

# TRANSFER

*The Steinbeis Magazine*

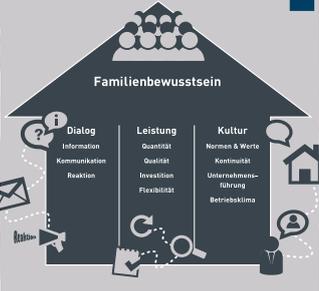
## Success based on transfer

**Steinbeis on a local level**  
 Knowledge and technology transfer in the region of Oberschwaben (Upper Swabia)

**The Steinbeis Foundation's prize for transfer excellence**  
 The 2012 Löhn Award

**From diamond wire to photovoltaic wafers**  
 Steinbeis researches diamond wire cutting technology

**Bees making the grade**  
 Steinbeis promotes project-oriented learning



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## Dear readers,



**Prof. Dr. Reinhold Holbein** lectures and researches at Ravensburg-Weingarten University of Applied Sciences and is director of the Corrosion and Corrosion Protection Steinbeis Transfer Center in Friedrichshafen. All Steinbeis centers in the Oberschwaben region are presented on pages 4 to 6.

The region of Oberschwaben, or Upper Swabia, lies in the southernmost corner of Germany. It is a patchwork of small and medium-sized communities, embellished with a rich tapestry of vacation areas along Lake Constance. Despite its lack of big city flair, it is outstanding compared to other German regions in terms of economic, social and environmental strength. This is demonstrated most impressively by the rankings and online surveys carried out by the regional association for Bodensee-Oberschwaben (Lake Constance & Upper Swabia). So it is not surprising that the region has a rich history of local inventions. International household names like Count Ferdinand von Zeppelin and Claude Dornier have left a lasting impression on the region. The historic workers' housing estate in Friedrichshafen is a shining example of social care in its time.

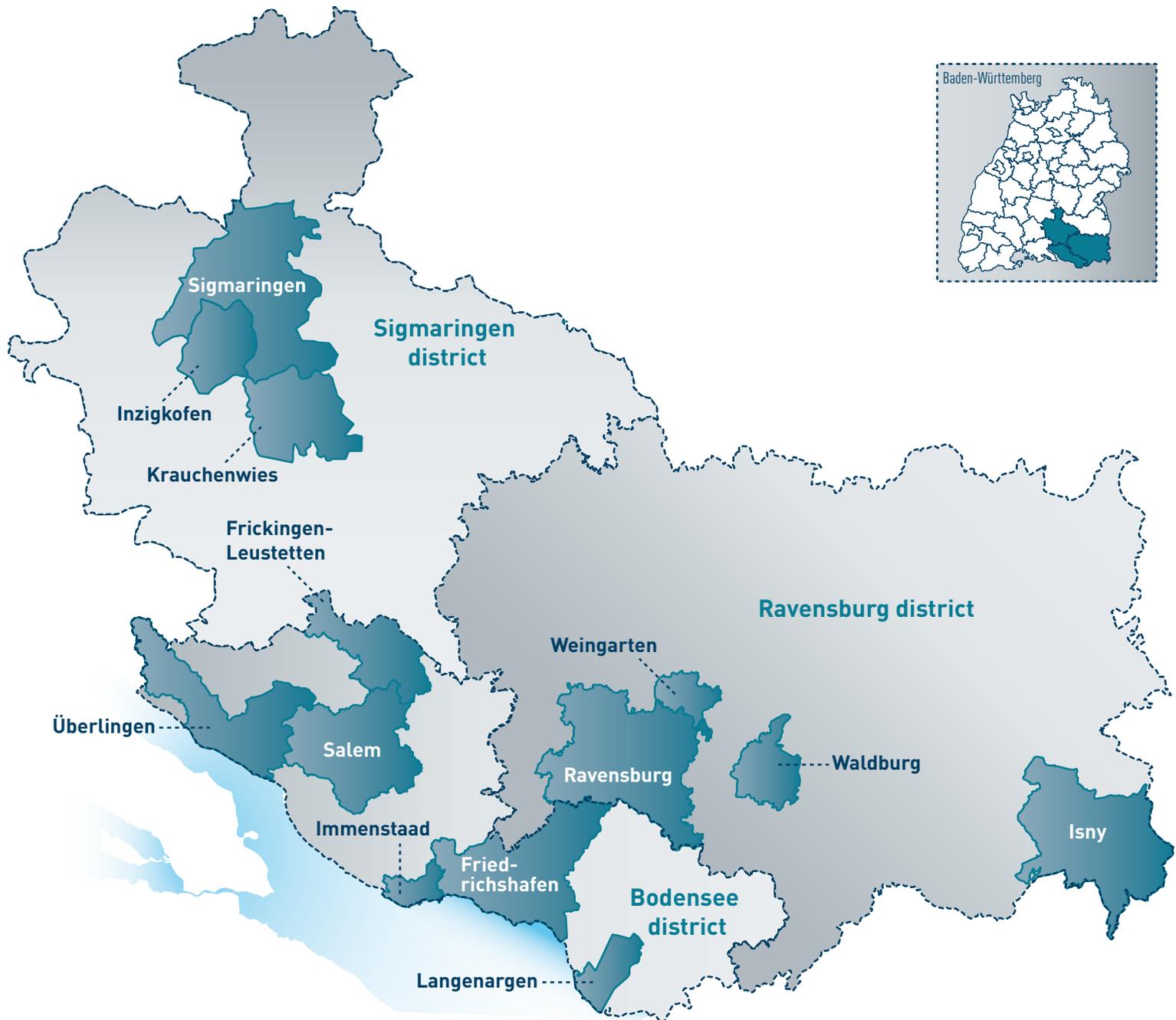
These former pioneers of technology left their mark on the economy in the area, which is now home to international companies such as ZF Friedrichshafen, Tognum and the former aeronautics firm Dornier. These and many other medium-sized enterprises like Andritz Hydro, Borg Warner Cooling Systems, and ifm electronic, plus numerous other firms, are important employers and crucial to the high standard of living enjoyed by people in the region. They provide a solid foundation for innovation, economic development and Upper Swabia's competitiveness in increasingly global markets. The innovative power of medium-sized enterprises is showcased by the recent bestowal of the 2011/12 Innovation Prize by the Ravensburg district WIR (an Upper-Swabian association for the promotion of industry and innovation): The prize went to three companies in the mechanical engineering sector.

Despite these successes, not even the region of Bodensee-Oberschwaben remains immune to the increasingly limited access to skilled workers. Local companies face a major challenge, which can only really be overcome through collaboration between educational establishments and industry. There are, however, excellent educational enterprises in the region in the form of its universities of applied sciences in Ravensburg-Weingarten and Albstadt-Sigmaringen, as well as the Ravensburg University of Cooperative Education (DHBW) in Friedrichshafen. These establishments focus firmly on the requirements of local industry. For example, students at Ravensburg-Weingarten University of Applied Sciences are involved in a variety of business projects on behalf of companies in the region. The excellent relationship between enterprises and the universities is also reflected in the remarkable number of endowed professorships. Thanks to publicly funded "centers for applied university research," research is carried out in areas central to future markets, such as autonomous mobile service robotics and energy-saving LED lighting. This is in cooperation with universities and higher education establishments in other regions.

The eight Steinbeis Centers at the Ravensburg-Weingarten University of Applied Sciences are another indication of the strong ties between universities and industry. These centers facilitate the transferal of knowledge from research into business, and promote practice-oriented teaching at university establishments. Thanks to the intense level of knowledge and technology transfer this leads to, a wide variety of companies are able to benefit from the expertise of the Steinbeis Network.

I hope you enjoy this latest edition of TRANSFER.

Prof. Dr. Reinhold Holbein



There are 31 Steinbeis Enterprises (SEs) in the Oberschwaben region (Upper Swabia), five Steinbeis Enterprises (SEs) at the Ravensburg University of Cooperative Education (DHBW), 6 at Albstadt-Sigmaringen University of Applied Sciences and 8 at Ravensburg-Weingarten University of Applied Sciences.

To find out more, go to:  
[www.steinbeis-oberschwaben.de](http://www.steinbeis-oberschwaben.de)

# Steinbeis on a local level

## Knowledge and technology transfer in the region of Oberschwaben (Upper Swabia)

The past is neatly interwoven with the future in the industrial fabric of Upper Swabia. The economy in the area transcends many fields, from traditional handicrafts and skilled trades to agricultural enterprises and even businesses with strong specializations in cutting-edge technology. The healthy mixture of large companies with worldwide operations and innovative, medium-sized enterprises has created a smoothly functioning scientific network, the ideal foundation for successful knowledge and technology transfer. Many Steinbeis enterprises in the region support this bedrock of activity.

Steinbeis has been proactively fostering technology transfer in the Oberschwaben region since the late 1960s, ensuring that scientific insight is translated quickly into tangible commercial successes, especially innovative ones. To this end, Steinbeis works with the following partners in the area:

**Ravensburg University of Cooperative Education:** Ravensburg University of Cooperative Education (DHBW) offers a broad spectrum of degree programs in business and technical fields. A core feature of the DHBW is its focus on dual studies, alternating student time between theory and practice, in close collaboration between the university and partner companies.

**Albstadt-Sigmaringen University:** Albstadt-Sigmaringen University is a university of applied sciences with a leaning towards engineering and

business studies. The department of Engineering, Business and Computer Science, and Life Sciences offers courses with a strong scientific foundation, based on business practice and international standards. Its innovative degrees have a focus on future trends and are matched closely to the demands not only of business, but also of students from a variety of academic backgrounds.

**Ravensburg-Weingarten University:** The university offers 15 bachelor's degree programs and 11 master's degree programs in the fields of technology, business and social science. A strong emphasis lies in knowledge acquisition through project work. The students are given the opportunity to apply what they have learned to live projects in industry. Further practical experience is provided through laboratory experiments, internships for companies and final papers based on business practice.

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## “We go to work where others go on vacation!”

### A discussion with Prof. Edmund Hauptenthal

Professor Hauptenthal, the region of Oberschwaben, Upper Swabia, has been your home for nearly 30 years now, and for a long time you worked in Friedrichshafen and Pfullendorf. Right next door, for 17 years, you've been director of the Gottmadingen-based Steinbeis Transfer Center for Technology – Organization – Human Resources. What have you come to appreciate in the region, what makes it unique?

I originally come from a region that doesn't offer nearly as much as the Lake Constance area in terms of the countryside and tourism. I remember during my first few months here near Lake Constance, I'd be on my way to work, there was a warm wind from the south, and I'd pull over and think, "Wow, this is beautiful!" I can still say with confidence that "We go to work, where others go on vacation," even after all these years. But one thing I cannot confirm is the original concern expressed by many of my friends – that getting attached to this region would "bang a nail in the coffin of my career."

We have so many pioneers to thank for the fact that this area has flourished as an economic area – Count Ferdinand von Zeppelin, Claude Dornier, Erwin Hymer, Hans Liebherr, or Helmut Vetter. The districts of Bodenseekreis and Ravensburg currently have among the lowest unemployment levels in Germany: 2.5 and 2.6% respectively.

There's a kind of "blessed backwardness" and frugality in this area, yet on the other hand there's a rich inventiveness and people are very generous. There are the occasional German terms that people use dialectally which still make me smirk though, like the word "carpet," which can also be said here to mean a woolen blanket.

Oberschwaben is an attractive area in economic terms, making it all the more important that it gears itself early to regional and national challenges.

Based on your projects in the region, what do you feel are the main issues that need tackling?

Oberschwaben is also affected by national issues like high energy costs and raw material prices, the lack of skilled workers, or the impact of the euro crisis. But some issues are more specific to the area. On the one hand, there's been strong investment in environmental fields. On the other, the national transport infrastructure has been severely neglected. Highways coming down from Ulm and Freiburg (the B30 and B31) are totally overloaded. Something needs to be done, urgently.

Also, the proximity of the border to Austria and Switzerland can be seen as an opportunity or as a hindrance. I've been involved personally in cross-border efforts for years as an "Ambassador of Lake Constance/United Innovations," to cultivate contacts in neighboring countries and make networks useful for our clients.

Despite this, on all these fronts, especially in terms of their economic significance for the regional economy, I think it's quite fitting to say that people should "learn to grieve without affliction!"

Your role as an honorary professor at the Ravensburg-Weingarten University of Applied Sciences also brings you into close contact with the region of Oberschwaben. You've been working at the university since 1999 and, among other things, you set the ball rolling for the business studies and management degree and helped set it up. This has also brought you into close contact with regional business. What developments have shaped the business community in Oberschwaben in recent years, especially among SMEs?

The underlying concept for the business studies and management degree was based on demands, following a local survey we carried out involving not just big companies but also SMEs.

Little has been understood until now about the extent to which the university – including its research departments and areas involved in know-how transfer – has a direct impact on the local economy. But I'm convinced that supplying local businesses with graduates has played a role in the region's economic fortune. This also applies to all the projects and thesis work that students complete at companies, or the consulting services, the joint research projects, having access to our scientists, or having access to key establishments like the library and labs. Not to mention the master's programs for people in full-time work, and the seminars offered by the Academy of Scientific Education, which enjoys strong demand even beyond the region.

Most SMEs can't afford the ongoing cost of special centers or expertise, especially during start-ups, so they're particularly likely to need such services. The local services provided by Steinbeis have adapted perfectly to these regional requirements. Companies tell us that expanding the scope of the new degree allows them to attract students early to work for the company, for example by offering internships.

*Turning to your current activities in the region, what services do your clients requesting more of, what requirements are intensifying?*

Since Basel II came into effect, banks already broach the topic of company succession during rating discussions, even when managers are as young as 55. We believe that this effect, combined with the crisis in 2009 – when lots of firms found they'd lost the sugar coating they needed to attract a successor – have resulted in a kind of "succession backlog."

*So now one of the main areas we consult on is not just raising efficiency, or financing, but succession arrangements, for the incumbent and the successor. Is anyone seriously surprised to hear that managers who've been moved aside in their career plans are suddenly interested in returning to this amazing area?*

Offering a broad selection of support services safeguards the attractiveness of our clients' services. It also allows us to gaze out tranquilly over the rooftops of neighboring companies to Lake Constance and mountains beyond.

## Steinbeis Transfer Center for Technology – Organization – Human Resources



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### Services

- Productivity improvement and cost reduction programs at companies and in organizations
- Introduction and supervision of quality and environmental management systems
- Business analysis, company evaluations and business rescue (international)
- Management and financial control of collaborations, equity participation and company disinvestments (international)
- Analysis, evaluation and delivery of training programs
- Coordination of technical and business projects with experts from the entire Steinbeis network
- Analysis of financial control instruments at companies and in organizations
- Analysis of costs and process cost calculations at companies and in organizations
- Analysis, evaluation and delivery of training programs in sales organizations
- Analysis, evaluation and implementation of business information and key performance indicator systems (rating systems)
- Interim management

### Key areas

- General consulting services
- Corporate development/internationalization
- Quality management (QM) and environmental management
- Integrated business systems (e.g., DP /ERP systems), information and management systems for key performance indicators
- Human resources management and HR development
- Development and technology consulting from experts
- Continuing professional development/qualifications



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Hans-Joachim Hölz  
discussing a project with a client

## Advice well given

### Economic development and the promotion of innovation in the district of Ravensburg

The Ravensburg district WiR is an association that promotes innovation and the interests of industry. For over a decade, it has been providing small and medium-sized enterprises with independent support on business development. Its declared aim in the medium term is to safeguard employment and, if possible, create new jobs. The spectrum of topics it provides support on ranges from purely technical to organizational or business management issues. The enterprise, WiR GmbH, is wholly owned by the district of Ravensburg and is supported financially not only by the municipality, but also by the savings bank Kreissparkasse Ravensburg. The WiR delivers its services within the scope of a Steinbeis cooperation agreement. This offers companies in the local district an opportunity to tap into the Steinbeis Network quickly and without red tape. All Steinbeis experts are available to provide their services.

The WiR acts as a catalyst and facilitator on behalf of the Steinbeis Network, providing a first port of call on issues and questions related to local business. Working alongside the client company, it analyzes current problems. The close-knit network of the WiR and collaboration with the Steinbeis Network make it possible to identify specific courses of action and solutions. But economic development will only succeed in the future if it is not only based on stronger collaboration – at a regional and local level – but also matches directly the individual needs of companies. Companies face a whole plethora of complex issues. The WiR helps firms tackle and solve business issues systematically, particularly through access to advice, research and development, evaluations, expert reports, and location marketing.

Drawing on individualized advice and exchanging views with experts unleashes the potential for customers to develop their own innovative solutions and push forward with ideas, thus boosting company know-how. WiR consults on a variety of topics covering the full spectrum of technology and management: ICT, microsystem engineering, microelectronics, production technology, automation, life sciences and new materials, but also more general topics like organizational issues, investments, quality, financing and diversification. The aim of advice given within the scope of research and development services is to translate know-how from fundamental research, applied research or development findings directly into marketable products and services, and thus, ultimately, to create a competitive advantage for client companies.

Aside from boosting existing potential, WiR develops and analyzes future business potential. For example, business concepts are checked to see if they are viable, or business plans are checked to see if they can be implemented. Experts work through projects in detail, focusing closely on future potential to give concrete support with decision-making and pro-

vide suggestions on ways to move live or planned projects forward. This allows clients to better understand opportunities and minimize risk.

The WiR also helps promote the district of Ravensburg as a business location beyond the region through a variety of marketing instruments. For instance, it works with three other economic development bodies to attract skilled workers to companies in the Bodensee and Oberschwaben region with the slogan "A career in the South". It also organizes regular student outings to give graduates at general or technical universities first-hand insights into companies in the region. There is also a marketing campaign portraying Allgäu and Oberschwaben as "The Number 1 Region" to showcase market and technology leaders from the area. Rounding off the service and consulting portfolio of the WiR is a Women & Careers Center, which was launched in Ravensburg in 2006. The center is just one of 10 in the state of Baden-Württemberg run under the auspices of the WiR. The aim of the center is to provide personal advice, stage events and promote initiatives and joint projects that foster equal opportunities for women in professional careers. As well as advising women, the center also supports firms on topics such as career guidance, employee development, juggling career priorities with families, career planning, becoming self-employed and much more.



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## The customer is king – focusing on market needs in the retail industry

### Research carried out at Steinbeis University Berlin

The retail industry has undergone sweeping changes over the past few decades, with new sales channels opening up, including self-service stores, discount stores, specialist outlets, DIY stores, cash and carry outlets, shopping malls – to name just a few. Simultaneously, huge outlets have emerged. Many of the major sales outlets now promote heavily on price, leveraging their purchasing power. The breakneck speed of the market and tremendous price pressures were too much for many smaller retailers who have now been squeezed out of the market. New kinds of hybrid shoppers have emerged, who are becoming more and more difficult to comprehend and tend to "drive their Porsche to Aldi before buying French foie gras at the delicatessen." As part of his Ph.D. studies at Steinbeis University Berlin, Klaus Hacker is researching the options open to small, service-intensive retailers to focus more on market needs and gain competitive edge.

The upturn in the German economy after the Second World War has changed a sellers' market into a buyers' market. Consumers' perceptions of small, service-intensive retailers now largely depend on the quality of the retail employees. Their skills and market knowledge shape the image of the company they work for, and thus have an impact on business success. But at the same time, there has been a shift in Germany toward post-materialism. This shift in values, hand in hand with higher levels of education, has had a major influence on purchasing behavior. In turn, this has had a strong impact on retailing. New sales channels have intensified the levels of competition and expanded the variety on offer. Green-field

sites, encompassing whole villages of outlets, entice shoppers with free parking and convenient access.

The danger with these developments is that inner city areas lie fallow. Many large retailers now promote heavily on low price, while stand-alone retail outlets and their purchasing cooperatives struggle to find ways just to hold their own in the increasingly competitive market. There has been little scientific research into small, service-intensive retailers and, in general, smaller companies do not have the financial resources to carry out their own research. In addition to this, many retailers are



skeptical about marketing as they feel they have sufficient exposure every day to consumers and can still compete simply on price.

Nonetheless, focusing on market needs can improve the standing of a company, motivate workers and encourage staff members to acquire new skills. One aim of companies should be to convert the 69% of "unmotivated" shop workers into "motivated" workers (source of statistics: Gallup Germany). At the same time, market orientation – focusing more closely on market needs – can be turned into a business USP. But what exactly is market orientation? This was a debate set firmly underway by Shapiro in an article titled "What the Hell is 'Market Oriented'?" In 1990, Kohli and Jaworski (1990) finally came up with a definition for it:

- **Generation of information:** Collecting all pertinent market information, such as information on the competition, customer desires, market trends, the business environment and future demands
- **Dissemination of information:** This can be top down, bottom up, or lateral. Group discussion has proven particularly effective.

- **Responsiveness to market information:** For any business, it is crucial to react to market information and market trends

Klaus Hacker hopes his research project will answer a number of questions. On the one hand, he is examining what can be done to improve market orientation among employees. On the other, he is analyzing which key factors make sense in the first place when it comes to improving market orientation. Based on his two postulations, the ultimate aim of his study is to derive recommended actions for businesses.

Hacker conducted interviews with external and internal experts. Based on an evaluation of key literature, plus the results of his expert interviews, he then developed a questionnaire which he made available online to 943 companies working in the retail industry. The 141 usable responses that came back provide a number of descriptive and model-specific findings. 91% of respondents have 30 or fewer employees. 75% run 1, 2 or 3 retail outlets. 94% of the companies provide consumer services. 93% of respondents are involved in cross-selling. Some companies have certain shortcomings in terms of Internet use, raising their profile and providing customer information: Only 35% use the Internet for offers, customer information or social media, and only 45% offer specialist training or instruction on using products in order to generate customer loyalty or raise the profile of their company.

Purchasing cooperatives have plenty of potential to provide cooperative members with suitable instruments to raise their company profile, especially when it comes to the Internet, customer training and customer loyalty. Model-based analysis should now examine the influence of the following factors on market orientation:

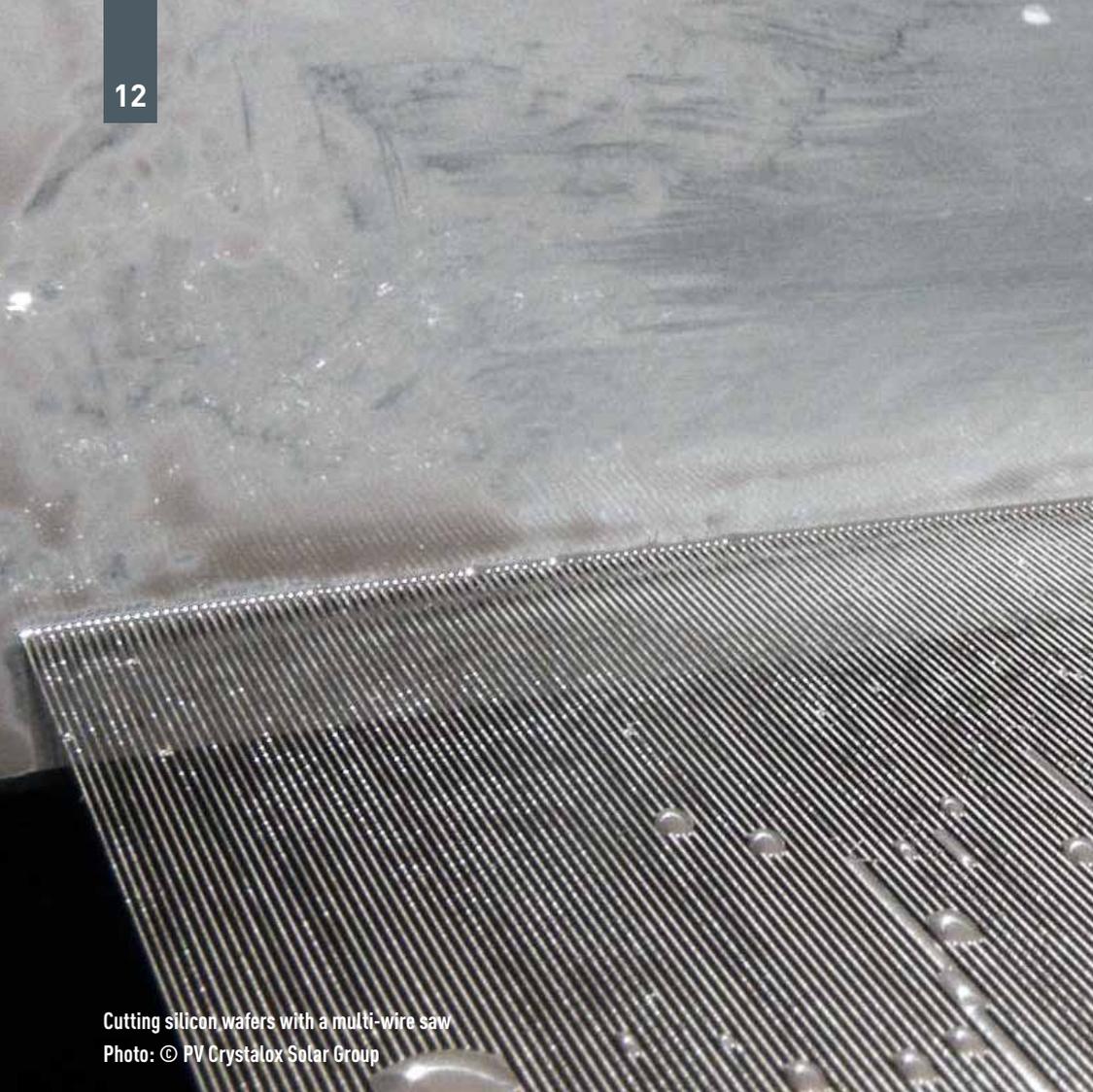
- **Psychological property,** encompassing affinity and "intrapreneurship"
- **Internal marketing,** encompassing the significance of management role models, sales training, communication/information and market orientation training
- **Incentives,** encompassing tangible and intangible incentives

An initial analysis of the results has confirmed that there are indeed ways for companies to improve their competitive standing in markets by enhancing their market orientation. And, for the first time, there are now research findings on small, service-intensive retailers. This makes it possible for the 35,000 small, service-intensive retailers (in Germany) to work out key actions and identify ways to motivate workers more and improve their company's competitiveness. As such, it would not be a stretch to say this represents a paradigm shift in company marketing for small, service-intensive retail businesses, and their purchasing cooperatives.

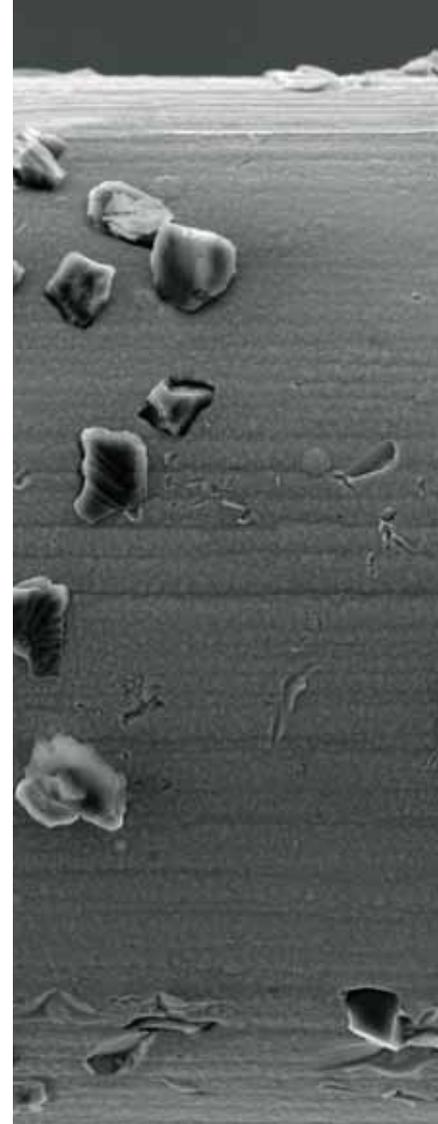


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Cutting silicon wafers with a multi-wire saw  
Photo: © PV Crystalox Solar Group



## From diamond wire to photovoltaic wafers

### Steinbeis Innovation Center researches diamond wire cutting technology

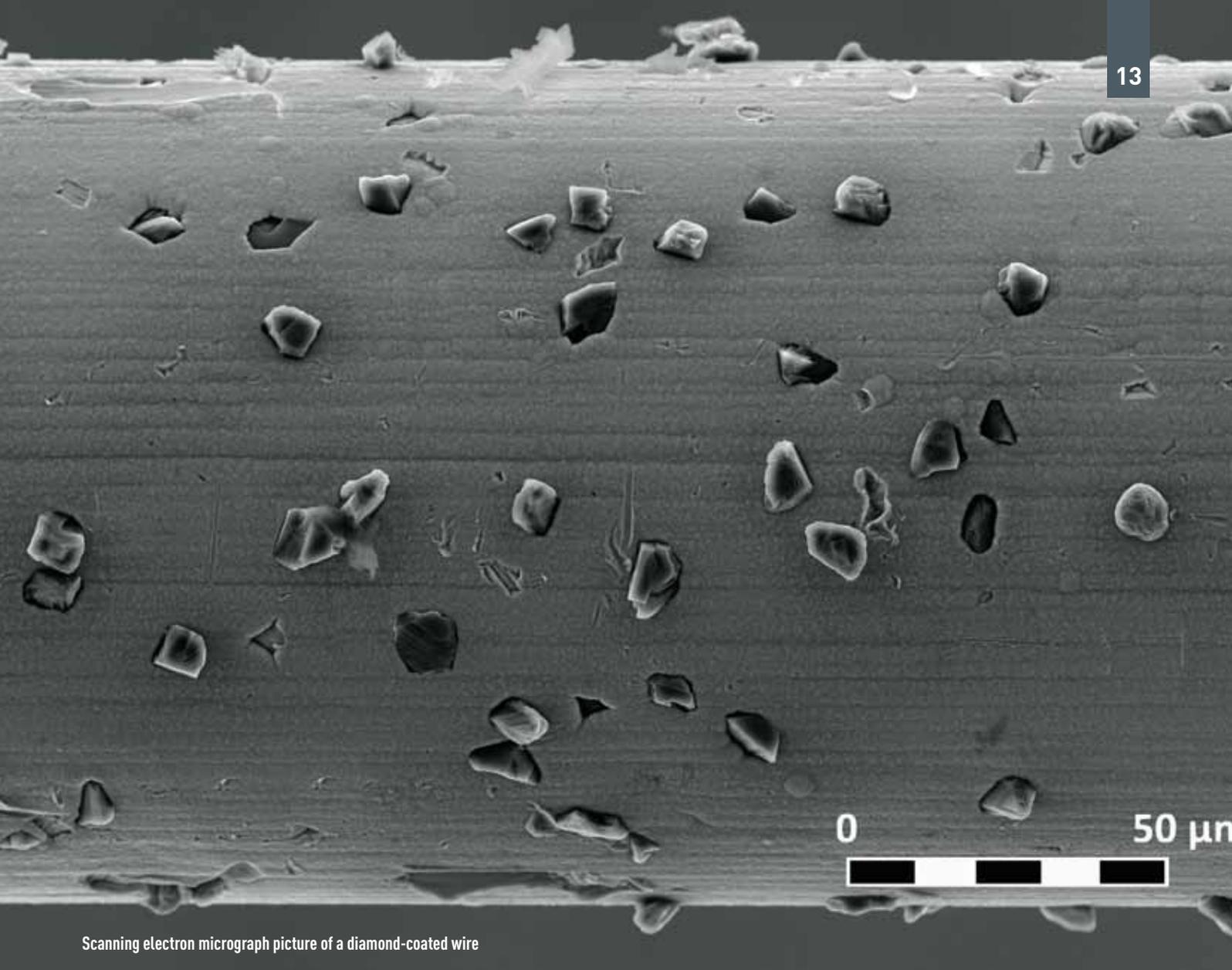
Using diamond wire for cutting is a technology of its own – one that is being explored in depth by the Steinbeis Innovation Center for Development Technology in Oberndorf, Germany. Professor Matthias Vogel, director of both the Steinbeis center and the collaborative program of study at the Baden-Wuerttemberg Cooperative State University (DHBW), is working with his team at the development of necessary components for a complete wire connection system, the diamond wire technology and sawing machines as well as the diamond wire cutting technique itself.

Since 2010 the Steinbeis Innovation Center has been awarded funding totaling more than 1.5 million euro from programs of the Federal Ministry of Economics and Technology and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety for three different projects. The Steinbeis experts in Oberndorf have already successfully completed their first ZIM-supported project: the development of a new generation of wire cutting machines. The construction and production of an endless loop wire saw for wires having a diameter of 0.12 millimeters is the most important result. The machine was specially designed for sawing of silicon wafers of the photovoltaic industry using diamond-coated wires. Its significance for basic research in the area of wire cutting was validated in numerous cutting trials. In addition to the determination of process parameters, the trials also included dry and wet cuts. As a result, the project team was able to define optimized cutting parameters and analyzed the effects of coolants on the tool life of a diamond-coated wire.

In a current ZIM project the Steinbeis Innovation Center is building on these results. Together with its industrial partner HK Präzisionstechnik

they are developing an innovative multi-wire saw for slicing photovoltaic wafers. Those machines can cut over 2,000 wafers simultaneously – each having a thickness less than 200 micrometers – out of one silicon block using a wire field. The goal of the project is to drastically minimize costs during this step of the solar panel manufacturing process. In part this can be achieved by taking advantage of improvements in diamond wire technology, but more importantly through targeted adjustment and optimization of the mechanical design and process to the upcoming tool technology.

The Steinbeis experts are working together with notable industry partners and institutes on a BMU project, the third and youngest of their three projects. It aims on reducing production costs for photovoltaic wafers while improving their quality through the introduction of diamond wire cutting technology. The Steinbeis Innovation Center for Development Technology is particularly doing basic research regarding the cutting process, for example a detailed analysis studying the effects of coolants, cutting parameters or wire oscillation on the wafer quality. For all those



Scanning electron micrograph picture of a diamond-coated wire

tasks, the center's high-tech equipment is frequently called into action. In addition to the endless loop wire saw, a product of the first project, which can simulate even more cutting parameters than conventional saws, a load measurement platform and a high-speed camera for analyzing wire oscillation are available. Furthermore, the team can examine the temperature profile in cut with a high-speed infrared camera and assess the wire wear or breakage with a scanning electron microscope. A brand new measuring machine to analyze wafers with an integrated confocal microscope evaluates the produced quality. The project also places emphasis on the development of a welding machine for extremely thin cutting wires. Those have to be welded with a high process reliability and stand loads of more than 35 Newton, which equates to a weight of roughly 3.5 kilograms. Considering the wire dimensions, this is quite an ambitious goal. In this case tensile strength values exceed 3,000 Newton per square millimeter.


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### Diamond wire cutting

During wire cutting, materials are cut or removed mechanically through the cutting motion of a wire on a workpiece. If the tool is a diamond coated wire, it is known as diamond wire cutting. In particular this method is employed for the separating of extremely hard materials like stone, ceramic or glass. Its most important use is in the production of wafers for the photovoltaic and semiconductor industries. In these applications slurry sawing is still the most common method: this procedure involves the cutting of a silicon block with a bare wire and the so-called slurry, a grinding emulsion made of glycol and silicon carbide grit, into thin slices, the wafers. Technically this is a cut-lapping technique, which explains why the process times can last over ten hours. This approach is losing its luster as it seems like diamond-coated wire could make the combination of wire and slurry obsolete. Why? First and foremost, it reduces process times dramatically and therefore improves cost efficiency. Advances in the manufacturing of diamond wire and its subsequent improvement in quality and sinking prices also benefit the advance of the new technology. Since know-how is lacking in the area of diamond wire cutting, experts are focusing on building up competencies before this promising method can establish itself full-scale within the industry.



## Steinbeis Day 2012

### Networks – Contacts – Projects

"Steinbeis Marketplace" – under this motto, numerous Steinbeis entrepreneurs provided insights into their project work at this year's Steinbeis Day. Visitors could get a real feel for the technology transfer on offer by centers from the areas of consulting, research and development, further education and training, as well as analysis and expertise for a variety of management and technology fields. Nearly 600 interested guests gladly accepted the invitation to Stuttgart's "House of Commerce" (Haus der Wirtschaft).

Technology.Transfer.Application. The Steinbeis trio of principles underscores what lies at the heart of the Steinbeis Network: the systematic and simple, yet successful transfer of know-how to businesses. This ethic is revealed particularly well on the annual Steinbeis Day, which typically starts with the award ceremony for the Professor Adalbert Seifriz Award. The award is generally bestowed each year by the Baden-Württemberg Trades Association (BWHT) and the German Confederation of Skilled Crafts together with the business magazine "handwerk magazin", the Signal Iduna Group for Insurance and Finances, the Association for Technology Transfer in Trades, the Ministry for Finance and Economics in Baden-Württemberg and Steinbeis.

The day offered guests an opportunity to establish initial contacts as well as take part in in-depth specialist discussions with experts from more than 60 exhibiting centers within the Steinbeis network. Short presentations held throughout the course of the exhibition gave insights into various facets of ongoing project work and introduced current developments. The exhibition series "SteinbeisART," which debuted last year, continued this year with the opening of an art collection by Michaela Würtz. The artist's works will remain on display in the Steinbeis area of Stuttgart's House of Commerce through the end of March.

 Steinbeis Day 2013 will be held on Friday, September 27, in the House of Commerce in Stuttgart. Images and presentations from Steinbeis Day 2012 are available online: [www.steinbeis-tag.de](http://www.steinbeis-tag.de)

The following Steinbeis experts held brief talks to provide insights into current projects. All recordings of the presentations are available online: [www.steinbeis-tag.de](http://www.steinbeis-tag.de).



**Promoting Innovation Through Skills Development at the German Aerospace Academy (ASA)** | Prof. Dr.-Ing. habil. Monika Auweter-Kurtz



**Integration of Complementary Medical Study Programs at the Institute for Physical Therapies** | Dr. Ernst Boxberg



**Role of the Steinbeis Network in the Development of the Indian Manufacturing Industry – Steinbeis Case Study – UNIDO Project in the Machine Tool Sector** | Vineet Kumar Goyal



**Access to Chinese Research and Innovation Programs for European Researchers: China-Access4EU project** | Eduardo Herrmann



**Wheels for a Better Quality of Life and More Mobility** | Prof. Dr.-Ing. Ralf Hörstmeier



**Promoting Technology Using Electromobility as an Example** | Helmut Haimerl



**Problem-solving Solutions for Employees Working in Manufacturing – Training for Shop Belt Worker at BSH Bosch and Siemens Hausgeräte GmbH** | Gudrun Jürß



**Involvement of Users Reduces Project Risks** | Gerburg Joos-Braun



**Small Things, Great Effect. Copyrights for Microsystem Technologies in Medium-sized Companies in Baden-Württemberg** | Wolfgang Müller



**Key Figures Done Properly! Strategic Process Management with Balanced Scorecard and Benchmarking** | Dr. Wilhelm Peters



**Less Effort, More Return** | Melanie Johanne Köhler



**...Classifying – Recognizing – Profiting... – Business efficiency Through More Transparency** | Wilfried Ludwigs, Andreas Held



**CoMo Injection Advanced: Online Quality Prognoses and Process Monitoring in Injection Molding** | Dr. Philipp Liedl



**Parameters for Successful Production Processes – Initial Results of a Steinbeis Engineering Study** | Dr. Meike Reimann-Zawadzki



**Usability for Small- and Medium-sized Businesses** | Prof. Dr.-Ing. Thomas Ritz



**Increasing Competition in the Donau Region (EU-Donau Strategy)** | Jürgen Raizner



**Long-term Harbor Development Concepts, Rhine Harbor Karlsruhe** | Jens-Jochen Roth



**Wireless M-Bus and OMS for Standardized Smart Metering** | Prof. Dr.-Ing. Axel Sikora



**Qualification Strategies for Medical Professions: Using Audiovisual Media for Blended-Learning and E-Learning Concepts to Increase Success Rates and Ensure Quality** | Dipl.-Biol. Jürgen Skuda



**Competitive Intelligence in Internationally Operating Businesses** | Prof. Dr. Elke Theobald



## The Steinbeis Foundation's prize for transfer excellence – the 2012 Löhn Award

### Award for excellent transfer

Traditionally, successful transfer isn't only highlighted at the annual Steinbeis Day as part of the overall program of events – it is also underscored during the Steinbeis evening in the Culture and Convention Center in Stuttgart's Liederhalle. As board representatives, Prof. Dr. Michael Auer and Manfred Mattulat welcomed more than 550 Steinbeis managers, customers and partners to the evening gala event. The evening centered around the 9<sup>th</sup> award ceremony for the Steinbeis Foundation's prize for transfer excellence – the Löhn Award.

Exceptional projects involving know-how and technology transfer are evaluated by a jury for the Löhn Award each year. Although this year's decision wasn't easy, it was definitely unanimous. Three Steinbeis projects and two Steinbeis directors were presented with this year's Transfer Award. A sculpture and prize money of up to 60,000 euro were up for grabs, for future innovative and transfer-oriented projects.

The Steinbeis Transfer Center for Embedded Design and Networking, together with the company PHYWE Systems received the award for their development of a wireless sensor linkage for didactical measurement technology. A further award went to the Material Engineering Center Saarland (MECS) Steinbeis Research Center, together with Atotech Germany. They developed a controlled self-healing process for electrical,



#### Award winners and jury

##### 1<sup>st</sup> row from the top

Sachihiko Kobori (Steinbeis), Manfred Mattulat (Steinbeis), Nathan Braun (Steinbeis), Dr.-Ing. Leonhard Vilser (Steinbeis)

##### 2<sup>nd</sup> row:

Prof. Dr. Dr. h. c. mult. Johann Löhn (Steinbeis), Prof. Dr.-Ing. habil. Eberhard Köhler (Steinbeis), Dr. rer. nat. Michael Mehlhorn (PHYWE Systeme GmbH & Co. KG), Prof. Dr.-Ing. Axel Sikora (Steinbeis), Prof. Dr. Michael Auer (Steinbeis)

##### 3<sup>rd</sup> row:

Heinrich Wecker (CeramTec GmbH), Florence Petkow (CeramTec GmbH), Prof. Dr. Michael Bauer (Steinbeis), Dirk Lill (Steinbeis), Christian Thomas (Atotech Deutschland GmbH)

##### 4<sup>th</sup> row:

Prof. Dr.-Ing. Frank Mücklich (Steinbeis), Dominik Britz (Steinbeis), Bernd Schmitt (Atotech Deutschland GmbH), Christian Selzner (Steinbeis)

extremely stressed galvanic systems of high-end circuit board production. To enable interactive consulting and training in the implantation of ceramic hip prosthetics, the Steinbeis Transfer Center for Technical Communication – Paracam – worked with CeramTec to develop an app which also earned them the Löhn Award. The jury bestowed the two additional awards on Sachihiko Kobori and Prof. Dr.-Ing. habil. Eberhard Köhler for their longstanding contributions to technology transfer.



Project videos on the award-winning projects can be found online:  
[www.loehn-preis.de](http://www.loehn-preis.de)



## Excellent Transfer

### History and aim of the Transfer Award

The Steinbeis Foundation's Transfer Award honors exceptionally successful projects in the area of competitive knowledge and technology transfer. It is awarded annually to Steinbeis companies and their project partners. Project success is measured based on two central criteria: quality of the transfer process and recognizable transfer potential. In addition to transfer projects, other notable projects, services and merits can also be recognized with additional special awards. The Löhn Award was initiated in 2004 by the Steinbeis Foundation in honor of the work done by Prof. Dr. Dr. h. c. mult. Johann Löhn, former chairman of the board and current honorary trustee. Since its inception, the award is bestowed each year as part of the program of events for the annual Steinbeis Day.

The award itself, designed by Prof. Detlef Rahe, director of the Steinbeis Transfer Center Institute for Integrated Design in Bremen, symbolizes the Transfer mindset of the Steinbeis Network and the associated transfer system – a network that was developed by Johann Löhn in 1983. The success criteria of systematics and simplicity, which lie at the heart of this transfer system, are represented by the dual nature of the award's physical design: two identical components placed parallel to one another to form the complete piece. They also represent the duality of the reciprocal transfer process that unites the independent but collaborating partners in "multidimensional togetherness." The key elements of the Steinbeis model – precision, simplicity and complexity, networking and de-centrality – are represented in the design and production of the award sculpture.

In addition to the tangible award, winners receive cash prizes of up to 60,000 euro. Winners are selected by a jury of Steinbeis Foundation board members together with the chairman and the honorary members of the board of trustees. All Steinbeis companies and their customers can apply for the award, provided they took part in a transfer project. The annual call for applications starts at the beginning of each new year and can be accessed online. A meaningful and informative description of the transfer process, transfer potential, transfer success, and unique selling points are essential to the evaluation of the transfer project.



More detailed information on the 2013 Transfer Award is available online:  
[www.loehn-preis.de](http://www.loehn-preis.de)



## Going Wireless

### Wireless sensor connectivity for Teaching, Training and Research

The transfer and storage of physical parameters have increasingly become a part of instrumentation and measurement technology. In recent years several transmission protocols have been developed for this purpose. In the past few years especially different wireless transmission protocols have entered the market. These transmission protocols allow a handling that is flexible and as far as possible installation free, i.e. ad-hoc. Today these protocols have already been applied in many areas of consumer electronics, but also in industrial and process automation. The Göttingen based PHYWE System GmbH & Co. KG decided to use these technologies for their didactical measurement technology. Together with the Steinbeis Transfer Center Embedded Design and Networking, PHYWE was awarded the Steinbeis Transfer Award for their project.

Objectives for the new transmission protocols are technical parameters such as data rate, stability, security, real-time capability, scalability, energy efficiency, autonomy and adaptivity of the network management as well as commercial parameters like costs, strategic long-term availability and standardization. In this context the management with efficient and user-friendly operating units, like smart phones and tablets, has become increasingly significant.

In response to this, the PHYWE System GmbH & Co. KG decided to use these technologies also for their application area of didactical measurement technology and establish it as an integral part of their solutions. PHYWE develops devices, experiments and solution systems for schools and universities of science and applied sciences and for applications preparatory to research or close to research. The company has a leading position in this area around the world. PHYWE connects this modern kind of data logging with curricular contents and thus strengthened the interest of scientific study contents.

The Steinbeis Transfer Center Embedded Design and Networking has implemented for PHYWE several developments on the so called Embedded Connectivity. The transfer center has successfully designed and implemented significant elements of the system development of the new

PHYWE Cobra4 product family, a computer interface for school teaching designed for scientific testing and experiments. "Besides a new micro-controller- and wireless transceiver platform, a flexible, stable and user-friendly complete system had been developed. The system succeeds in combining low cost and high energy efficiency with a very high performance." explains Prof. Dr.-Ing. Axel Sikora, director of the Heidenheim based Steinbeis Transfer Center and professor at Offenburg University of Applied Sciences. The fact that both partners are currently working on a second product generation underscores their success in this area.



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Dr. Michael Mehlhorn  
PHYWE Systeme GmbH & Co. KG (Göttingen)



## Good recovery!

### Controlled self-recovery process for galvanic systems

Our modern day today would be unimaginable without electronic systems. With companies constantly vying for a competitive edge in small, yet high-performance systems, the electronics industry faces ever-growing challenges. A central component to these systems is the circuit board, the instrumental "nervous system" of electronic devices. Together with the German company Atotech, the Steinbeis Research Center for Material Engineering in Saarland (MECS) has successfully tackled the issue of wear to galvanic systems and earned its team the Steinbeis Foundation's Transfer Award.

The circuit board, with its complex, three-dimensional "nerve strands," takes care of the electrical networking of all of the smaller components in a system. It also handles the excess heat generated from this connectivity. The manufacturing of circuit boards must include a thin yet homogenous copper plating of the board's surface. In applying this layer, only very fine tolerances are allowed in terms of the layer thickness and evenness. At the same time, this thin, homogenous plating is needed for larger circuit boards in order to make them more efficient.

The extremely high energy density of the fast galvanic stripping of the copper plating allows the electrodes in the manufacturing facilities to close very quickly. This is achieved on account of the so-called "electro-erosion" – the breakdown of a material through electrical current or flashover. Scientists at the Saarbrücken-based Steinbeis Research Center for Material Engineering in Saarland (MECS) looked into this problem together with Atotech under the direction of Prof. Dr.-Ing. Frank Mücklich and Christian Selzner at the Saarland University.

The aim of the project was to find raw materials components and geometries that could withstand the extreme stresses of the production machinery. Ideally, this would lead to longer service cycles and fewer

maintenance requirements. The project resulted in the development of an innovative solution based on a controlled recovery process for the existing system. The team has applied for a patent. This transfer system is a shining example of the benefits of "thinking outside the box."



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## Virtually within reach

### Interactive media for the consulting and training of surgeons

Smartphones and tablets have opened the door to even more exciting opportunities in digital publishing. But depending on the specifications of the operating system, apps still have to be created in the individual program environments. Taking Internet or desktop solutions into account, companies often hit up against operational barriers when it comes to getting their message out into the digital world with the least possible scattering losses. German company CeramTec, together with the Steinbeis Transfer Center for Technical Communications (Paracam), have developed a platform-independent workflow which creates a single programming environment for various forms of media. The two companies were awarded the 2012 Transfer Award for their work.

CeramTec is a global market leader for ceramic hip joints. They face the challenge of keeping nearly 50,000 surgeons from around the world informed on the features of their high-performance ceramic BIOLOX® and its highly specialized operating techniques. What's more, they have to train these surgeons in the use of their products. These days, it simply isn't possible to reach their target audience by means of standard media.

Paracam, the Steinbeis Transfer Center for Technical Communications in Salach, is headed by Prof. Dr. Michael Bauer of the University of Applied Sciences in Aalen. Together with CeramTech, the center created the BIOLOX® app. A vast array of animations, videos of operations and other media show the proper implantation of BIOLOX® components. All animations and the interactive interfaces were produced by Paracam.

What makes this so special? The Steinbeis team set up a platform-independent workflow which allows apps for smartphones, tablet computers, web-based and desktop systems to be developed out of a single programming environment. It is a cost-effective and time-saving approach that comes close to the ideal of so-called cross-media and

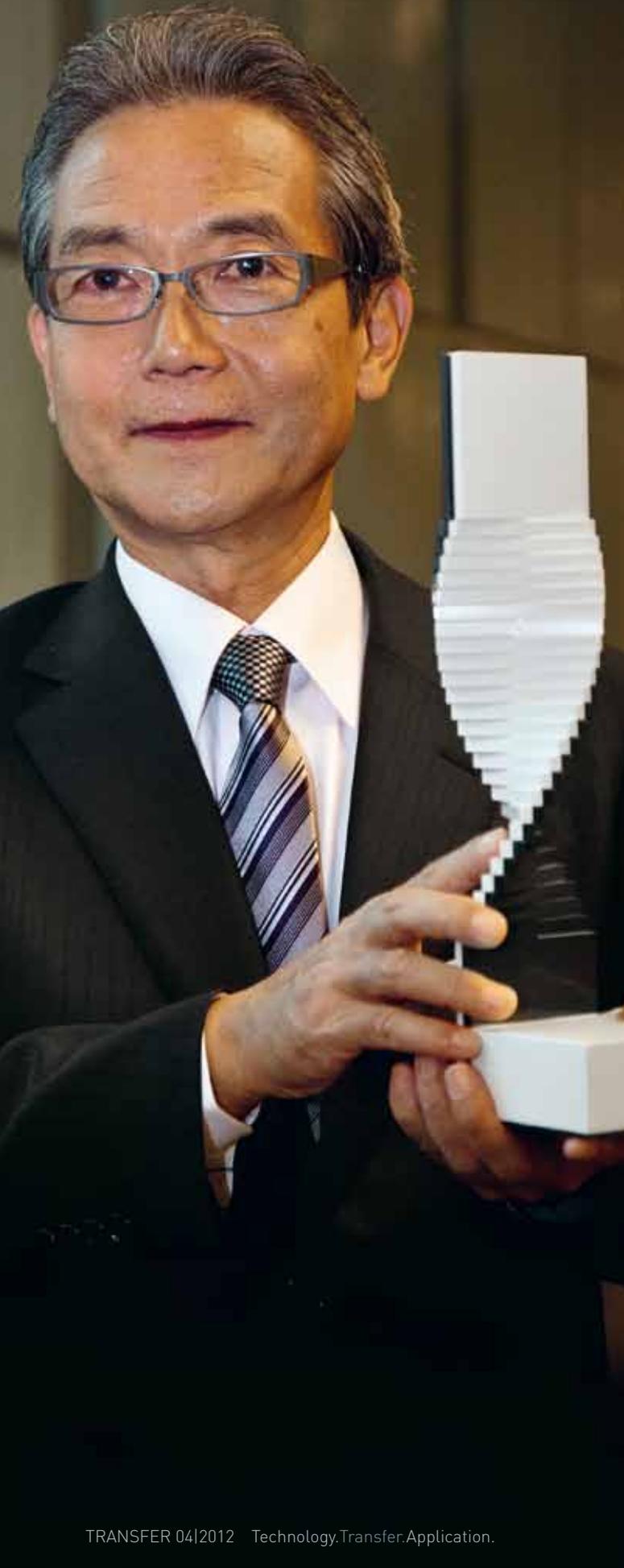
single-source publishing. The project partners are currently working on a beta version of a second app that will offer advanced functionality in the imaging and simulation of hip joints in action.



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## Steinbeis quality on the Japanese market

### Sachihiko Kobori

The jury of the Steinbeis Foundation's Steinbeis Transfer Prize has honored Sachihiko Kobori with a special award. Kobori has been the president of Steinbeis Japan Inc. since 1999. Success between Steinbeis and Kobori is not only a result of extremely high quality standards, but also a relationship marked by strong mutual trust and personal ties.

After completing a degree in business studies, Sachihiko Kobori served as interim director of the American Miami Beach Redevelopment Agency where he was responsible for coordinating multidisciplinary consulting teams. Since 1992, he has been the managing director of the Japanese Oceanautes Inc., for which he has developed new maritime geographical information systems (GIS).

Kobori worked as the interim representative of Baden-Wuerttemberg's Ministry of Economic office in Japan from 1982 to 2000, followed by a position as representative of the Steinbeis Foundation in Japan from 1996 to 1999. In addition to his lectureship at Steinbeis University Berlin, Kobori has also taught at the Kyushu University Career Development Center.

Sachihiko Kobori directs Steinbeis Japan Inc., which strives to strengthen the worldwide Steinbeis Network's position as the main port of call for Japanese experts. Offering consulting services, Steinbeis Japan Inc. supports companies in Germany, the US and Asia with matters in the area of management and technology on the Japanese market. The Kobori family has been involved with Steinbeis since the beginning of the foundation in the early 1980s. Sachihiko Kobori's father, Kiyoshi Kobori, also served as the representative for Baden-Wuerttemberg in Japan during the term of Baden-Wuerttemberg's former minister-president, Lothar Späth.



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## Machines are his passion

### Prof. Dr.-Ing. habil. Eberhard Köhler

The jury of the Steinbeis Transfer Prize has paid tribute to Prof. Dr.-Ing. habil. Eberhard Köhler's many years of outstanding contributions to technology transfer with another special award. Eberhard Köhler is a brilliant, recognized authority in his field. His expertise played a huge role in building up multiple Steinbeis enterprises.

The qualified machine fitter and welder received his degree in mechanical engineering from the former Karl Marx City Technical College (now the Chemnitz University of Technology) in 1960. In 1974, he completed his post-doctoral degree in engineering. Köhler's professional career began in 1960 with an engineering position at VEB Centrifuge Construction in Hainichen, where he later served as technical director and interim plant manager. Shortly thereafter, he coordinated research at Berlin "Carburetor and Filter Works" before returning to his alma mater as a research assistant in 1969. In 1985, Köhler was appointed as a university lecturer for processing machine construction, and in 1989 he received a professorship. From 1989 to 1991, he directed the textile machine construction division, serving for a year (1990-1991) as interim director of research in the area of textiles and leather. Following completion of his post-doctoral qualifications, he worked as vice-rector of research at Chemnitz University of Technology from 1991 to 1994 before becoming the chair of construction in general mechanical engineering.

In the mid-90s, Köhler founded and directed the Institute of General Mechanical Engineering and Plastics Technology at Chemnitz University of Technology. From 2001 to 2003 he served as dean of its Mechanical Engineering department. Köhler began his Steinbeis career as a project director in 1990. In 1991, he founded his first Steinbeis enterprise, the Steinbeis Transfer Center for Drive and Handling Technology in Mechanical Engineering. He followed with the establishment of the Steinbeis Research Institute of Processing Machines and the Steinbeis Innovation Center for Drive and Handling Technology in Mechanical Engineering, in 2004 and 2008 respectively.

Eberhard Köhler and his Steinbeis transfer center, along with its project partner, Siemens AG Generator Plant in Erfurt, were granted the Löhn Award in 2010 for the development of an innovative bending machine for large-scale induction conductors.



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## Business Rendezvous

### Exchanging experience at the Business School Alb-Schwarzwald

Initially, it might seem like a daring plan: Students at the Business School Alb-Schwarzwald, a part of Steinbeis University Berlin, would like to host a "Business Rendezvous" on January 26th, 2013. The chosen venue: the former Capuchin monastery in Rottweil, now a popular events center. They don't want to keep to themselves, but rather plan to invite an extensive guest list from regional businesses to this historical setting.

As part of the event program, nearly 50 students and alumni will present themselves and their businesses. The aim? To open lines of communication between the guests and participants. But that's not all. A special planning team took several weeks to develop concepts for an appealing event designed to accommodate as many guests as possible. Rottweil's mayor was particularly impressed by the professionalism and creativity the planners brought into the planning process: "Quality education that meets exceptionally high standards is an important location factor. We are very pleased that future-oriented study programs are on offer in the oldest city in Baden-Wuerttemberg – and that this 'Business Rendezvous' will emphasize the potential of our students." Despite many other German Carnival-related commitments, he promised to give some opening remarks. Prof. Dr. Dr. h. c.

mult. Johann Löhn, president of Steinbeis University Berlin, will be the day's keynote speaker. Prof. Dr. Werner Mezger will also speak at the event. He has the chair of European Ethnology at the University of Freiburg and will address the topic: "Europe and the Euro Crisis: What Economists Haven't Thoroughly Considered." In addition, Hans-Jörg Bley, marketing director at the company Interstuhl in Meßstetten-Tieringen, will talk about his experiences in a brief presentation. But the students will also get a chance to contribute. "Most of us are already experts in our own field," says master's student Andrea Weigold. In her primary job, she manages the branch of a company herself. "During my studies for my bachelor's degree, I concentrated mainly on the way companies deal with new recruits. That's why I will be available at the 'Business Rendezvous' to answer any question guests might have about this topic." Engelberd Leib, director of the association for health care for the county of Rottweil (Betreuungsverein Landkreis Rottweil e.V.) and also a student of the Business School, will be on hand to answer questions about health care proxy, legal council, and living wills. These two examples highlight the broad spectrum of topics that will be covered by the event.



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## Further education and training for the aerospace industry

### SHB cooperation

The Steinbeis Technology Group, a Steinbeis University Berlin (SHB) school, will introduce a new study program in the coming year. Together with training provider TRAINICO, they will be offering a program for a Bachelor of Engineering with a major in Aviation Engineering. Students will take classes at the SHB Study and Research Center at the TRAINICO Campus Wildau and in Berlin-Schönefeld.



Jürgen Grau, Wolfgang Clement, Professor Dr.-Ing. Ulrich Günther (left to right)

TRAINICO is Germany's leading expert in further education and training (and retraining) in the aerospace field. The company is licensed to offer study programs in line with EASA Part 66, and is thus an accredited examination institution. The collaboration was officially ushered in at an opening ceremony celebrating the dedication of the new TRAINICO campus on the former grounds of the University of Applied Sciences in Wildau. The first collaborative project will be the extra-occupational bachelor's degree with a major in aviation engineering. The new SHB Study and Research Center was dedicated by Wolfgang Clement, federal minister of economics and employment a. D., together with TRAINICO director Jürgen Grau and Professor Dr.-Ing. Ulrich Günther, director of the Steinbeis Technology Group. It was the symbolic inauguration of the study program.

The study program will include a closer look at what types of technical aerospace companies exist and how they operate (Part 21, CAMO and Part 145, operation). It will also cover select fundamentals of becoming a licensed business in the field, in addition to management techniques applied within the aerospace industry.



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## Public and private services – an upcoming issue for regions and municipalities

### Steinbeis experts develop innovative solutions

Regional authorities, municipalities, administrative districts, associations, organizations and businesses of today face enormous challenges such as international competition and the resulting mobility of companies, the shutdown of retailers, social tensions and much more. That's why forward-thinking regional and municipal development is the order of the day. The need to find common solutions makes communal and regional cooperation a must. The Steinbeis Consulting Center for Regional and Communal Development provides assistance to this end.

The Steinbeis consulting center's portfolio of services ranges from brief consulting sessions to comprehensive communal, business and project support. Its experts can react flexibly to various challenges facing key regional and communal players, thus offering their clients fast service free of red tape. The center draws on its extensive expertise to develop practical concepts and present the client with innovative and effective solutions.

The Steinbeis experts are currently working on a regional strategy for public services in the German district of Rhein-Hunsrück. The strategy should serve to develop integrative public service concepts that address changes in demographics as soon as possible. The goal is to discuss and create pragmatic strategies on an interdisciplinary level, ensuring that experts in district administration who are responsible for key areas are involved, as well as key players, and private users. Existing approaches and initiatives should be optimized and brought together into a comprehensive strategy. Synergy effects should be mapped and promoted. Furthermore, collaboration mechanisms already in place in the district (intercommunal partnerships, networks and alliances) that are functioning well should be utilized to work out the regional strategy for public services, with the ultimate aim of achieving the best possible results. The project is unique in that it forms a bridge between Germany's path toward sustainable energy and local institutions providing public services, highlighting issues related to creating and maximizing added value for the region through sustainable energy concepts.

Structural changes on a social, economic and technological level also lead to changes in value-creation structures and intensified competition. Globalization and continuous demographic change are common factors influencing regional and communal development. The Steinbeis consul-

ting center offers its clients innovative solutions, especially with issues related to demographic change and sustainable energy practices. The experts provide detailed analysis that aids the client in making more informed decisions about innovations, their image and strategic market developments. In this way, the potential and viability of ideas can be analyzed and new approaches can be revealed.

When viewed against the background of globalization and Europeanization, the increased mobility of businesses is also an area ripe with potential for research and consulting. The Steinbeis Consulting Center for Regional and Communal Development concentrates mainly on questions of current and future significance for regional, municipal and urban development. It supports municipal authorities in their search for the appropriate positioning and decisive strategies that create an advantage on the market.

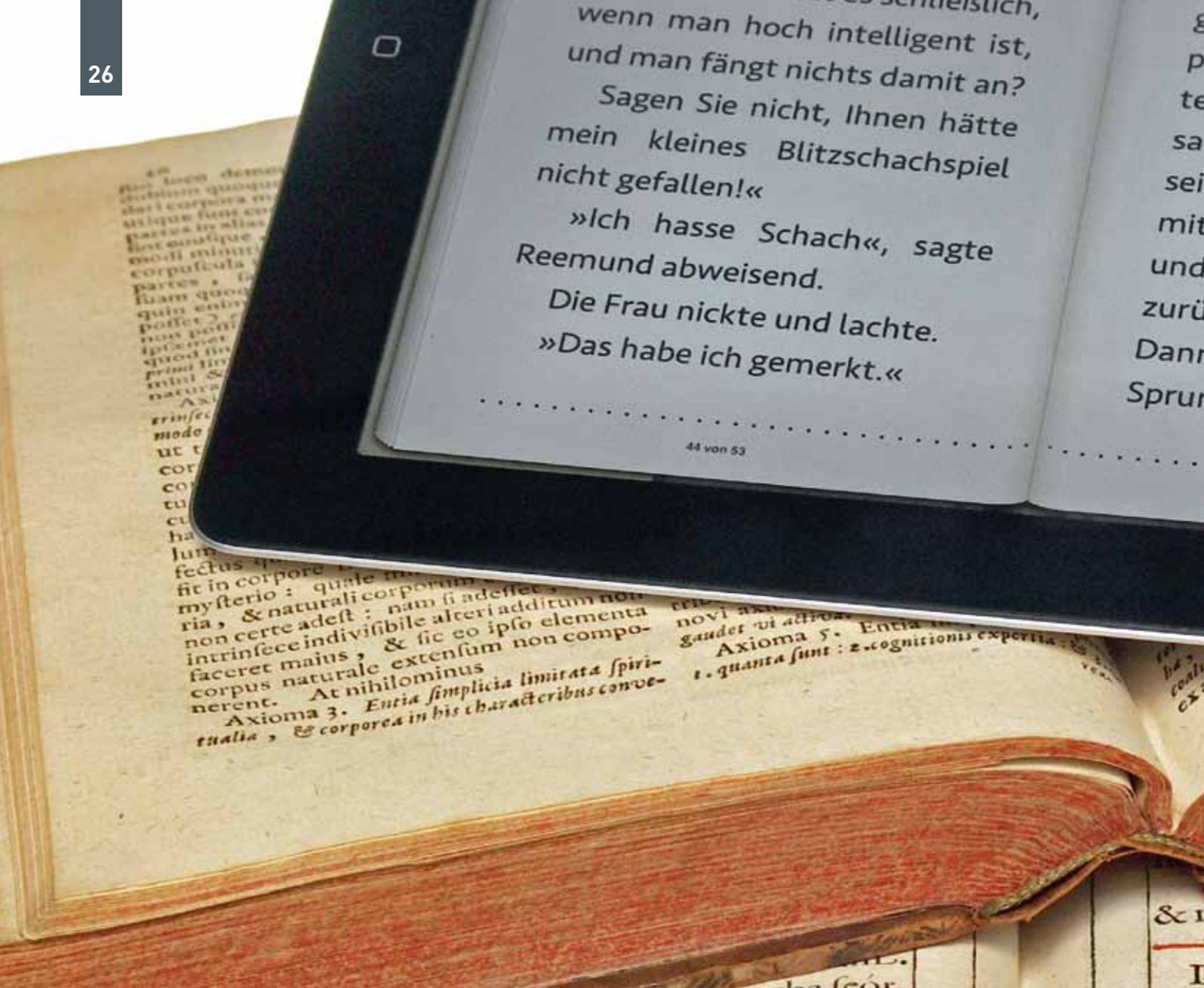


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## Guide posts for the book market

### Steinbeis consults on the restructuring of SPIEGEL's bestseller list

Although, to date, the e-book has only achieved 2% market share in Germany, the "digital revolution" is certainly gaining wind. The electronic book is changing the way the industry sees itself and is pushing publishers to start looking for the business model of tomorrow. These days, publishing houses and authors can only really make money if they produce their works on a grand scale, globally. The fusion of large publishers underscores the power shifts taking place on the worldwide book market. Even in Germany, it is becoming increasingly difficult for publishers to get their books to retailers and into the hands of the masses. One of the most important guide posts for readers struggling with the jungle of book titles on offer is the SPIEGEL bestseller list. Steinbeis Media Publishing & Management consulted the company on its 2012 list of paperback titles.

The SPIEGEL bestseller list – which is based on sales figures – can be found in every bookshop and is used by retailers to determine the contents of their bestseller shelves. Authors whose works rank among the top 15 list entries can rest assured of their success. In addition to the list for top hardcover books, in Germany, there has always been a separate list for paperback publications. Both lists were subdivided into fiction and non-fiction publications. But in the last few years, more and more paperbacks made it onto the list for hardcover hits. From a purely technical viewpoint, paperbacks were defined as large softcover books with two additional folding elements. Lower prices of paperbacks – up to € less compared to hardcovers – in addition to a more modern appeal have

made them the more popular option among readers. As paperbacks became the success story for contemporary book retailers, SPIEGEL's hardcover bestseller list lost its standing as a reliable guide for customers.

Pressure from retailers and a number of publishers prompted SPIEGEL to update its approach to producing its list. The criteria publishers had to meet to make it onto the list hadn't been very clear. And no one really knew where paperbacks fit in. The paperback is very popular among young, less-known authors and young readers, but sales figures in this market segment are so high that new authors producing paperback works don't have much of a chance of making the bestseller list. A work-



shop lasting several days resulted in the new (third) paperback list. Working with Steinbeis Media Publishing & Management as an impartial party and know-how provider, the criteria for all three lists were revamped from the perspective of the reader. These criteria take new book forms into account, so that readers can distinguish between various formats and evaluate them better. The hardcover and paperback lists only contain German-language first editions that meet the newly defined criteria. "If retailers now adequately present the paperback list, there are good chances for instilling a new appreciation for works in which paperbacks and, more significantly, e-books are better differentiated," explains Michael Köhnlein, managing director of Steinbeis Media Publishing & Management.

But what happens to titles that will never make the bestseller list? For example, all of the specialist publications and guidebooks that deliver specialist knowledge to smaller target groups? Retail's tendency to gradually concentrate on top-selling titles leads to only potential best-sellers being available in shops. Specialist books are increasingly only available from online booksellers. And even there, these are often

available in such limited numbers with such high retail markups, that even seasoned publishers are pushing the boundaries of what is financially feasible. Do specialist publications with an edition of 10,000 copies still have a chance in the future? Yes, they do – thanks to new marketing strategies. Steinbeis Media Publishing & Management doesn't just consult media companies. It also works with specialist publishers. Printed books and e-books are offered via standard retail channels, but new sales routes which allow a large part of an edition to be brought to the customer without going through the trade are also being sought after. The new concept allows specialist authors to transfer their knowledge to third parties through their own publishing company, thus avoiding the pains of going through the cost-intensive machinery of traditional publishing houses. The Steinbeis name is a hallmark of quality – one that Steinbeis Media delivers in terms of content as well as in its professional dealings with authors and the professional marketing of specialist content.

Meanwhile, Steinbeis Media will shortly be coming out with its own first publication. Together with author Stefan Renz, it has written a training book for startup entrepreneurs that doesn't cover the usual questions surrounding the business plan or legal aspects, but instead highlights the personal development of the entrepreneur. What's more, it addresses the most important question: "Do I have what it takes to be in business?"

### Steinbeis Media Publishing & Management

#### Services

- Publisher for knowledge and technology transfer
- Consulting of media businesses
- Business development

#### Key areas

- Publisher
  - Publications on management and technology topics
  - Publication of knowledge on traditional and electronic media types
  - Distribution of content regarding new, target-group-oriented and standard retail channels
- Consulting
  - Consulting of businesses in the publishing media industry and their technology and service providers
- Business development
  - Development of new business models and products in the field of media
  - Market research and market analyses
  - Innovations management



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## Financial management, credits and equities

### The Steinbeis event series "Financial Communications"

The end of October saw the debut "Financial Communications" event take place. It was the first in a series of planned events and was held in cooperation with the Chamber of Commerce in Rostock. Organized by the Steinbeis Consulting Center Finance.Communication.Training., it featured background information provided by experts and looked at the requirements for bank lending.

More than 50 events and seminars are planned for 2013, in cooperation with chamber organizations, banks and associations. "The kick-off event in Rostock was sold out within the first few days. It is a very popular topic among banks and companies," says Frank Armbruster, director of the Steinbeis consulting center. The idea behind the event series is an open forum discussion giving practical instructions for adding more

professionalism to the financial communications between companies and banks. This is important because poor securities often aren't the sole reason companies don't receive bank credit or satisfactory lending terms and conditions. Actually, many credit discussions fail on account of poor communications between the business and the bank. The event in Rostock was followed by a seminar and workshop series that included ten training modules for financial communications. The event then came to a close with an innovative "World Café" and "Marketplace" for exchanging experiences and discussing the new things learned at the event. It also served to strengthen existing contacts among participants.



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## Aging employees: wasted potential

### Confronting demographic change

How can companies make the most of demographic developments? The key element is innovative human resources management, one that systematically integrates and encourages older employees with all of the know-how and experience they have to offer, possibly even giving them a chance to redefine themselves. Companies carry out stocktaking exercises to determine the measures and instruments they will use – things like mixed-age learning groups and mentoring models, life-cycle-oriented personnel development, or workplace health promotion. The Steinbeis Consulting Center for Business Coaching supports companies to this end.

Jil Sander sets the example: the 68-year-old founder of the eponymous fashion line has decided to take a fresh start and begin designing collections again. Demographic change in the workplace is not a new topic and the effects of changing age structures are clearly visible: The workforce is not just aging, but businesses seem to be facing a shortage of qualified specialists. This is leading companies to present themselves as attractive employers within a tightening workforce market. However, many companies seem to focus exclusively on acquiring young potential from high achievers instead of making the most of demographic changes.



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Steinbeis consultants are on hand to help with strategy development and implementation, as well as to contribute with coaching sessions designed to overcome these demographic changes. Companies interested in taking such steps have access to funding from the European Social Fund.



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## Brief Steinbeis consultations

### Free consultations for SMEs

Steinbeis offers free consultations to small and medium-sized businesses to open up access to new technology and know-how sources. These companies are given contacts from the Steinbeis network of experts, comprehensive consultations and multifaceted information regarding products, technologies and processes.

The individual companies, representatives of various chambers, the regional L-Bank, institutions for promoting the economy, or the directors of Steinbeis companies can apply for the brief consultations by indicating the desired consultation topic. All necessary forms are available on the Internet.

The conditions for brief consultations include:

- The company is headquartered in the state of Baden-Wuerttemberg
- Company revenues lie under 100 million euro (in the previous year)
- Only one consultation per year, per company
- Applications are evaluated by Steinbeis, in addition to selection and consultation



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## Steinbeis networking forum for SMEs

### Platform for companies to merge theory with practice

Organizational issues, process management, project management, production, technology, sales – the focus of the first Steinbeis Entrepreneur Forum, which will take place March 22, 2013. The Steinbeis Center of Management and Technology (SCMT) is inviting guests to Stuttgart's Haus der Wirtschaft (House of Commerce) to exchange views on these topics and hear some thought-provoking talks.

The one-day communication forum will be an ideal opportunity to meet people and set new ideas into motion. It is open to anyone working for an SME, especially Steinbeis clients and partners, but also students and Steinbeis University Berlin graduates.

During the day, presentations on the topic of project skills will be organized in tandem. This means guest can expect an examination of the principles underlying a particular topic from a Steinbeis expert, combined with practical perspectives on the same issue from a Steinbeis project partner. This will be followed by question and answer sessions. Prof. Dr. habil. Hans Jobst Pleitner will moderate the event.

There is no entrance fee for the event, but online registration is required.

To find out more and register online, go to [www.steinbeis.de/su/1274](http://www.steinbeis.de/su/1274)



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Speakers at the Steinbeis Entrepreneur Forum  
(as of December 2012):

- **Organization and Process Management**  
Prof. Dr. Lüder Tockenbürger  
Full-time lecturer at Steinbeis University Berlin, Director of PRO4S & Partner GmbH
- **Production and Technology**  
Prof. Dr.-Ing. Ulrich Günther  
Full-time lecturer at Steinbeis University Berlin, Director of the Steinbeis Technology Group
- **Sales**  
Dr. Klaus Hörmann  
Part-time lecturer at Steinbeis University Berlin, Director of Fabbrino Produktionsgesellschaft mbH & Co. KG



Beekeeping program keeps students of the FWG in Singen busy as bees

## Bees making the grade

### Steinbeis promotes project-oriented learning

For many people, "bee" is an emotionally charged word – either conjuring up images of an idyllic countryside, the sweetness of honey and the delicate scent of beeswax, or alluding to a source of fear and painful stings. After cows and pigs, bees are the third most important domesticated animals. Not because of their honey, but rather for their function as pollinators: apples, cherries, cucumbers and many other crops depend on pollinating insects. And even better, these social creatures offer a lot of insights into peaceful coexistence. The Friedrich Wöhler Grammar School (FWG) in Singen realized this early on and initiated a program with a local beekeeper. For five years now, school children have been taking care of their own bees as a part of this program, which is supported by Steinbeis.

The educators in Singen aren't the only ones who have recognized the pedagogic potential of bee breeding. "School with Bees" was the name of a Germany-wide conference at which Bettina Laurer, project director of Bienen AG at the FWG, first came into contact with other bee breeding schools. All of the participants felt convinced that there was much to be learned with and from these insects, and that a bee-inspired code of conduct should be adopted as a rule rather than as an exception in schools. Why? As pets, bees can be monitored and observed easily for analysis. The entire bee colony structure can be examined without having to destroy it first. At the same time, honeybees have retained characteristics of wild animals – they wouldn't be dependent on human intervention if not for varroa parasites. That's what makes them an interesting source of educational activities involving cognitive, emotional and tactile skills.

Together with Bettina Laurer, Horst Scheu, principal of the FWG and director of The Steinbeis Transfer Center for Didactics of Technology and Interdisciplinary Natural Sciences, wanted to demonstrate the variety of uses for bees and bee products to school children. The same variety is found in the bee-related topics now being integrated into school lessons. Honey, propolis and royal jelly, for example, have great medical potential. Due to its antibiotic properties, propolis was used in microbiological testing in the FWG's own school laboratory. By analyzing the pollen in honey under a microscope, school children are able to see the intense integration of the bee colony in its environment. The social aspects of bee colonies become clear when they take a look at the structure of a beehive through bee display cases. Even business principles can be integrated by way of school honey farms organized as student-run cooperatives.

**Connected Vehicles between  
Web 3.0 and Safe Driving**  
April 9–11, 2013 in Stuttgart-Fellbach

**25 Years  
of a Successful  
Industry  
Event**

Through its educational work, the project group at the FWG hopes to make a contribution by adding a splash of color to the landscape where the bees normally flourish. They plan to introduce nectar-producing flowers into predominantly green patches of land currently overrun by corn crops, which can cover up to 80% of usable land. This is crucial since these plants provide the basis of existence for all pollinating insects. It would be an opportunity for cooperative work with farmers and communes that would give school children a chance to see concrete results. Projects could range from planting ordinary cup plants as an energy-generating alternative to corn, to creating green buffer strips or wild flower patches in parks.

Steinbeis is a supporter of the core subject programs for natural sciences and technology at the Friedrich Wöhler Grammar School, home of extremely modern scientific workshop spaces, a natural sciences library and a school laboratory. The program gives school children the chance to learn in a hands-on, project-oriented way at school, while supplementing the school's natural sciences and technology curriculum.

**Services**

- Consulting
- Development of teaching concepts for Company visits and factory tours, Projects and internships, Presentations
- Preparation of media

**Key Areas**

- Exploration of technical job descriptions
- Exploration of production and products
- Dovetailing of school activities involving companies and businesses with training programs
- Provision of exhibits

**Program Committee**

- Dr. Dirk Walliser » MBtech Group GmbH & Co. KG
- Prof. Dr. Michael Auer » Steinbeis Foundation
- Kai-Uwe Balszuweit » BMW Group
- Jochen Hanebeck » Infineon Technologies AG
- Ricky Hudi » AUDI AG
- Ralf Lamberti » Daimler AG
- Klaus Meder » Robert Bosch GmbH
- Uwe Michael » Dr.-Ing. h.c. F. Porsche AG
- Klaus Oertel » HANSER Automotive
- Prof. Dr. Konrad Reif » Baden-Wuerttemberg Cooperative State University (DHBW)
- Prof. Dipl.-Ing. Prof. h. c. (YZU) Gerhard Walliser » Steinbeis Transfer Center

**Some Key Areas**

**Technical state of the automotive electronics industry and further perspectives**

- Connected electronic architectures
- Secure multicore control mechanisms
- Software and functional architecture following AUTOSAR

**Connected Vehicles**

- Demands of connectivity interfaces
- Status Car2X communication

**Web 3.0**

- Changes in the world of mobility and related services
- Frameworks for modern infotainment systems

**Safe Driving**

- New functions: personalization, assistance, online
- Smart operation and displays in vehicles

**New: Now with interpreting services in German/English!**

**Organizers**



**Media Partners**



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# Integrated market

Target groups

Brand offering

Point of sale

## Cut and grow

**The Steinbeis Transfer Center for Integrated Design (i/i/d) assists medium-sized enterprises on the path to long-term success.**

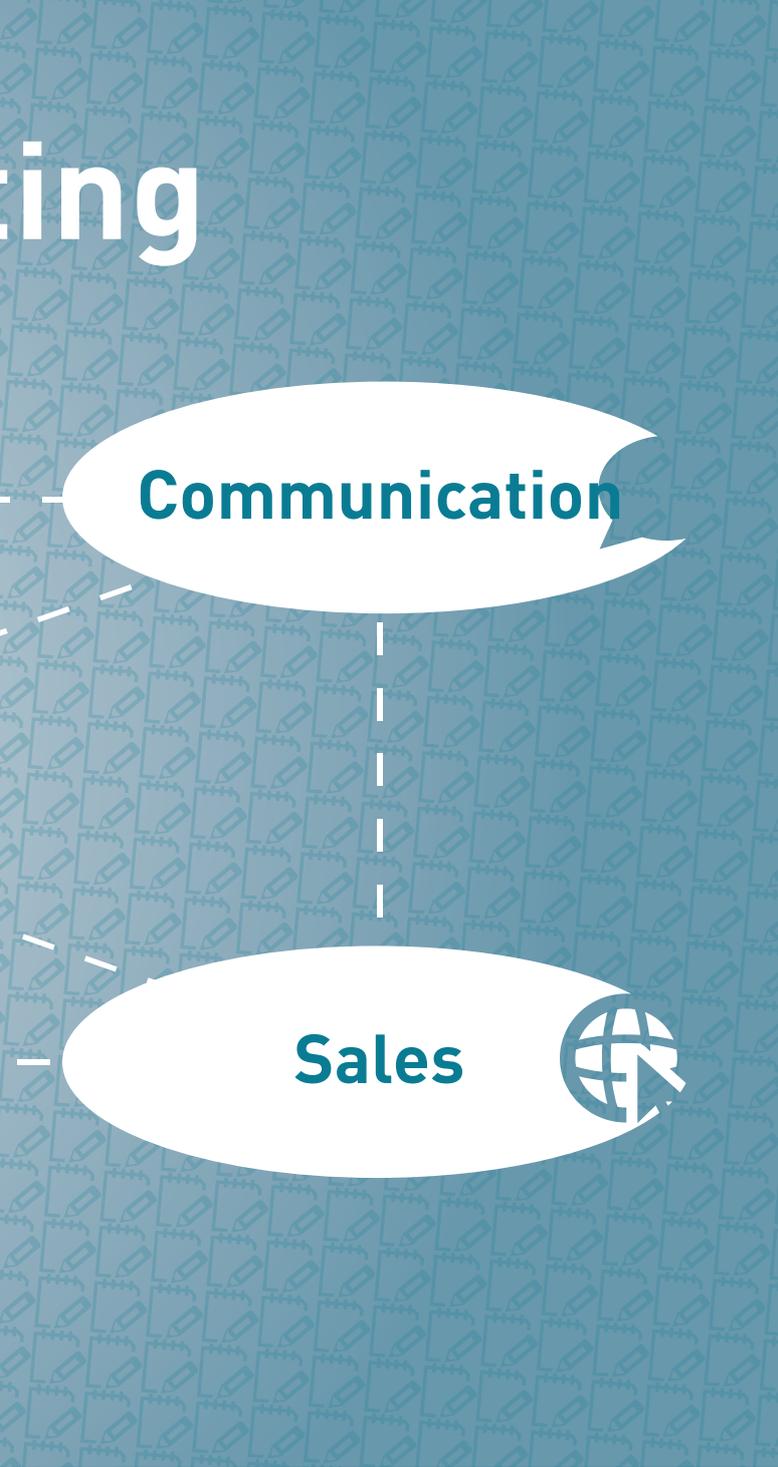
Many medium-sized, owner-operated companies stand out for the high levels of commitment their employees demonstrate, at all levels of the business. They understand and "live" the true meaning of service. Within the company, people take responsibility for co-workers, and day-to-day interactions are friendly. Frequently, however, one key factor is overlooked: the need to invest time in business strategies, long-term planning, market observation and early innovation. Yet these factors are central to securing competitiveness and success. To specifically address these areas, the Bremen-based Steinbeis Transfer Center for Integrated Design (i/i/d) provides businesses with highly individualized advice, as well as support with issues pertinent to markets and strategic topics. In doing so, it draws on many years of expertise to help companies with their innovation and development processes.

The typical working day of the committed owner of a medium-sized enterprise is filled with a variety of tasks, all running in parallel to one another – telephone calls, client meetings that the boss absolutely has to be involved in, walks through production, maybe a series of short meetings with employees (each with a friendly handshake of course). Should a problem crop up, workers do not hesitate to ask directly for advice. They know their manager likes to try to find a solution himself. Everything revolves around the boss, who is totally involved and, in essence, is doing everything right. But these day-to-day issues really eat into his schedule, leaving no time to rest, let alone time to deal with

overarching issues like planning, strategies and frontline implementation – tasks often pivotal to the role of a business owner.

A simple analysis of the numbers at a typical small enterprise highlights a key issue, usually in line with the Pareto principle: around 20% of products or clients account for roughly 80% of sales, the other 80% of clients only account for 20% of sales. Time investment in these small clients is correspondingly high, for little (if any) profit. Without a doubt, the problem is partly to do with the nature of daily business, which dictates everything.

ing



**Communication**

**Sales**



Unprofitable products and clients are given attention for too long, and too much time is invested. This means opportunities are missed to adjust the company portfolio or engage in marketing. The competition is not observed closely enough. And if customer behavior changes, this may not be noticed until it is too late.

There are five key factors that dictate successful marketing: the company's portfolio of services, the target group it sells to, the sales channels, the point of sale, and last but not least, communication. These factors are linked and have a mutual influence on one another. They are the threads of a cobweb that make up integrated marketing. A firm should aim to develop efficient market strategies, customer-oriented concepts, products and services that minimize dependence on larger customers, as well as the time invested in small customers and day-to-day business. It should also strive to tap into its full potential to develop solutions and innovate, and with this, make profit. It is here that companies can draw on the full support of the Steinbeis Transfer Center for Integrated Design (i/i/d).

One such company was Quadro, the Vechta-based producer of advertising materials. Its primary philosophy for years had been to keep the customer satisfied – whoever the customer, large or small. As a result, it was difficult to express what the company stood for, as over time it had developed a sprawling and confusing product and service portfolio. Worse still, some support services were not making money. Day-to-day business dictated everything, and no one had a clear overview of what was going on. Key actions and decisions were constantly being put on the back burner – activities such as acquiring major customers, or finding ways to manage small or large accounts on a differentiated basis. It had also needed to make distinctions between unprofitable clients or services and then organize its realigned portfolio according to a clear, systematic structure. Building on a business strategy developed with the i/i/d, Quadro settled on a relaunch of its brand and marketing communications. By the end of the process, people finally had time and capacity again to focus on key tasks and develop new products and offerings likely to generate real profit.

One reliable starting point for the decision-making process outlined above is a close examination of business prerequisites and an assessment of market requirements. Continually re-examining key factors makes it possible to spot (early) any adjustments that may need making and take the appropriate corrective measures, with the ultimate aim of creating enough space to develop new concepts and innovations. Central to a company's ability to launch new offerings and reach out to the right target group is how well it knows the target group's preferences and tendencies, its values, life goals, lifestyle or attitude. This must be understood, as different customers need to be approached differently.

This two-pronged strategy – separating the wheat from the chaff and launching new offerings early – results in less time wasting and higher profits.

Apart from integrated marketing services, the i/i/d portfolio includes communication planning, brand development, industrial design and interface design. These services culminate in products, processes and campaigns that arouse interest in clients and users, engender client satisfaction and thus provide a foundation for long-term success.



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	GP 2.1	GP 2.2	GP 2.3	GP 2.4	GP 2.5	GP 2.6	GP 2.7	GP 2.8	GP 2.9	GP 2.10	GP 3.1	GP 3.2	SP 1.1	SP 1.2	SP 1.3	SP 1.4	SP 1.5	SP 1.6	SP 1.7	SP 2.1	SP 2.2	SP 2.3	SP 2.4	SP 2.5	SP 2.6	SP 2.7	SP 3.1	SP 3.2	SP 3.3	SP 3.4	SP 3.5	
REQM	R	R	G	G	Y	R	G	Y	R	R	R	R	G	G	G	Y	R															
PP	R	Y	G	G	Y	R	Y	G	R	R	R	R	G	R	G	Y					G	G	R	Y	R	R	G	R	G	Y		
PMC	R	R	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	G	G	R	Y	G										
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RD	R	Y	G	G	Y	R	G	G	R	R	R	R	G	G							G	G	Y					Y	G	G	R	
TS	R	Y	G	G	Y	Y	R	Y	R	R	R	R	Y	Y							Y	G	R	R				Y	G			
PI	R	Y	G	G	Y	R	R	Y	R	R	R	R	G	Y	Y						R	R						R	G	G	G	
VER	R	Y	G	G	Y	R	R	Y	R	R	R	R	G	G	Y						Y	G	R					G	R			
VAL	R	R	R	R	Y	R	R	R	R	R	R	R	R	R	R						R	R										
OPF	R	R	R	R	Y	R	R	R	R	R	R	R	G	Y	Y						G	Y						R	R	R	R	
OPD	R	R	R	R	Y	R	R	R	R	R	R	R	G	Y	G	G	R	R	R													
OT	R	R	Y	Y	Y	R	R	R	R	R	R	R	Y	G	G	G					Y	G	Y									
IPM	R	R	R	R	Y	R	R	R	R	R	R	R	R	R	Y	R	R	Y	Y	R	R	R										
RSKM	R	Y	Y	G	Y	R	Y	R	R	R	R	R	G	G	G						Y	Y						G	R			
DAR	R	R	G	G	Y	R	R	R	R	R	R	R	R	R	G	Y	G	Y														

An evaluation using SCAMPI<sup>SM</sup>. The green boxes indicate factors with a high probability of fulfilling previous and new requirements. The yellow boxes show ones that have a low probability of fulfilling requirements, and the read boxes indicate that requirements are unlikely to be fulfilled.

## Steering projects to success

### Evaluation of projects using reference models

Will that project that's about to get underway, or has already started, be successful? This is a question companies frequently have to ask themselves. Often the answer may come by drawing on a suitable reference model to evaluate the project early in the process. If the answer is negative, the company can "pull the plug" on the project or make changes, and save a lot of money. The Steinbeis Consulting Center for Processes, Excellence and CMMI (PEC) provides support with such issues by using Capability Maturity Model Integration, or CMMI<sup>®</sup>, and the Standard CMMI<sup>®</sup> Appraisal Method for Process Improvement (SCAMPI<sup>SM</sup>).

Steinbeis experts were consulting a client on the improvement of business processes when a project caught their attention. The project involved overhauling the invoicing of deliveries and improving efficiency. At first glance, it was not clear which factors had been taken into consideration and which ones had been omitted, even though the monthly project status reports pointed to no unexpected problems. As there was already discussion within the company about the scope of the project, it did not take long to convince the client to carry out a short assessment of the project with the Steinbeis team, based on two CMMI<sup>®</sup> for Services Process Areas (Service System Transition, or SST) and Capacity and Availability Management (CAM). Following a brief meeting and an initial evaluation of project documentation, it became clear that almost all key aspects that should be taken into consideration when introducing a new invoicing system were not being addressed by the project; they had simply been overlooked. As a consequence, it was decided to halt the assessment and present results generated until that point to management. The managers decided to call off the project and go back to the drawing board, this time taking the points raised into consideration, as well as an analysis to ascertain which other aspects captured by CMMI<sup>®</sup> for Services should be covered.

In another project with the PEC Steinbeis Consulting Center, a leading international company ascertained that the next generation of its products would need to address a variety of new demands. The manager responsible for the project was doubtful that existing, tried-and-tested development processes would suffice. As a result, he approached the

Steinbeis Consulting Center and arranged for Steinbeis experts to carry out an assessment based on CMMI<sup>®</sup> for Development, Maturity Level 3. The aim was to check whether the existing development processes could cover the new requirements. To do this, a team consisting of three people – an expert on CMMI<sup>®</sup> for Development, an expert on safety standards and a specialist in development processes – was set up. Together, they evaluated the existing development processes using SCAMPI<sup>SM</sup>. Based on the findings of their evaluation, a variety of improvements in the development process were prioritized and implemented.

CMMI<sup>®</sup> is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University. SCAMPI<sup>SM</sup> is a service mark of Carnegie Mellon University.



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## Corporate social responsibility – putting CSR center stage

### Steinbeis supports companies with the introduction of CSR

The Mittelstand – traditional German small and medium-sized enterprises (SMEs) – is pivotal to the German economy. For most SMEs, acting responsibly toward employees, the environment and the community is a given. But when finances and personnel are scarce, it is not possible for all SMEs to approach the issue of CSR systematically. This is where the "Social Responsibility for SMEs" program, a project initiated by the German Federal Ministry for Labor and Social Affairs (BMAS) with the support of the European Social Fund (ESF), comes in. The aim of the program is to offer companies a made-to-measure selection of consulting and training tools in the field of corporate social responsibility. The Steinbeis Transfer Institute of Corporate Responsibility Management is in charge of implementing CSR measures as part of a stand-alone project.

Under the program, SMEs should benefit from specific ways to manage business in a "corporately responsible" manner. CSR advice is being offered to business managers, employees and employee representatives, spanning four key areas: the work place, the environment, the market and the community. Companies can make use of this advice in a variety of ways: They may want to focus on more employee-centric HR policies to improve motivation and productivity, or introduce measures to help workers strike the right balance between work and family priorities, or put systems in place to increase opportunities for older employees in order to answer HR needs. Or they might want to use natural resources more carefully and efficiently and cut production costs.

Such CSR measures allow companies to cope with the fact that in the future, the EU will only allow firms to tender for official contracts if they score well on CSR issues. This will move companies forward, helping them adapt better to the business environment, raise their survival chances in the market and create more options for taking on staff.

As part of the support program, the Steinbeis Transfer Institute of Corporate Responsibility Management, which belongs to Steinbeis University Berlin, has joined forces with the State Association of Baden-Wuerttemberg Industry, or LVI, in a stand-alone project called "Implementation of CSR programs in SMEs with help of the Project Skills Concept." Their aim is to train employees to add social value and develop "best practice." Skills and project development are receiving 80% funding. Project results will be shared throughout Germany and Europe as best practice.

Standard projects last 12 months and during this time people involved in the project at the company start with a one-week training phase on key topics. During the subsequent project implementation phase, at least one person who is responsible for the project pulls together a list of project objectives with the support of a specialist project coach from the Steinbeis transfer institute. Implementation is based on Steinbeis project competence principles, which involve applying scientific methods to solve specific issues faced by the company.



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### The key to increasing productivity

#### Developing specialized machinery

The Chemnitz-based Steinbeis Transfer Center for Drive and Handling Technology in Mechanical Engineering has been successfully active for more than 20 years in the research and development of new technologies, processes, and specialized machinery – in particular for machine construction. An example of their work is an innovative patented system for producing transversal conductors in the manufacture of large generators, which was implemented as a specialized machine in the production process.

The aim of the experts in Chemnitz is to move the R&D process forward – as far as producing prototypes, primarily for SMEs. They support SMEs with subsidies from the Federal Ministry for Economics, drawing on the

ministry's central innovation program for the small firm sector (the German "ZIM-Förderprogramm"). Through the initiative they have already helped to develop a new deposit collector device for sparks and particles. The solution minimizes the ignition energy used in grinding processes. The device, which has already been launched, makes it easier to protect downstream filter units and massively extend their service life. In addition to increasing productivity in processing, this specialized machinery significantly cuts the cost of the overall processes.



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### Dredged material for dike construction

#### EU project: DredgDikes

Dike constructions protect millions of people from flooding in the southern Baltic Sea region. In Germany alone, the cost of dike maintenance and new construction will total €50 million up until 2014. And nearly €5 million have been earmarked for coastal protection for the next 20 years. To ensure navigability in these waters, vast amounts of dredged material have to be moved each year, which, for the most part, must be disposed of on land due to its organic makeup. For years, people have been looking for ways to use this dredged material in dike construction.

The Rostock-based Steinbeis Innovation Center for Applied Landscape Architecture has partnered with a project, co-financed by the EU, which focuses on the use of dredged material in dike construction. Since 2011, experts have been investigating ecological and vegetation-related factors, and they have been testing the quality of the dredged material. The fine grained material from estuaries and saltwater lagoons in the state of

Mecklenburg-Western Pomerania – which mostly consists of organic particles – can be used as a cover for dikes, replacing the more commonly used marl. To prepare for dike construction, selected dredged materials were designated as test areas to determine the growing behavior of planted grass seed. The selected mixture is intended to promote the erosion stability of the dike's top surface. The dike, which was completed in the summer of 2012, is now being monitored in terms of how well the planted grass seed grows and how well it works as a surface layer, in addition to testing the vitality and proportional growth of cultures and wildflower vegetation. The results will be documented and analyzed, and all findings will then be featured in a manual highlighting the correct use of dredged material in dike construction.



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Dr. Rosemarie Genn (left),  
the stallion Caroly and  
Andrea Winkel  
Photo: © Becker

## Horses as a mirror for human behavior

### SHB student examines new approaches to conflict research

As Paul Watzlawick once said, "One cannot not communicate." But what does this widely cited quote have to do with horses? Andrea Winkel has been studying at Steinbeis University Berlin's (SHB) Steinbeis Business Academy since 2011. She is working towards a Bachelor of Arts in Social, Healthcare and Education Management with a concentration in Equine Assisted Therapy. Her research deals with the potential to derive patterns in human communicative behavior from intervention methods using horses. "In our daily interactions, often gestures, mimicking and body language are more important than words. Since horses communicate for the most part with their bodies, they provide us with a great way to analyze our own behavior," explains Winkel.

Together with her partner, Josef Kathmann, the 45-year-old professional dressage trainer manages the Kathmann horse breeding farm in the Lower Saxony town of Hausstette. Much to her delight, she is able to draw on a wealth of practical experience and use it directly on her project as part of her project competence degree. "The effort to build links between scientific theory and practical work is what piqued my interest in this program." It was an obvious step for her to draw on her everyday work to formulate the topic of her project. "Working with horses and riders, I have noticed time and again how so many conflicts could be solved, or avoided in the first place, if people were more confident. And this is something that can be applied, for example, to teachers in a classroom setting," believes Winkel.

Up until this point, however, she hadn't been given the opportunity to explore her observations in a scientific way and come to concrete conclusions. "Our program picks up just where these thoughts leave off, and gears itself particularly well to those with some kind of professional experience," explains Dr. Rosemarie Genn, director of the Steinbeis Transfer Institute of Equine Assisted Therapy and Management at SHB. "We recognize the extreme demand for skilled employees in the areas of business, consulting and management and know that the potential to use horses in a therapeutic or didactic capacity is far from being explored to its maximum."

The current student projects in Andrea Winkel's study program span a range of interesting topics, including the evaluation of psycho-social

rehabilitation and development with horses, the introduction of equestrian intervention methods at a school sports club, or the creation, implementation and evaluation of horse therapy concepts in occupational therapy.

As is the case with all degree programs at Steinbeis University Berlin, the Bachelor of Arts in Social, Healthcare and Education Management is also designed as an extra-occupational, modular program. Its core element is a project whose purpose is defined by students and their employers. The project must be completed within the term of study and benefit both the student and business in some way.

Students from all corners of the country meet on a regular basis in the city of Vechta for seminars and exams, which always revolve around actual practice. "Thanks to the carefully thought-through learning materials and the close, personal guidance from instructors, students are well equipped to succeed in their courses," Winkel adds.



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## Companies in times of change – managing the transformation

### Steinbeis helps medium-sized companies pass the baton to the next generation

Long-term survival in the market is of central importance to every family business. To develop sustainably and if possible, hand operations on to the next generation, a company has to instill value, not just in monetary terms. Accordingly, to keep pace with current and future demands, a company will need to change. The tasks that managers have to deal with these days are becoming more and more complex, and as market developments gather pace, decision-making deadlines are shortening. Decisions have to be well thought through and implemented rigorously – one area the Steinbeis Consulting Center for Business Development & Corporate Control helps with.

The Steinbeis experts support family businesses in particular during phases of business development. They do this by developing plausible and practical concepts and helping with implementation. Typical benchmarks during the planning phase are consistency of action, the sustainability of improvements and safeguarding earnings. "We pay particularly close attention to striking a healthy balance by looking at the company, the manager, the family and the employees as a holistic entity," explains Gerd Birkhold, who heads up the Steinbeis Consulting Center for Business Development & Corporate Control.

These were also the main areas of focus during a joint project with machining technology specialist, Kümmel, a family-run business now in its third generation. The firm received close support from Gerd Birkhold during the transfer of the business from the previous owner, Rolf Kümmer to his son-in-law, Jürgen Altenburger.

The succession concept was based on a systematic business plan, showing clearly how the company would continue to develop in the future in a way that would also safeguard finances. Working with the company's tax advisors and its bank, the succession process went ahead smoothly and came to a successful conclusion.

Business decisions are now planned systematically, according to long-term success criteria, with regular financial controls in place to monitor progress. This even made it possible to come through the most difficult part of the financial crisis almost unscathed. Looking forward, Jürgen Altenburger is now confident. The company gained official certification under DIN EN ISO 9001:2008 last year and investments have been made

in technology developments to respond to growing demand for the company's premium products.

#### Steinbeis Consulting Center for Business Development & Corporate Control

The center helps small and medium-sized companies facing complex business problems. For a company to develop successfully as a business, it needs a clear strategy and specific goals, based on plausible and practical ideas.

##### Key areas

- Corporate development
- Management succession
- Owner-managed small and medium-sized enterprises; family businesses
- Manual trades, trading businesses
- Manufacturing trades, mechanical engineering and machine construction



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# New centers in the Steinbeis Network

The Steinbeis Network comprises around 900 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 August 2012:

## Radebeul



### Energy and Systems Engineering

Manager: Prof. Dr. Dr.-Ing. habil. Hans Müller-Steinhagen  
E-mail: su1640@stw.de

#### Services

- Organization of conferences
- Courses and workshops
- Expert reports
- Consultations

- Training courses for doctors, dentists, therapists and health care workers in systemic, strategic, operational and staff management
- Burnout prevention for doctors, therapists and medical personnel
- Training of doctors and therapists in health coaching, resilience development, burnout prevention and positive psychology (for patient training courses, prevention groups, operational health promotion)
- Training courses in medical and environmental mediation
- Consulting and coaching of clinic executives, community health centers and large medical practices

## Stuttgart



### Information Systems and Technologies

Manager: Prof. Dr. Udo Heuser  
E-mail: su1641@stw.de

#### Services

- Consulting in the field of IT security, computer networks, network performance
- Seminars to raise company awareness of IT security
- Knowledge transfer of relevant core research

## Dresden



### Intelligent Functional Materials, Welding and Joining Techniques, Implementation

Manager: Prof. Dr.-Ing. Gunnar Bürkner  
E-mail: su1644@stw.de

#### Services

- Angewandte Forschung, Entwicklung, Konstruktion und Exploitation
- Materials
  - Joining
  - Competents
  - Implementation

## Großkarolinenfeld



### Business NLP and Applied Positive Psychology

Manager: Dipl.-Psych. Daniela Blickhan  
E-mail: su1642@stw.de

#### Services

- Business NLP
- Training programs for positive psychology
- Leadership training
- Coaching instruction

## Esslingen



### Steinbeis Interagierende Systeme

Manager: Dr. Oliver Bühler, Dr. Daniel Ulmer  
E-mail: su1645@stw.de

#### Services

- The provision of engineering services and implementation of projects and consultations as well as the development, manufacture and marketing of products in the field of interacting systems.

## Berlin



### Communications in Medicine - Health Coaching, Resilience Development, Positive P

Manager: Dr. med. dent. Anke Handrock  
E-mail: su1643@stw.de

#### Services

- Training courses for doctors, dentists, therapists and health care workers in patient communication

## Hyderabad



### Ansal-Steinbeis Centre for Technology & Innovation

Manager: Dr. Subhra Das  
E-mail: su1647@stw.de

#### Services

- Training and development of personnel in automotive industries
- Training and development in the field of renewable energy

- Enhancing the knowledge of students & faculty members in the field of automotive industry, electrical, designing, manufacturing of prototypes
- Consultancy on advances in materials in automotive industry

## Pune



### Steinbeis Centre for Automotive Technologies & Training

Manager: Er. Deepak Dhami  
E-mail: su1648@stw.de

#### Services

- Training In Automotive Technology
- Training In TPM
- Training in Industrial Safety

## Hyderabad City



### GNITS-Steinbeis Centre for Renewable Energy

Manager: Prof. N. Moorthy Muthukrishnan, Ph.D.  
E-mail: su1649@stw.de

#### Services

- Design, Fabrication, and installation of solar PV systems
- Research and development projects in solar PV

## New Delhi



### Steinbeis Centre for Renewable Energy Technologies & Training

Manager: Tanmay Bishnoi  
E-mail: su1650@stw.de

#### Services

- Training & Further Education for Technicians, Students and Professionals
- Technical Consultancy & New Technology Development
- Industries interfacing for Professional Institutions
- International Technology Scouting, Evaluation & Transfer including Joint Ventures & Collaborations

## Manipur



### Steinbeis Centre for Renewable Energy Technologies & Knowledge Transfer

Manager: Phungmayo Horam, MBA | E-mail: su1651@stw.de

#### Services

- Renewable energy training centre: Technical and Service
- Small scale project development
- Consultant and facilitator for project development
- Evaluation, Expert Reports

## Berlin



### Sustainability Design (SIGN)

Manager: Prof. Dr. Manuela Thurm, Dr. Karl G. Leutschaft  
E-mail: su1652@stw.de

#### Services

- Certification course in "Sustainability Design"
- Research in the area of change management and sustainability design
- Course participants are trained to become "Scouts of Sustainability" capable of:
  - reorienting themselves within altered environments and acting intelligently
  - spotting systemic connections and being a valuable source of ideas
  - representing the core principles of sustainability within businesses and transporting them into technical and commercial settings
  - recognizing and communicating market opportunities for sustainable products and services
  - utilizing interdisciplinary know-how for the good of the business
  - initiating and being a part of innovative processes in this field
  - anchoring sustainability within business strategies and implementing it entrepreneurially
  - supporting the business during change to enhance stability and future-readiness

## Heubach



### Energy-efficient manufacturing

Manager: Prof. Dr. Georg Kleiser  
E-mail: su1653@stw.de

#### Services

- Energy consultations
- Development of energy concepts
- Expert reports and consultations
- Employee training

## Wesseling



### Drug Delivery

Manager: Prof. Dr. Alf Lamprecht  
E-mail: su1654@stw.de

#### Services

- Development of drug formulations
- Bio-pharmaceutical analyses
- Pharmaceutical manufacturing processes

## Ulm



### Fundamental and applied electrochemistry

Manager: Prof. Dr. Timo Jacob  
E-mail: su1655@stw.de

#### Services

- Research and development in electrochemistry
- Consulting in research and development matters
- Development management
- Project supervision
- Expert reports
- Seminars

## Esslingen



### Damage assessment in Power Engineering

Manager: Dipl.-Ing. (FH) Willi Lippe  
E-mail: su1656@stw.de

#### Services

- Consulting
- Expert reports
- Applied R&D
- Testing and assessment
- Survey reports
- Audi

## Bad Oeynhausen



### Safety & Security Training (S & S T)

Manager: Mirko Sicksch, Maik Schiefer, Manuel Tücke  
E-mail: su1657@stw.de

#### Services

Consultations for businesses on matters of safety and security. The offer is available for internationally operating companies, universities and students planning a study abroad term during their program.

## Aschaffenburg



### Energy-efficient power electronics for electrical drives and power storage system

Manager: Prof. Dr.-Ing. Johannes Teigelkötter  
E-mail: su1658@stw.de

#### Services

- Simulation of electrical drives
- Setup and testing of power converters
- Readings of electric machines and power converters
- Testing of electrical power storage systems

## Chemnitz



### Fluid Drive Systems

Manager: Dr.-Ing. Eberhard Zipplies  
E-mail: su1660@stw.de

#### Services

- Consultations on fluid drive systems
- Planning and trial of hydraulic and pneumatic drive systems
- Development of components for fluid power technology

## Esslingen



### Steinbeis Embedded Systems Technologies

Manager: Dipl.-Ing. (FH) Manuel Jacob, M.Sc.  
Dipl.-Ing. (FH) Christian Hayer, M.Sc.  
E-mail: su1661@stw.de

#### Services

The enterprise's main objectives are the provision of engineering services and implementation of projects and consultations as well as the development, manufacture and marketing of products in the fields of distributed embedded systems, industrial communications and system integration.

## Kusterdingen



### Institute for Information and Content Management (I4ICM)

Manager: Prof. Dr. Wolfgang Ziegler  
E-mail: su1662@stw.de

#### Services

The efficient creation, management and distribution of product information requires process-oriented system support. The institute offers its customers services for the methodological planning and successful implementation of such systems.

- Know-how transfer of the latest methods of Information and Content Management (ICM) for application in technical communications
- Information and data modeling
- Process analysis and modeling
- Analysis and optimization of existing implementations
- Determination of key data using the REx method and adjustment for special systems and implementations
- Development of retrieval and delivery concepts for technical product information



### Strong in innovation and quality

#### Baden-Württemberg Competence Award for 2013 underway

Last May, the 2012 Competence Award for Innovation and Quality from Baden-Württemberg was bestowed on Dr. Sybill Storz and the Oximatec/Leonhardt engraving companies. Before the winners even left the stage, preparations were well underway for the next

### Great funding for small satellites

#### EU research fellowship

The most highly remunerated EU award has been bestowed upon the former director of the Steinbeis Transfer Center for Applied Computer and Software Technology (ACS). Professor Dr. Klaus Schilling, a researcher at Würzburg University, has been awarded more than €2.5 million in funds to conduct research into innovative technologies for small collaboration satellites. The funding will be contributed by the European Research Council. Schilling was director of the ACS Steinbeis Transfer Center for 16 years and continues to work with the center as a project manager.

As has been the case with computers, satellite technology is undergoing radical change. The once massive computers of the 1970s have been replaced by smaller, networked computers with access to the Internet. "We are seeing a similar paradigm shift in satellite technology – moving away from the still standard large satellites to smaller, networked systems made up of many smaller interactive satellites," explains Klaus Schilling. To implement this change, research and development of modern telecommunications methods is necessary.

Schilling's team at the institute is all too familiar with small satellites: since 2005, the team has launched two University of Würzburg Experimental Satellites (aka UWE) into orbit. At the size of a standard milk carton, each of these satellites weighed only 1 kilogram. Another of these UWE satellites will be launched at the start of 2013, while a fourth satellite is currently under development. "Each of these small satellites only has limited uses, but the collaboration between the individual units can yield impressive and exciting results," says Schilling. For example, points on Earth can be monitored from various perspectives and this information can be used to generate three-dimensional images.

award ceremony, set to take place in May of 2013 within the scope of the Control Trade Show in Stuttgart. Applications are already being accepted.

The application process is quite thorough and extends to all Baden-Württemberg-based companies that meet the requirements. Applicants are measured against very high standards; a strong entrepreneurial drive and innovative spirit alone won't cut it. Since 2008, the winners have included companies that successfully bridge the gap between innovation and quality, have integrated this into their daily operations and can show evidence of outstanding results.

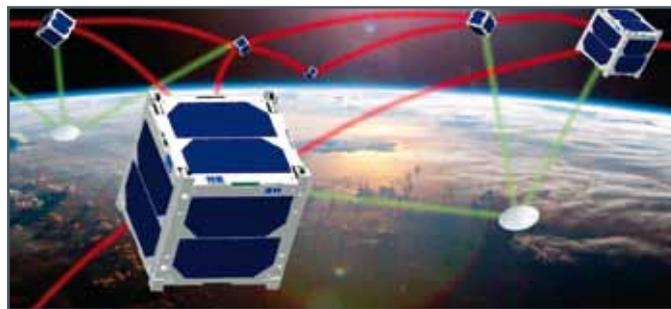
Anyone who meets these criteria is welcome to apply by sending in the appropriate documents. All applications must be received by February 22, 2013.



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But these small satellites might also pave the way for low-cost telecommunications networks that span the globe. These are precisely the types of uses that the engineers in Würzburg aim to research over the course of the next five years. To do this, they will further develop methods implemented in control and communications technologies. Their aim is to end the research fellowship with a demonstration of the feats this innovative approach could achieve. They plan to present a "mini-fleet" of four small, interactive satellites in space. The satellites will be held in formation with advanced control mechanisms to ensure the optimal flow of information within the network between the satellites and terrestrial base stations.



Schilling's research plans will be financed with an "European Research Council Advanced Grant." With these funds, the ERC supports researchers from all fields who have shown themselves to be world leaders and who are interested in carrying out groundbreaking, future-oriented projects in Europe.



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# Experts.Knowledge.Sharing.

## New releases from Steinbeis-Edition

Steinbeis-Edition, the publishing arm of the Steinbeis Foundation, regularly publishes works mirroring the scope of the Steinbeis Network's expertise. All titles can be easily ordered via our online shop at [www.steinbeis-edition.de](http://www.steinbeis-edition.de).



### Corporate Mediation – 02/2012. Specialist magazine for business and public administration Gernot Barth, Bernhard Böhm (publ.)

2012 | magazine, color | 84 pages, German.  
ISBN 978-3-943356-31-1

#### About the publishers

Associate professor Dr. habil. Gernot Barth has been working as a mediator and trainer of mediators since the foundation of IKOME® (the Institute of Communication and Mediation), the Steinbeis Consulting Center for Corporate Mediation and the Academy for Social Aspects and Law (Steinbeis Transfer Institute at Steinbeis University Berlin). Bernhard Böhm is a qualified attorney and has been working for more than 12 years as a mediator and expert in mediation and extrajudicial conflict management. He is also an executive project manager at the state-approved Steinbeis Consulting Centers conciliation office.



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### Public Funding – ENERGY in Germany. An Introduction Albert von Wallenrodt

2012 | paperback, B&W | 198 pages, German.  
ISBN 978-3-941417-96-0

#### About the author

Albert von Wallenrodt studied mechanical engineering in Munich and New Jersey. He is a director and partner of 4C Advisory in Munich and head of the Stuttgart-based Steinbeis Consulting Center for Innovation and Subsidies Management. Both companies are leading advisers on state subsidies.



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### Several Fronts in the War for Talents Steinbeis-Stiftung (publ.) | Ineke Blumenthal, Werner G. Faix, Vanessa Hochrein, Annette Horne, Gerhard Keck, Roberta Lenz, Jens Mergenthaler, Sabine Sax

2012 | paperback, color | 64 pages, German.  
ISBN 978-3-941417-95-3

#### About the authors

The authors work in a variety of positions at the School of International Business and Entrepreneurship (SIBE) at Steinbeis University Berlin, which has almost 800 students enrolled in master's programs in the field of management.



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### Innovations: The Driver of Economic Growth. A Holistic Study on the Innovative Capacity and Activities of Selected Economies Jens Mergenthaler, Werner G. Faix | Steinbeis-Stiftung (Publ.)

2012 | paperback, color | 218 pages, German/English.  
ISBN 978-3-943356-28-1

#### About the publishers

Prof. Dr. Werner G. Faix is the managing director of the School of International Business and Entrepreneurship (SIBE) at Steinbeis University Berlin. Jens Mergenthaler works at SIBE as a project manager for scientific assignments and is a degree program coordinator for Ph.D. students.



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**Business and Corporate Ethics in the Financial System. Annual Proceedings of the 2011 Second Financial Ethics Congress in Eichstätt**  
**Frank Zschaler, Sabine Meck, Jens Kleine (Publ.)**

2012 | paperback, color | 272 pages, German/English.  
 ISBN 978-3-943356-33-5

**About the publishers**

Prof. Dr. Frank Zschaler is a professor of Economic and Social History at the Catholic University of Eichstätt-Ingolstadt. Prof. Dr. Sabine Meck has been head of the Steinbeis Transfer Institute of Financial Behavior and Ethics at Steinbeis University Berlin since 2008. Prof. Dr. Jens Kleine has been director of the chair of Management and Financial Services at Steinbeis University Berlin and director of the Research Center for Financial Services, also a Steinbeis Transfer Institute, since 2004.



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**Social Unrest:  
 OECD Reviews of Risk Management Policies**  
**Aleksandar S. Jovanovic, Ortwin Renn, Regina Schröter | OECD Publishing (ed.)**

2012 | paperback, B&W | 104 pages, English.  
 ISBN 978-3-943356-03-8



**Systemic Financial Risk:  
 OECD Reviews of Risk Management Policies**  
**OECD Publishing (ed.)**

2012 | paperback, B&W | 78 pages, English.  
 ISBN 978-3-941417-93-9

**About the partner authors**

Steinbeis Advanced Risk Technologies Group (R-Tech) is the cluster of units belonging to and/or linked to Steinbeis. Currently, about 800 Steinbeis units in 50 countries worldwide act as a global player in the area of innovation management and technology transfer. The group of Steinbeis units working in "Advanced Risk Technologies" deals with multiple aspects of risks, risk engineering and risk management.



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**TECHNIKEN. STRUKTUREN. OBJEKTE. Art Exhibition Catalog | 2012 Steinbeis Day | House of Commerce, Stuttgart**  
**Michaela Würtz | Steinbeis-Stiftung (Publ.)**

2012 | paperback, color | 66 pages, German.  
 ISBN 978-3-943356-27-4

**About the artist**

Michaela Würtz completed her degree in media publishing (publishing business administration and production) at the Hochschule der Medien (Stuttgart Media University) in 1994, before going on to work as a product manager at a specialist publishing house. In 1999, she was appointed project manager at the Management – Innovation – Technology (MIT) Steinbeis Transfer Center.



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**A Practical Guide to Environmental Technology and Environmental Law**  
**EQ ZERT (Publ.)**

2012 | spiral-bound, color | 133 pages, German.  
 No ISBN.

**About the publisher**

The European Institute of Management System Certification and Personal EQ ZERT is an enterprise within the Steinbeis Network and the only certification center for management systems and personnel among the 900 or so Steinbeis companies within the comprehensive international Steinbeis network.



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**Steinbeis-Stiftung für Wirtschaftsförderung (Publ.)**

2012 | paperback, B&W | 106 pages, German/English.  
 ISBN 978-3-943356-25-0

**About the Steinbeis Day**

The Steinbeis Day takes place once a year and already enjoys a long tradition. Every year it acts as a "marketplace" reflecting the kaleidoscope of new activities throughout the Steinbeis network. A variety of Steinbeis enterprises attended the event in Stuttgart's House of Commerce to exhibit their recent projects and answer specialist questions. In the afternoon they made short speeches to provide insights into their transfer projects. The day opened with the bestowal of the 2012 Prof. Adalbert Seifriz Award.



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**Competence: Publication Commemorating the  
70<sup>th</sup> Birthday of Prof. John Erpenbeck**  
Werner G. Faix (Publ.)

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**About the publisher**

Prof. Dr. Werner G. Faix is the managing director of the School of International Business and Entrepreneurship (SIBE) at Steinbeis University Berlin, which has almost 800 students enrolled in master's programs in the field of management.



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Steinbeis is an international service provider in tangible, implementation-oriented knowledge and technology transfer. The Steinbeis Transfer Network is made up of about 900 Steinbeis Enterprises and project partners in 50 countries. Specialized in chosen areas, Steinbeis Enterprises' portfolio of services covers consulting; research and development; training and employee development as well as evaluation and expert reports for every sector of technology and management. Steinbeis Enterprises are frequently based at research institutions, universities and colleges, which are constituting the Network's primary sources of expertise. The Steinbeis Network comprises around 5,800 experts committed to practical transfer between academia and industry. 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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