

# TRANSFER

*The Steinbeis Magazine*

## Sparking interest – implementing innovative ideas

### **Steinbeis on a local level**

A whistle-stop tour of our centers in and around Aalen

### **Where next for European research funding?**

“Horizon 2020” – a new direction for EU backing

### **A changing working world**

The results of the Steinbeis Consulting Study are unveiled

### **Bionics – inspired by nature**

SHB student examines lightweight construction requirements

# Contents



<b>Editorial</b>	<b>p. 3</b>	<b>New centers in the Steinbeis Network</b>	<b>p. 23</b>
<b>Steinbeis on a local level</b> Knowledge and technology transfer in and around Aalen	<b>p. 4</b>	<b>Bionics – looking to nature</b> Steinbeis student analyzes the need for innovative lightweight construction techniques	<b>p. 26</b>
<b>“Students gain tremendously from active Steinbeis enterprises”</b> A discussion with Professor Dr.-Ing. Lothar Kallien	<b>p. 7</b>	<b>Reliable prognoses</b> Calculating the service life of heavy-duty machinery	<b>p. 27</b>
<b>Research.Science.Management.</b> The 2012 Max Syrbe symposium	<b>p. 9</b>	<b>The value of safety</b> Steps taken to increase the traffic safety of delivery vehicles	<b>p. 28</b>
<b>Correctly calibrated quick-test gauges</b> 20 years of successful collaboration	<b>p. 10</b>	<b>Mobile marketing for medium-sized companies</b> Steinbeis consults on app development and sales	<b>p. 29</b>
<b>European research funding: where next?</b> “Horizon 2020” – defining the direction of future EU funding	<b>p. 11</b>	<b>Research spotlight</b>	<b>p. 30</b>
<b>Supplier of products today, value-adding partner tomorrow</b> Steinbeis student analyzes service organization development	<b>p. 12</b>	<b>Pooled expertise in company pension programs</b> Center of excellence for companies	<b>p. 31</b>
<b>2011: a successful year for Steinbeis</b> Annual result and board changes	<b>p. 13</b>	<b>Just-in-sequence with disabled persons</b> Steinbeis student plans new logistics center	<b>p. 32</b>
<b>Management systems that work in training environments</b> Steinbeis experts advise vocational training institute IbBG	<b>p. 14</b>	<b>Consulting spotlight</b>	<b>p. 33</b>
<b>The 2012 Steinbeis Day</b>	<b>p. 15</b>	<b>News</b>	
<b>Working World.Job Satisfaction.True Happiness.</b> Steinbeis Consulting Study	<b>p. 16</b>	<b>News</b>	<b>p. 35</b>
<b>Training spotlight</b>	<b>p. 18</b>	<b>New releases from Steinbeis-Edition</b>	<b>p. 37</b>
<b>Potential improvements to the externalization of knowledge</b> Research at Steinbeis University Berlin	<b>p. 20</b>		
<b>Branding the right way</b> New brand and media guidelines for the Hanoverian Society	<b>p. 22</b>		



## Editorial

Dear Readers,

In recent years, East Württemberg has developed into an economic zone brimming with future promise. Often referred to as a "place for talents and patents," it enjoys all the benefits of strong and innovative medium-sized enterprises with a solid heritage in mechanical engineering, metal processing, textile processing and the paper industry. The area is home to a large number of traditional family-owned businesses, but also many international companies including Carl Zeiss (Oberkochen), Voith (Heidenheim) and the steering systems manufacturer ZFLS (Schwäbisch Gmünd). These firms have had a lasting influence on the region. A number of business clusters exist in the area, with interests in future technologies ranging from photonics/optical technology to the automotive sector, surface technology and machining/molding/metal casting.

There are four universities in East Württemberg, offering a variety of degree programs to nearly 10,000 students. For many years, Aalen University has been one of Baden-Württemberg's strongest research-based universities of applied sciences. The region is also home to more than 20 Steinbeis Transfer Centers, providing an important backbone to local infrastructure alongside the highly proactive East Württemberg chamber of commerce (IHK) and the East Württemberg regional economic development corporation (WiRO). Together, they are a catalyst and sponsor of knowledge-sharing and productive collaboration between a variety of partners.

Current trends do not just influence our region. Societal, political, economic and tech-

nological issues are rapidly becoming more complex. Today's knowledge-based society has to cope with more and more information within shorter and shorter timeframes, exacerbated by increasing pressure to assimilate this knowledge. As a result, knowledge-based solutions and concepts are becoming increasingly important to us. Similarly, this is fuelling demand for skilled workers with the right qualifications. Working in highly specialized, interdisciplinary fields, these people are under permanent pressure to gain further qualifications. Simultaneously, the demand within companies for academics and staff from a scientific background is intensifying.

The key to further economic growth lies in technology and innovations. The push to innovate is building rapidly as product cycles continuously shorten. The chasm is widening between front-line research and the translation of scientific findings into products. So available resources must be used as efficiently as possible. Knowledge and technology transfer must be targeted, professional and success-oriented. Steinbeis has demonstrated in the past that it has an outstanding contribution to make at the interface between universities and business. Little wonder, therefore, that more than 65% of Steinbeis Transfer Centers in Baden-Württemberg are based at universities of applied sciences – to shape knowledge sharing, also in collaboration with SMEs in the region. Business startups can also stem from Steinbeis Transfer Centers, and, in the future, this is exactly the area in which universities, business, politics and Steinbeis must work more closely together.



I hope you enjoy this latest edition of TRANSFER.

Prof. Dr. Gerhard Schneider

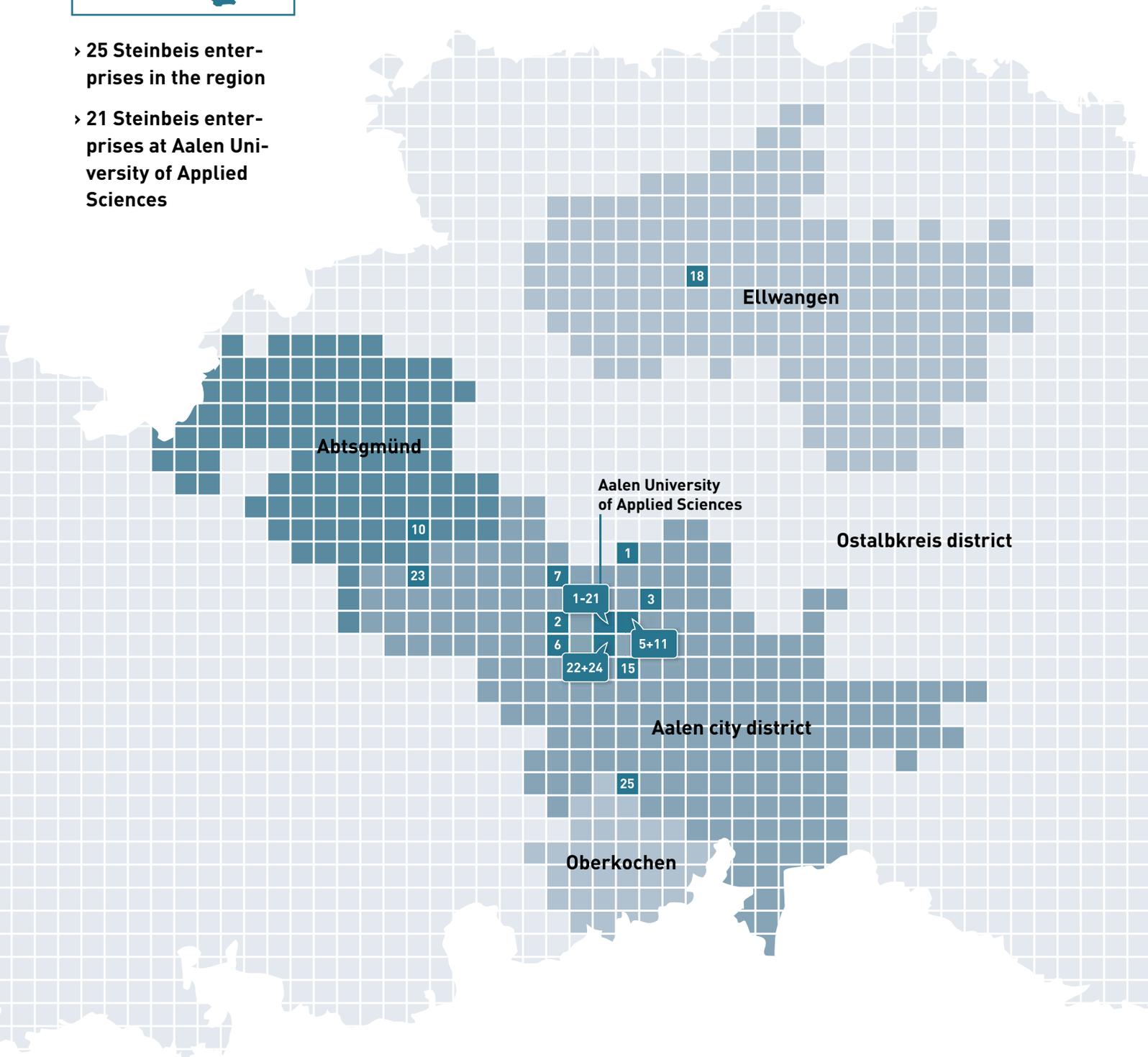
Prof. Dr. Gerhard Schneider is rector of Aalen University, board member of the Rectors' Conference of Universities of Applied Science in Baden-Württemberg and Deputy Chairman of the Steinbeis Foundation Board of Trustees. He is the founder of the Steinbeis Transfer Center for Materials Engineering in Aalen. Steinbeis's interests in the East Württemberg/Aalen region are presented on pages 4 to 7.



“The key to further economic growth lies in technology and innovations.”

Prof. Dr. Gerhard Schneider

- › 25 Steinbeis enterprises in the region
- › 21 Steinbeis enterprises at Aalen University of Applied Sciences



## Knowledge and technology transfer in and around Aalen

# Steinbeis on a local level

Aalen and the surrounding area is an attractive place to live and work. A broad spectrum of industries is based there, spearheaded by mechanical engineering and vehicle construction companies, followed by precision engineering, optical technology, metal production, metalworking, electrical engineering and wood processing. In addition to young and ambitious companies in the hi-tech industry, the service sector has also gained in importance in recent years – so much so that the area now enjoys the advantages of a mixed array of industries with a strong leaning toward fast-moving, medium-sized enterprises. To ensure this trend continues into the future, the region is banking on innovation, and research and development underpinned by transfer between business and the world of science and academia. The Steinbeis enterprises in the area make an important contribution to these aims through a portfolio of services spanning a variety of fields.

Steinbeis has been operating in and around Aalen since the early days of the Steinbeis Foundation at the end of the 1960s, actively working to foster targeted knowledge and technology transfer.

To this end, Steinbeis works with Aalen University of Applied Sciences in the fields of engineering and business. Aalen University is one of the biggest universities of applied sciences in Baden-Württemberg and one of the strongest in the field of research. With strong ties in the area and a broad network of contacts outside Germany, Aalen University's core strengths lie in two areas: technology and business.

A former engineering college, today the university has an international focus centering on practical business applications. The school's 5 faculties offer a total of 39 bachelor and master degree programs, all of which guarantee high-level academic and practice-oriented education.

As a modern institution of higher education, Aalen University keeps its finger on the pulse of needs in the region as the area changes over time, matching its degree programs to

the latest scientific insights and placing an emphasis on progressive education. As a result, some fields of study offered in Aalen are almost unique within Germany or can only be

studied in Aalen: optoelectronics/laser technology, plastics engineering, surface and materials technology, technical communication, IT security, optometry and audiology.

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**A discussion with Professor Dr.-Ing. Lothar Kallien****“Students gain tremendously from active Steinbeis enterprises”**

Professor Kallien, your Steinbeis Transfer Center, The GTA Technology Foundry in Aalen, is based at the University of Applied Sciences in Aalen. So it's at one of Baden-Württemberg's strongest universities of applied sciences in terms of foundry technology research – and it runs the biggest foundry lab in southern Germany. How important is this for the work of your Steinbeis enterprise?

Teaching at Aalen University focuses more on general education with time set aside for iron and sand casting, whereas research concentrates on the die casting of light metals. Our research partners are, on the one hand, small and medium-sized enterprises from the region, with whom we look into new and innovative processes – for example, the ongoing development of die casting processes. But we also work in Aalen on research projects sponsored by the Federal Ministry for Education and Research (BMBF). These involve automotive companies and their suppliers. One such project is the development of new and lighter aluminum or magnesium castings for cars.

We were delighted about the approval of an EU project which gets under way in September. The project will involve attempting to raise die casting processes to new quality levels by using artificial intelligence and self-optimizing systems. This will be in cooperation with 15 European partners. As a supplier of die casting machines, we also have access to a medium-sized company in Schorndorf near Stuttgart.

There's a large laboratory available for research and development activities for experimenting with sand casting and gravity die casting, and there are four pressure die casting machines to pour aluminum, mag-



nesium and zinc alloys. There's also 3D computer tomography equipment, an X-ray machine, a tensile testing facility and a fatigue testing machine, so we can assess key material properties. It's really important these days to simulate the optimization of new die cast parts with respect to mold filling, solidification and residual stress.

Our Steinbeis Transfer Center, The Aalen GTA Technology Foundry, is also involved in this work. Aside from broader services for manufacturing companies – ranging from alloy testing to process development and training – the GTA organizes two events. In May, there's a two-day foundry colloquium in Aalen. The last event attracted over 240 people to Aalen, who came to talk about die casting innovations. In December, there's the traditional Barbara Colloquium, an event at which die casting experts from all kinds of fields talk about their work. It often attracts



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over 200 people which shows that Aalen's an important location for the industry. It's a major benefit to students to be able to meet people from industry at the evening events and talk directly with delegates about internship semesters, bachelor theses or job openings – without going through third parties. Again, this underscores the Lohn concept developed by Steinbeis – students gain tremendously from active Steinbeis enterprises.

**Your center is set up to work with manufacturing companies throughout the state to drive die casting technology forward, especially in terms of development, innovation and staff training. What trends are you noticing at the moment?**

Lightweight construction is a driving force at the moment, and it will increasingly find its way into aluminum and magnesium components. Audi paved the way some time ago with its aluminum space frame. Mercedes has now unveiled the first completely aluminum car. The chassis makes intensive use of die casting processes – an innovative 44% of its content is aluminum. To make these kinds of premium value die cast parts, special casting technology and metallurgical procedures are needed. These developments raise a number of issues that need looking

into quickly at our Steinbeis Transfer Center: the production of prototype die cast parts using new kinds of alloys; testing of new mold release agents; testing of the production of new composite parts consisting of several materials. What this shows is that, in the future, people will be looking more closely at amalgamated materials. The current priorities lie in core technology issues such as the production of salt cores that can withstand harsh die casting processes and be rinsed with water. Such salt cores would make it possible to die cast particularly rigid closed-deck cylinder blocks.

Also, when the economy's doing well, staff training has a high priority on the agenda. We provide special training courses that look at theoretical issues but also practical considerations.

**You founded your Steinbeis Transfer Center, the Aalen-based GTA Technology Foundry, in 2004 and are still managing it successfully today. What were your aims when you founded the center and what are the aims today?**

Our current Steinbeis activities focus on the die casting of light metals, although there's also demand for professional consulting in other areas of die cast technology. In the fu-

ture, we want to be active in this area with other project managers, who've already gained business experience in these fields.

**Albert Einstein taught us that "The important thing is not to stop questioning." What are the key questions that will be occupying your thoughts in the years to come?**

Back in January, I was asked in an interview at the Euroguss trade show what I think of productivity enhancements in the die casting process. This is no longer the key question. In the future, it'll be more about working out how much energy and CO<sub>2</sub> is being used to produce parts. In the future, car-makers will award contracts for components or systems to the suppliers that can prove they have the lowest carbon footprint. And in many foundries there's still huge potential to do better in this area – an issue we can provide plenty of support with at our Steinbeis Transfer Center.

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## Aalen region

Aalen lies in the east of Baden-Württemberg. Entrepreneurs in the region place emphasis on the joint development of future solutions by bringing together the best of innovation and technology from the world of science and research. Growth industries benefit from excellent infrastructure in Aalen and its large clusters of industry are

perfectly positioned to benefit from future expansion. Well-established as one of the strongest research universities in Baden-Württemberg, Aalen University of Applied Sciences is a leading light of engineering and business developments. A number of Steinbeis enterprises are based in the area, making important contributions to regional development through market-based knowledge and technology transfer.



More information on Steinbeis in and around Aalen:  
[www.steinbeis-ostalb.de](http://www.steinbeis-ostalb.de)

### The 2012 Max Syrbe symposium

## Research.Science. Management.

**More than 150 people from science and business attended the first Max Syrbe symposium at the end of March. The key topic of discussion: factors influencing successful science and research management. The symposium was organized by Steinbeis in honor of Prof. Dr. rer. nat. Dr.-Ing. E.h. Max Syrbe who headed up the Foundation's Board of Trustees for many years and passed away last September.**

After the day was set underway by Dr.-Ing. Leonhard Vilser (Steinbeis Board of Trustees), and an opening speech by Assistant to the State Secretary Günther Leßnerkraus (Baden-Württemberg Ministry of Finance and Economy), Prof. Dr. Heinz Trasch (Steinbeis) praised the work of Max Syrbe, who always believed scientific work should be directly linked to specific applications and that it should be quickly implemented.

Prof. Dr. Dr. h. c. mult. Johann Löhn (Steinbeis) built on the topic of technology transfer in an introduction speech that evaluated the constantly evolving Steinbeis system. Prof. Dr. Achim Walter (University of Kiel) examined academic entrepreneurship and the symbiotic relationship between science and business. Prof. Dr.-Ing. Hans-Jörg Bauer



(Karlsruhe Institute of Technology, KIT) presented a knowledge and innovation community called KIC InnoEnergy which offers new ways to galvanize innovation in Europe in the field of sustainable energy. Klaus Hamacher (German Aerospace Center, DLR) introduced research management as an area full of challenges, all lying somewhere between business and the remits of public research bodies. Prof. Dr. Karl-Heinz Meisel (Karlsruhe University of Applied Sciences) discussed the special role played by universities with respect to applied research, as well as knowledge and technology transfer. The topic discussed by Prof. Dr.-Ing. Bernd Bertsche (TTI – Technologie-Transfer-Initiative GmbH, Stuttgart University) was how to make research collaboration between science and business work properly, looking at the example of Steinbeis University. Prof. Dr.-Ing. Rolf Ahlers (ASG Luftfahrttechnik und Sensorik GmbH) looked at collaboration from the perspective of companies, with a demonstration of science and research management as a value driver in small and

medium-sized enterprises. Prof. Dr. rer. pol. Meike Tilebein (German Institute of Textile and Fiber Research, Denkendorf) provided insights into the work of SME-based research, emphasizing the important role played by networks. Dr. Dirk Ahlbehrendt (AiF Projekt GmbH) presented a central innovation program for medium-sized companies called ZIM. The program supports R&D and innovation at SMEs. Prof. Dr.-Ing. Herbert Emmerich (Steinbeis Transfer Center for Production and Organisation) discussed the opinions of a Steinbeis enterprise regarding science and research management, expressing his belief that a key success factor is available know-how in association with experience, with an emphasis on application. All speeches will be published in the German conference minutes in Steinbeis-Edition, which is currently being finalized.

Steinbeis Foundation  
Stuttgart

 [www.max-syrbe-symposium.de](http://www.max-syrbe-symposium.de)



A gauge being used to measure grooves inside a pipe

## 20 years of successful collaboration

# Correctly calibrated quick-test gauges

**Kroeplin, a traditional engineering company from Schlüchtern, has been producing gauges for nearly 80 years. Its products are mainly used to quickly measure dimensions of parts located in difficult-to-reach areas. For many decades, its measurement instruments were mechanical, but over the last 15 years they've been increasingly replaced by electronic measuring devices. These are not only highly accurate, they also offer useful features such as digital displays and minimum/maximum functions. No matter which measurement principle is used, rigorous testing is essential. For the last 20 years, Kroeplin has turned to the Ilmenau-based Steinbeis Transfer Center for Quality Assurance and Image Processing for its professional and reliable support. The specialists from Ilmenau develop and design high-precision testing technology for hundreds of different types of quick-test gauges.**

Quick-test gauges are used in a variety of ways: to measure inner-grooves, wall thickness, outer measurements but also for dental applications. Steinbeis engineers have developed the gauge technology for each new generation of mechanical and electronic testing device. Since electronic quick-test gauges provide linearization, based on measurement deviation functions, the requirements have become more complex.

The hardware used in the test system is now in its third generation. A high-precision incremental length measuring system with deviations down to the sub-micrometer range is used as reference. The gauges always have a fixed arm and a moving sensor arm on a swivel. They are placed on an aerodynamic bearing so movements can be compensated for when the tips of the feeler arm slide into position and are moved automatically. The resulting target position is used to determine the actual value measured by the

gauge, the according deviation curve is plotted on a screen. With mechanical gauges this curve is used for adjustment, with electronic ones it forms the basis for the linear approximation function to be stored in the gauge its microprocessor. Based on the testing that follows, a test certificate is issued for delivery with each gauge.

The comprehensive testing software programmed by the Ilmenau Steinbeis Transfer Center comes complete with printing, administration and service functions. Future innovations at Kroeplin GmbH will pose new challenges to testing technology, so that further cooperation with the Steinbeis Transfer Center Ilmenau will be extended into a third decade. Clients around the world benefit from the know-how offered by both business partners, as Kroeplin also produces quick-test gauges for Japanese, American and Swiss customers.

With each project, the Steinbeis Transfer Center for Quality Assurance and Image Processing has continuously expanded its understanding of high-precision incremental measuring processes, precision instrument construction and software development. Aside from its collaboration with Kroeplin, the center is involved in a variety of projects with domestic and foreign companies, most of them focussing on industrial image processing for precision geometry measurements.

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## “Horizon 2020” – defining the direction of future EU funding

# European research funding: where next?

Companies, universities and research bodies throughout Baden-Württemberg have benefited significantly from funding provided under the European Union's 7th Framework Programme for Research (FP7). As of 2014, companies will have to get their minds around a new program: Horizon 2020. According to forecasts made by the experts at the Steinbeis-Europa-Zentrum (SEZ), the new program will result in a number of changes. SEZ helps companies apply for and implement EU research projects and make use of research findings.

A look at the names on the current 7th Framework Programme for Research confirms that the number of successful applications from Germany has risen significantly as the program has progressed. More than 25% of German applicants received funding in 2010. Having won around € 3.6 bn worth of funding, applicants from Germany were at the top of the list from 2007 to 2011. Within Germany, the state of Baden-Württemberg is number one, with 20.8% of applicants, 22.2% of EU financing and 26.9% of coordinators.

The framework initiative is an important source of funding in Germany, especially in Baden-Württemberg. Within the German landscape, 23.3% of universities, 19.9% of research institutions and 24.6% of companies to gain funding under the program are based in Baden-Württemberg. As an important economic region within Europe and an area with high average earnings, Baden-Württemberg has to work continuously to improve the quality of its products. To maintain its high standards, the region must invest in research and development on a permanent basis. The EU funding program

makes it possible to cushion companies from financial risks when products are still in development and not yet bringing commercial benefit. The framework program fosters transnational collaboration. Through such transnational collaboration, Germany as a strong exporter has a major opportunity to gain access to foreign markets or build and bolster its standing. As a result, the state is keen to maintain access to European funding programs. To facilitate this, the Steinbeis-Europa-Zentrum represents the parties involved on a variety of European Commission committees, making an active contribution to political discussion on future EU innovation and research policy. One of the aims of the Steinbeis-Europa-Zentrum is to involve more small and medium-sized companies in European Union research programs.

The planned Horizon 2020 program is an important pillar of the "Innovation Union," one of seven key initiatives under the Europe 2020 strategy, which is aimed at strengthening Europe's global competitiveness. Horizon 2020 brings together activities for the first time that were previously carried out in isolation, such as the Framework

Programme for Research, the Programme for Competitiveness and Innovation and the European Institute for Innovation and Technology (EIT). The hope of the European Commission is that funding instruments will work more cohesively.

The Steinbeis-Europa-Zentrum is inviting business managers, researchers and scientist to take advantage of the current funding opportunities presented by the EU's 7th Framework Programme for Research. During the remainder of 2012, the EU will be requesting project applications in the following technology fields: transport, nano/microtechnology, materials/working materials, production, medicine, the environment, nutrition and foodstuffs. SEZ project managers offer free short consulting sessions.

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### Horizon 2020 (Budget 80 bn.)

#### Part I: Excellent Science

- European Research Council
- Future and emerging technologies
- "Marie Curie Actions"
- Research infrastructures

#### Part II: Industrial Leadership

- Leadership in enabling and industrial technologies

- Access to risk finance
- Innovation in SMEs

#### Part III: Societal challenges

- Health, demographic change and well-being
- Food security, sustainable agriculture, marine and maritime research and bio-economy
- Secure, clean and efficient energy
- Smart green and integrated transport
- Climate action, resource efficiency and raw materials

- Inclusive, innovative and secure societies

#### Part IV: Joint Research Centre (JRC) activities beyond nuclear areas

## Steinbeis student analyzes service organization development

# Supplier of products today, value-adding partner tomorrow

Customer focus and service orientation have evolved into a core competitive advantage. Daniel Delank, a Steinbeis University Berlin alumnus, looked closely at this topic as part of his Master of Science degree. On behalf of his project sponsor – T-Systems International in Saarbrücken – he identified significant factors influencing companies' ability to achieve global competitive advantage.



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According to a study published in *Academy Management Review* in 2009, services are more important in strategic terms than pure product business. Furthermore, the gap between the functional attributes of business-to-business products and technological aspects is diminishing. As a result, in many sectors of industry – especially B2B markets – competition is cut-throat. For several years, producers of tangible goods have been focusing on the delivery of supplementary services, frequently involving complex customer solutions. Previously, they simply developed and marketed products – then waited to see what happened.

This points to an increasing tendency for customers to seek solutions to their business “pains” and not just the product itself. The

traditional marketing strategy maintained by goods manufacturers – typically revolving around the product – must shift away from the product itself as the primary item in the exchange of goods. There are already examples of “hidden champions” like IBM and UPS undergoing a transformation into solution providers and achieving significant growth – with corresponding financial rewards – by delivering end-to-end customer solutions.

Similar trends are being witnessed in German B2B markets. Companies are offering integrated service packages – a combination of tangible goods and services aimed at solving specific customer pains – and, thus, making it difficult to compare (conventional) services. This shift in focus toward customer-specific solutions also marks a paradigm

shift among producers of tangible goods (who primarily focus on the product), as well as their servicing and maintenance units.

Although customer interest is rising continuously, when it comes to adapting their service policies most product-based service providers are still dragging their feet, all the more so when it comes to re-engineering their business processes. As far as the executive managers of customer services are concerned, terms like “service” and “customer services” primarily relate to sales instruments for differentiating themselves from the competition.

Many managers are now considering what prerequisites need fulfilling in this area and asking themselves if there are catch-all ways to tackle the problem, or if indeed things can be learned from different areas. They know it's time to do justice to the paradigm shift, but how? What can we learn from business theory? To address these issues, Daniel Delank joined forces with Prof. Dr. Karsten Hadwich and Walter Duschek to found the “Service Circle,” a network that looks primarily at the key issues of service management. Meetings are held regularly to discuss key topics and shed light on these topics, primarily with case studies. Even during his studies, Daniel Delank was able to apply what he learned to his place of work. The Service Circle's members come from science, politics and, to a large extent, business.

One thing the group has learned is that it makes sense to transform product-focused service organizations step by step, gradu-

ally restructuring the business while at the same time expanding the portfolio of services. This means service units must have a solid command of service delivery (Phase 1). After this more value-added services can be offered to answer customer demands (Phase 2). Then it is essential to dovetail processes with the customer organization in Phase 3, by which time services must be matched to customer requirements and reengineered/modified such that service providers can take responsibility for entire business processes and even client systems. One exam-

ple: outsourcing. With such services, in the form of service packages, the benefits should exceed the value of the sum of each individual service.

Changes in company cultural take time, as Daniel Delank has discovered, not just through his studies. But now he's more convinced than ever that the continuous and sustainable development of skills and business competences are crucial to every busi-

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The next Service-Circle event takes place in September 2012 and will look at the transformation into a service organization.

## Annual results and board changes

# 2011: a successful year for Steinbeis

**The Steinbeis Foundation reported excellent results for the 2011 financial year at the board of trustees meeting in late March. The Steinbeis Network now spans more than 850 centers, most of these based at establishments of higher education, universities of applied sciences, and research institutes. In the year under review, sales totaled € 134 million. Prof. Dr. Michael Auer has been appointed chairman of the board to replace the departing chairman, Prof. Dr. Heinz Trasch. Manfred Mattulat was also appointed to the board.**



New members of the Steinbeis board:  
Michael Auer (l.), Manfred Mattulat

The Steinbeis Network is a service provider in the field of knowledge and technology transfer with a focus on delivering tangible, application-based support encompassing consulting, research and development, training and employee development, and evaluations and expert reports across all areas of technology and management. In 2011, 88 new Steinbeis enterprises were founded, expanding the network to 855 centers worldwide. Depending on their focus and specialist field, Steinbeis enterprises are run as dependent legal entities like transfer centers, research and innovation centers, consulting centers, transfer institutes or even independent companies. These enterprises employed 1,462 people in 2011 as well as 3,631 freelancers and 697

professors, with a focus on transferring expertise between the worlds of academia and business and a strong emphasis on business application.

Prof. Dr. Michael Auer, long-standing Steinbeis Foundation board member and member of the management board of Steinbeis GmbH & Co. KG für Technologietransfer (StC), was appointed Chairman of the Steinbeis Foundation Board on April 1, 2012. He succeeds Prof. Dr. Heinz Trasch, who has relinquished his role as chairman for age reasons after eight years. The Board of Trustees also voted unanimously to appoint Dipl.-Kfm. Manfred Mattulat to both the Foundation Board and the board of management of StC. Previously, Manfred Mattulat was managing director

of Steinbeis Beteiligungs-Holding and was responsible for equity holdings managed by the Steinbeis Network.

At the board meeting, the Chairman of the Board of Trustees Committee, Dr.-Ing. Leonhard Vilser (J. Eberspächer GmbH & Co. KG) expressed gratitude to the retiring Board Chairman for his commitment and wished the new management board every success in the future.

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Steinbeis experts advise vocational training institute IbBG

## Management systems that work in training environments

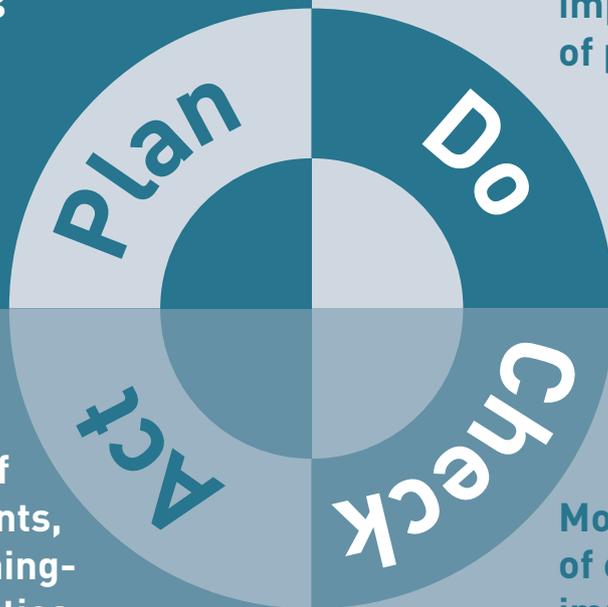
Competition in the education industry is intensifying, resulting in more and more emphasis being placed on confirming people have the right qualifications and certificates for management systems. The experts at the ifqo Steinbeis Consulting Center (Institute for Quality Management and Organizational Development) help training and continuing professional development establishments identify suitable management systems.

Goal setting and process planning

Structured implementation of processes

Definition of improvements, use of learning-based activities for use as best practice

Monitoring of effective implementation of processes



with a bearing on training. It also captured procedures and instructions in writing.

The project team used quality management methods that focus on processes across all disciplines. Processes were harmonized and responsibilities spanning different departments were merged. To systematically pinpoint improvement potential, the team used the Plan-Do-Check-Act model.

Setting up management systems under DIN EN ISO 9001 may be complex, but it's worth every effort as quality services are central to the long-term success of any organization. Processes and procedures have to be checked and improved

on a continual basis. To facilitate this, the Steinbeis consultants set up an internal auditing system that ensures structures, processes and outcomes are checked at regular intervals and employees are involved at all levels. Another important aspect of quality management is the perception of the customers, i.e. the trainees. To help students and visitors find their way around, new signs were put up. The building also received a new coat of paint and hallway exhibition units were dressed with materials from the field of healthcare and medicine.

Deming, W.E.: *Out of the Crisis*. Massachusetts Institute of Technology, Cambridge 1982, p. 88.

Vivantes is a healthcare network based in Berlin and the biggest hospital group in Germany (Vivantes – Netzwerk für Gesundheit GmbH). Its network offers patients the full spectrum of medical care services in hospitals and care homes, even out-patient post-treatment rehabilitation. The IbBG, a vocational healthcare education institute owned by Vivantes, currently employs over 700 trainees within its network of companies. It recently invited the Steinbeis Consulting Center to identify a suitable model for external certification.

After researching key issues, the Steinbeis experts chose DIN EN ISO 9001:2008, a standard not only recognized in Germany (DIN), but also on a European level (EN) and elsewhere (ISO). As part of the project, the team identified customer expectations – in this case the expectations of trainees and organizations offering practical experience – as well as statutory requirements and implementation processes. The team also checked actual training services provided by the institute with respect to all working processes

A questionnaire survey is now carried out in all faculties at the end of the students' trial period and at the end of the third semester. Its aim is to gauge satisfaction regarding theoretical training. Trainees can also submit feedback on the theoretical and practical aspects of their training using feedback forms provided under the complaints management system. The results are evaluated for potential improvements at staff meetings before being presented to the students. A management assessment is also conducted to evaluate the overall picture and compare this with goals. Objectives are extended and quality plans are drafted for the following period.

The time and effort invested in the project was worth it: The IbBG successfully gained certification last year.

#### Training-related processes at the IbBG:

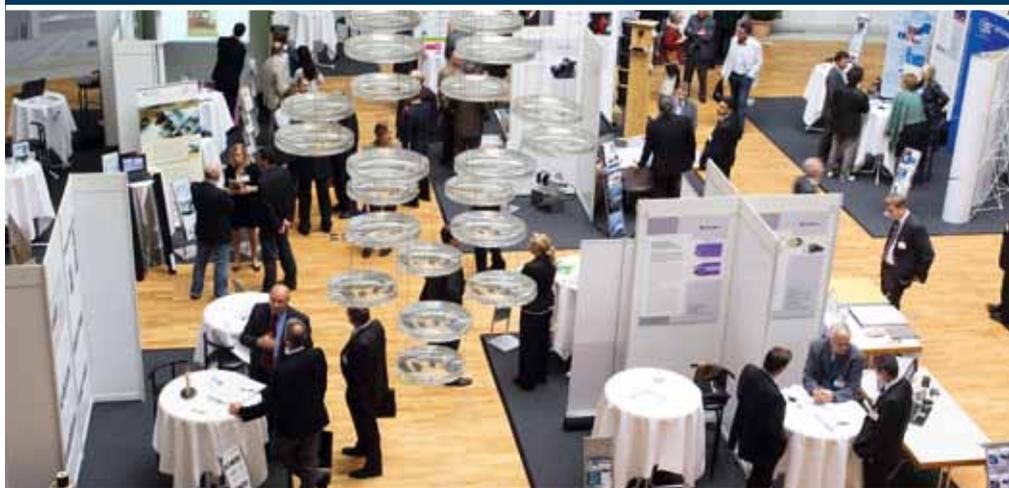
- Selection and recruitment of trainees
- Organization of training and teaching
- Performance evaluations
- Support during practical placements
- Instructor meet-ups
- Network management for internships/placements

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# The 2012 Steinbeis Day

Friday, September 28, 2012 | Haus der Wirtschaft (House of Commerce), Stuttgart



- 10.00 a.m. Official opening**
- 10.15 a.m. Bestowal of the 2012 Prof. Adalbert Seifriz Award**
- 11.00 a.m. Steinbeis Marketplace opens**  
Steinbeis Center exhibitions
- 11.15 – 12.15 p.m. Steinbeis Info**  
Invitation-only event for Steinbeis managers
- 12.00 – 1.30 p.m. Light lunch**
- 12.00 p.m. Steinbeis Corner opens**  
Short presentations of Steinbeis enterprises
- 1.00 – 4.30 p.m. Alternative program (invitation only)**
- 2.00 – 3.00 p.m. Visit from Dr. Nils Schmid, Minister of Finance and Economy, Baden-Württemberg regional parliament**  
Speech and tour of exhibition
- 5.30 p.m. Official program ends**
- 7.30 p.m. Evening program**  
Invitation-only event for Steinbeis managers

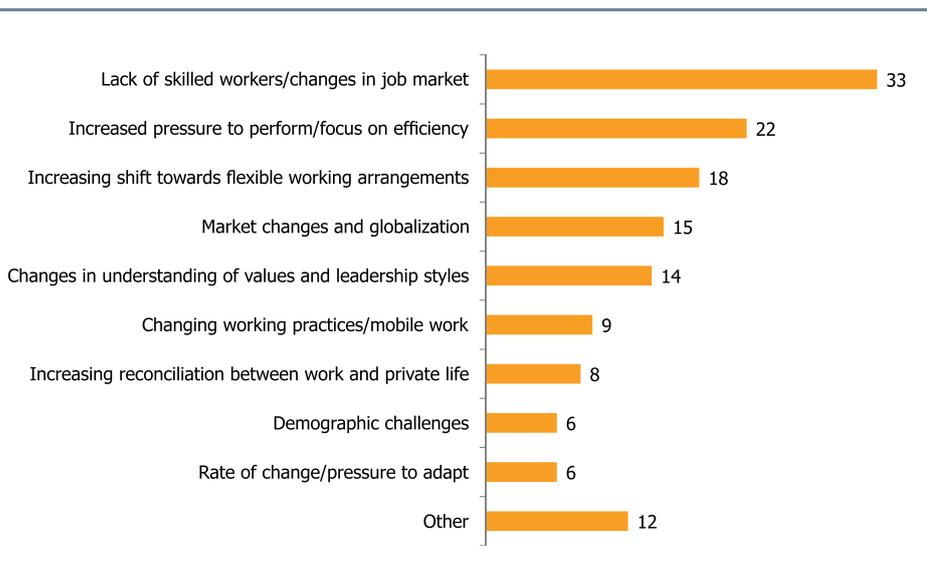
(Last updated July 2012)

The Steinbeis Day is free but visitors are kindly asked to register in advance. For more information and to register online, visit [www.steinbeis-tag.de](http://www.steinbeis-tag.de).

## Steinbeis Consulting Study

# Working World. Job Satisfaction. True Happiness.

There are increasing indications that more and more people are suffering from the effects of psychological stress at the workplace. Stress can result in psychological conditions and this is increasingly becoming a burden on the economy. The causes of growing stress levels are often believed to lie in changes in the working environment and with this, raised expectations. To investigate the possible causes of stress and its impact on job satisfaction and personal happiness, the Steinbeis Foundation conducted a web-based survey in collaboration with the Baden-Württemberg Junior Chamber (WJ BW). The topic: "A changing working world."



Expected changes in working environments, multiple answers permitted, in %  
Sample: 117 respondents who named negative changes

160 young entrepreneurs took part in the survey, which assessed attitudes toward working environments and the influence perceptions have on work satisfaction and personal contentment. The results were analyzed by Prof. Dr. Konrad Zerr of the Steinbeis Consulting Center "Marketing – Intelligence – Consulting". Although they cannot be considered statistically representative, the findings do provide interesting qualitative insights and are an aid in confirming existing assumptions relating to the links between work and personal satisfaction. Alternatively, they can help reformulate these assumptions.

The respondents were asked to express their personal opinion on the extent to which their working environment had changed in recent times, how they feel about these changes and what brought them about. As

expected, a clear majority of respondents pointed to major changes. Using a numerical scale, one third of the respondents scored the changes negatively, around 50% considered them positive as well as negative and just under one fifth felt the changes were purely positive.

In the analysis of the open questions regarding the reasons for the changes, the picture becomes clearer. Over 75% of respondents spontaneously named negative causes. They were particularly likely to point to performance pressure and an exaggerated focus on efficiency in business, and felt this had caused the work-life balance to get out of kilter. The rapid pace of change at work was also a contributing factor. Sometimes a link is made between the lack of skilled workers and the pressure to perform. Some respondents complain about "changing values" in

management. Finally, they point to negatively perceived changes in the economy as a whole and to social factors.

The fact that people who are generally quite happy – both in their personal situation and at work – deal with work challenges and the associated stress in a different way is reflected in responses to the question about work stress and whether it is felt to be primarily a positive or a negative thing. The vast majority of happy respondents tend to see work stress as a positive thing (82%). But almost 50% of the less happy respondents also still reported that they experience positive work stress. The differences in perceptions – regarding changes in the working environment, and related to respondents' attitudes towards work stress – are probably therefore not just because of individuals' personal attitudes. In part, happy and less happy people are actually likely to be exposed to different stress factors sometimes, which are thrown at them by their environment.

A good 60% of respondents anticipate major change in their working environment in the future. Looking back at changes in the past, the feeling is negative, whereas looking forward, optimistic opinions outnumber the pessimistic ones. With around 50% of respondents, the views are mainly split. The most commonly named catalysts of expected change are factors relating to the employment market, mostly with negative connotations. The expectation is that the lack of skilled workers will continue to place businesses under pressure. However, this also has positive implications for work-

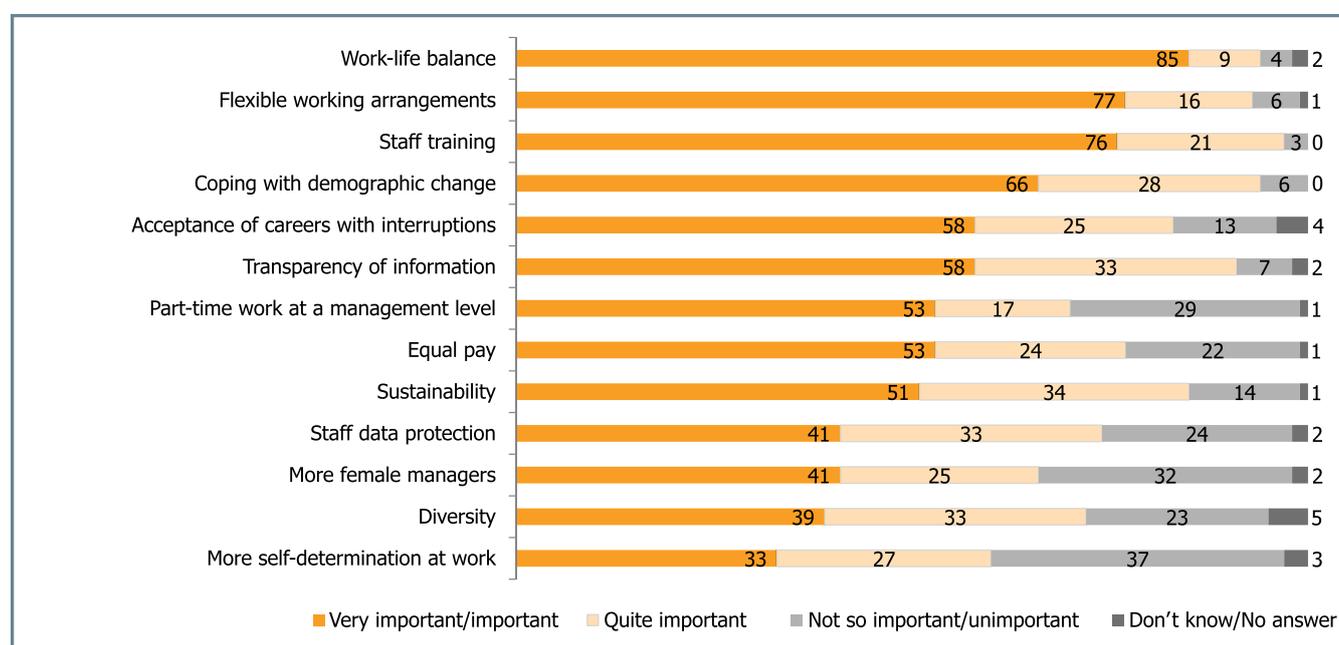
ers as this strengthens their position as an employee. In second place, with much more negative scores, is many respondents' expectation that the pressure to perform and the focus on efficiency will intensify.

The assessment of increasing flexibility in working arrangements is mainly positive, although some respondents are more critical, believing that flexible work patterns can place more pressure on staff to be available any time they are needed.

balance between work and family priorities followed by the need for more flexible working hours. Both issues are closely related. Flexible arrangements free people up. Then comes a demand to invest more money in staff training. The issues of protecting staff data, appointing more female managers, diversity or more "self-determination" at work receive comparatively little attention.

To a certain extent, some responses may be linked to the nature of the sample, which

spondents feel that changes in working environments will continue to intensify. Looking back, opinions tend to be more negative whereas future prospects are more positive. However, when respondents are prompted further about the anticipated lack of skilled workers, the issue of increasing pressure to perform is raised. On the positive side, the respondents predict increasingly flexible working arrangements with an expectation that it will be easier to reconcile work and personal priorities.



Expectations of the managers of tomorrow, sample of 160 respondents, in %

In fourth place in terms of fuelling negative changes comes increased competition resulting from globalization. This contrasts with respondents' attitude towards changing values amongst managers, which they mainly expect to be positive. Similarly positive is their attitude towards working practices brought about by new technological possibilities. Only around 8% of the respondents specifically expect it to be easier to reconcile work and family priorities in the future. Finally, most respondents are negative about the challenges posed by demographic change and the pressure from companies to adapt in response to this rate of change.

The most important expectation respondents express regarding management is a better

had a leaning towards men. When the data is analyzed by gender, there are major differences between the sexes in terms of the demands placed on the managers of the future. As a rule, women have higher expectations and consider almost all issues to be more important, with one exception: they place less emphasis on staff training than male respondents. The opinions diverge clearly between men and women when it comes to "a higher proportion of female managers." Only just under a fifth of the male respondents consider the issue important compared to over two thirds of the women. There are also differences between the sexes with respect to part-time work and equal pay. Women consider these issues much more important. The results of the study show that the re-

Full details of the study (in German) at [www.fsti.info/studie-wjbw](http://www.fsti.info/studie-wjbw)

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Beginning in October 2012

## Masters Program for Criminal Investigation

The School of Governance, Risk and Compliance (School GRC) at Steinbeis University Berlin is launching a new Master of Criminal Investigation in a joint initiative with the German Association for Criminalistics (DGfK). Participants will be comprehensively trained in fields like criminal strategy and tactics, scientific and technical aspects of criminalistics, IT forensics, business culture, criminology but also criminal law.

The degree is directed mainly at criminal and corporate attorneys, private and business investigators, business security specialists, and investigative journalists. The program is equally appealing to psychologists and scientists.

Alternatively, a Certified Investigation Expert (CIE) course is also being offered to prospective students. This training can be applied later to a Master's Degree in Criminal Investigation and provides a springboard into the field. A college degree (with a minimum

of 180 ECTS points) is required to apply for the master's program with no specification of prior field of study. Relevant work experience is an advantage, but not compulsory. The application period for this groundbreaking program closes in September, 2012.

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6<sup>th</sup> German dialog marketing conference

## Impetus for marketing professionals

The SVI-endowed chair for Marketing and Dialog Marketing at Steinbeis University Berlin's School of Management and Innovation will host the 6<sup>th</sup> German Dialog Marketing Conference in Berlin. The event, which will be held September 27-28, 2012 is a collaboration with the Center for Interactive Marketing and Media Management at the University of Münster, the University of Kassel's Dialog Marketing Competence Center, the SVI-endowed chair for Marketing and Dialog Marketing at the University of Hamburg, and the Siegfried Voegelé Institute in Königstein im Taunus.

The German dialog marketing conference is an exclusive forum for scientists and executives in dialog marketing to exchange views. The annual conference offers participants the chance to stay up to date with the latest developments in dialog marketing and compare notes with peers. The conference series allows advertisers to gain new impetus for successful dialog with their target groups.

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MedienMBA alumna starts web training portal

## Pink University

Britta Kroker, a graduate of the MedienMBA program at Steinbeis School of Management and Innovation at Steinbeis University Berlin, used to manage a publishing house successfully. Since the beginning of the year, Kroker offers online courses and seminars on the web-based training portal "Pink University". The video seminars address topics such as profession and career, management, sales, and health and fitness.

"We have to ask ourselves how to communicate specialist information in a contemporary way," says Britta Kroker, "and if we're given the opportunity to learn from the best by using audiovisual media, we should take it." Kroker demonstrated a keen sense for what works in the market when nearly three million copies of Werner Tiki Küstenmacher's bestseller "Simplify your life" were sold. This landed the Campus publishing house manager one of the biggest successes in the history of German publishing.

Since 2006, Britta Kroker has been working as an independent media entrepreneur, operating an online shop in addition to her "Pink University" Internet startup.

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## Financing options for students

# SHB cooperations with Festo educational fund

The Steinbeis Transfer Institute Corporate Educational Process has teamed up with the Festo educational fund to offer financing options for further education to students, doctoral candidates and post doc researchers. In addition, it oversees research and development in continuing professional development (CPD) and offers training strategy services in the fields of human resources and organizational development. These services extend to degree programs for engineering as well as industrial and technical engineering.

The institute functions as an interface between other institutions at Steinbeis University Berlin (SHB) and the Festo educational fund. It offers financing, qualifications and networking opportunities to students, doctoral candidates and post doc researchers in MINT fields (Mathematics, Information Technology, Natural Sciences, and Technical Engineering) as well as in related areas. The financing options include funding of up to €40,000 per participant, who then repays the loan depending on subsequent earnings. This offers companies the possibility to support the CPD of their employees without

having to provide funding up front. What's more, they can contribute to the repayment plans of their employees, allowing training to work (in part) as an employer-financed development scheme.

In cooperation with the SHB and with backing from the Festo educational fund, companies can tap into new potential. The success of projects and the increased performance of the trained employee compensate for the associated costs of financing – clearly, a win-win situation for both employer and employee.

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## SIBE fireside chat

# A grounding in founding companies

Whether senior vice president or founder, all of the speakers at the fireside chats held by the School of International Business and Entrepreneurship (SIBE) at Steinbeis University Berlin (SHB) are people worth listening to. All Alumni of the SIBE, they have come back to their business school to share their experiences and knowledge with current students. Last March, Christoph B. Rößner, a managing partner of Eight GmbH and Co. KG, was guest at the Haus der Wirtschaft (House of Commerce) in Stuttgart.

As a student, Christoph Rößner was convinced that the trend toward electric vehicles would spell endless possibilities for companies. In early 2011, he established the company Eight. Eight develops products that enable visibly sustainable and emissions-free electric vehicle mobility.

Listeners at the fireside chat were able to glean an impression of the types of considerations new startup founders face before their visions can truly take shape. The

theoretical contents of his MBA gave Rößner exactly the tools he needed to implement his business plan. Rößner also gave interesting insights into the management of a business startup, especially in the first phase when a business is defining itself and the risk of incorrectly positioning itself is at its greatest.

The fireside chats are held several times a year and offer students the opportunity to think "outside the box" by talking and networking with current and former students.

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## Research at Steinbeis University Berlin

# Potential improvements to the externalization of knowledge

According to Peter Drucker, the American business guru, knowledge workers are a new breed of employee that is replacing a whole class of industrial workers. The new nature of work requires higher levels of training than the jobs of the industrial worker. Also, people need to be prepared to keep learning new things and continuously retrain. A defining feature of knowledge workers is their degree of specialization. They tend to work as a cog within an organization to which they contribute with their specialist knowledge. These were the conclusions Latifa Yakhloufi-Konstroffer came to as part of research carried out for her Ph.D. at Steinbeis University Berlin. The key issue she examined: How does leadership influence people's willingness to externalize knowledge?

Specialist knowledge can only be used meaningfully and result in good performance through close collaboration with an organization. As a result, knowledge workers will be employees with a direct-line boss. They will be managed. But they will also be bosses themselves, who manage others. Sometimes they will be both managed and manager.

When experienced knowledge workers move to different jobs or enter retirement, their successors initially face new challenges until they are also experienced in the area. How long it takes someone to work their way into a job depends mainly on whether co-workers are prepared to share their experience and knowledge with the new worker. One of the aims of knowledge management is to standardize such processes with systematic procedures. The Japanese scientists Nonaka and Takeuchi have provided us with a theoretical foundation for knowledge sharing. They make a distinction between tacit and explicit (or formal) knowledge. Tacit knowledge cannot be captured in writing. It can be seen as the kind of knowledge that Michael Polanyi referred to when he said that "we know more than we can tell."

Nonaka and Takeuchi have a model in which they show the transferal, or conversion, of tacit knowledge into tacit knowledge, tacit

to explicit knowledge, explicit to explicit knowledge, and explicit to tacit knowledge. They coined terms for the corresponding transferals: socialization (tacit to tacit), externalization (tacit to explicit), combination (explicit to explicit) and internalization (explicit to tacit). Each conversion in the sequence can be seen as one possibility for generating new knowledge in an organization. Socialization occurs when a new co-worker receives personal supervision when learning a new job, or is shown how to do something. The externalization process happens when a new co-worker thinks through new ways of working acquired during socialization and writes up notes. Combination happens when different knowledge – which is already explicit – is linked up, resulting in new knowledge. During internalization processes, the application of knowledge is no longer perceived as conscious. This is a stage described in the four-stage psychological competence model as "unconscious competence." Individuals are so versed in a task that they can carry it out without even thinking about it.

The issue Latifa Yakhloufi-Konstroffer researched was which leadership styles make a positive contribution to the knowledge externalization captured in Nonaka and Takeuchi's SECI model (socialization, externalization, combination, internalization)

and which leadership behaviors should be encouraged by organizations with an interest in this kind of knowledge sharing. Linked to this is the issue of which measures an organization should introduce to support knowledge externalization.

Until now, little research has been conducted into the influence of leadership on knowledge management and there are few studies on the issue. There is no empirical evidence to prove a link between knowledge externalization and leadership. The aim of Latifa Yakhloufi-Konstroffer's study was to make a recommendation on how to shape leadership and thus improve knowledge externalization in keeping with the Nonaka and Takeuchi model. It also aimed to pinpoint untapped potential to externalize knowledge.

Based on the results of an empirical study, the researcher concluded that organizations that are interested in encouraging



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ership behaviors that encourage workers to plan how they will achieve work objectives and then discuss these. They should also encourage workers to discuss the responsibilities that come with different roles and key areas of responsibility.

According to the American entrepreneurs and business theorists Hersey and Blanchard, this style of leadership is part of directive leadership. These directive behavioral traits belong to "directing" and "coaching" methods.

To go beyond leadership and support knowledge externalization further, organizations interested in encouraging workers to externalize knowledge should keep their IT systems up to date. This makes it easier for workers to externalize their knowledge as IT, especially intranets and wikis, facilitates the publication of and access to externalized knowledge – new know-how is made available more easily and is thus of more use to the organization.

Another issue encountered in the empirical study (which looked at the willingness of workers to externalize knowledge) was collegiality. Organizations interested in encouraging workers to externalize knowledge should encourage collegiality amongst workers and motivate them to recognize others for their efforts. They should share experiences and insights, and support one another to manage their work more effectively. Checks should therefore be carried out on incentive systems at organizations interested in encouraging workers to externalize knowledge, to see if they actually do foster these behaviors amongst workers.

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workers to externalize knowledge should train managers to lead in a way that fosters intelligence, cognitive processes and considered problem-solving amongst workers (intellectual stimulation). Also, high expectations should be communicated and symbols should be provided to focus effort. Important objectives should be articulated in a simple way (inspirational motivation). According to the researchers Bass and Avolio, these approaches can be seen as "transformational leadership." Specific behaviors of a manager that foster these attributes of intelligence, cognitive processes and considered problem-solving amongst workers should be monitored continuously to ensure that underlying assumptions are still valid.

This encourages managers to question assumptions that would otherwise be considered given in the organization, immediately motivating workers to deliberate more. Managers seek solutions to problems from a variety of angles. Ultimately, this behavior

results in managers also encouraging their workers to look at issues from different perspectives. When people question givens and think about problems in a different way, managers are then able to suggest different approaches and ways to proceed with projects and assignments. All in all, this results in a greater willingness amongst workers to externalize knowledge. Managers demonstrate tangible behaviors that express the extent of their expectations and signal this. Efforts are focused on the task at hand and important objectives are articulated in straightforward terms. This includes managers expressing optimism about the future, showing enthusiasm about the tasks that should be achieved, talking, formulating visions of the future convincingly, and feeling extremely confident that the goals that have been agreed will be reached.

Organizations that are interested in their workers externalizing knowledge should keep giving managers instruction on lead-

## New brand and media guidelines for the Hanoverian Society

# Branding the right way

As companies grow, they often risk losing control of their own corporate communication. The visual cues of communication instruments can become increasingly heterogeneous. There's even a danger that companies may lose recognition as too many variations or sub-designs are developed. The Hanoverian Society advises horse owners on one of the most successful breeds of horses in the world. With the support of the Bremen-based Steinbeis Transfer Center for Integrated Design (i/i/d), the association successfully refocused its branding by cleaning up and modernizing its imagery and establishing coherent brand guidelines.



Corporate communication is a multifaceted discipline. Every visible expression of the brand – from business cards to headed notepaper, brochures, pamphlets, catalogs, the design of buildings, the desk in reception, email footers, website pages, every presentation, even promotional activity – everything has a design, each element conveys a message about the quality, philosophy, self-image and customer orientation of the enterprise. Successfully merging materials and activities to focus resolutely on a common goal – and “living” a philosophy – has positive long-term impacts. Ideally, the messages conveyed by the company are condensed into a single, unmistakable, recognizable, and positively perceived brand. But often, a company designs materials that are simply too heterogeneous. Its product designer looks after the appearance of 3D products. Its graphical designer creates an appealing

company logo. Its advertising agency thinks up a clever campaign. And if they're unlucky, everyone interprets the brief and the image of the company differently, resulting in haphazard if not incongruous designs.

Alternatively, the company can approach the issue holistically, on an integrated basis. Different design processes and instruments can be dovetailed and coordinated. By integrating all elements of design, the company creates a clear, recognizable set of statements that is much easier (and cheaper) to communicate successfully than the heterogeneous alternatives.

An example of best practice in this area is provided by the Hanoverian Society. The term “brand” originally goes back to the branding of horses, so it actually stems from horse breeding. And the Hanoverian Soci-

ety's brand device is a prime example of a precise and succinct brand icon.

Unfortunately however, the Hanoverian Society had “let go of the reins” a bit in recent years when it came to its communication, partly due to its own success, which has been at an international level. Last year, the society successfully relaunched its brand. Central to its branding remains the Hanoverian H symbol, retaining yellow and black as this is already known internationally and thus good for recognition.

The brand is now part of an identity that forms an umbrella over the many Hanoverian associations, sub-associations, initiatives, promotions, organizational entities and even individual breeding farms, throughout the whole world. All media are now based on a clearly defined communication strategy and common design guidelines – from the “Hannoveraner” magazine to auction catalogs, headed notepaper, invitations and programs. The website will also adhere to these guidelines to ensure all media are clear and gain strong recognition.

The systematic design guidelines have other benefits, of course. Not only do they differentiate the Hanoverian brand clearly from the competition – and with it, the whole Hanoverian Society – they also make design processes and production more efficient. The identity and recognition of the Hanoverian Society grows hand-in-hand with identification with Hanoverian horses – something everyone in the Hanoverian fraternity can be proud of!

### Steinbeis Transfer Center *i/i/d* Institute of Integrated Design

The *i/i/d* supports enterprises on a project basis or as a long-term consulting partner with the development of market-ready concepts, products and services. Its methods range from careful consideration of business potential to assessments of future market requirements. Its portfolio of services ranges from innovation strategies and

corporate planning to communication design, brand development, industrial and interface design, and workstation design. It delivers products, processes and communications that arouse the interest of customers and users, and foster satisfaction – the foundation of sustainable success.

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## New centers in the Steinbeis Network

The Steinbeis Network comprises around 850 Steinbeis enterprises spanning all fields of technology and management. Depending on the nature of their work, these may be Transfer Centers, Consulting Centers, Innovation Centers, Research Centers, Transfer Institutes or separate legal entities. The following new Steinbeis enterprises have been founded since February 2012:

### LINGEN

#### Steinbeis Transferzentren Niedersachsen

**Manager:** Dipl.-Ing. (FH) Hermann Blanke

**E-mail:** su1580@stw.de

#### Range of services

As its primary objective, the company focuses on knowledge transfer between the fields of science and business. To do this, the enterprise based in Lower Saxony establishes Steinbeis transfer centers through which they deliver services for research, development, consulting and continued professional development. In addition, the enterprise produces and distributes products and services related to these areas.

### STUTTGART

#### Business, IT-Solutions, Strategy

**Manager:** Prof. Dr. Friedemann Schwenkreis

**E-mail:** su1581@stw.de

#### Range of services

- Strategy consulting
- Cooperative research
- Expertise in selected fields

### BERLIN

#### Networked Engineering

**Manager:** Prof. Dr.-Ing. Günther Würtz

**E-mail:** su1582@stw.de

#### Range of services

- Certification courses: e.g. integrated engineering
- Company and staff development programs
- Sourcing, supervision, training of in-house and external project managers

### HEIDELBERG

#### AstroGeomaterials

**Manager:** Prof. Dr. Mario Trieloff

**E-mail:** su1583@stw.de

#### Range of services

- Astromineralogical and geoscientific expertise on planning and carrying out spaceflight experiments
- Advice on acquiring and analyzing extra-terrestrial geomaterials: materials analogous to planetary surfaces (e.g. asteroids, the Moon, Mars) and interplanetary/interstellar dust

- We consult on selecting, acquiring and preparing analogous materials, and interpreting measurement results

### FRANKFURT

#### Steinbeis Consulting for Impact Investing

**Manager:** Dipl.-Kfm. Lothar Jakob

**E-mail:** su1584@stw.de

#### Range of services

- Consulting of family-owned offices on investment strategies in the field of impact investing
- Fundraising for impact investment funds, especially with respect to technology transfer
- Management and administration of the soon-to-be-launched Steinbeis Technology Transfer Impact Investment Fund

### REGENSDORF

#### Processes, Excellence and CMMI (PEC) (Switzerland)

**Manager:** Peter Sprenger, MBA

Dipl.Math. Gerhard Fessler

**E-mail:** su1586@stw.de

**Range of services**

- Consulting/coaching on process optimization and CMMI
- Training, SEI-licensed CMMI instruction
- SEI-licensed assessments and audits
- Project management

**CHEMNITZ****Welding and Joining Technology****Manager:** Prof. Dr. Peter Mayr**E-mail:** su1587@stw.de**Range of services**

- Advice on welding and joining technology
- Mechanical materials testing
- Metallographical materials analysis
- Development of optimized joining strategies
- Damage analysis

**BIEDERITZ****Technologies, Performance Assessment and Health Management in Sports****Manager:** Prof. Dr. Jürgen Edelmann-Nusser

Prof. Dr. Lutz Schega

**E-mail:** su1588@stw.de**Range of services**

- Hypoxemic hypoxia: Diagnostics and intervention support in prevention and rehabilitation (for professional athletes, amateur athletes, mountaineers, patients)
- Evaluation: Development and evaluation of exercise and health management plans, methods and strategies along the lines of sustainable intervention research for physical activity and health for various environments and target groups
- Health management: Practice-based research projects to implement and improve workplace health management (workplace health promotion – WHP)
- Sports equipment engineering: Development, improvement, testing and evaluation of sports equipment and gear
- Performance assessment for specific sports and exercises: Performance testing for professional, recreational, health and rehabilitation sports
- Measurement technology: Hardware and software development, consulting

- Sports IT: Simulation, modeling, software development (databases), measuring and control systems, image processing
- Methods, equipment: 3D motion analysis with infrared cameras (Vicon), 3D inertial motion capture/analysis (Moven suit), electromyography, spiro-ergometrics, electrocardiogram, heart rate variability, dynamometer plates, load sensor, accelerometer, high-speed video, photoelectric sensors, treadmill

**AALEN****Optical Technology****Manager:** Prof. Dr. Rainer Börret**E-mail:** su1589@stw.de**Range of services**

- Process development for polishing
- Polishing of injection molding tools (polishing molds)
- Process development for optics processing
- Measurement technology for surfaces

**BERLIN****Energy efficiency and renewable energy****Manager:** Dr. Andreas Kulczak**E-mail:** su1590@stw.de**Range of services**

- Consulting, analysis, technology evaluations
- Strategy, concept and project development
- Implementation support, project management
- Knowledge sharing, continuing professional development, communication

**ISW Business School Freiburg****Manager:** Dr. Hermann Ayen**E-mail:** su1591@stw.de**Range of services**

- Academic degree programs
- Further education
- Innovation management
- Strategy and organizational consulting

**Preventative Health, Therapy and Complementary Medicine****Manager:** Petra Witt

Peter Abels

**E-mail:** su1592@stw.de**Range of services**

- Training and professional development for alternative practitioners
- Certification courses for the field of health and well-being
- Research and development of alternative treatments and remedies
- Advanced training courses in health and naturopathy
- Bachelor and master-level degree programs in health, health management, health care and naturopathy
- Research studies in the field of complementary medicine, prevention and rehabilitation
- Consulting and knowledge transfer services

**Institute for Integrated Diagnostics****Manager:** Prof. h.c. Dr. Thomas Petschner, ph.D.**E-mail:** su1593@stw.de**Range of services**

- Certified course in Facial Diagnostics
- Certified course in Integrated Diagnostics

**Institute for Medical Clowning****Manager:** Prof. h.c. Dr. Thomas Petschner, ph.D.**E-mail:** su1594@stw.de**Range of services**

- Level 1 Certified course: Certified Medical Clown
- Level 2 Certified course: Certified Instructor & Medical Clown
- Level 3 B.A. degree: Medical Clown B.A.

**VECHTA /CLOPPENBURG****Oldenburger Münsterland Region****Manager:** Dipl.-Ing. (FH) Hermann Blanke**E-mail:** su1595@stw.de, su1596@stw.de**Range of services**

The Steinbeis Transfer Center Oldenburger Münsterland helps companies and organizations in the area access the complete spectrum of services offered by the Steinbeis Foundation. Our Steinbeis experts are at hand to provide the following services.

- General consulting
  - o Support with:
    - Structuring of problems
    - Business startups

- Filing applications for funding programs
- Making use of scientific findings
- o Procurement of:
  - Contacts for company cooperations
  - Contacts to research and development facilities
  - Business information
- Technology consulting by experts
  - o Analysis of problems and proposal of solutions in the following areas:
    - All areas of technology
    - Business administration
    - Design
  - o Evaluation of technologies and markets
  - o Product searches and making use of ideas
  - o Diversification strategies
- Applied research and development
  - o Selection and definition of R&D projects
  - o Planning and management of project cycles
  - o Running R&D projects on behalf or companies

## TRIER

### Model-based Mathematical Optimization (MMO)

**Manager:** Prof. Dr. Volker Schulz

**E-mail:** su1597@stw.de

#### Range of services

- Software development
- Applied research and development
- Training, professional development, seminars
- Expert reports, studies

## AALEN

### Information security and data protection

**Manager:** Prof. Roland Hellmann

**E-mail:** su1599@stw.de

#### Range of services

- Advising company management, IT staff and internal data security boards (DSBs) on complex issues in the field of information security and data protection, primarily in medical areas
- Development of IT security concepts
- Auditing infrastructure, procedures and processes
- Acting as an external data protection and information security officer
- Coaching and employee training

## ULM

### Engineering design and product development

**Manager:** Prof. Dr.-Ing. Robert Watty

**E-mail:** su1601@stw.de

#### Range of services

- Training in product development methods
- Consulting in the field engineering design and methodical product development
- Training in engineering design and business issues for technical staff
- Dimensioning of components and machinery
- Expert reports in the field of engineering design

## MANNHEIM

### Marketing and Strategy

**Manager:** Silvia Schumacher-Michalik, M. A.

**E-mail:** su1602@stw.de

#### Range of services

- Marketing consulting and support for SMEs
- Marketing consulting and support for municipal utility companies and energy companies
- Market and needs analyses, customer segmentation, definition of customer profiles, customer retention and acquisition measures
- Development and maintenance of a successful integrated communication strategy in terms of both form and content (corporate branding)
- Development of a profit-oriented market cultivation strategy based on an analysis of existing market development strategies with regard to competition, sector development, customer requirements and social trends

## BONN

### GRADE Reading Center

**Manager:** Prof. Dr. med. Frank G. Holz

PD Dr. med. Steffen Schmitz-Valckenberg

**E-mail:** su1603@stw.de

#### Range of services

- Evaluation of retinal images based on clinical studies conducted after standard operation procedures (SOP)
- Instructions and support for producing retinal images using various imaging systems under standardized conditions

- Design and coordination of clinical studies
- Internet portal for the transfer and archiving of imaging data
- Training for evaluation of retinal images

## RAVENSBURG

### Health Business & Management

**Manager:** Dipl.-Verw.Wiss. Gerhard Maier

Prof. Dr. Benedikt Hackl

**E-mail:** su1604@stw.de

#### Range of services

- Expert and process consulting on key success factors related to people and performance issues in organizations and health care management
- Cost and results-based networking of clinics and other health care institutions

## NORDHEIM

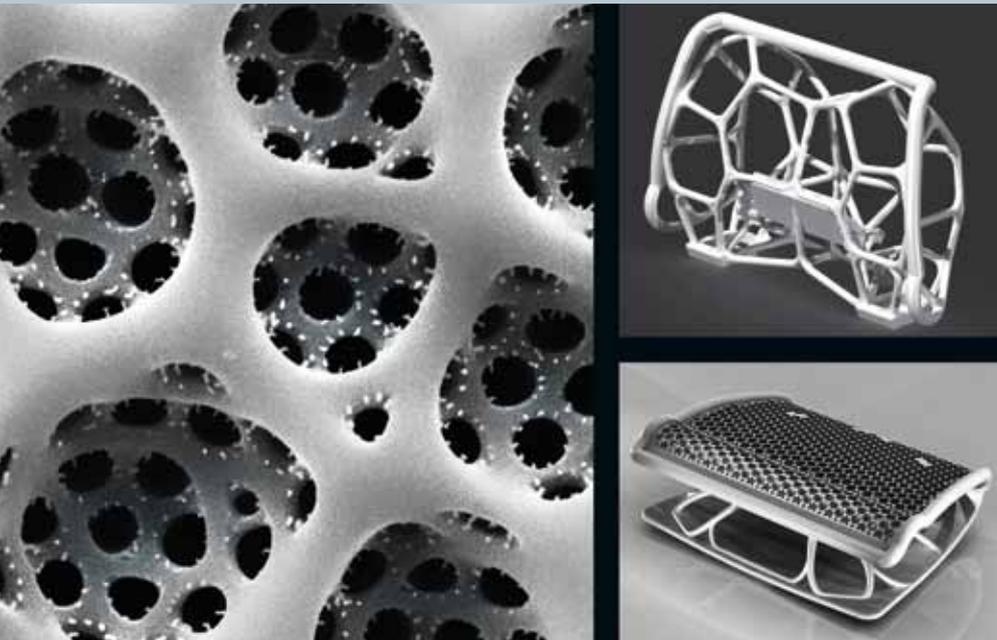
### Microcontroller Systems and Microelectronics

**Manager:** Prof. Dr. Norbert Reifschneider

**E-mail:** su1605@stw.de

#### Range of services

- Development of microcontroller systems based on controllers made by companies such as ATMEL, Motorola, ARM
- Development of customer-specific microelectronics solutions (ASIC, FPGA, CPLD)
- Development of database systems (SQL) and customer-specific software (front and back end)
- Development of faster, more compact cryptographic modules in hardware and software, also for small microcontrollers



Biological model and the resulting technical application – a headrest (AG Bionik (AG Bionics), Alfred Wegener Institute)

**Steinbeis student analyzes the need for innovative lightweight construction techniques**

## Bionics – looking to nature

The bionic lightweight construction technique called "Evolutionary Light Structure Engineering" (ELiSE) was developed at the Alfred Wegener Institute for Polar and Marine Research (AWI). It's a core competence of a workgroup made up of employees from the Alfred Wegener Institute and the Institute for Marine Resources (IMARE). This technique uses biological structures as models for the lightweight design of technical innovations. Pilot projects using ELiSE technology have already achieved weight reductions of up to 40%. The essence of this technology is understanding sophisticated, highly efficient construction principles behind biological plankton organisms and transferring this understanding to the design of technical components. Daniel Siegel researched the industrial feasibility of ELiSE technology during his MBE studies at the School of Management and Technology at Steinbeis University Berlin. Work like this is a logical step in implementation after successful application research has been carried out.

To begin his research, Daniel Siegel designed and analyzed various application strategies, and then evaluated them. He created various scenarios to assess the use of lightweight construction databases. The main focus of his assessment was to look at service providers.

Siegel conducted customized market research based on various investigations he devised using his own interactive online survey, a telephone survey and extensive research of secondary data. The online survey included interactive elements to function as an Internet-based workshop on the topic of bionic lightweight construction, and it involved context-related questions. Workshop participants were introduced to the new topic of bionic lightweight construction techniques and were then given the chance to share their knowledge of modern applications and of lightweight construction optimization techniques. In addition, Daniel Siegel carried out further strategic research

using various analysis methods looked at in his MBE studies i.e., Porter's five forces analysis, stakeholder analysis, and PEST and SWOT analyses.

The results of the market research underscore the need for lightweight construction solutions for technical applications in the coming years: more than 75% of the surveyed experts showed a strong interest in ELiSE technology. The results show that the target market spans various industries, with the greatest potential for application identified in the automotive, aerospace, mechanical engineering and shipbuilding industries. Potential users of the technology also expressed a strong interest in the use of a lightweight construction database, though there is still some uncertainty regarding the desired value-added.

Daniel Siegel evaluated the results of the analyses and illustrated several scenarios and configurations for organizational struc-

tures for the industrial application of ELiSE services in the field of lightweight construction optimization. He also presented further possible application areas. The summarized results form the basis of strategic decisions to be taken further down the line. They will also provide a focus for the workgroup and its technology.

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## Calculating the service life of heavy-duty machinery

# Reliable prognoses

Terex® Fuchs, which is located in Bad Schönborn in Baden-Württemberg, produces highly dynamic heavy-duty machinery such as cranes and excavators. Inertial forces play a major role in such machinery, since relatively large masses have to be accelerated and decelerated. If the weight of the moving parts can be reduced, less energy is required to move them. The resulting potential faster acceleration increases work speed and thus improves productivity. However, at the same time, it is important not to reduce the service life of components. Where possible, weight reduction should lead to an extended service life. To support this process, the Ulm-based Steinbeis Transfer Center for New Technologies in Traffic Engineering has carried out fatigue life calculations.



Terex® Heavy-duty machinery

To start, the experts in Ulm defined the load scenarios and their cycle times. In doing so, they specified the position of the loading arm as a function of the time and the corresponding load. On this basis, they were then able to calculate finite element (FE) load scenarios, which in turn served as a basis for determining the stress tensor function over time for each joint in the structure. With this, the project team used an S-N curve to carry out fatigue calculations and determine the results on the surface for each of the joints. The welding seams were cross-linked based on structure stress principles and using hexahedron elements.

As the Steinbeis engineers and their project partners at Terex® Fuchs initially suspected, the welding seams are the most critical points on the structure. Their wear and critical positions were clearly identifiable. By varying the geometry, and redesigning and repositioning the welding seams, the Steinbeis experts were able to radically increase the service life compared to the initial design. They were also able to quantify the significance of individual steps taken so that, in addition to these improvements, they could keep an eye on the cost of implementing the measures.

The project team did not stop there. Various usage scenarios were analyzed and wear values were calculated. In doing so, they were able to determine, for example, that "sweeping" – a motion in which the loading arm is pressed to the ground without a load – causes similar wear to an actual loading process.

With comparably little effort, Terex® Fuchs was able to glean very useful information and implement their findings in production by optimizing the structures. The company will use the methods developed as a standard in all subsequent production.

The software used for the project, winLIFE, developed by the Steinbeis Transfer Centers New Technologies in Traffic Engineering, and Traffic Engineering. Simulation.Software has been updated continuously over the past 20 years and nearly 200 licences have been sold worldwide. It is used in areas such as vehicle manufacturing, mechanical engineering, shipbuilding and in the aerospace industry. Recently there has also been growing demand from the wind energy sector.

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## Steps taken to increase the traffic safety of delivery vehicles

### The value of safety

Delivery vans combine the haulage space of light commercial vehicles with the flexibility and performance of passenger cars – no need for a special driver's license. Although the accident risk for delivery vans is still higher than for passenger cars, the actual number of accidents for these vehicles has not continued to increase, as was the case in the past. And this despite the fact that greater numbers of delivery vehicles are taking to the streets. The Steinbeis Innovation Center for Logistics and Sustainability has outlined new measures and certification programs to improve the traffic safety of delivery vehicles. Their research project also identified steps that have already been taken to increase safety, and to what extent these have been effective.



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Steinbeis experts surveyed 116 drivers, program providers, companies, vehicle manufacturers and rental agencies. The results of the survey showed that, on the whole, drivers don't have any special qualifications for handling delivery vehicles – they generally only hold a standard class B (3) driver's license. With 40% of traffic violations resulting from speeding, this is the most common cause for complaints.

According to program providers, there are several reasons why so few drivers participate in supplementary training programs. The field of couriers and express mail/packaging services leaves little time for training programs. Add to this the tight budgets common in the industry. Nevertheless, many companies do offer a variety of seminars, especially with respect to properly securing

loads. Most companies see this as a particularly important starting point for improvement. Measures implemented to increase traffic safety for delivery vehicles should also be extended to the manual trades.

Vehicle safety is a major issue for manufacturing companies. Delivery van safety features have been continually improved in recent years, and manufacturers are starting to promote customer training programs for these vehicles. But in most cases, customers aren't prepared to pay a higher price for the van, which would cover the cost of vehicle-specific traffic safety.

Rental agencies would argue that the active and passive safety features of delivery vehicles have dramatically improved over the last ten years, and this influences the pur-

chasing decisions of the agencies. Business made through private customers is perhaps the most problematic, as safety-related vehicle features mean very little to this group. Improvements in traffic safety will only truly become effective when all user groups understand that driving a delivery vehicle is not directly comparable with operating a passenger car. Steps taken to improve vehicle traffic safety must be planned for the long term, especially at the driver's level. In fact, in this area, much more needs to be done.

The Steinbeis Innovation Center for Logistics and Sustainability (SLN) in Sinsheim conducts certified analyses and works on customized solutions in defining projects for logistical business management for both public and private clients. The center sees itself as a lynchpin between the traffic and transport sciences.

The project report has been published under the title "Measures to Increase the Traffic Safety of Delivery Vehicles" (German: Maßnahmen zur Erhöhung der Verkehrssicherheit von Kleintransportern) and can be purchased through book sellers.

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## Steinbeis consults on app development and sales

# Mobile marketing for medium-sized companies

According to analysts, the market for advertising on mobile devices is expanding rapidly. Large companies can benefit from this market growth by developing apps or having these developed. Mid-sized companies, however, must generally rely on the services of third-party providers – often an expensive alternative. The Steinbeis Consulting Center for Innovation Management and Know-How Transfer NORTH is now supporting the project k.now, a mobile Internet-based information service for the small firm sector. It was launched as part of an EU project.



### Principles underlying the “k.now” information service

The average app costs €23,000 to develop and complex versions can even cost as much as €79,000. These price scales inspired the German state of Schleswig-Holstein to develop the mobile Internet-based service k.now as part of an EU-funded program for future commerce called “Zukunftsprogramm Wirtschaft”. The project is due to receive funding of up to €1.5m, and Steinbeis experts will provide support in the form of consulting services.

k.now is a marketing platform for service providers. Customers have full control over how they (and their services) are represented on mobile devices using text, graphics, audio and video content. The user has several options for transferring the information to their mobile device: either via the k.now mobile app or by entering a POI code, scanning a QR code or via direct access to k.now through their mobile browser.

The system provides an alternative information source called k.box, which enables information on k.now apps and project partners to be transferred for free via Bluetooth using mobile devices. Like Wi-Fi hotspots, this virtual storage box is particularly practical for use in shopping centers, service centers, in and around terminals and train stations.

Unlike “inanimate” newsletters, k.now offers companies the opportunity to keep customers up to date at all times, and unlike with websites designed for PC-based web browsing, k.now information can be imparted anytime, anyplace. For example, through this modern and mobile marketing platform, auction or purchasing decisions can be made at any time. As a result, information is distributed better, productivity is increased and customers are reached in a modern, more informative way – this improves customer relationships. It also signals to customers that they are dealing with a modern company that is already future-ready.

#### k.now

- worldwide mobile information service
- customized backend, allowing partner companies to independently add information regarding their services
- cross-platform service, supporting more than 165 mobile phones, smartphones, Android-based devices, iPhones and tablets, as well as PC-based terminals
- available in German, English and Danish
- accessible components
- several options for location/POI recognition and searches

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## Fast digital signal processing in satellite communications

# Fast-track data, directly from the source

Satellites constantly gather vast amounts of data which need to be transmitted in a continual stream to ground stations for subsequent processing. Since satellites are only directly visible to ground stations for a few minutes each day, the time available for direct transmission is very limited. One way to address this problem is through data transfers via geostationary relay satellites. From their highly perched positions, these can maintain almost permanent contact to low flying satellites and simultaneously transmit continuous data to the ground station on Earth. As part of the GeReLEO research project, the Gäufelden-based Steinbeis Innovation Center for Aerospace will be involved in the development of this type of communication system.

The project is being backed by the Aerospace Agency of the German Aerospace Center (DLR) with funds from the German Federal Ministry of Economics and Technology (BMWi).

At the heart of this system is a modem based on a Field Programmable Gate Array (FPGA) for use on a Low Earth Orbit (LEO) satellite. This modem implements the algorithms for the adaptive transfer processes and uses a multi-beam reception antenna for the transponder on the geostationary relay satellite.

The Steinbeis innovation center will use an aerospace-suitable FPGA for the LEO modem. Unlike a processor, this offers a number of advantages in terms of configurability, speed, and data processing. Developing the modem firmware with the high-level programming language Handel-C allows for complex modulation and synchronization processes to be efficiently simulated and implemented in the

hardware. Given the relative movement of the satellites and the resulting continual changes in their relative distances, it is important to have adaptive transmission processes that can adjust to current conditions. In addition, signal attenuation in the recommended  $K_u$  band is dependent upon atmospheric humidity and constantly fluctuates. The modem's job is to select the algorithms for the transmissions channel in such a way that the data throughput rate is maximized while the error rate is kept below a specified limit.

The improved, channel-adaptive and broadband-efficient coding processes will be developed in cooperation between the DLR's Institute of Communication and Naviga-

tion and the Technical University in Munich. Steinbeis experts will then implement these in an FPGA. After the technology has been successfully tested on the ground, a demonstration in orbit is planned. To carry out this demonstration, an aerospace-suitable modem will be constructed for a LEO satellite, and a transponder will be constructed for a GEO satellite. The Steinbeis Innovation Center for Aerospace will be responsible for the equipment needed for the flight hardware.

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## LED Lighting Systems

# Tackling lighting issues head on

Technical lighting applications have undergone a growth spurt in innovation over the past ten years: Light diodes (LEDs) are used more and more in vehicles and general lighting systems. The development of these types of lighting systems relies increasingly on simulation processes. The Steinbeis Transfer Center for Applied Lighting Technologies supports companies in meeting the challenges raised by using LEDs.

This collaboration between the center and its customers often starts with an on-site training, in which the Steinbeis experts meet with the company's employees to instruct on various aspects of LED lighting. This includes information about basic parameters and measurement methods for technical lighting and the general approach to designing LED lighting systems. In addition to these customized training courses, the center works with

providers of specialty conferences, offering a broad spectrum of employee qualification options. As host of the International Light Simulation Symposium (ILISIS), the Steinbeis Transfer Center also networks with the most significant software providers for light simulations worldwide.

Technology transfer is also about using help to help oneself – customers are offered con-

sulting services, but for the mid-term, internal development of LED lighting systems using the company's own workforce is also an option.

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## Center of excellence for companies Pooled expertise in company pension programs

Retirement is a complex issue for employees and employers alike. In addition to numerous legal issues arising from diverse legal areas, business and tax concerns also have to be considered by a number of disciplines. The Reutlingen-based Steinbeis Transfer Center for Profitability Management and Financial Control has set up a center of excellence for retirement to unify its expertise on a range of related issues.

Retirement planning requires teamwork and involves, at a minimum the company, a legal practitioner, a tax consultant, an independent insurance actuary and a pension plan provider. None of these professionals can offer everything. In fact in Germany none of them is allowed to.

Pension plans are always an official mandate to provide assistance as legislators adopt new provisions every year, employees come and go, and businesses evolve. And the impact of these changes on the private retirement sector has to be reviewed constantly because ultimately the liability rests on the shoulders of the employer.

These considerations were the impetus for the experts at the Reutlingen-based Steinbeis Transfer Center for Profitability Management and Financial Control to create their own center of excellence for retirement planning.

The center is broken down into four areas, each with extensive experience in their respective fields. The experts at the center coordinate and exchange information, pooling skills through networking. Whether it is dealing with new retirement plans, an existing, general retirement fund, or individual areas within the retirement sector, the center of excellence offers professional support.

In this way, employers and employees receive legally-approved advice from certified experts. The center is a first point of call and coordinator, saving time and money.



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### The center of excellence spans four areas:

#### Financial Mathematics Institute

##### Services:

- Coordination and professional support for all questions related to pension plan calculations
- Creation of actuarial reports on pension provisions, service anniversary bonuses, pension right equalization and forecasts

#### Legal Practitioner for Retirement Services:

##### Services:

- Legal advice on retirement planning
- Remediation and legal optimization of pension provisions
- Consultation on corporate acquisitions and restructuring
- Consultation on legal and statutory insolvency insurance contributions to pension provisions

#### Pension Program Trust

##### Services:

- Administration and maintenance of retirement funds
- Setting up of individual funds
- Shareholder/director provisions
- Setting up and management of welfare funds and pensioner companies

#### Tax Consulting

The tax consultants of companies are as a matter of course included in the entire process from start to end.

## Steinbeis student plans new logistics center

# Just-in-sequence with disabled persons

The GWW, a communal workshop cooperative, is a joint venture between 17 organizations consisting of municipal and rural authorities, and associations of the handicapped in the Böblingen/Calw region of Baden-Württemberg/Germany. The organization makes it possible for disabled people to find work. To meet growing market demand for contract logistics (such as just-in-sequence, JIS), Alexander Edele planned and implemented the move of two logistics centers to new premises in the Hulb industrial zone in Böblingen. The center will serve as a logistics center. The project was part of his Master of Business and Engineering at Steinbeis University Berlin's School of Management and Technology.

Alexander Edele's project objective was to analyze existing JIS divisions and products from sites in Magstadt and the Gültstein area of Herrenberg, to leverage synergies through space and process optimization, and to maximize location advantages offered by the new logistics center in Hulb. The change should make it possible to provide time-critical deliveries and complex logistical services.

Alexander Edele started his project by analyzing the location and processes at both JIS sites and examining existing products and space to identify potential synergies. Both JIS sites had reached full capacity and Daimler, a major client, had asked for further logistical services. As a result, it was time to search for a larger JIS location. Ideally, the new site would be located near – in terms of physical location and delivery times – to the Daimler plant in Sindelfingen.

Just-in-sequence services are extremely demanding. GWW employees have to line up each part as it is called up by the computer – according to the series or car model, and in keeping with the car type, color and specification. Products are then placed in special transportation units. Parts must be delivered to the different production lines at the Daimler plant in Sindelfingen within a specified time frame, at least every 120 minutes. A single wrong delivery or interruption of supply can have serious consequences.

The site on the Hulb industrial estate in Böblingen was identified in July 2011. Af-

ter receiving building permission, Alexander Edele was able to start planning the fitting of the logistical center for its new tenant. Once construction planning was complete, the layout and floor plans were finalized to match the needs of people with disabilities. After 5 months of construction, the logistics center was opened in December 2011 and the equipment was moved in again, including production lines and work places. A Kanban warehouse and IT system were also put in place, complete with integrated emergency power supply.

After a stressful four-day move and countless shuttling to and fro in trucks, production got underway on January 9, 2012 and goods rolled onto the production line at Daimler.

In hindsight, the merger of the two logistics sites into a single logistics center, spanning a processing and administration area of no less than 6,000 square meters, was the right decision. The original aim of improving the site's ability to meet customer demand was achieved. The competitiveness of the company was enhanced and the larger facilities have resulted in the creation of new jobs.



Moving to the new site has also improved the working environment of more than fifty disabled people. Nearby access to public transport will also make it possible to offer more flexible working hours and different types of positions in the future.

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## Ensuring users to involve in the process

# Gaining acceptance for IT projects

Satisfaction and acceptance from users are crucial when new software is being introduced. What looks like a good idea to everyone at the beginning often disappoints once it's transferred into reality. Yet so many IT solutions promise to simplify significantly work process. The IT Service Management Steinbeis Consulting Center runs workshops to introduce methods for project managers involving users in IT project design. They can even try these methods out for themselves.

Studies on software introductions confirm a number of ways to make them more efficient by early involving users in project planning. But as time is a valuable resource, so to work, the aim of using certain methods and the appropriate instruments must be clearly defined. The participation needs the right tools to work out solutions as a team. Moreover, people have to be trained with the right skills to make things happen. Whatever the approach, individual users have to get a real chance to influence the functions to be provided – and this gains buy-in. By using the right methods, control mechanisms can be determined during the design phase and integrated into concept development. People involved in projects start to play an active role exactly at the point where they will be affected by the new system. Customized solutions are not necessarily at crosspur-

poses with set frameworks for an IT project, but they do need to be incorporated into the planning process right from the beginning. Working along these lines significantly reduces the risks associated with solution introductions. By gaining broad acceptance, sustainability is guaranteed without the need for continuous intervention. A workshop will be held on all of these issues on September 19/20 in the "Haus der Wirtschaft" in Stuttgart. The Center is happy to welcome everybody interested in these issues.

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## EXI start-up vouchers

# Consultation even before the start-up

Steinbeis has the authority of the Baden-Württemberg Ministry of Finance and Economy to offer pre-start-up consultation services under the European Social Fund (ESF). The "EXI start-up vouchers" are aimed at expanding the use of consultation services by founders of new businesses.

The objective of the program is to expand the provision of consultation services before start-ups actually get off the ground and to give professional advice to more (potential) entrepreneurs than in the past – as they start preparing for business. The program should also result in more intensive consultation for start-ups targeting future growth. The project is scheduled to end in September 2014. The service includes a free short consulting session up to 8 hours and up to 10 days of intensive consultation with a subsidy of 80%.

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## Twelfth Steinbeis Consultant Forum

# Does work-life balance equal happier people?

The results of the latest Steinbeis Consulting Study (page 16) – in which almost 1800 members of Junior Chamber International Baden-Württemberg were surveyed about their expectations and attitudes for future management – were the focal point of the Twelfth Steinbeis Consulting Forum. The participants examined whether a work-life balance makes people happier.

Following keynote speeches from Prof. Dr. Dr. Sabine Meck (Steinbeis Transfer Institute of Financial Behavior and Ethics) and Dr. Sabine Horst (Steinbeis Consulting Center for Skills, Communication and Cultures) on work-life balance and the current state of happiness research, Prof. Dr. Konrad Zerr (Steinbeis Consulting Center for Marketing, Intelligence and Consulting) introduced the key findings of the study. As well as Steinbeis consultants, members of the Baden-Württemberg Junior Chamber (WJ BW) were also invited to the exclusive presentation of survey results.

During the final panel discussion, a lively debate emerged concerning the status quo within businesses as well as possible changes that managers and employees can actually implement in the work environment to achieve the ideal work-life balance.

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## Process optimization

# Effectively organized processes

The Steinbeis Consulting Center for Economic Corporate Management has successfully supported reorganize office processes in a large tax and auditing company, enhancing the efficiency of office routine organization and matching them to future requirements. The benefits of the project – in terms of economy, speed, flexibility, identification with tasks and motivation far exceed management expectations.

Uniform, effective processes, flexibility in administration, smooth cooperation within key areas of overlap – these are just some of the terms mentioned in the project assignment by the tax and auditing practice. Several independent sites were to be merged, each had its own organizational structures and management procedures. The project involved setting up project teams with team members from each site. Their aim was to identify best practice solutions, independent

of existing process terms. This already meant that the new organization received strong acceptance from staff in all sites, laying a foundation for successful implementation and the sustainability of new operational sequences. The company paved the way for future success and obtain the benefits of an active continual improvement process (CIP), just one innovative idea struck upon during the project.

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## Delegating responsibility effectively

# More freedom for bosses!

**"Nothing gets done if I'm not involved." Bosses who work this way are doing something wrong, or so Ute Villing strongly believes. She is a consultant in organizational and HR development at the Steinbeis Consulting Center for Company Management. Elisabeth Steiner, a client of Ute Villing, runs a laboratory for calibration technology and asked for a consultation.**

Ten people work for Elisabeth Steiner at SFP, her laboratory services provider. This includes staff without any formal qualifications and women with training in other fields. Although Elisabeth Steiner gave all employees training on the intricate task of calibrating measuring instruments, for a long time, nothing got done without the boss getting involved – even though she was keen to delegate more responsibility to staff. She called in Ute Villing for some expert advice. Villing put all internal processes under the microscope and helped make procedures more streamlined and efficient. The project not only impressed Elisabeth Steiner,

her employees liked what they saw as well. They now have more family-friendly working hours, feel they are taken more seriously, and feel more supported and appreciated. The customers of the calibration laboratory are impressed too. Ultimately, safeguarding customer satisfaction is core to the company values written jointly by Ute Villing, Elisabeth Steiner and her employees. Superwomen to the rescue!

The laboratory now has regular employee appraisals as part of the company philosophy, as well as training on technical issues, running meetings, managing conflict and

dealing with complaints. "And the best bit," enthuses Elisabeth Steiner, "is that it's freed me up so much, I've even got time for my bachelor's degree at Alb-Schwarzwald Business School, which is part of Steinbeis University Berlin."

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## STASA QC showcases services at NPE

# STASA QC launches in the United States

The NPE (The International Plastics Showcase in Orlando, Florida) is one of the biggest plastics trade shows in the world. STASA (Steinbeis Applied Systems Analysis) has joined forces with the Swiss company Kistler Instrumente and together, they used this year's show to launch the new STASA QC software on the American market.

The software was originally developed by STASA but it's being marketed by Kistler which is based in Winterthur in Switzerland. Together, they will continue to develop the IT solution. STASA QC is a program that enhances process stability and the quality of injection-molded parts. Simultaneously, it optimizes cycle and setup times. The program systematically assesses the impact of key machine parameters on the quality of molded parts and then determines machine setting according to all optimization targets.

The team uses existing sensors in combination with Kistler's advanced CoMo injection system to predict a whole range of quality features, based on the sensor data, for each cycle and for all kinds of online activity. This makes it possible to recognize scrap parts immediately and sort them out.

STASA QC was presented at the NPE in April, thus entering the American market for the first time. The NPE covers the entire plastics industry, from raw materials supply to addi-

tives used in plastic production, plastic processing machinery and semi-finished plastic products and finished products.

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## SEZ discusses equal opportunities for men and women in research

# Scientists call for a quota for women

Up until graduation from university, women represent 51 per cent of researchers. Afterwards, the gap between men and women only widens. Although the proportion of women in research is at around 30 per cent across Europe, women only account for 21 per cent in Germany. Around 12 per cent of the most prestigious professorships in Germany are occupied by women, across Europe the figure is 19 per cent. So how can research be structured to actively change this situation? In March, the Steinbeis-Europa-Zentrum (SEZ) organized a symposium at the Stuttgart Haus der Wirtschaft (House of Commerce) called "Maximising Innovation Potential Through Diversity in Research Organisations." Its aim: to foster Europe-wide debate on the issue.

Delegates representing interest groups from nine European countries joined 90 participants to discuss the causes and background of the imbalance. The conference concluded with the EU project, GENDERA.

"Our labor structures and the institutional conditions have to change for more women to forge careers in executive positions. We have noticed that today, young women already have excellent training. They don't need further assistance pro-

grams," commented Dr. Petra Püchner, Managing Director of the Stuttgart-based Steinbeis-Europa-Zentrum and the German spokeswoman of the EU project, GENDERA. Püchner, who is also deputy director of the European Centre for Women and Technology in Norway, is speaking out in favor of a quota for women.

"We've been discussing this issue for several years, but the numbers haven't changed," confirms Professor Ernst Th. Rietschel, one

of the speakers. Rietschel, former president of the Leibniz Society and member of acadtech, the German National Academy of Science and Engineering, also favors a quota and pointed to quotas that are no longer challenged in other areas.

Over the past two years, the Steinbeis-Europa-Zentrum and its project partners of the EU project, the EU project GENDERA, have devoted much attention to equal opportunities for women and men within the

European research landscape. GENDERA is being coordinated by the Hungarian Science and Technology Foundation and backed by the European Commission's Seventh Framework Programme for Research with around € 799,000. Examples of best practice for increasing the proportion of women in research were identified and assessed in an exchange among the research organizations of partner countries. 64 successful measures from businesses, research institutions and

universities are now documented in the database of the GENDERA project. In addition, task forces have been set up in each country to bridge the gap between policy and practice. The project partners in individual GENDERA countries have incorporated domestic recommendations. Furthermore, the project partners have channels of communication with various committees of the European Commission. Together, they are working on an equal opportunity concept which should

influence Horizon 2020, an upcoming European Framework Programme for Research which will be underway in 2014.

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## Steinbeis project at vocational college in Sinsheim Award-winning ideas

The Steinbeis Innovation Center for Logistics and Sustainability has been recognized for the second time for its "Where Education and Sustainability Meet" initiative under a German UNESCO competition that highlights "Ideas for Future Initiatives" in cooperation with the drugstore chain dm. As part of the competition, the project partners are supporting the UN decade of "Education for Sustainable Development."



The project was organized by the Steinbeis Innovation Center with the Max Weber Vocational College from Sinsheim. The aim was to look at a wide variety of activities relating to sustainability, from an LED project to a bamboo umbrella and recycled PET bottles. The young inventors presented the results of their projects to shoppers in a local dm store which supported the project by collecting € 800 of sponsorship money at the tills. "The 'Where Education and Sustainability Meet' initiative is making an important contribution to the development of skills amongst young people, especially in environmental, commercial and social areas," states Jens-Jochen Roth, head of the Sinsheim-based Steinbeis Innovation Center.

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### 5th Energy Conservation Symposium.

#### Energy storage for non-residential buildings

Proceedings | March 3, 2012 | Dresden

Jörn Krimmling, Bernd Landgraf (Publ.)

2012 | Paperback, color | 116 pages, German

ISBN 978-3-943356-04-5

More online:



The speakers' slides are also available as a free e-book in the Steinbeis-Edition:

ISBN 978-3-943356-05-2

More on the e-book:



### About the publishers

Prof. Dr.-Ing. Jörn Krimmling is a full professor in the department of civil engineering at Zittau/Görlitz University of Applied Sciences where he lectures on "Technical Building Management." Bernd Landgraf is director of the Steinbeis Transfer Institute of Building and Property Industry at Steinbeis University Berlin (SHB), which offers a Master of Science in Real Estate as part of the project skills program at SHB, as well as certification courses on energy management in the real estate industry.

### Sustainable Health Care in Germany

#### Trends in the Health Care Sector and Their Impact on the Structure of Healthcare Provision based on a Scenario Analysis

Bärbel Held | New Public Management Volume 2

2012 | Paperback, color | 284 pages, German

ISBN 978-3-943356-13-7

More online:



### About the author

Bärbel Held studied political economics and qualified with a Diploma in Economics in 1987. In 2003 she gained a doctorate in political science (Dr. rer. Pol.) at Hamburg University of Technology (TUHH) writing about performance management in public administration. Held worked for over 15 years for a variety of public authorities before entering industry as a business consultant and sales manager at Oracle Germany. Since 2011, Held has been a lecturer in public management at Steinbeis University Berlin, where she heads up the Institute of Economics and is scientific director of the Academy of Public Administration and Law. She is also a guest lecturer at Nanchang University (PRC).



**Boosting research and innovation friendly support programmes for SMEs in Europe  
Key success factors and good practice examples  
for supporting SMEs in research and innovation activities**

Effie Amanatidou, Olga Munteanu, Kerstin Seidel, Hartmut Welck  
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**About the authors**

Effie Amanatidou, an external collaborator on QPLAN N.G., is a research and innovation policy analyst. Dr. Olga Munteanu holds a Ph.D in economics and an MBA through the SEPT program (Small Enterprise Promotion and Development) at the University of Leipzig in Germany. Kerstin Seidel works at Steinbeis-Europa-Zentrum as a project assistant where she is involved with domestic and European (FP7) projects and conducts data analysis and research on socio-economic issues. Hartmut Welck comes from a scientific background as an agronomist and is currently a senior project manager at Steinbeis-Europa-Zentrum in the area of innovation, project and network management.

**4th iNTeg-Risk Conference 2012**

**Managing Early Warnings – what and how to look for?**

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**About the publishers**

Prof. Jovanovic is head of the EU-VRI and the managing director of Steinbeis Advanced Risk Technologies GmbH. Prof. Renn is a professor of technological and environmental sociology at Stuttgart University where he specializes in interdisciplinary risk research.

**Reference Price-Based or Indicator-Led Price Evaluation –  
An Experimental Analysis with Special Consideration  
of Price Image**

Alexa Luksch  
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**About the author**

Dr. Alexa Luksch studied business administration with a focus on marketing, international management and communication science at Friedrich-Alexander University, Erlangen-Nürnberg (FAU) and Bishop's University in Canada. Between 2007 and 2011 she worked as a scientific assistant at the SVI Endowed Chair For Marketing and Dialog Marketing at Steinbeis University Berlin (SHB). She gained her Ph.D in 2012.

**Photonics in Environment & Energy**

**A Technology Roadmap for SMEs  
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Jonathan Loeffler, Anthony Salingre, David Vitale,  
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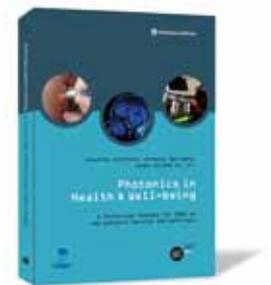
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Isabel Ferrando-Guarrido, Dirk Kalinowski et al.

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ISBN 978-3-941417-80-9

More online:



**About the project**

The European "PhotonicRoadSME" project resulted in the development of individual technology roadmaps for small and medium-sized enterprises (SMEs) in the field of photonics. Demands placed on future photonic products need to be identified at an early stage. Analyzing relevant international research and development findings on photonic materials, manufacturing technologies, photonic devices and components helps SMEs react to emerging requirements. The roadmap process supports SMEs with investment decisions and the design of successful mid-term business models.



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Founded in 1971, the Steinbeis-Stiftung is the umbrella organization of the Steinbeis Transfer Network. It is headquartered in Stuttgart, Germany.

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