Create synergies. Use networks.

Cluster networks in the German state of Thuringia. Organizational structures and activities in strategic growth areas and industries.
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Foreword by the Thuringian Minister for Economy, Labour and Technology, Uwe Höhn, and the Managing Director of the State Development Corporation of Thuringia, Andreas Krey

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Other Industry-Related and Technology-Oriented Networks, Associations and Platforms

Thuringian ClusterManagement (ThCM)
Dear readers,

In the last 15 years, Thuringia's cluster landscape has experienced outstanding development. Among the very first networks formed here were the automotive thüringen, PolymerMat, medways and OptoNet Networks who represent major players in the traditional growth areas of automobile, plastics, life sciences and optics-opto-electronics. Also, bursting years of network experience are the MNT and Solarinput Associations which represent companies in the micro- and nanotechnology and solar sectors. Additional networks have been added to this list during the last few years; like the Thüringer Logistik Netzwerk and the food industry network ELMUG for electronic measurement and equipment technology, and the FemMeTh network for the engineering sector.

Although the technologies represented by these networks are very diverse and their structures and key activities different, they all have one thing in common – the bundling of sector-specific interests of industry and research in order to successfully develop Thuringia as a technology center even further. To achieve this, these network organizations have developed a wide spectrum of tasks, including the handling of strategic topics affecting technology development, organizing expert events and participating in trade fairs, along with network building on an international level. But these networks also have a portfolio of services for their members – such as mediating cooperative efforts and initiating projects, developing junior staff and location marketing.

There is also an active exchange between these networks as well. Here the focus is on expert dialogue and joint projects and cooperations. With their professional expertise, the network offices deliver tangible and individual support as mediators in this process. But these network clusters also cooperate closely in answering questions about securing skilled personnel or international marketing efforts.

They have been supported in these efforts since 2012 by Thuringian Cluster Management (ThCM) which has created a structure for advancing and promoting joint cluster development in Thuringia’s growth areas. Activities such as internationalization, securing skilled personnel and location marketing strengthen existing initiatives, cross-sectional and cross-cluster dialogue and an exchange of knowledge.

This edition of the cluster brochure provides an up-to-date overview of existing networks, their key activities and network goals. As such, it represents an initial orientation guide for companies, scientists, but also politicians, associations and societies.

Sincerely yours,

Uwe Höhn
Thuringian Minister for Economy, Labour and Technology

Andreas Krey
Managing Director of the State Development Corporation of Thuringia

On behalf of the networks,
Dr. Klaus Schindler, Managing Director of OptoNet e. V.
Thuringian ClusterManagement: Importance, Objectives and Functions.

Shaping a future-oriented economic development

To develop and support existing and new network clusters in a targeted way, the Thuringian Ministry for Economics, Labour and Technology (TMWAT) set up Thuringian ClusterManagement (ThCM) at the State Development Corporation of Thuringia. The ThCM is the product of a recommendation in the “Trend Atlas Thuringen 2020” (for a future-oriented economic development of the German state of Thuringia) which was compiled by Roland Berger Strategy Consultants.

Targeted Development of Growth Areas

The ThCM is a networked system that:

- strengthens existing network clusters and initiates new networks if needed in growth areas,
- supports the visibility of Thuringia’s clusters and networks,
- increases the innovative power and know-how of relevant companies,
- encourages cooperative efforts and accompanies them if necessary and
- supports international network creation.

The goal here is to increase the performance and competitiveness of the Thuringian economy and to secure its future sustainability. We represent the individual interests of the networks in the clusters and work closely with them within the parameters of a strategic partnership.

Promoting the Development of Growth Areas

We contribute to a close partnership cooperation between other players as well – especially the Thuringian networks – in promoting targeted development of network clusters in strategic growth areas and in other relevant sectors in Thuringia in the future.

Functions of ThCM include.

1 | Conducting Roadmap Processes

Together with relevant players, we put together concepts, so-called roadmaps, for growth area development. These roadmaps define goals, measures and milestones. The starting point for these roadmaps are the market potential studies as well as the regional research and innovation strategies for intelligent specialization in Thuringia – the RIS3 Thüringen. We analyze the development in growth areas using our own monitoring system. New developments and changes in the business environment are taken into account by constantly updating the roadmaps. This roadmap process is coordinated and mediated by our growth area managers. For us, these roadmaps determine the strategic framework within which we work.

2 | Initiating Projects

We focus on strategic topics, function as a contact partner for those involved and initiate new projects between them. We monitor financial assistance programs as a way of helping to tap into new sources of financing. To this end, we continuously screen financial assistance programs in Germany and at the EU level, and we provide information about suitable programs. To ensure that projects can be target-oriented and successfully placed in the right hands, we identify important decision-makers and influencers as well.

3 | Bringing Partners Together

We identify potential partners in the development process. Our goal is to bring players together in a common process and to mediate between them in a results-oriented way. In this way, innovation is stimulated, ideas are made accessible and joint decisions are made and then implemented. At the same time, we function as an information platform to create transparency and to continuously make use of lessons learned.

4 | Expanding and Deepening the Network

We support intensifying and expanding the networking activities of those involved in, and especially between, potential areas of growth and business activity. This includes the interfaces with regional, national and international institutes and government administration offices. We assume tasks of the networks that can be dealt with more effectively together.

5 | Using Expert Panels

We offer communication platforms in form of expert panels that deal with high-level, strategically important topics – such as human resources, internationalization, innovation and technology, resource-efficiency. The panels are chaired by one of our growth area managers. The contents of the discussion are decided by the participants and are always oriented towards the needs of the Thuringian economy.

6 | Intensify Communication

We use the internet, events and trade fairs to improve the public perception of Thuringia and to improve the position of the state as a center of highly productive clusters and networks. We support communication between relevant players in the process of developing growth areas, and we strengthen levels of public awareness about them using targeted and public marketing activities.

Our website www.cluster-thueringen.de/en offers information and news about growth areas, the networks, their activities and success stories. At our high-value flagship and crossover events, we also support knowledge and information sharing about growth areas beyond the borders of Thuringia.

1 www.thueringen.de/th6/entwicklungsthemenstrategien/threndatlas2010
Automotive

The Company and Technology Database of the State Development Corporation of Thuringia lists about 530 companies (tier-1 companies in core sectors, suppliers and service suppliers) active in this growth area.

The automobile and automobile supplier industry is characterized, like many sectors in Thuringia, by a patchwork of smaller companies. 21 companies in the automotive and automobile supplier sector are on the list of the 100 largest companies in Thuringia (see Die 100 größten Unternehmen in Thüringen; Helaba/The State Development Corporation of Thuringia). These companies are mostly tier-2 and tier-3 suppliers. The original equipment manufacturers (OE) companies in Thuringia include BMW Fahrzeugtechnik GmbH, Hako GmbH (Werk Multicar Waltershausen), MDC Power GmbH and OPEL Eisenach GmbH. The companies in this sector can be found in all areas of Thuringia, with higher concentrations in the areas around Eisenach, Gotha and the district of Wartburg.

The supplier companies cover all segments of the automotive industry delivering modules, systems, subassemblies and spare parts. Their focus is on the product groups drive trains, chassis, engines and auxiliary drives, body shells, exteriors, interiors and electric instruments and electronics.

The Sector with the Highest Revenues

According to statistics, the automotive and automotive supplier industry has been the sector in Thuringia with the highest revenues for years. About 10 percent of employees working in the manufacturing industry ("Companies with 20 or more Employees") work in this sector.

Companies from the automotive sector are important customers for many of cross-sectional industries in Thuringia (including the plastics technology and engineering sectors). This is why the structural importance of the automotive and automobile supplier industry is considerably more important for Thuringia’s economy than statistical data indicate.

Strong Research Partner – Ilmenau University of Technology

The R&D activities of automotive sector companies in Thuringia (especially automotive suppliers) are still small compared to Germany as a whole. This weakness is compensated by significant research investments by the public sector. At the center of this is the Ilmenau University of Technology, which specializes in vehicle technology research. The Thüringer Innovationszentrum Mobilität (ThiMo), a center of innovation, supports the move to sustainable mobility with industry-driven research. Other research facilities, most of them working across sectors (in plastics, MSR, manufacturing technology) also have close ties to the automotive and automotive supplier industry.

Attractive Education and Training Programs

Because of its long tradition in automotive manufacturing, Thuringia has a skilled, well educated workforce in this sector. The state offers a wide spectrum of automotive-related study programs – including automotive engineering at the Ilmenau University of Technology and the vehicle electronics study program at the University of Applied Sciences Schmalkalden. There are other specialized study programs as well, such as engineering, material flow and logistics, and even a study program called “Mobility Management.” Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia, and at www.virtuelles-automobilthueringen.de.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
Founded on August 29, 2000 by nine Thuringian companies as the Automobilezulieferer Thüringen e.V. (AZT) and now called automotive thüringen e.V. (at), this cluster network has organized network partnerships of over 100 Thuringian automotive supplier companies. In addition to these, some universities, research institutions, banks, leasing companies and other service suppliers are "at" members as well.

New goals defined during a strategic realignment in 2004 – under Chairman of the Board Dr.-Ing. Michael Militzer – have since been implemented and pushed forward by the network’s professional management team. The basic strategy of the charter – to maintain and improve the competitiveness of Thuringia’s automotive industry, to retain automotive jobs and if possible create new jobs – reflects the enormous growth of over 8 billion euros the automotive industry here has experienced during the last eight years.

The "at" supports its member companies by promoting a regional and national exchange of knowledge in topic-related work groups and product- and process-related competency clusters. It analyzes corporate research and development capacities, proactively develops technology transfer by using local capacities at technical colleges, universities and at the Thüringer Innovationszentrum Mobilität.

To this end, the network uses a host of internal and external communication platforms. These allow for an intensive knowledge transfer between member companies and between regional, national and international partners of the State of Thuringia, the German Federal Government and the EU. The close collaboration with the State Development Corporation of Thuringia creates added value when it comes to identifying market developments and new possibilities for investment.

Its close networking with so many companies and institutes allows the "at" to bundle – together with other initiatives in the former East Germany – the interests and know-how of its member companies in the Automotive Cluster Ostdeutschland (ACOD), which is a joint and extraordinary platform for knowledge exchange that is also supported by the VDA (German Automobile Manufacturers Association).

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Growth Area

Life Sciences

The Thuringian medical technology industry is one of the federal state’s largest business sectors by turnover. The Company and Technology Database of the State Development Corporation of Thuringia lists a total of ca. 340 medical-technology manufacturers and suppliers. Many of the companies in the life sciences sector have well established global R&D, production and sales structures, with the lion’s share going to manufacturers of electro-medical devices. Thuringian companies and R&D facilities in the medical technology sector are concentrated mostly in Jena and in the Ilm district, Saalfeld-Rudolstadt, Gera-Zeulenroda-Greiz and im the Eichsfeld district.

Interesting Inter-disciplinary Connections

Key activities in Thuringia include infection research and diagnostics, biophotonics, implantology, medical technology for ophthalmology, medical products for rehabilitation and the production of pharmaceutical substances. Some of these have resulted from inter-disciplinary connections and from using methods from other technological fields – such as precision engineering, optics and micro-system technology which find application in the development of products for ophthalmology, diagnostics and laboratory instrumentation.

During the last 15 years, a very active biotechnology sector has emerged in Thuringia, most of it red biotech. The biotechnologies produced in the federal state are future-oriented and have led to amazing developments especially in research, such as functional genome research, in active ingredients for therapeutics, probes and markers, miniaturized analysis systems, in equipment engineering, interfacial and surface functionalization, and in bioinformatics. In addition, Thuringia possesses special expertise in the area of diagnosis and therapy of sepsis. Compared to the manufacturing industry in Thuringia, the biotech sector is still comparatively small but features well established and profitable companies. Among these are companies such as Wacker Biotech GmbH, known for its priority technology for the affordable production of therapeutic proteins.

The medical technology sector represents some 2 percent of all jobs and gross value in the manufacturing industry in Thuringia. Due to its close ties to cross-sectional technologies, especially optics, not all of the companies important for the medical technology sector, nor their employees, are registered in the database under “Medical Technology”. Accordingly, their influence on the economy of Thuringia may be larger than suggested by the numbers.

Attractive Training Programs

The Friedrich Schiller University in Jena, the University of Applied Sciences Jena and the Ilmenau University of Technology form the basis for securing academic specialists for this sector with study programs in medicine, biochemistry, biomedical engineering and nutrition science. The vocational training schools in Thuringia complete the offer with training programs for laboratory specialists and assistants; along with vocational training in sensor technology and electronics, as mechatronics technicians and specialists in the fields of microtechnology and precision optics.

Select companies include:

- AEROPHARM GmbH
- ALERE Technologies GmbH
- Analytik Jena AG
- Bauerfeind AG
- Bayer Weimar GmbH und Co. KG
- Carl Zeiss Meditec AG
- Königsee Implantate GmbH
- Otto Bock Mobility Solutions GmbH
- Otto Bock Manufacturing Königsee GmbH
- Wacker Biotech GmbH

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
Short Profile

The medways e.V. (formerly OpthalmoInnovation Thüringen) won a competition held by the German Federal Government for “Competency Centers of Medical Technology” in 1999. During its early years, the competency center focused on research projects for ophthalmology while the sponsoring organization developed quickly into an expert contact partner for the medical technology companies and research facilities in Thuringia. Today medways is an association for the growth area medical technology/biotechnology whose member companies, research institutes and universities generate innovative products and processes for treating age-related diseases for different application areas in medicine.

The medways network supports and promotes this process through the
› medways service Center
› medways research Center
› medways Academy

Since 2008, medways has established a service company to take care of its own business operations.

Goals and Strategy

According to its charter, medways orient its goals and strategic alignment based on the challenges facing its member companies in the future-oriented medical technology sector. The medways network seeks to:
› Strengthen the competitiveness of leading medical technology companies internationally
› Improve patient care with innovative products
› Accelerate innovation processes
› Better align R&D to demand
› Continuously improve the business environment
› Improve the professional staff situation and investment activities in Thuringia
› Establish a coherent innovation policy and derive recommendations from this

The strategic implementation of these goals rests with the medways modules (Service Center, Research Center, Academy).

Focus

In an extremely complex environment, innovative medical products are created, approved by authorities and subsequently sold both nationally and internationally.

The focus of medways’s projects and the consulting services include improving:
› The competitiveness of member companies
› Overall health care performance
› The innovative power of research

Current Projects

Collaborative research projects:
› Molecular diagnosis of the AMD/MO/DAMD
› Development of high quality microalgae-based products (AlgaeStream)

StartUp Companies
› Medways accompanies startups in implementing quality management systems to meet DIN ISO 13485 standards and in the product certification process

International Activities
› Collaboration with the Central Hospital Wuhan, China (with student and doctor exchange programs, clinical studies)

Training and Education Activities
› Continuously running program

Highlights and Success Stories

› medways has organized and carried out collaborative projects valued at 35 million euros
› Transfer rate of research results ca. 90%
› Initiator and co-organizer of the Bundes Zukunftskonferenz Medizintechnik 2009 in Jena
› Co-organizer of the DGBMT Jahrestagung 2012 in Jena
› Responsible for the Thuringia community stand at the world’s largest medical technology trade fair in Düsseldorf, Germany
› medways is sponsor of the Haus des Sehens in Jena
› Awarded bronze by the European Cluster Excellence Initiative Label Certificate GER064201002KOM0185

Cross-Sectional Collaboration and Networking in and outside of Thuringia

The medways network is regionally networked across sectors with OptoNet, PolymerMat, MMT, “at,” SolarInput, ELMUG and FerMeth. Depending on the proximity of area and expertise, collaboration may be very close.

On a national level, medways conducts an intensive information exchange with the industry association SPECTARIS, works closely with the German Association for Biomedical Technology (DGBMT) and is a member of the German Medical Technology Alliance (GMTA).

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Growth Area

Environmentally Friendly Energies and Energy Storage

A key area of growth in Thuringia is the solar industry. Nearly every second renewable energy company works in this sector. Other areas with high potential for growth include, with 45 manufacturers, the bioenergy sector, along with storage technologies and components for wind power and power plant technology.

High Value Creation by Manufacturers

Despite tough challenges from a constantly changing European photovoltaic scene, the Thuringian photovoltaic sector is of national importance in Germany, with the entire value creation chain for photovoltaics present. In Thuringia, manufacturing and research are being conducted in all areas relevant for future success on the global market. While the focus is placed on the area of silicon technology, Thuringian companies and institutes also manufacture and research in the fields of crystalline technology and thin-film technology.

Thuringian photovoltaic companies work with partners in the engineering and plant construction sector in Thuringia to realize and automate their production. The proximity of these companies creates the best prerequisites for a partnership based on trust, which is especially important when developing and implementing new and innovative products.

The Thuringian wind energy sector focuses on companies active in project management, installation and operation as well as services. In the area of production of wind power plants, Thuringian companies primarily supply construction elements or software for such wind power plants. In the bioenergy segment, value creation occurs primarily in facility management areas but also in block heat power plant construction and their components.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.

Source – “Number of Companies and Employees” section of the Company and Technology Database of the State Development Corporation of Thuringia (as of July 2013). Export quota according to the 2020 Thuringia Trendatlas (final report March 2013).
SolarInput e. V.

Short Profile
The non-profit association SolarInput e. V. was founded on August 22, 2003 with the goal of representing the Thuringian cluster of solar technology companies, to manage and further develop the cluster. The focus of the association is bundling, coordination and developing existing structures and expertise in Thuringia’s solar technology sector as well as networking the industry within and outside of Thuringia, also beyond the sector.

Member Companies
The SolarInput association currently has 61 company members. These include manufacturers, service providers, research facilities, universities, technical colleges and local municipalities. Regular meetings offer a forum for an inter-disciplinary exchange of information.

SolarInput’s honorary (and voluntary) Board of Directors:
- Association Chairman: Dr. Hubert Aulich, HW GmbH
- Association Vice Chairman: Prof. Dr. Dieter Seil, Thüringer Energie und GreenTech Agentur
- Board Member: Dr. Gudrun Andrä, IPHT Institut für Photonische Technologien e. V.
- Board Member: Dr. Gabriel Andra, IPHT Institut für Photonische Technologien e. V.
- Board Chairman: Dieter Ortmann, maxx solar & energie GmbH & Co.
- Board Member: Matthias Peschke, Masdar PV GmbH
- Board member: Stefan Thiel, Bosch Solar Energy AG

Operative Management
SolarInput’s headquarters are in the city of Erfurt. Managing Director of the association is Jana Liebe.

Working Teams
SolarInput has working teams with the following topics:
- State market/innovative solar applications in Thuringia
- Internationalization
- Personnel, securing skilled staff and promoting young staff
- Label development
- Energy storage (at and with Material innovativ Thüringen)

Goals and Strategy
The SolarInput network has the following goals:
- Promoting a business environment that allows for further development of Thuringia as a solar technology location of choice
- Creating and expanding platforms to access the solar technology sector in Thuringia
- Establishing regional networks with partners from different fields of business outside of Thuringia
- Supporting the innovative potential and precompetitive research in Thuringia
- Improving the business environment for R&D in the photovoltaic and solar heating segments
- Promoting young staff and training for actors through education measures and workshops
- Supporting and implementing demonstration projects in the photovoltaic and solar heating sectors
- Public relations work to embed solar energy as a natural part of the power supply landscape
- Making information available for actors and the public

The network has defined four strategic areas for development:
- Making Thuringia a center for solar manufacturing, solar research and solar education; and domestic market development.
- For this, the SolarInput network serves as the necessary communication and cooperation platform for the Thuringian solar economy and is responsible for cluster management.

Key Activities and Current Projects
Focus of the SolarInput network’s activities is the development of a business environment suitable for strengthening Thuringia’s position as a center for the solar sector through collaboration with all renewable energy associations, establishing regional networks across sectors with partners from different fields of business, promoting and educating young staff and making information available to the involved actors and the public. SolarInput also functions as a consultant to politics, public administration, public institutions and associations on questions concerning business and energy.

The network also organizes the international series of scientific conventions Bauhaus. SOLAR. These conventions deal with innovative and aesthetic aspects of integrating solar power systems into buildings, offering a platform for inter-disciplinary dialogue between architects, planners, construction engineers, technicians, designers and representatives from the solar technology, real estate and financial sectors. At these conventions, the Bauhaus. SOLAR AWARD for youth is granted to students and young graduates in architecture, urban planning or design for creative – but primarily innovative – solutions for integrating solar energy systems into buildings and the landscape.

SolarInput is member of the following advisory boards:
- Thüringer Wirtschafts- und Innovationsrat
- Thüringer Energiebeirat
- Stiftung Baukultur
- Beirat der Thüringer Energie- und GreenTech-Agentur
- Cluster Council of Thuringian ClusterManagements
- Cluster Board of Thüringer ClusterManagements

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SolarInput is involved in numerous partnerships and pursues cooperative efforts with the following institutions:
- Agentur für Erneuerbare Energien (AEE)
- Akademie für Raumforschung und Landesplanung (ARL)
- Bayern Innovativ – Cluster Energietechnik
- Bundesverband Erneuerbare Energien e. V. (BEE)
- Bundesverband Solarwirtschaft e. V. (BSW-Solar)
- Cluster Chemie/Kunststoffe Mitteldeutschland
- CoOPTICS GmbH
- Deutsche Gesellschaft für Nachhaltiges Bauen – DGNB e. V.
- European Photovoltaic Industry Association (EPIA)
- Industrielles Netzwerk Erneuerbare Energien Sachsen (EESA)
- Kompetenznetzwerk dezentrale Energietechnologien e. V. (deENet)
- OptoNet e. V.
- PolymerMat e. V. – Kunststoffcluster Thüringen
- Regiosolar e. V.
- SEMI PV Group
- Solarvalley Mitteldeutschland e. V.
- Silicon Saxony e. V.
- Thüringer Energie- und GreenTech-Agentur (TEGA)
- Thüringer Agentur für Fischerei und Wasserwirtschaft (TFAF)
- Verband Deutscher Architekten- und Ingenieurvereine e. V. (DAI)
- Verband Deutscher Maschinen- und Anlagenbau e. V. (VDMA-Ost)
- Wirtschaftsinitiative für Mitteldeutschland GmbH
A wide spectrum

A key activity of the engineering sector in Thuringia is the manufacturing of machining tools, especially metalworking tools. Also playing a very important role in the engineering sector here is the production of special machines as well as the manufacture of precision tools, engines, pumps, bearings, transmissions and instrumentation. Thuringia also covers a wide spectrum of products in the metal production, metal processing and metalworking sectors, and it is involved throughout the entire range of manufacturing processes, especially metal processing. Core competencies include laser technologies for welding, surfacing and hardening. The growth area engineering is the third-largest employer in the manufacturing industry in Thuringia. It contributes about 10.4 percent to the state’s gross added value.

It is a growth area with above average jobs creation and gross added value creation. The Company and Technology Database of the State Development Corporation of Thuringia lists a total of ca. 670 companies (first-tier, suppliers and service suppliers) in this growth area. In Thuringia, engineering plays a key role as a necessary basis for other sectors and in particular connects information technology, electronics and optics.

Attractive Training and Education Programs

With their engineering study programs, the universities in Thuringia continue the state’s reputation for being technologically oriented. Three universities and a state-owned vocational training academy offer study programs for engineering and further relevant fields relevant. Young people are trained to be toolmakers and moldmakers, mechatronic specialists, CNC programmers and computer programmers as well as mechanics. Thuringia plays a leading role in training manufacturing technology specialists.

Outstanding Conditions for Research

A close cooperation with outstanding R&D facilities that are long-established in Thuringia (three universities and two business-oriented research institutes) allows the appropriate scientific approach for the development of innovative products and technologies for companies based in Thuringia. To intensify business-relevant research for Thuringia’s engineering sector, the Thüringer Zentrum für Maschinenbau (ThZM), a center for engineering, was founded in January 2013.

The ThZM focuses on:

- Process technologies relevant for the engineering sector
- Precision technologies
- Materials and coating technologies
- Power tools and power molds
- Quality assurance in the manufacturing process

Selected Thuringian Engineering sector companies:

- Deckel Maho Seebach GmbH (manufacturer of state-of-the-art machining tools)
- Sumitomo (SHI) Demag Plastics Machinery GmbH (one of the world’s leading manufacturers of plastic injection molding machines)
- Eisenwerk Arnstadt GmbH (leading European supplier of cast-iron brake shoes)
- Feinmess Suhl GmbH (Thuringia’s innovation prize winner for a digital gear-toothed gauge for internal gears)
- Herwig Bohrtechnik Schmalkalden GmbH (Thuringia’s innovation prize winner for a shear blade with a blade-changing system)
- Raumag Janisch Systemtechnik GmbH (leading European supplier of special instrumentation for flue gases)
- SAMAAG Saalfelder Werkzeugmaschinen GmbH (Thuringia’s innovation prize winner for an electric high-performance drive)
- Viega GmbH & Co.KG (global leader for instant-freeze molding technology for piping systems)

Selected research facilities:

- Ilmenau University of Technology
- University of Applied Sciences Jena
- University of Applied Sciences Schmalkalden
- Society for Production Engineering and Development Schmalkalden (GFE e.V.)
- Günter Köhler Institute for Jointing Technology and Materials Testing (IFW)

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
Short Profile

The industry cluster FerMeTh unites companies of the metal processing and metalworking sectors, engineering companies and their suppliers, along with universities and research institutes from Thuringia that are active in the manufacturing industry.

FerMeTh was founded on January 1, 2009 as an initiative of the State Development Corporation of Thuringia, the Chamber of Commerce and Industry of Südthüringen and the Gesellschaft für Fertigungstechnik und Entwicklung Schmalkalden e. V. (GFE). This was preceded by a 2 year lead-in period during which corporate interests were bundled and cooperative alliances initiated – carried out by a core team made up of employees from major companies along with the initiators mentioned above. The member companies of the FerMeTh collaborate based on a contractual cooperation. The organization's office is affiliated on a project basis with the non-profit, business-oriented research institute GFE. The FerMeTh currently (as of July 2013) consists of 18 members.

The cluster network is currently expanding its sphere of influence is extended by the 135 members of the GFE from all over Germany and surrounding European countries. A core quality of the cluster network is that it brings together companies working in the entire value creation chain of the metal processing, metal working and engineering sectors. Apart from well known Thuringian tool manufacturers such as Sandvik Tooling Deutschland GmbH and HERWIG Bohrtechnik Schmalkalden GmbH, there are also globally active machine tool manufacturers such as SAMAG Saalfelder Werkzeugmaschinen GmbH and service suppliers to engineering companies such as KERN Technik GmbH & Co. KG, Nagelschmiede, Metallwaren GmbH and KMFMesstechnik-und Verwaltungs-GmbH.

Also included in FerMeTh network are tool and mold manufacturers (such as Haseltal Werkzeugbau and Kunststofftechnik GmbH) as well as the sector's industrial customers such as Otto Bock Manufacturing Königsee GmbH. Furthermore, the cluster organization unites companies in the measurement and control technology sector and precision technology firms. It also encompasses educational institutions and serves as a central contact partner for questions about vocational training and securing skilled personnel.

Goals and Strategy

FerMeTh is a platform for broad and comprehensive collaboration between member companies with the goal of sustaining and increasing market opportunities and member competitiveness in a regional and increasingly global marketplace. FerMeTh helps to eliminate structural disadvantages of small and mid-sized companies to improve their competitiveness. This applies especially to R&D, cooperative efforts in manufacturing, marketing and sales as well as securing skilled personnel. FerMeTh encourages R&D projects (joint research projects), coordinates these and supports the partners in finding the appropriate collaborators. The network cluster brokers collaborations for manufacturing companies, shared marketing measures such as trade fair stands, company presentations and websites. Besides cluster internal meetings of cooperating companies, FerMeTh also organizes trade-specific company forums and expert discussions as platforms for new collaborations with interested companies in the sector and as a way to encourage R&D networking. The network cluster focuses not only on the organization of measures for subject-specific vocational training apart from the focus points securing skilled personnel.

In the future, the FerMeTh will concentrate, apart from the focus points mentioned above, on the implementation and contribution to recommendations for action in the Trend Atlas 2020 for even closer networking of engineering sector companies both among themselves and with cross-sectional technologies. Based on these recommendations for action, the goal of FerMeTh is to actively contribute to shaping the roadmap for further exploiting the growth area engineering sector. Due to the synergies available between the metal working and engineering sectors, developing the cluster into a network of engineering companies with their partners in business, science and politics alongside with committees with members from business associations and boards etc. will continue to be pursued.

Key Activities and Current Projects

When implementing key projects, the FerMeTh network orient its activities on the interests of its members and the need for strong sector growth.

Certain activities such as:
- manufacturing processes that conserve energy and resources
- integrating sensors and actuators into tool systems
- quality assurance in manufacturing
- product and process simulation
- play a central role here. By applying these points, steps in the manufacturing process can be optimized by choosing the appropriate manufacturing systems, tools and processing parameters.
Developing new tool systems

Technological development for internal combustion engines

Developing adaptive image-processing methods for optical

Developing tools for processing high-tensile materials

Developing new tool systems

Another highlight are FerMeTh’s initiatives in establishing wider networks beyond Thuringia’s borders. Examples of these initiatives include the NEMO Netzwerke (networks management and organization), BMWI, ADAPTOOLS (intelligent tools and machine components) with 9 partners from Thuringia, CoatingTeC (coating and surface engineering for tools, elements and machine components) with 7 partners from Thuringia and since 2012 the new network Sinter-MaT (applications for innovative sintered materials) with 11 partners from Thuringia.

Current Projects

FerMeTh has co-initiated highly innovative projects in the following areas:

- Developing layering with optimized friction coefficient
- Developing adaptive image-processing methods for optical real-time process control
- Technological development for internal combustion engines
- Developing tools for processing high-tensile materials
- Developing new tool systems

Various projects dealing with innovative coating technologies have been successful in making manufacturing processes more efficient (for example a collaborative project with 8 Thuringian network partners in the area of optimizing plastic injection molding tools with a project value of 2 million euros). Other projects have been conducted in lightweight construction and substituting conventional materials in engineering applications. Projects have also been initiated for integrating measurement systems into manufacturing and tool systems to shorten the process chain and hybridization of processes.

Highlights and Success Stories

FerMeTh is a relatively new cluster network. In just three years, it has achieved such successes as successfully completing and newly initiating research and network projects with partners from business and science in Thuringia and beyond. In particular, its quick establishment of a central networking office for this sector needs to be mentioned. Among other things, direct manufacturing cooperations have been established in Thuringia, which have had a positive and long-term effect on the corporate landscape of this sector, on the gross value and employment structure of the companies involved.

A highlight of the FerMeTh was organizing the Thüringer Branchentag Metall – Wachstumsfeld Maschinenbau in September 2011. At this event, major players of this sector deliberated on the successes achieved so far and specified concrete measures for tapping the sector’s growth potential. This potential and FerMeTh’s role here are also clearly laid out in the 2020 Thuringia TrendAtlas which identify increased networking activities of companies as elementary. The cluster organization is also coordinating preparations for the Thüringer Zentrum für Maschinenbau (THZM) which aims to establish an even closer network of business and science, bringing together existing expertise in order to grow the sector even further.

Other highlights include FerMeTh’s successful exhibitions at national and international trade fairs. The cluster organization, for instance, exhibited at the Thuringian community stand at the 2013 Hannover Messe Industrie for the fifth time. Other success stories of the FerMeTh include international expert conferences such as the bi-annual Schmalkalden Werkzeugtagung – which it co-organizes with the GFE, the University of Applied Science Schmalkalden and the VDMA – which attracts 200 exhibitors from the above mentioned sectors.

Collaboration and Networking outside Thuringia

Not least due to this sector’s close linkage with other sectors in Thuringia, FerMeTh cooperates with other Thuringian sector-based networks such as PolymerMat e. V., OptoNet e. V., medways e. V. The focus of this collaboration is the initiation and coordination of company networks. FerMeTh brokers regional cooperations throughout the value chain, especially on a regional level, but also nationally and internationally with regions where the engineering and automobile manufacturing sectors are growing – such as cooperative efforts with the regions around St. Petersburg and Kazan.

FerMeTh continues to focus on regional cooperations in the growth areas of Thuringia in order to strengthen and further expand the performance of the sector in Thuringia and the local system expertise. Experienced partners in these efforts include not only research institutes and university research facilities, but in particular TMMAT, the State Development Corporation of Thuringia as well as the various Chambers of Commerce and Industry and the Chambers of Trades.

An even wider field of activity in the future will be the coordination of company networks on a national and international level, also including business associations such as the VDMA. Also planned is an increase in the inclusion of R&D institutes and facilities in the manufacturing technology sector throughout Germany and Europe. Here the actors involved can also take advantage of the wide-reaching experience of Thuringia’s universities and research facilities.

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In the growth area plastics, Thuringia covers the entire value creation chain – from plastic production to plastic compounding and processing, with plastic processing clearly the most relevant. The plastics sector produces some of the highest revenues in the manufacturing industry in Thuringia. The Company and Technology Database of the State Development Corporation of Thuringia lists ca. 540 companies (first tier and plastic user companies, suppliers and service suppliers) in this growth area. Most plastic users are in the construction and automotive industries. The plastics sector in Thuringia for the most part only started after 1990; it grew disproportionately and has now become a primary characteristic of the growth area. The leading cluster network in this growth area for plastics technology companies is the PolymerMat e. V. Kunststoffcluster Thüringen.

In the smaller ceramics/ceramic glass growth area, ceramics and ceramic glass are being developed and produced for a large number of technical applications in the medical technology and automotive sectors, among others. The ceramics sector has a long tradition and contributes to Thuringia’s perceived from outside the state’s outside perception. The Company and Technology Database of the State Development Corporation of Thuringia lists some 35 ceramics-sector companies (Tier-one and user companies, suppliers and service suppliers).

In the growth area plastics, Thuringia offers a wide spectrum of mid-sized companies working in material manufacturing, refinement and processing. Selected companies and research facilities: Chemiewerk Bad Köstritz GmbH, FCT Ingenieurkeramik GmbH, FKT Formenbau und Kunststofftechnik GmbH, Glatt Ingenieurtechnik GmbH, Grafe Advanced Polymers Thüringen, IBU-tec advanced materials AG, J-fiber GmbH, Leuchttstoffwerk-Breitungen GmbH, Rauschert GmbH Technische Keramik und Kunststoff-Formteile, TRIDELTA GmbH, VITRON Spezialwerkstoffe GmbH, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS) in Hermsdorf, the Institute for Photonic Technologies e. V. (IPHT), other research institutes such as the Thuringian Institute for Textile and Plastics Research e.V., the Textile Research Institute Thüringen-Vogtland e.V. (TTIV), Inovent e. V. the Institute for Bioprocessing and Analytical Measuring Techniques e. V. (iba) and the University of Applied Sciences Jena are also active in this area.

Plastics and ceramics hold a key position in the development of new fields of application. The know-how in Thuringia’s materials sector is growing dramatically in specialist networks, the respective sector clusters and in the communication platform Material innovativ THÜRINGEN. Here, companies work closely with research facilities in Thuringia to create worldwide innovations such as functional surface coatings.

Ceramics and (glass) ceramic materials show great promise for innovative approaches in a great number of application possibilities. For plastics, one may mention the technological trends in current technology towards plastic based, energy and resource-saving lightweight construction in the automotive sector and the development of fiber-reinforced plastics. Other cross-sectional technologies include collaboration with micro- and nanotechnology and optics as well as fields of application in green, information and communication technology.

Current research projects in the plastics and ceramics sectors range from energy storage (new kinds of batteries) over laser development, to new types of materials for medical technology applications (implants, sensors). Aside from the Friedrich Schiller University in Jena, the Ilmenau University of Technology, the Fraunhofer Institute for Applied Optics and Precision Engineering (IOF), the Fraunhofer Institute für Ceramic Technology and Systems (IKTS) in Hermsdorf, the Institute for Photonic Technologies e. V. (IPHT), other research institutes such as the Thuringian Institute for Textile and Plastics Research e.V., the Textile Research Institute Thüringen-Vogtland e.V. (TTIV), Inovent e. V. the Institute for Bioprocessing and Analytical Measuring Techniques e. V. (iba) and the University of Applied Sciences Jena are also active in this area.

Selected companies and research facilities:
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- FCT Ingenieurkeramik GmbH
- FKT Formenbau und Kunststofftechnik GmbH
- Glatt Ingenieurtechnik GmbH
- Grafe Advanced Polymers Thüringen
- IBU-tec advanced materials AG
- J-fiber GmbH
- Leuchttstoffwerk-Breitungen GmbH
- Rauschert GmbH Technische Keramik und Kunststoff-Formteile
- TRIDELTA GmbH
- VITRON Spezialwerkstoffe GmbH
- Fraunhofer Institute for Ceramic Technologies and Systems (IKTS) in Hermsdorf
- The Thuringian Institute for Textile and Plastics Research (TITK)

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
The interests of the companies active in the many application and technology fields of the plastics sector were bundled together when the regional network IRIS e.V. (Innovative Region Ilm-Saaletal), founded in 1999, was PolymerMat e. V. Kunststoffcluster Thüringen with 35 founding members.

Organization and Membership Structure

The PolymerMat network is organized as a registered association in Jena (registered at the District Court Jena VR: 1301). As part of the shifted focus of their activities, headquarters were moved from Jena to Ilmenau in 2012. Many of currently some 45 members are Many of currently small and mid-sized companies, with only a few large-scale production facilities of corporate subsidiaries active at all levels of the value chain – from plastic compounding, processing over integration and refining to recycling, including tool manufacturing and engineering. Also involved are vocational training institutions, universities, non-university-affiliated research facilities and service providers.

Professional Groups

The network's substantive work is oriented to the needs of the members. At a general meeting in 2013, members were grouped by their technological specialty – injection molding technology, lightweight construction, fibre-composite technology, energy efficiency in plastics processing, material technology and extrusion technology. Here, the fields of innovation most relevant to the regional industry, as identified by the roadmap for the plastics industry in Thuringia in 2011, are at the heart of the efforts. The “technology groups” mentioned above offer platforms for the regular exchange of information and opportunities to invite technology specialists to the respective workshops. In addition, company roundtables are conducted at irregular intervals where current topics and challenges for companies are introduced by a guest speaker and discussed by the participants.

Public Relation Activities

The PolymerMat network sees itself as a platform for the regional plastics industry, serving the articulation and pursuit of common goals and interests in of technology, training and corporate alignment. Furthermore, the cluster network seeks to encourage regional and national opinion building activities in sales markets, society and politics. To that end, the network conducts events and attends trade fairs. Synergies with other sectors and initiatives in Thuringia are fostered, regularly coordinated with complementary networks active in the states of central Germany.

Goals and Strategy

The goals and strategy to achieve them are outlined in the charter of the PolymerMat network as follows:

- The purpose of the association is to promote science, research, training and innovation
- Establishing a communications platform for the Thuringian plastics sector including gathering and disseminating information and knowledge as well as holding information events
- Qualification and vocational training for the Thuringian plastics sector
- Initiating and mediating cooperative projects to strengthen R&D capacities/competencies of Thuringia’s plastics sector on the technical and organizational sides.
- Development of cooperation platforms in various areas, e.g. R&D
- Conducting public relations
- Connecting the Thuringian plastics sector to other national and international networks

Current Key Activities and Projects

- Conventions: Mitteldeutscher Kunststofftag (MKT) 2013 in Erfurt
- Trade fair exhibition at the K 2013 (Düsseldorf, Germany)
- Strengthening the substantive work of the professional groups
- Innovative projects (participation in projects at the Thuringer Innovationszentrum Mobilität and at the Thüringer Zentrum für Maschinenbau, projects in core growth areas and as part of the Zwanzig20 Project Approval of the BMBF, projects that are part of the plastics sector initiatives of the State of Thuringia, various network projects and promotional projects of individual companies.)
- Preparing an initiative to improve energy efficiency in plastics processing
- Cooperation with other regional plastics technology project networks in Thuringia
- Consolidating and expanding the Mitteldeutsches Kunststoffnetzwerk (MKN) organization
- Supporting the foundation professorship for plastics technology at the Ilmenau University of Technology

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Growth Area

Micro- and Nanotechnology

In Thuringia, the micro- and nanotechnology sector is a new field of technology with traditional roots. In particular due to the basis of optical technologies, technical ceramics, measuring technology for physical parameters (here primarily temperature measurement technology), electronics and material sciences have allowed Thuringia to develop into an outstanding location for micro- and nanotechnologies. According to a definition in the Nano-Initiative-Aktionsplan 2010 of the BMBF, micro- and nanotechnology is the “...analysis, application and manufacture of structures, molecular materials and systems with a production tolerance that is typically below 100 nano-meters in size.” The nano-scalability of system components can result in new functionalities and attributes, improving existing products or developing new products and applications. In addition, these two technologies (micro- and nanotechnologies) inspire and promote each other. Nanotechnology is a major contributor to the expanded functionality and areas of application of microtechnology. At the same time, the possibilities offered by nanotechnology can only be harnessed when they are integrated into microsystems (“micro-nano-integration”).

6th Place in Germany

According to a study by the IVAM Fachverband für Mikrotechnik e. V., Thuringia ranks 6th among German states, measured by the actor’s distribution. Compared to other German states, the companies here are not concentrated in a single central location, but dispersed throughout the Jena, Erfurt and Ilmenau areas. The micro- and nanotechnology sector is of significant importance in Thuringia because strongly positioned suppliers and the most important application sectors are located in the area. Accordingly, close links between the micro- and nanotechnology sector and other growth areas have been established.

The micro- and nanotechnology sector in Thuringia consists primarily of small and mid-sized companies. While the average size of micro-technology companies in Thuringia is about a quarter below the German average, they have a higher number of employees per company.

The micro- and nanotechnology companies in Thuringia primarily serve the measurement and control technology, optics, automotive technology, environmental/energy, medical technology and microsystems technology markets.

Attractive Vocational Training Programs

The strength of this sector can be attributed to the wide range of study programs offered at Thuringia’s universities. The most relevant study programs for micro- and nanotechnology are engineering science programs, with some 25 percent of all students in Thuringia are enrolled in these.

The key micro- and nanotechnology programs at Thuringia’s universities:

- Ilmenau University of Technology: micro-system technology und nanotechnology, mechatronics, materials technology, electrical engineering/information technology, optronics
- University of Applied Sciences Jena: photovoltaic and semiconductor technology, information technology/automation engineering, mechatronics, materials engineering
- Friedrich Schiller University Jena: materials science, solid-state physics, optics, quantum electronics
- University of Applied Sciences Schmalkalden: electrical engineering/information technology

The University of Applied Science Schmalkalden also offers cooperative, dual-course study programs combining a Bachelor’s study program with vocational training as a micro-tech specialist. The technical universities and vocational training schools in Thuringia complement these study programs with authorized vocational training as mechatronic or microtech specialists. In addition, the number of companies willing to take part in vocational programs for the micro- and nanotechnology fields is growing all the time.

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.
The Mikro-Nano-Technology Thüringen e. V. (MNT) was originally founded in 2001 under the name Mikrotechnik Thüringen e.V. (MTT) as a network for micro-system technology actors with the goal of bundling their activities. The MNT network sought to encourage innovation as a way to expand the technological infrastructure of Thuringia and to push forward the process of bundling expertise in the micro-system technology segment.

These goals could only be partially achieved, however. The main reason the lack of a central coordination office with fully paid staff to support and promote network activities. At the member’s general meeting in February 2009, it was decided to expand the network to companies from the nanotechnology sector, which in the opinion of leading experts is a technology with high future cross-sectional and market potential.

The network then faced new qualitative challenges that until then had been inadequately bundled and represented in Thuringia. Accompanying this realignment, and to clearly communicate it to the outside, the network was renamed Mikro-Nano-Technology Thüringen e. V. (MNT) in February 2009. This was publicly announced at the state’s convention on June 26, 2009, the new network’s first, of leading experts is a technology with high future cross-sectional and market potential.

On January 1, 2012, MNT has been merged with Micromold.net, the high-precision mold design and production and injection molding technology network. With this collaboration, MNT obtained a further important sector – plastics processing technology. The MNT network cluster now bundles innovation-promoting expertise for future-oriented Thuringian scientific institutes and companies working in the fields of microsystems technology, nanotechnology and plastics processing technology. Their activities include the use of raw materials and their refinement using nanotechnology, ultra-precision processing of new materials in the nanometer range, as well as the design and manufacture of micro-system technology products and components.

The MNT network currently lists 51 members, 29 of them companies, 12 research facilities and scientific institutes.

The new office took up work in April 2010 in the Jen Tower at the city center of Jena and thus very close to the offices of the OptoNet, PolymerMat and medways networks.

MNT’s office coordinates the joint public presence and collaboration of its members. Furthermore, the network organizes expert meetings for the exchange of inter-disciplinary solution strategies. It plans and oversees activities at leading trade fairs with MNT community stands allowing companies to exhibit individually under the umbrella of the MNT network.

As a shared platform for research companies and facilities, developers, manufacturers, suppliers and service suppliers of the micro- and nanotechnology sector, MNT activities help to further expand Thuringia’s technology infrastructure. In addition to these activities, MNT has taken on the task of establishing the micro- and nanotechnology cluster as a platform for technology and action to establish expert meetings, workshops and conventions for communicating knowledge. With regular meetings of specialists from individual companies and research institutes of the network, also including external actors, MNT seeks to promote productive insider conversations and pragmatic approaches to solutions in topical discussion groups among technicians, marketing directors and personnel managers.

MNT presents its members at all leading medical technology, automation, precision processing, plastics processing, sensor and laser technology trade fairs in Germany. At these shows, MNT is in constant dialogue with representatives from business, politics and science in order to promote the cluster’s goals at every level and to represent the interests of its members. Due to its very high profile in leading micro- and nanotechnology networks as well as its close cooperation with other cluster networks, MNT is gaining more and more respect on regional and national levels.

In the end, this will not only strengthen individual members but also the state’s strength as a location for business, science and innovation, demonstrating that Thuringia is an internationally respected location for companies in the micro-system technology, nanotechnology and plastics processing technology sectors.

Current Projects

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The network’s vision is to strengthen the innovative power and growth of its members through bundling expertise all along the micro- and nanotechnology value chain and to promote the potential of these technologies. All activities are subordinate to the main goal of further developing and expanding the capacity and willingness for innovation and thus the competitiveness of the micro- and nanotechnology actors.

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To promote innovative research work among members, MNT initiates regular work group and expert meetings. But these are not limited to companies from Thuringia or Germany. For example, a delegation of company representatives visited the Kunststoffcluster Oberösterreich (plastics cluster Upper Austria) in 2012. The Austrian plastics cluster is relevant for micro- and nano technology since that cluster’s manager also heads the association of local micro- and nanotechnology actors. Personal contacts were established with MST-BW. Already existing relationships by board members with Bavarian MN specialists, networks and companies are to be expanded in cooperation with the MNT office.
MNT Mikro-Nanotechnologie Thüringen e. V.

Highlights and Success Stories

Since establishing its office in Jena and thus structuring and bundling the work of the cluster network, the number of MNT member companies and research institutes has grown from 29 to 41. This clearly demonstrates how valued the cluster network and its are.

MNT doe’s work is also driven by public relations activities and through joint exhibits at important business events in Thuringia. Successful lobbying work by MNT allowed, the micro- and nanotechnology sector to be classified as “a pivotal cross-sectional technology” – the MNT has opened up an even larger scope of activity along the technological value chain. In fact, this merger has led to a new specialization for mold construction and injection molding technology – the MNT has opened up an even larger scope of activity along the technological value chain.

The MNT sector convention in 2011 "nano goesmakro – Potentiale der Mikro- und Nanotechnologien" was a successful summit meeting of scientists, companies, users, students and national media. Some 80 visitors from several German states attended lectures by experts in the field. This expert convention was a milestone event for Thuringia’s micro- and nanotechnology sector and welcomed by the numerous visitors.

At the 2nd Weimar business forum Wirtschaft 2020, the Chairman of MNT’s Board of Directors, Dr. Knuth Baumgärtel, spoke at a workshop entitled “Cross-sectional Technologies – Plastics, Ceramics, Measurement and Control Technology, Optics” about the challenges and objectives of cluster management in Thuringia. The workshop was based on the results and recommendations for action in the 2020 Thuringian Trendatlases, which defines 11 growth areas for Thuringia’s economy. This market analysis was carried out by the consultancy firm Roland Berger Strategy-Consultants under contract by the Thuringian Ministry for Economic Affairs, Employment and Infrastructures.

By merging with the micromold.net network in 2012 – a proven specialist for mold construction and injection molding technology – the MNT has opened up an even larger scope of activity along the technological value chain. In fact, this merger has led to a new and positive level of collaboration, both qualitatively and quantitatively. The value chain of the micro- and nanotechnology sector intersects frequently with the plastics processing technology companies. MNT bundles the expertise of Thuringia’s scientific institutes and high-tech companies working in the future-oriented fields of micro-system technology, nanotechnology and plastics processing technology fields.

In June 2013, the 1st MNT Expert Symposium took place at the WiN die Mittelstandsmesse für Thüringen trade fair. Under the motto "Potential and Developments in Micro- and Nanotechnology in Thuringia," numerous guests met for an intense exchange of information at the trade fair grounds in Erfurt. Dr. Frank Lindemann, from the State Development Corporation of Thuringia was one of the lecturers. He presented the results of a study analyzing the potential of micro nano-integration and gave a summary of the road-mapping process in the future. MNT Chairman of the Board of Directors and Managing Director of Micro-Hybrid Electronic GmbH, Dr. Knuth Baumgärtel, gave a lecture on the strategic challenges facing SMEs in the micro- and nanotechnology sector and outlined possible approaches to solve these.

In addition, MNT regularly organizes expert meetings and R&D roundtables among members of the cluster network, thus ensuring an effective exchange on a technical level.

Collaboration and Networking across Sectors

To intensify its role as initiator and expertise strategy MNT cooperates across sectors with the following networks:

- BVWM Bundesverband mittelständische Wirtschaft, Fachgruppe „Präzision aus Jena“
- IVAM e. V.
- Deutscher Verband Nanotechnologie e. V.
- Kompetenzatlas Nanotechnologie Deutschland
- MicroNano-Broker.EU
- Industrieallianz Thüringen
cefAS e. V.
- Bildungsportal Thüringen
- SolarInput e. V.
- OptoNet e. V.
- medways e. V.
- PolymerMat e. V. Kunststoffklusster Thüringen
- Elektronische Mess- und Gerätetechnik Thüringen (ELMUG) eG

When it comes to skilled staff (recruiting, training and education, qualification and securing staff), the MNT cluster network cooperates successfully with the education portal Thuringia and with the cefAS e. V. organization and can look back with pride at an innovative Skype project on career orientation that gave high school students a close look at the micro- and nano-world.

Besides these activities, MNT’s office works with the the State Development Corporation of Thuringia to feature Thuringia’s skilled staff portal at the MNT page at the website www.mikronanotechnik.de.

The logo of the umbrella brand FasliMT will be used for activities pursuing the skilled staff strategy. Currently, cooperation with more Thuringian networks is being sought to bundle such central network activities more effectively.

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Growth Area
Measurement and Control Technology

A Growth Area with a long Tradition

The measurement and control sector has a long tradition in Thuringia. The roots of measurement technology reach back to the 19th century, for example with the manufacture of microscopes and other optical instrumentation in Jena or the commercial production of thermometers in the area around Ilmenau. With the development of electronic components and electronic measuring technology in the 20th century, this sector experienced another boom, and the importance of these technologies has continued to this day. Reasons for this include new developments in sensor and actuating technology (implemented with the application of micro- and nanotechnology) and achievements in the fields of information and telecommunication technology (digital signal processing, increasingly powerful processor technology and digital networks). The measurement and control technology sector has been the basis for an increase in process automation across all economic sectors.

As a cross-sectional technology, this sector provides the preconditions for mastering many of today’s challenges – such as the move to alternative energies, ensuring a sustainable treatment of the environment, as well as mobility, new developments to meet the needs of a more health-conscious populace and even the future-oriented project Industrie 4.0. In short, this sector forms the basis for a successful development of growth areas.

A High Number of Patent Applications

These companies are also very active in research and development reflected e.g. by their number of patent applications. In 2005, nearly a quarter (24.3 percent) of all patents in Thuringia came from companies in the fields of measurement, testing, optics and photography; while the percentage in all of Germany only reached about a third of this (7.9 percent). By 2012, this sector represented about 34 percent of all patent applications in Thuringia.

Attractive Education Programs

The strength of this sector in Thuringia is due to the wide range of study programs at the state's universities. Engineering study programs are the most important for the measurement and control technology sector. Public research is highly diversified in Thuringia particularly because of the close collaboration with other cross-sectional technologies. Another advantage for Thuringian companies here – besides a high density of research facilities in this sector – is their access to various application and implementation centers with state-of-the-art technological infrastructure for developing new products and technologies.

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.
ELMUG is organized as a registered cooperative.

Goals and Strategy

ELMUG’s vision is to create ADDED VALUE by expanding and developing the excellent technological positioning of its members into an adequate market positioning. The purpose of the cluster network is to promote and support its members through cooperative business operations with the objective of joint economic action in order to solidify or expand the members’ market success – either individually or as a group – and to develop new market opportunities.

Strategic Areas of Business

More customers

Improved market penetration of network members in particular in growth areas:

Establishing ELMUG as a brand
Sector-specific marketing activities for individual members
Community stands at select trade fairs

Better products

Intensifying the technical collaboration of members through:

The annual technology conference elmugfuture
Member meetings with specialist lectures and company tours
Meetings of expert and work groups
Topical idea workshops for initiating projects
Project management through the ELMUG office
Development of individual OEM suppliers to cross-cluster system suppliers

Collective efforts in recruiting and training skilled staff

Thuringia high school student outreach program elmugstudents
Sharing skilled staff
Advanced training programs

Short Profile

ELMUG bundles the activities of developers, manufacturers, suppliers and service suppliers of companies and research facilities in this important sector in Thuringia. At the heart of this cluster is ELMUG eG.

2007 start of the cluster initiative ELMUG
February 2009 founding of the Elektronische Mess- und Geräte-technik Thüringen (ELMUG) eG
June 2009 ELMUG offices open in Ilmenau
April 2012 28 members/partners

ELMUG is organized as a registered cooperative.

Selected Highlights

Advanced training and establishing new cooperations
Annual conference with 40 expert lectures, mostly from the business side
150 participants mostly from the business side
Bundles the technological spectrum of the electronic measurement and control sector and its fields of application in industry
Promotes a dialogue about future trends such as environmentally friendly energy, mobility and communications, health and safety
The concept Raum für Dialoge – offers the space to discuss lecture contents, to find approaches for solving actor-specific problems, to develop new project ideas together and to initiate and launch new strategic, cross-cluster cooperations from OEM suppliers to system suppliers.

Success Stories

4 years of ELMUG = 4 years of active network activities
Continuously growing membership
Major increase in trust among members
Substantially higher levels of knowledge about the competencies of other members
Increased networking: exchange of knowledge and experience, support, mutual projects
Initiating mutual projects
Extension of value chains
Dependable, low-risk collaboration
Active collaboration between members

4 years ELMUG = members strengthened by
Joint technical activities
Joint marketing activities
Joint activities in the area of skilled staff
Better preparations for the future

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Network

Elektronische Mess- und Geräte-technik Thüringen (ELMUG) eG

 measurement and control sector and its fields of application in industry

Cooperation with the Thuringia Chamber of Commerce and Industry, especially in southern Thuringia

Cooperation with the Patzelt Foundation

Cooperation with the Thuringia Chamber of Commerce and Industry, especially in southern Thuringia

Cooperation with Thuringian networks, especially with

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Optics and Optoelectronics

The optics/optoelectronics sector is very important in Thuringia because of its long tradition, its role as a key enabling technology, and its high growth potential. Because it is highly cross-sectional in nature and offers a great deal of possibilities to be combined with other technologies, the optics/optoelectronics sector plays a notable role in value and job creation in other industries. The heart of Thuringia’s optics sector in Jena is one of the world’s leading centers for the optics/optoelectronics sector and contributes significantly to Germany’s top reputation in this field.

Three factors have been, and still are, decisive in the successful development of this growth area in Thuringia – innovation, internationality and investment.

Excellent Conditions for Research

Optics is being studied in all of its facets at Thuringia’s many institutes and research facilities. Thuringia’s research institutes are leaders in this sector, especially in developing tailor-made optical materials, laser technology, biophotonics, optical micro-systems and photonic nano-materials.

Here, 80 percent of the companies invest 10 percent of their revenues into research and development, contributing to a broad and deep research landscape in Thuringia. Another key factor for the innovative expertise of Thuringia’s optics sector is the companies’ willingness to cooperate with each other.

Attractive Educational and Training Programs

Due to the tradition and growth of the state as an opticscenter, attractive education programs have been established for the sector.

Specialist university study programs for optics/optoelectronics – such as ophthalmic optics/optometry, laser and opto-technologies, photovoltaics as well as semiconductor technology and scientific instrumentation – are offered at the Friedrich Schiller University Jena, at the Ilmenau University of Technology and the University of Applied Sciences Jena. In addition to these, the Abbe School of Photonics offers Master’s and PhD programs in photonics. In Thuringia, training programs for skilled staff – such as physics laboratory specialists, specialists in precision-optics and mechanics, ophthalmic optics, micro-technology, mechatronics – are offered at the Schott Carl Zeiss Jenoptik Center for Learning in Jena.

Selected companies and research facilities include:

- Carl Zeiss Jena GmbH
- DocterOptics GmbH
- Hellma Optik GmbH
- Jenoptik AG
- Jenoptik GmbH
- POG Präzisionsoptik Gera GmbH
- Fraunhofer Institute for Applied Optics and Precision Engineering (IOF)
- Institute for Photonic Technologies (IPHT)

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
OptoNet was founded in June 1999 as part of the German Agenda "Optical Technologies for the 21st century". The founding members included 13 companies, research institutes, backers of technology and financial service providers. It currently has 97 members: 80 companies and service providers, 7 research institutes, 5 universities and training centers as well as 5 banks and venture capital firms. Organizational bodies: members’ general meeting, Board of Directors (current board members are representatives from JENOPTIK AG, Carl Zeiss AG, Fresnel Optics GmbH Apolda, MAZeT GmbH, Fraunhofer IOF, TU Ilmenau, Grintech GmbH) Office in Jena, Leutragraben 1, Managing Director Dr. Klaus Schindler and three employees. Subsidiary OptoNetCoOPTICS GmbH managed by Maiko Klosch.

Goals and Strategy
OptoNet bundles the interests of some 100 actors in the Thuringian optics cluster, promoting their networking and stimulating cooperative efforts with the goal of furthering the development of the photonics industry in the region, increasing its competitiveness and raising the visibility of the cluster nationally and internationally. OptoNet considers itself as a service provider to its members. It creates a shared platform for communication and cooperation and is actively committed to location marketing. Of particular importance here is the collaboration with regional, national and international networks in adjacent technological fields and with relevant market partners.

OptoNet collaborates with OptoNet CoOPTICS GmbH and shares the cooperation work – while OptoNet manages the overall cooperation network, OptoNet CoOPTICS GmbH is greatly dedicated to initiating and accompanying research and development projects.

Current Projects
Individual, practical, sustainable: the OptoNet young staff project MASTER+ Since 2010, OptoNet together with ELMUG has broken new ground in promoting the education and training of young staff. The project OptoNet MASTER+ offers of 16 university students the chance to take part in a three-semester program of excellence alongside their studies. They as well as access to the sector’s top companies of the as well as exclusive workshops and training seminars, providing them with the optimal launchpad for a career in the photonics sector. In return, OptoNet’s member companies can contact potential new employees early on and can allocate specialist tasks to the students through internships or as Master’s thesis topics. This project is intended to highlight the attractive career opportunities at photonics companies in the state, especially small and mid-sized ones, and to interest students in starting their career in Thuringia. The project was financed by GFAW via ESF funding until the end of July 2013.

Innovative, international, growth-oriented: the Growth Report PHOTONIK 2013 Since 2001, the companies and organizations of Thuringia’s photonics sector have been surveyed by OptoNet about their business situation and skilled staff development. Conducted biannually, they not only provide reliable figures about revenue development, priorities in technology, export and market trends but also forecasts of future developments, especially for personnel needs. This year, 168 companies and research institutes were surveyed, with 137 firms taking part in a telephone interview conducted by sociologists at the University of Applied Science Jena. The results were published in a 22-page report providing a detailed look at this dynamic growth area. Thus, OptoNet is a step ahead of other photonics centers in Germany and Europe.

Other Initiatives & Projects
To promote young staff and qualification: the OptoNet Programm zur Förderung von Führungskompetenzen (ProFF) in collaboration with Jenovation GmbH
To promote cooperations: preparation of various expert workshops with topics such as “Software for Optics” and “Ultra-precision Processing.” Furthermore, organizing community stands at the Photonika (Moschcow), Optatec, (Frankfurt), Laser World of Photonics (Munich), Photonics West (San Francisco), Laser World of Photonics India (Mumbai) in cooperation with OptecNet Deutschland e. V.
To promote location marketing: the EU’s ASPIRE project with partners in France, Ireland, Spain, Greece, Poland and England.

Highlights and Success Stories
From early to mid 2000, initiation and coordination of projects for young staff recruitment, training and advanced training. The 7 QualiNet projects and other activities, promoted by the state, provided significant support to the education structure of the Thuringian optics sector. This continued to this day with e.g. support for the precision optics accredited training program at the Educational Center in Jena, the advanced training program for modular optics at JENALL, the study program for ophthalmics at the University of Applied Science Ilmenau and with support for the study program for laser and opto-technology at the University of Applied Sciences Jena.
Advertising for the CoOPTICS Initiative in the BMBF Top Cluster competition, resulting CoOPTICS projects – co-funded by Thuringia with 27 million euros – and a substantial part of the Abbe School for Photonics and the OptoNetCoOPTICS GmbH.
Germany-wide networking as part of OptoNet Deutschland
European and global networking with optics clusters, exhibiting at international trade fairs (e.g. Photonics West in the USA)

Cross-Sectional Collaboration and Networking
Regional networking across sectors started quite early with medways (BioRegio), PolymerMat, MNT and at, later joined by Solarinpuit, ELMUG and Femeth.
Networking outside the region is especially intensive with Silikon Saxony and the GFWM Frankfurt an der Oder (both OptoNet members).
Nationally in Germany, very close collaborations have been established with other optic cluster networks via the OptecNet Deutschland e. V.
Across Europe, three joint European network projects have supported particularly close relationships with Optics Valley in Paris, to the region around Helsinki and Oulu in Finland and to Poland.
Internationally, there are contractual connections (memorandum of understanding) with Hamamatsu Technopolis (Japan) and Ontario Centers of Excellence (Canada). Delegations of company representatives have also been exchanged with the city of Gumi (South Korea).

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The 2020 Thuringia Trendatlas confirms that many companies are already active in leading markets relevant for green technology. However, these markets lack an "overarching identity as a green tech industry." The main reasons for this lack are the markets’ high number of small-sized companies and the specialization of companies in what is a highly segmented industry.

**Potential is Present**

Thuringia’s water resource management sector is currently oriented towards a regional market. However, in the field of “sustainable water resource management”, the 2020 Thuringia Trendatlas sees promise for Thuringian companies since they can build on what is already a broad traditional water management market. Characteristic for the leading market “sustainable mobility” in Thuringia are the activities of the state’s automotive and supply industry. For more information about this, please refer to “Growth Area Automotive.” In the “recycling economy”, Thuringian companies are active internationally in fields such as contamination clean-up and sorting/separating technology. “Green building technology” as part of the leading market “energy efficiency” serves as the most important focus in Thuringia, offering great promise. Thuringia is known for its many innovative technologies for increasing “material and raw material efficiency,” such as ceramic-based membranes for material separation.

Thuringia’s green technology companies are strongly committed to R&D. Many institutes are active in cross-sectional fields and areas of application for green technology. All of the 7 public universities in Thuringia offer highly specific study programs that are relevant to this sector.

**Green technology as a cross-sectional Task for the Economy of Thuringia**

When conducting product design activities, improving efficiency or in very specific industrial processes, Thuringia’s companies are increasingly confronted by green technology tasks and requirements. Generally, the networks of growth areas offer their members events and information on essential green technology topics. As there are so many possible tasks and topics in this regard several networks and initiatives have been established to specifically represent technology segments. A look at the 5 leading green technology markets shows that hardly any company can avoid working across sectors, especially application companies. The growth area GreenTech is increasingly turning into a cross-sectional task for Thuringia’s economy and accordingly is not represented by a single cluster network.

**Selected Companies and Research Institutes active in the Green Technology Sector:**
- EAW Energieanlagenbau GmbH
- EPC Engineering Consulting GmbH
- EuRec Recycling Machines GmbH
- K-UTEC AG Salt Technologies
- SBN Schachtbau Nordhausen
- Advanced System Technology (AST) Branch of Fraunhofer IOSB
- Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Hermsdorf branch of the Institute
- Weimar Institute of Applied Construction Research (IAB)

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

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The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
While industrial robots have long been an established field, the development of service and assistance robots is often still at the beginning. While this segment is still rather small in Thuringia, it is nonetheless very promising. Many supplier industries for service and assistance robotics – e.g. sensor technology, image processing, actuating, signal processing and powertrain engineering – are strongly positioned in Thuringia.

The World’s First Usable Purchasing and Mobile Service Robots Come from Thuringia

The world’s first purchasing and mobile service robots were developed in Thuringia. These shopping-assistance robots help customers find products in home improvement stores and provide information about these. Starting from this platform, similar robots can be designed, such as sales assistance robots, exhibition guide robots, tray-transporter robots for fastfood restaurants or mobile monitoring robots for cleanroom labs.

Other potential applications of service and assistance robots lie in the highly demanded technological fields of healthcare/health, transportation/logistics and identification/recognition solutions. Preconditions for this are innovative developments in the areas of sensor, control and drive technology as well as in computer sciences, information and communication technology (control/regulator solutions, IKT). In the future, these will open up a host of new, highly innovative fields of application outside of the industrial manufacturing sector.

Existing Linkages Offer Great Opportunities

The existing linkages between research institutes and companies – especially in Thuringia’s companies working with cross-sectional technologies – offer the chance to take advantage of these highly demanded fields of technology in a comparably small, but rather new segment that promises high potential for growth. The strengths of Thuringia in important fields of application (for example in medical technology), system components (such as optics) and related areas (automation, measurement and control technology) can be supported by the fast development of innovations. This is especially the case with the optics sector, as technological advancements in image and object recognition are vital here.

Robotics Center Is to Accelerate Development

A study group – currently consisting of the Ilmenau University of Technology, companies active in this segment and the State Development Corporation of Thuringia – is driving the conceptional preparations for setting up a robotics center and network in Thuringia.

Selected companies and research institutes:

- H&S Robots
- Metralabs GmbH Neue Technologien und Systeme
- OLPE Jena GmbH
- Optimess Engineering GmbH
- TETRA Gesellschaft für Sensorik, Robotik und Automation mbH
- Ilmenau University of Technology, Group Neuroinformatics and Cognitive Robotics Lab
- Friedrich Schiller University Jena
- Fraunhofer Institute for Applied Optics and Precision Engineering (IOF)

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

The 2020 Thuringia Trendatlas offers in-depth information about this growth area.
The food industry produces high revenues and is one of the seminal economic sectors in Thuringia. Regarding total revenues and numbers of employees, the food industry is the second largest sector in Thuringia. Its success is based primarily on tradition and quality ("Certified quality - Thuringia"). Foods and beverages produced in the state have a first class reputation in Germany, with food safety and longer shelf life becoming more important than ever before.

With ca. 200 companies (with 20 employees or more) and yearly revenues of over 4 billion euros, the food industry is an essential pillar of the Thuringian economy. The Company and Technology Database of the State Development Corporation of Thuringia lists ca. 400 tier-one companies along with facility builders and service suppliers.

A research landscape constantly collaborating with businesses throughout the state, along with a sector-specific network, provide Thuringia’s food industry with everything it needs to continue its successful development in the future.

Well known Thuringian brand products include Thüringer Rostbratwurst and Thüringer Klöße, Köstritzer Schwarzbier, Nordhäuser Dopplekorn, Greußener Salami, Altenburger Ziegenkäse, Mühlhäuser Pflaumenmus and pasta from Erfurt.

Selected Thuringian companies:
- August Storck KG
- Griesson – de Beukelaer GmbH & Co. KG
- Kaserei Altenburger Land GmbH & Co. KG
- Köstritzer Schwarzbierei GmbH & Co. KG
- Ospelt food GmbH
- Stollwerck GmbH
- Stollwerck GmbH
- Vibasweets GmbH
- Weimarer Wurstwaren GmbH
- Wolf GmbH Echt Thüringer Wurst

Selected research institutes:
- Friedrich Schiller University Jena, Institute for Food Sciences
- University of Applied Sciences Erfurt, focus on in horticulture
- University of Applied Sciences Nordhausen, sensor technology laboratory
- Leibniz Institute for Vegetables and Ornamental Crops Gropheeren/Erfurt e. V. in Erfurt-Kühnhausen
- Institute for Bioprocessing and Analytical Measurement Technik (iba)
- Research Center of Medical Technology and Biotechnology in Bad Langensalza
- PHARMAPLANT (medicinal and aromatic plant research) and Saatzucht GmbH in Artern

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

More information
www.invest-in-thuringia.de/en
Thüringer Ernährungsnetzwerk e. V.

**Short Profile**
On November 7, 2011 the food industry cluster network Thüringer Ernährungsnetzwerk e. V. (TH-ERN) was founded at a meeting of 15 founding members. The network was created following an initiative of the sector along with the Thuringian Ministry for Agriculture, Forestry, Environment and Nature Conservation (TMFLFUN) and the Thuringian Ministry of Economy, Labour and Technology (TMWAT).

Since then, the cluster network – which is organized as a registered association – has grown to 26 members consisting of Thuringian food producers and privately run research facilities. The offices in Jena are supported in their operative activities by a five-member Board of Directors and a six-member Advisory Board.

**Goals and Strategy**

**Vision:** A strong sector needs a strong voice!

The TH-ERN cluster network seeks to fully exploit the potential of Thuringia’s food industry and to develop and implement strategies to strengthen the competitiveness of Thuringia’s food industry.

**Goals:**
The network’s member companies from the food-producing segments in Thuringia share the intention of working together for the benefit of all parties involved and for the entire local food industry. In promoting Thuringia’s food industry conceptually and financially as a group, TH-ERN focuses on the following key activities:

- Development of cooperations between the companies of the food industry and partners in other economic sectors
- Facilitating a knowledge transfer between science and business about new processes and product developments
- Recruitment of personnel, employee qualification, vocational and advanced training
- Development of strategic sales concepts for diversified sales channels
- Media and public relations work, image building, brand communication
- Promoting a dialogue with politics and special interest groups

**Current projects:**

Preparations are currently underway for an R&D project in the candy segment. Planned partners for this project are the Technical University Dresden, the University of Applied Sciences Jena and the Food GmbH Jena. Because the application for funding has not yet been submitted, details about the project’s contents cannot be discussed at this time.

**Further measures planned:**

- A brand awareness study of manufacturer companies in the TH-ERN cluster network
- Regional Menu: The cluster network is working together with its cooperation partner DEHOGA Thüringen e. V. and large wholesalers on the development of a holistic logistics concept that will make supplying foods from Thuringia to restaurants and hotels more efficient. Work is also being done to revitalize the “Thuringer Hospitality” seal lated by DEHOGA as a promotional award for restaurants and hotels using mostly Thuringian products.

**Work Groups:**
The appointment of four topical work groups serves to ensure targeted activities in the area of company collaboration and knowledge transfer, due to the involvement of experts from different fields of the food industry. Our current work groups are Tourism/Restaurants, Energy, Purchasing/Logistics and Food Safety/Food Labeling. Through work done by the Food Safety/Food Labeling work group, TH-ERN organized three advanced training events (the first in September, serving as a platform for food retailers and businesses. In addition, TH-ERN is in constant dialogue with food industry networks from other German states (Food Processing Initiative e. V. Nordrhein-Westfalen, Süderelbe AG Hamburg) and other countries (Kompetenznetzwerk Ernährungswirtschaft Switzerland), in order to identify common points of interest and create a basis for possible cooperations.

**International Green Week (IGW):**
As advocates of the interests of Thuringia’s food industry, TH-ERN e. V. is championing the urgent need for a community exhibition of the state with a single corporate identity at the international Green Week (IGW) beginning in 2014.

**Collaboration and Networking outside of Thuringia**
The TH-ERN network seeks synergies beyond the state’s borders. There is a close exchange with the Ernährungswirtschaft Sachsen-Anhalt network; for the first time, both networks together organized and ran the “Trend Day Food Industry” event in September, serving as a platform for food retailers and businesses. In addition, TH-ERN is in constant dialogue with food industry networks from other German states (Food Processing Initiative e. V. Nordrhein-Westfalen, Süderelbe AG Hamburg) and other countries (Kompetenznetzwerk Ernährungswirtschaft Switzerland), in order to identify common points of interest and create a basis for possible cooperations.

**Network Round Tables:**
To facilitate a regular exchange between member companies, a series of round table events has been held at company headquarters in a rotating sequence since May 2012. Topics: current information from TH-ERN, gauging common points of interest, motivating scientific lectures.

“Sector Talk: Food Industry”:
These events bring state politicians and businesswomen and women together at the same table. First held on April 14, 2013 and attended by Thuringia’s State Governor, Christine Lieberknecht, this sector talk is planned to become an annual meeting, promoting vertical cooperation.

**Media and Public Relations Activities:**
A series of media and public relations activities, aimed at regional media outlets and the trade press, have been carried out to advertise the cluster network, to attract new members and to provide general education to end customers about the sector. Additional campaigns are being planned.

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... because Thuringian products taste better!
Thuringia, due to its central location and good infrastructure, offers optimal conditions for the logistics sector. From here, every production and consumption location in Germany can be reached by truck in just five hours. Over the mid-term, logistics is one of the sectors that will profit from the continuing globalization and internationalization of Thuringia’s economy. This is because the state forms an interface between the mature markets of middle and western Europe and the growth markets of eastern Europe.

The logistics sector in Thuringia is multifaceted. In the automotive industry alone, logistics companies operate consignment warehouses, preassemble and perform just-in-time deliveries directly to the assembly lines of manufacturers. The sector also meets highly specialized requirements, especially regarding the consignment and delivery of temperature-controlled goods of the pharmaceutical and food industries. Thuringia has long since established itself as a center for distribution warehouses for the food industry and the automotive supplier industry. The time from assembly of a product to delivery to the customer is getting shorter and shorter, especially in the automotive industry. It is sophisticated logistics that make this possible in the first place.

Well known Internationally Active Companies

Thuringian logistics companies are characterized by their expert know how, enormous flexibility and speed. Most actors have their own global network of partners, yielding them high levels of internationalization and global competence.

Optimal Conditions

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Well known Internationally Active Companies

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Selected logistics and distributor companies:

- BLG Handelslogistik, Standort Erfurt (für IKEA)
- KN Logistik GmbH (für KNV Koch, Neff & Volckmar GmbH)
- redcoonLogistics GmbH (für Media-Saturn-Unternehmensgruppe)
- Rhenus AG
- Schenker Deutschland AG
- Zalando, Logistikzentrum Erfurt

Good Education and Training Programs

Committed and flexible people skilled in logistics in are available in abundance Thuringia, and local businesses provide training and education programs in all relevant occupations. Study programs for classical logistics and intralogistics are offered at Thuringian universities such as the University of Applied Sciences Erfurt, the International University of Applied Sciences Bad Honnef-Bonn, branch Erfurt (formerly Adam Ries University of Applied Sciences) and the Vocational College Thuringia, covering offer several specialized study programs. The Technical College for Building, Business and Transport Gotha offers a study program for state-certified logistics specialists.

Detailed information about these companies and research facilities can be found in the Company and Technology Database of the State Development Corporation of Thuringia.

More information

www.invest-in-thuringia.de/en
The cluster network employs constructive information, communication and cooperation to help shape and strengthen the competitive and innovative skills of logistics, trade and manufacturing companies in Thuringia. Developing an innovative logistics environment is intended to create important local advantages for attracting outside and newly founded manufacturing and service provider companies to Thuringia.

Our vision for the Thuringian Logistics Sector:
When companies need innovative logistics solutions, they go to Thuringia. Here there is a network of logistics specialist companies that use shared processes in developing and implementing new logistic solutions.

Goals and Strategy
The goal of the Logistik Netzwerk Thüringen is to strengthen Thuringia as a European distribution hub. To achieve this, the cluster network’s members develop future-oriented, sustainable and demand-oriented solutions and structures for the logistics sector. All of Thuringia’s industrial, production and trade companies also profit from these solutions and structures – because only high-capacity (production) logistics create the basis for greater value creation and productivity. Robust networking with universities and R&D institutes along with businesses guarantee an innovative environment. Needs are to be identified through mutual exchange and joint projects, helping to develop practical and sustainable solutions. The Logistik Netzwerk Thüringen also handles the joint development of tailor-made vocational and advanced training programs together with companies and educational institutions to ensure the plentiful availability of skilled staff in the future.

Experts are aware of the potential of the logistics sector. But the awareness of its importance among the public and politicians needs to be raised. The sector needs to invest even more in communication and public relations to create acceptance and understanding of its own achievements and potential. Only this will allow the logistics sector in Thuringia to continue its successful development, recruit qualified people and generate a positive impact on location marketing in Thuringia. Accordingly, this is a focus of the cluster network. The Logistik Netzwerk Thüringen follows a holistic approach in creating the best possible and most sensible ways to connect all companies in the logistics process, combined with an open exchange as well as targeted information and communication. Increasing the competitiveness of all participants is at the forefront of these activities.

Networking as a Recipe for Success
Strong networking between business and science, as well as between sectors, is a basic prerequisite for creating innovative products. The Logistik Netzwerk Thüringen cluster network offers a platform for exchange and communication, establishes connections, creates contacts and thus levels the playing field for innovations in the logistics sector. Only companies aware of their customers’ and partners’ the concerns and needs can work together with research and development to create innovations.

Optimally structured logistics – from procurement to disposal – can generate savings and bring about value creation. Thuringia’s logistics companies have gathered comprehensive know-how in process optimization, in using state-of-the-art logistical systems and technologies such as GPS and RFID; and they are experts in planning transportation routes and in the area of internationalization. The effectiveness of logistical systems also plays a key role in the successful development of new markets.
Competent Partner for all Logistics Needs

The Logistik Netzwerk Thüringen e. V. is a central partner for answering all questions related to logistics and offers a network of expertise to help with solutions. The goal of the network is to constantly expand and consolidate this network of expertise. Through networking with scientific institutions – currently with the University of Applied Sciences Erfurt, technological innovations for the logistics sector are to be created to meet the demands of both globalization and environmental requirements. Among these is the optimization of transportation routes using the best possible combination of rail, air, water and road along with making contributions to the testing and development of alternative drive systems. In addition, optimizing work processes with newly developed technology not only saves on costs but also improves the working conditions of employees.

Key Activities and Projects

Innovation – Bringing Business and Science together

The logistics sector is constantly evolving. The future-oriented development of strategies and products is essential. By networking logistics companies with diverse core areas and specializations both with each other and with scientific and research institutes, we create the power to innovate. Not only does the logistics sector profit from this, every sector of the economy connected to logistics processes does as well.

Securing Skilled Staff – People Handle Logistics

Securing skilled staff is a major challenge. Many new logistics companies have come to Thuringia in the last few years and more are planned, increasing the competition for capable employees. The Logistik Netzwerk Thüringen seeks solutions for securing employees and employee loyalty and to forge new paths when it comes to qualification and personnel development.

Public Relations – We polish the Image of Logistics

The cluster network will continue its efforts to cultivate a positive image of the logistics sector and our member companies through trade fair and event participation as well as publications in the trade media and daily press. The goal is to create a better understanding for the capabilities and potential of the logistics sector among the public and politicians. In addition, the cluster network is working on a holistic approach to its activities in Thuringia – from PR over skilled staff acquisition to employee loyalty.

Summary of Projects and Activities

- “Future Mobility” project – environmentally oriented logistics and transportation, further development and testing of alternative drive systems: electric cars, urban and regional development of transportation models for Thuringia and flexible concepts for the means of transportation used
- The Sustainable Logistics from Thuringia project (Working title in German NaLOG‘isch!)
- The eCommerceRegion Thuringia project – innovative shipping strategies for online merchants, networking of eCommerce companies among themselves (IT service suppliers, marketing, distribution, logistics), innovative packaging for eCommerce, fulfillment solutions
- InterLog – consultation and support services in the area of internationalization
- Training – development of demand-oriented vocation and advance training in logistics
- FaceTOFace – expanding cooperative efforts between schools and university partnerships
- WholisticLogistics – media and PR work for the logistics sector with an integrated holistic concept including securing skilled staff and ensuring employee loyalty
- Lobbying – representing the interests of the logistics sector in Thuringia and intensifying lobby work
- Marketing – expanding communication media such as internet portal, brochures, business directory for the sector and other efforts
- Statistics & Analysis – initiating the network’s own studies about the logistics sector in Thuringia, deriving future-oriented measures from these

Cross-Sectional Collaboration and Networking in and outside of Thuringia

The Logistik Netzwerk Thüringen is networked with other sector networks in Thuringia in order to identify common interests and generate synergies. Moreover, the cluster network cultivates close contact with other logistics networks around Germany. These serve a mutual exchange and collaboration in national projects.
Other Industry-Related and Technology-Oriented Networks, Associations and Platforms

- **BioEnergie Verbund Thüringen e. V.**
  - www.bioenergieverbund.de

- **Erdwärme Thüringen e. V.**
  - www.erdwaerme-thueringen.de

- **GECO e. V.**
  - A professional association for developing efficient solutions and strategies to fight odors and corrosion in local communities, business and industry
  - www.geco-dialog.de

- **HzweiO-Net**
  - A network initiative in Gera for the water and sewage sector
  - www.hzweiio.net

- **MiT – Material innovativ THÜRINGEN**
  - www.material-innovativ.de

- **PolymerTherm**
  - www.polymertherm.de

- **Protonetz – Netzwerk der Thüringer Prototyper**
  - www.protonetz.de

- **SpectroNet – Kompetenznetzwerke für Green Vision & Spectral Imaging**
  - www.spectronet.de

- **Thüringer AG Biomaterial e. V. (TAGB)**
  - www.tagb.de

- **Solarvalley Mitteldeutschland e. V.**
  - www.solarvalley.org

- **Thüringer Erneuerbare Energien Netzwerk (ThEEN)**
  - www.erneuerbare-thueringen.de

- **Towerbyte eG**
  - Umweltinstitut für Forschung und Technologie in Ostthüringen e. V.
  - www.uft-gera.de

- **ZIM NEMO Netzwerk “Thermie”**
  - www.thermienet.eu