland has founded an independent company for the provision of further education.
- ❖ By promoting the founding and/or spin-offs of scientifically and technologically based companies. Companies based on new research and with their roots in the

universities have created more than 2,000 high-quality jobs since the beginning of the 90's. Which, for no more than around 22,000 students and researchers, is way above average.

**Knowledge and Innovation Management**

The competitiveness of medium-sized and large companies can be reinforced by innovative impulses and technologies derived from research and technology. However, in the end research and business have differing goals at heart and do not speak the same language. These hurdles may be overcome by means of projects and interdisciplinary cooperation. Which is why, within the clusters, private innovation agencies have



been implemented to initiate joint research and development projects between companies and universities and to see these processes of innovation through for their clients with great confidentiality.

In order to remain competitive vis-à-vis other regions, both in Germany and throughout Europe, additional efforts are being made in Saarland to support the regional research and development landscape in its drive to attract resources. The Saarland universities and research establishments are co-ordinating, or are for that matter involved in, countless national and international research plans.

These aims are to be achieved through a co-operative concept and measures for improved communication and moderation between the various regional partners for innovation, and through the reinforcement of the development and transfer of innovations. The following measures are currently being implemented:

- ❖ The setting-up of a research and innovation portal
- ❖ The extension of the network for the transfer of consultation and technology, in order to help support innovations in medium-sized companies
- ❖ Support in the initiation of major research and development projects at the universities
- ❖ The setting-up of a patent exploitation agency, to assist the universities in protecting and marketing the results of their research.



**Start-Ups –  
Boosting Quantity, Boosting Quality**

Innovative start-up companies make up an important group of generators of growth for the structural transformation of Saarland. At the universities and the technology parks, a well-planned infrastructure, which includes top-quality facilities and which is constantly being extended, is available. And the demand continues to grow. However, one characteristic of the region is its below-average number of self-employed persons: it does need more entrepreneurs.

In order to ensure that the best-possible conditions for growth are ready and waiting in Saarland for promising ideas for start-ups

**Growth through international networking**

On account of the limited size of the domestic market, a reinforced growth of Saarland's economy can be supported by means of strategic or thematic partnerships, or by partnerships geared towards specific (growth) regions. The region's networks ("Short Routes") support this process of growth from within.

"Saarland International" is the label under which Saarland's international activities are co-ordinated. Saarland International offers companies based in Saarland a demand-oriented service package to assist in the opening of new markets, including project-



and for motivated new entrepreneurs, the range of available services in the start-up network of Saarland is being extended. Its quality is being raised in order to be more flexible and capable of adapting to fit both the individual processes and requests for start-up companies. The promotion, stimulation and augmentation of the coming generation of entrepreneurs is being accorded the very highest priority in Saarland. In respect of this, at many points competitive structures are needed to complement the efforts being made in the public sector.

related consultation on foreign trade, promotion of participation in international trade fairs and firm pools, and also the promotion of co-operation exchanges in partner countries such as, for example, the United States of America, Japan, China or Eastern European Countries. Saarland is also concerned with the establishment and nurturing of international co-operative ventures with selected partner regions on a governmental level, with foreign trade strategies throughout the world and with looking after foreign organizations, companies and delegations in Saarland. In addition Saarland is planning to establish a network of up-and-coming regions with other dynamic partner regions worldwide. The purpose of this network is for all regions to learn from each other's experiences and to develop new business connections and investment opportunities.



4

Saarland.

Others talk – we act.

# 4

## Saarland.

### Others talk – we act.

Saarland. Others talk – we act.

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With its Innovation Strategy, the State Government is establishing a mixture of projects and the further development of existing structures. That Saarland is in a position to provide the necessary thrust to the process of reformation is something it has already demonstrated in recent years. Saarland has introduced the "Abitur" (university entrance qualification) after eight years of secondary education – the first of the German Federal States to do so. The model project "French at Kindergarten" is already in operation at more than 50 locations within Saarland. Almost two-thirds of the local government regulations have been abolished and not replaced. Bureaucratic procedures for obtaining various forms of permission have been simplified, standards rendered more flexible. Taxation has been cut, thus giving an important boost to the domestic economy. The initial tiles in the mosaic of a reform of the employment market have already gone into implementation. A fine example of this is the communal initiative that brings together business, associations and administrations in

the creation of apprenticeship places. The State Ranking system of the German Institute of Economics confirms the value of this development. This scientifically-based study places Saarland at number 1 among its fellow States in terms of "Dynamics Ranking" for economic development and political reform over the years 2000 to 2002. This gives substance to the recent transformation in the image of Saarland to one of the most dynamic regions in Europe, an image confirmed by independent observers from outside the State. Saarland is not willing to spend all its time talking about renewal and then to wait for others to make the first move. The region's inhabitants have to take the first step for themselves. Which is why, in the summer of 2003, the new image campaign was launched: Saarland. Others talk – we act. This provides a framework within which a nationally and internationally oriented marketing mix is being pursued, including ads, international trade delegations, business matchings, and public relations to promote innovations from Saarland.



