

# TRANSFER

*The Steinbeis Magazine*

## Scoring with innovation

### Standard or customized?

Core banking systems compared

### Bringing insight to communities

Steinbeis Centers attend the "Zukunft Kommune 2010" trade fair

### More than data gathering – the shape of modern HR management

Steinbeis University student sets up HR monitoring system

### Clinical diagnosis of lysosomal storage diseases

Steinbeis and partners analyze inborn errors of metabolism

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## Editorial

Dear readers,

According to recent surveys, economic recovery is now in full swing. Astonishingly, businesses have so far managed to weather the storm and successfully rise to the challenge presented by the crisis. Despite the downturn, unemployment in the German state of Baden-Württemberg stood at just 4.7 per cent last year – a good starting point for recovery.

Competitiveness counts as one of the key competencies of any company. To keep up with market demand for competitive services and products, the economy must adapt constantly – and this is especially true for exporters. By offering a broad spectrum of services, the Steinbeis Network provides rapid access to knowledge and technology, helping maintain and improve the competitiveness of enterprises. Which new strategies do they need to master permanent structural change? Partnerships, network solutions, consortiums, societies and business networks using common infrastructures and resources can provide answers that bring added flexibility and quality. This applies to both the private and public sectors.

The public sector is not happy about budget deficits, especially at the municipal level. Compared to other countries where the government share of GDP is much lower, Germany has a greater spending problem – and with it a competitiveness problem. The picture is similar in the much-debated health sector. Here, the primary issue to be addressed is how to organize and use resources efficiently. Local municipalities and government departments are increasingly asking themselves how they can continue to do their job efficiently, to everyone's liking.

What they need are sustainable, made-to-measure solutions. As well as working for the private sector, Steinbeis Consulting offers the public sector a broad spectrum of support services. In fact, six centers from the Steinbeis Network recently attended the Zukunft Kommune ("The future of the municipality") 2010 trade fair in Stuttgart. The centers showcased a variety of services, spanning the fields of health care provision, energy efficiency, broadband supply, and business-oriented technological and economic development.

The cost squeeze is nudging everyone, in both the public and private sectors, into partnerships with other businesses and organizations. To answer the needs of their customers, many companies – especially small and medium-sized enterprises – are having to bring partners on board. As the public sector will not be exempt from this trend, it will have to put more and more thought into intercommunity and interregional partnerships. Partnerships are often the answer to complex issues. But they have to be managed professionally, and apart from the personal qualities they require, they demand a high degree of trust and confidence. Confidence in yourself and others is a strong basis for mastering future challenges, and you'll find several examples of this in this edition of Transfer. We hope it provides some inspiration.



August A. Musch is managing director of the consulting network Steinbeis Beratungszentren GmbH, which was one of the Steinbeis representatives at the "Zukunft Kommune 2010" trade fair. To find out more, turn to page 12.

A handwritten signature in blue ink, consisting of several large, sweeping strokes that form the letters 'A. Musch'.

August A. Musch

## Core banking systems compared

# Standard or customized?

Large banks often develop their own core banking software, and are selective with their use of standard solutions. However, small and medium-sized banks often use core banking software provided by software companies. This software has to be specially adapted to their needs. At savings banks and cooperative banks in Germany, these core banking systems are provided to local branches by group IT departments. Banks like these have undergone extensive consolidation in recent years, allowing for huge economies of scale. Simultaneously, their IT systems are being modernized. This contrasts to the market for core banking systems used at small, independent banks, which is dominated by a variety of well-established solutions. In a recent study, Steinbeis staff at the Focos Transfer Center Research | Consulting | Studies, Karlsruhe University of Applied Sciences investigated the current market for core banking systems.

The term "core banking system" has no uniform definition and is commonly used to mean two different things. In the broader sense, it refers to a complete banking system, which generally includes all products,

sales channels, reporting systems and control modules. The second, narrower interpretation is only used to describe the classic product area of payments, lending and deposits, plus legal reporting requirements

and rudimentary support for different sales channels.

The market for core banking systems in Germany is not very transparent. From a cus-



Photo: © iStockphoto/Nikada

customer perspective, this is unsatisfactory, as investing in a core banking system is a major long-term decision associated with high costs. This is where the study by the experts in Karlsruhe aims to help. The study focused on the broader definition of core banking and key functions, as well as software architecture. By pinpointing the strengths and weaknesses of different systems, the study aimed to help banks decide which product to use and to provide software engineers with pointers for improvement. The study also examined likely market developments. To provide data for the study, software providers were asked to evaluate their products using a structured questionnaire. Reference customers were also surveyed.

The overall ranking was based on products' ability to address all banking needs. This included one score rated as an overall solution, and another for the actual modules provided.

The overall rankings were derived from all questions in the survey, and reflect the extent to which different software packages offer a complete solution. Essentially, they are a maximum synthesis of all scores. Although summarizing scores in this way inevitably leads to a loss of differentiation, it delivers rankings with which make it possible to compare all providers at a glance. It indicates the ability of software to meet customer requirements without modifications (i.e. the standard delivery package) or with special modifications.

At the top of the ranking comes a large group of leading software providers with very similar scores. It is worth taking a closer look at these, as this uncovers significant differences. As none of the software providers came top of every category, the differences level out in the overall ranking. At the top of the overall ranking come providers whose software is designed as a complete banking solution in the most comprehensive sense.

Reference customers of six of the solution providers were surveyed. Compared to their

own expectations, providers that did not offer a complete banking solution (and thus offered lower levels of functionality), scored better in the eyes of customers. The survey revealed that customers often made very selective use of these types of products, and that the software engineers underestimated their own products and did not want to make false promises.

Two different types of customers were identified in the core banking market: "standard software users", and "component users" who carefully pieced together their own complete solution. Standard software users prefer one-stop, all-round solutions, with a single point of contact who is fully responsible for the system. Banks who choose this option have little or no IT expertise themselves – if the overall package gets the job done, they are prepared to accept certain weaknesses. While these "standard software users" merely want the best overall solution, "component users" create their own by selecting individual components. These users are prepared to take on responsibility for the overall system. They use components they know they can trust and prefer not to make compromises when selecting them. Component users look for the best product for each application. This requires a certain amount of expertise, as the overall responsibility for the resulting IT landscape lies with the user.

As outlined above, the study shows that banks fall into two different groups: standard software users and component users. This distinction is mirrored by the different types of software providers: universal specialists and module specialists. To interpret the software providers' self-assessments correctly, it is important to consider this divide.

Technological progress has also led to a change in software solutions: modern solutions use contemporary platforms and architectures. In terms of programming languages, there is a clear trend towards integrated Java elements, especially at the front end.

With the advent of new technology, systems are becoming more and more modular, making it increasingly easy to piece together all-round solutions from a selection of components. This will affect the market standing of software providers, as increasing integration means new areas will open up for component providers. This trend means universal providers will face increasingly challenging demands, as they will be forced to compete more and more with component providers. One thing is clear, however: providers unable to keep pace with technological change will disappear from the market. At the most, outmoded technology is only useful to banks for serving existing customers, not attracting new ones. For software providers, the study's main conclusion is that the most important features for modern core banking systems are an attractive and user-friendly interface, plus scalability and openness.

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**Steinbeis assists in process optimization**

## **Integrated systems based on tried and tested methods**

**Leading products. Internationally successful projects. At gwk, an SME from the German state of North Rhine–Westphalia, things are looking good. The Kierspe-based engineering company enjoys an excellent global reputation as a specialist in top-of-the-range cooling and temperature control technology. Ranging from small, serially produced, general-purpose temperature control units to one-off, custom-made central chilling units, gwk's portfolio spans the full range of refrigeration and heating solutions. Most are destined for industrial use in plastic and metal production and in chemical processes. The Steinbeis Transfer Center for Innovation and Organization helped the company optimize its engineering processes.**



IT systems at the medium-sized enterprise were becoming outdated and needed a fundamental overhaul. "Keep up with the rapid pace of innovation demanded by the market, and you safeguard the long-term growth of the company," explains Ingo Brexeler, engineering director at gwk. Changes in customer requirements, in tandem with the new pressure equipment directive, placed challenging new demands on gwk, especially with regard to technical documentation and design. As well as capturing exhaustive product descriptions in 3D, the company had to ensure its systems linked up seamlessly through fully-automated interfaces, using uniform media.

As part of this overhaul, the plan was to upgrade the electronic design software at gwk to a state-of-the-art e-CAD system. gwk also wanted to introduce a product data management (PDM) system to coordinate administrative tasks throughout the company and support engineering processes flexibly at all levels. Given the nature of the existing engineering processes and IT, this entailed a complete reorganization of the development department. As various internal attempts to address the problem had only been partly successful, gwk turned to the experts at the Eislingen-based Steinbeis Transfer Center for Innovation and Organization for assistance.

The chief aim of this far-reaching project was to improve engineering processes, in harmony with the mechanical and electrical infrastructure. gwk also wanted to improve engineering, documentation and production performance throughout all departments by adopting across-the-board, end-to-end systems. More often than not, gwk had optimized product designs in one department then simply left the others to catch up. "Before you can begin to define mechatronic processes in design, let alone put them into practice, everyone needs to speak the same language when it comes to electrical and mechanical design," explains Oliver Brehm from Steinbeis. Once underlying equipment and plant infrastructures had been standardized, complex requirements arose concerning the operation and management of standard components – even within the ERP system.

This helped define the extremely wide scope of the project: selecting and introducing MCAD, ECAD and PDM, and establishing an ERP link between the new systems and the existing commercial systems.

Given the overriding needs of the company, it was relatively obvious which individual components would be the favorites to go into the overall solution. Alternatively, gwk could pick the best possible components and integrate them, or choose from the limited selection of suppliers who provide an end-to-end system solution.

gwk chose to embark on the project together with staff from the Steinbeis Transfer Center. Although the team members had different levels of experience and areas of expertise, this was no obstacle and before long they had pinpointed a variety of alternatives based on objective criteria. This ultimately resulted in an acceptable solution to all parties.

In an open selection, the team chose between two completely different scenarios: an integrated solution, or a composition of leading components. This made it possible to take into account all aspects affecting the decision and involve all key people in the project. The overall selection process lasted four months, culminating in a "decision template" which was presented to senior management. Interestingly, the final decision was unanimous. Thanks to clear benchmarking of the overall scenario, even people who had at one point backed another option were won over enough to vote for a different solution.

As the project progressed, people from different departments with varying areas of expertise coalesced into a highly motivated team, committed to managing and implementing while keeping one eye on the overall picture and overriding priorities. Once again, the integrated approach taken by the Steinbeis Transfer Center for Innovation and Organization proved an all-round success.

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Tube heat exchanger

#### The Steinbeis Transfer Center for Innovation and Organization

##### Services:

- Consulting in the field of product development involving CAD, PDM/PLM, ERP/PPS and even CMS
- Advice on the introduction of product information systems (PIM)
- Independent ("system-neutral") consulting during selection and introduction projects
- Expert reports, studies, publications and technical specifications
- Coaching of in-house project managers
- Third-party project management, on contract
- Management consulting
- Seminars and training courses

##### Main focus:

- R&D, engineering design
- Content management
- Quality management
- Change management
- Business partnerships

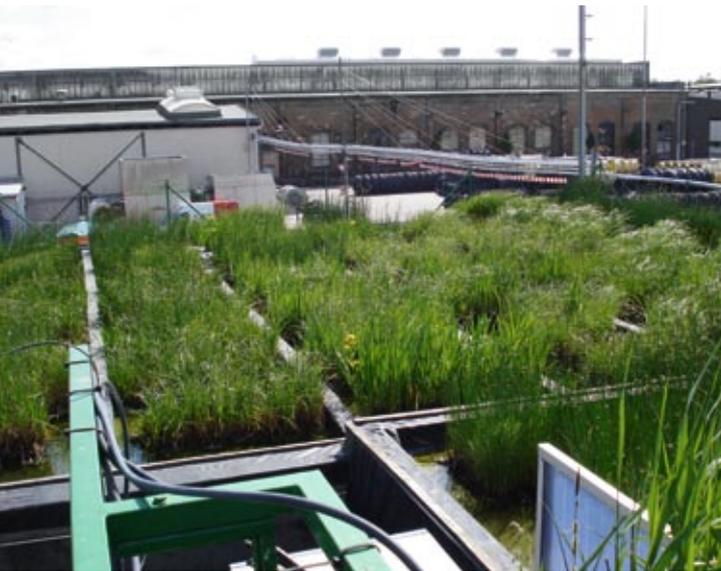
#### gwk Gesellschaft Wärme Kältetechnik mbh

Over the past 40 years, gwk has earned international acclaim as a specialist in quality temperature and cooling control technology. As a system provider at all stages of the temperature control process, from cooling equipment to temperature regulation and water treatment, gwk is a trusted partner to industry. For years, gwk has also been supplying its customers with "close-to-cavity" heating and cooling solutions for use in tooling applications and tool cleaning. The company now employs over 300 people in the development, production and installation of customized complete process solutions in temperature and cooling control. gwk operates at an international level, with 32 agents worldwide supported by a global service network.

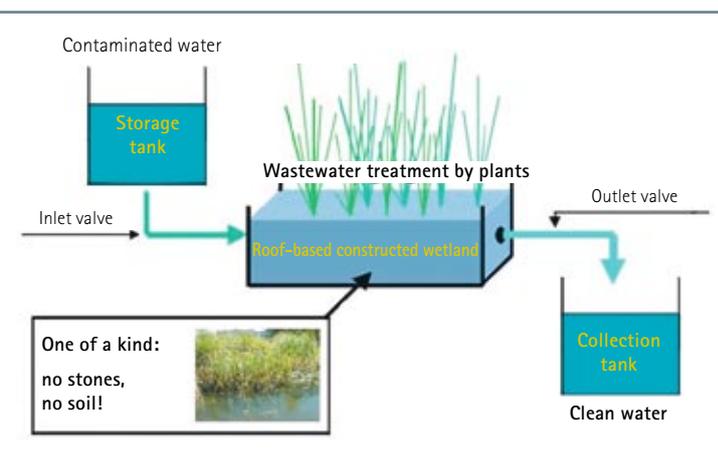
## SHB graduate develops environmentally-friendly wastewater disposal plant

# Intelligent constructed wetlands

On the roof of the John Deere tractor factory in Mannheim, Germany, there is an ingenious plant-based wastewater treatment system – or constructed wetland – that produces clean water. Lilies, reeds and rushes purify wastewater from the factory's production processes before returning it to the public water system. As part of his MBA studies at Steinbeis University Berlin, Hartmut Bauer developed this eco-friendly system while looking for a cost-effective solution for wastewater disposal.



Constructed wetland on the roof of the John Deere plant in Mannheim



Schematic diagram of the wetland

Conventional constructed wetlands usually require a relatively large area, which in this case was not available due to the location of the John Deere plant in central Mannheim. This inspired Hartmut Bauer to design a treatment system which would fit on a flat roof. To avoid the need for structural changes to the roof, the new wetland was not allowed to exceed its maximum load. This meant

that it had to be able to purify industrial water without using a conventional soil layer. Instead, the wetland uses special phytolytic plants which grow in the wastewater. Each day at John Deere, up to ten cubic meters of wastewater are flushed into the roof-top constructed wetland via a heated pipe. "The water to be treated contains a high proportion of phosphates and mineral oil hydrocarbons. Micro-organisms like algae, fungi and bacteria, which mostly live at the plants' roots, play a major role in removing contaminants," explains Hartmut Bauer. These micro-organisms absorb and metabolize substances in the wastewater. In particular, the ability of the common water plantain (a marsh plant) to remove contaminants exceeded all expectations. There are minor fluctuations in contaminant removal rates depending on the type of plant, the season and the time of day. Wastewater purification involves several stages: an initial purification tank, a mixing zone for industrial wastewater and sanitary sewage, a storage tank, the main purification tank, and finally a drainage area.

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The results of Bauer's project are impressive across the board. Not only is this unique wastewater treatment system environmentally friendly, it's also economical – costing up to 60% less than conventional chemical wastewater treatment. What's more, capital investment is relatively low and the system is economical to operate and low on maintenance. Also, buildings with constructed wetlands on their roofs need less air conditioning. However, the system does require a relatively large area.

The constructed wetland is environmentally friendly in a variety of ways. Up to 30% of wastewater evaporates during treatment; fine particulates are filtered out of the air; CO<sub>2</sub> is converted to oxygen; and treated water can be reused. Starting in 2012, the purified wastewater will be used at John Deere for toilet flushing, pre-treatment of industrial materials, and watering gardens. The goal for 2015: a wastewater free factory.

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## Steinbeis symposium on “Electronics in the Automotive Engineering”

# Electromobility: off the beaten track

**In times of change, treading unconventional paths can lead quickly to success. Some engineers attending the 2010 Steinbeis symposium on “Electronics in the Automotive Engineering” were probably secretly wishing they could rid themselves of the shackles of big organizations and conventional thinking, go out to green-field sites, and start afresh – in exactly the unorthodox way Tesla Motors did. The American company has now completed “Phase 1”: interest in e-autos has been aroused. Now it’s time for industry to add its experience – a sure recipe for excitement.**

After all the experimentation, Phase 2 now begins: preparing for industrialization. This was the subject of a number of speeches and debates at the Steinbeis symposium in April 2010, where the main focus was “Electrics and electronics on the road towards electromobility”. With higher quality and safety requirements, all-round standardization, and, in particular, lower-cost components and systems, the task now is to establish a basis for larger batches of electric and hybrid cars. Coordinated by Dr. Dirk Walliser of MBtech Group, this year’s symposium continued its newly established tradition of aiming to solidify the basic understanding of electrics and electronics in the automotive sector.

Since 2006, this has entailed keeping pace with changes in propulsion technology, and repeatedly edging forward on key issues and important crossroads, plus much more. The commitment of the organizers was particularly well rewarded this year, not least thanks to the speakers, who helped clarify some already-resolved issues and spell out the challenges ahead in the field of electric drive trains. The speeches touched on all stages of the process chain, from initial concepts of E/E architecture in the early stages of development, to production and subsequent diagnosis of high-voltage systems. Many of the speeches adopted a consultative approach, emphasizing the challenge of keeping power electronics at a suitable temperature, underscoring the relationship between chemistry and electronics in battery systems, and also looking at component specifications and how they have yet to be adapted to high-voltage systems in cars.

The German automotive industry is still finding its bearings, so there are many unanswered questions. Much of the discussion at the Stuttgart symposium was tinged not just with an atmosphere of excitement, but also perplexity. The mood is endemic across the entire industry. It is impossible to predict development and unit costs. This is the biggest challenge facing engineers and key decision-makers – technology does not hold the answer to everything. Business needs leadership, plus a measured dose of psychology.

This became clear during the panel discussion with Dr. Hermann Scheer, member of the German Federal Parliament, winner of the Alternative Nobel Prize and promoter of the “solar age”. On the panel with Scheer were Dr. Wolfgang Bernhart (Roland Berger Strategy), Arwed Niestroj (Daimler) and Arno Mathoy (Brusa Elektronik). The discussion embarked on a quest for future business models, with the question “Will we be buying cars, energy or mobility in the future?”

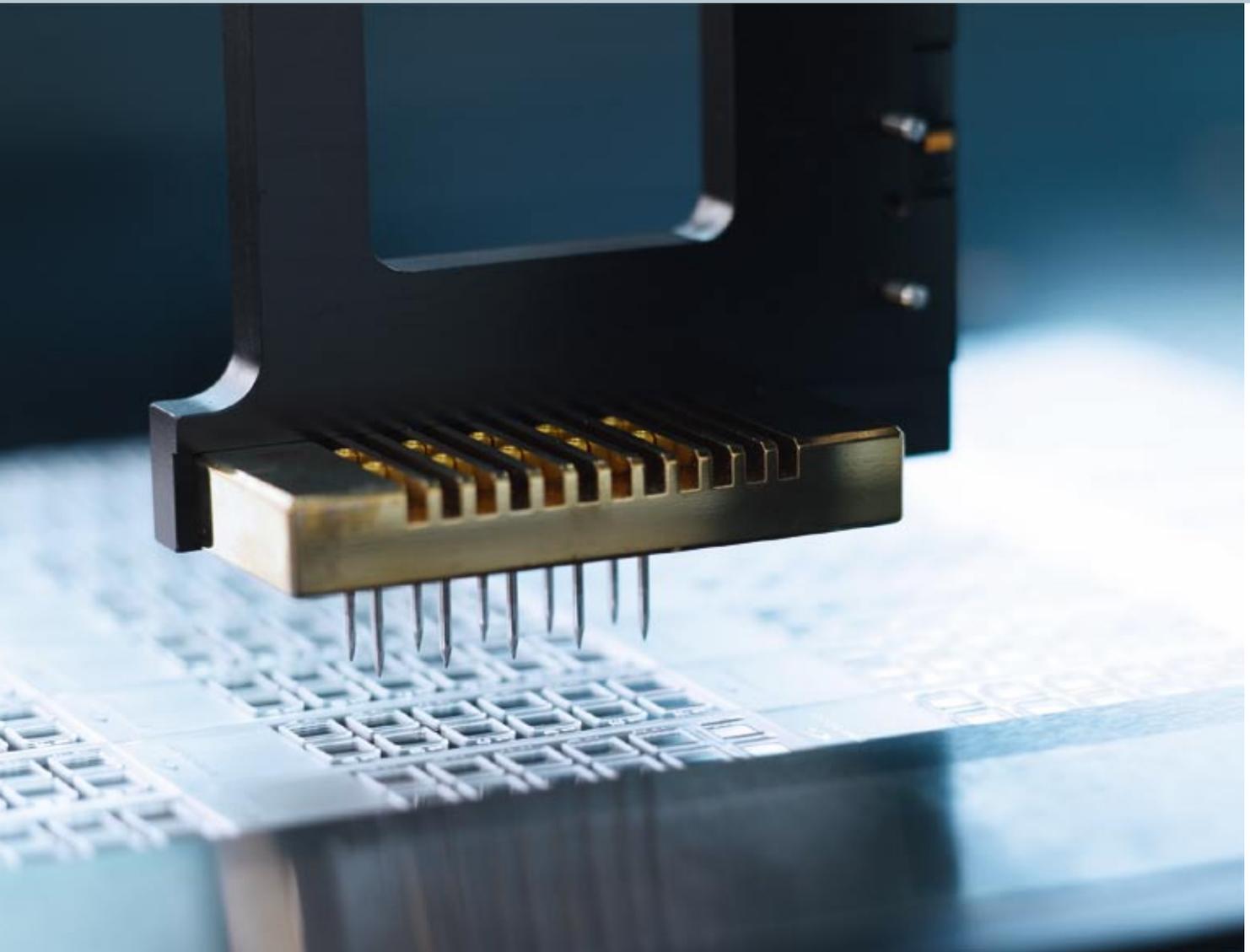
Summarizing the experts’ responses, they agreed that the only area where we are holding ourselves back is in believing in change and new ways of thinking. The understandable demands from Scheer – for a turning point in energy production and decentralized electricity supplies – are being overshadowed by the acute problems and mindsets of automotive companies and their advisors. How and when

will we have affordable electric cars on our roads? And who will be the first to buy this new technology while it remains expensive? Key questions that dictated the panel discussions. It stills seems to be chicken and egg: waiting for the market, rather than stimulating it market and reshaping it with new ideas. Mathoy, a specialist in electric motors, adopted a confident tone which was mirrored by his enthralled audience: a vision of a sea-change in mobility, and sensitive customers longing for the first electric cars. The critical mass of potential buyers is ready and waiting.

Author: Markus Schöttle, ATZelektronik



Dr. Wolfgang Bernhart (left), Dr. Hermann Scheer, Markus Schöttle (moderating), Arwed Niestroj and Arno Mathoy



**Steinbeis-Europa-Zentrum is partner in the EU-project DINAMICS**

## **A new early warning against bioterrorist attacks**

**DINAMICS is an EU-funded research project which objective is to enhance the safety of water supplies through the use of nanotechnology. The DINAMICS project partners are planning to develop a special biosensor to precisely analyze water quality and detect hazardous substances. Partly based on nanotechnology, the new system aims to prevent bioterrorist attacks on drinking water supplies in the future – by setting up an early warning system to identify infectious agents such as bacteria and viruses. DINAMICS envisages a portable measuring device to reliably monitor drinking water supplies at special events. For example, it could be used at major sporting events to ensure participants security. Steinbeis-Europa-Zentrum (SEZ) is one of the partners involved in the project.**

The project was approved by the EU thanks to the support from the Steinbeis-Europa-Zentrum during the application submission and contract negotiations with the European Commission. DINAMICS intends to make an important contribution to the safety technology of the future. To fulfil the project, partners will receive around € 4.5 million of EU-subsidies between 2007 and 2011.

As well as integrating a variety of cutting-edge technologies – such as nanotechnology, microsystem technology, signal processing, and micro- and molecular biology – DINAMICS focuses primarily on developing cost-efficient solutions so that new equipment can be used in a broad spectrum of applications.

DINAMICS is developing an automatic warning system to identify dangerous infectious agents quickly. Early prototypes, based on a "DNA-microchip" used in combination with microfluidic processes and signal processing techniques controlled by special software have already been produced. The project partners are confident that their findings will have a significant impact on the moni-

toring of drinking water. They could also find their way into the pharmaceutical industry, food and beverage manufacturing, and the medical diagnosis of infectious diseases.

In total, the DINAMICS project involves 12 partners from 8 countries: Germany, the UK, Italy, the Netherlands, Austria, Slovakia, Turkey and Hungary. The innovative partners range from SMEs to universities and research institutions. The project is being coordinated by Lambda (Labor für molekularbiologische DNA-Analysen GmbH), a medium-sized biotech company from the Austrian town of Freistadt. The SEZ's role in the project is to manage knowledge transfer, administration and finances.

To set the ball rolling, four in-house training sessions on nanotechnology, microfluidics/ simulation and system architecture were organized with support from SEZ consultants. They also coordinated a series of meetings between project partners throughout Europe.

As well as managing intellectual property rights, the SEZ is also responsible for overseeing dissemination activities, such as partner attendance at conferences and involvement in scientific publications. In February 2010, the SEZ organized and moderated a workshop in Istanbul on the analysis of relevant research results. Working closely with selected partners, technological road maps focusing on cell lysis and optical detection technologies were produced. Further, a database was set up to store pertinent project data and capture technology observations. The SEZ also writes official annual reports for the consortium, which detail finances and activities for presentation to the European Commission.

European projects sometimes involve more than 20 partners from a variety of countries and organisational backgrounds. Key to the success of every project is the professionalism of project management. Companies

have to plan project steps precisely and invest in the management of highly complex project structures. Especially in small and medium-sized enterprises (SMEs), this part of the project alone can seem almost insurmountable. This is where SEZ offers support in managing administrative and financial aspects of projects, as well as managing issues related to innovation.

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#### Steinbeis-Europa-Zentrum provides support during applications for EU-projects:

##### Before the project:

- Selection of suitable funding program
- Help defining the project
- Innovation workshops to pinpoint strengths and weaknesses
- Studies on the status of technology and market opportunities
- Assessment of chances for funding (project screening)
- Help writing proposals
- Partner searches, help forming a consortium/ partnerships

##### During the project:

- Coaching during contract negotiations
- Project management
- Advice on intellectual property rights
- Help making use of technology (patent and licensing issues, search for research/ technology users e.g. licensees)
- Managing communications with relevant EU directorates-general involved in research and technology programs

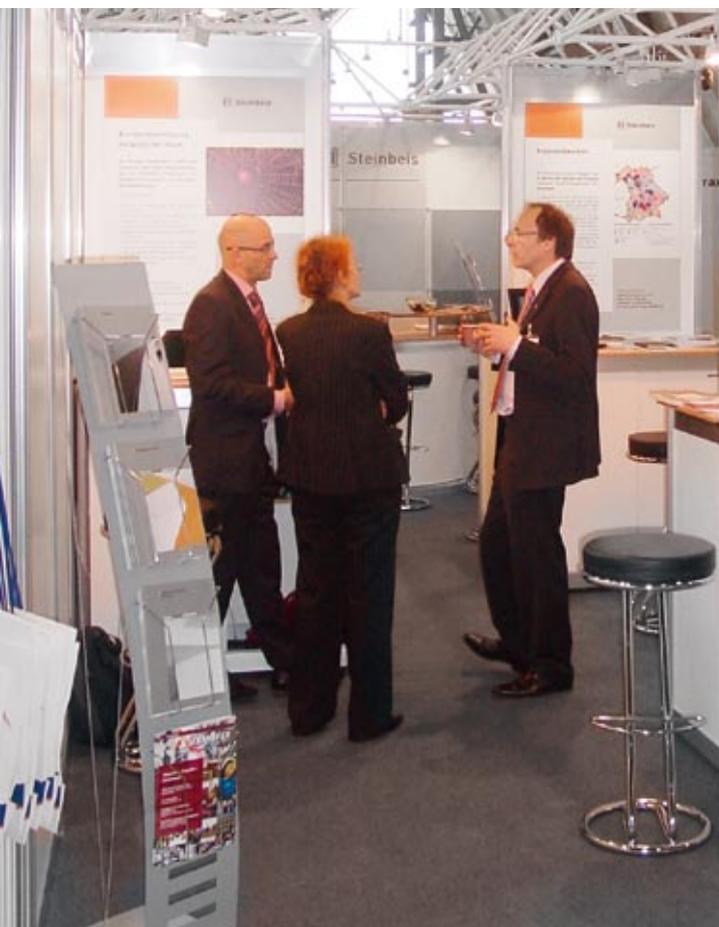
##### On completion of the project:

- Dissemination and exploitation of research results and technological development results (both EU and national/regional projects) and stimulation of innovation processes through:
  - studies on regional technology requirements and quote preparation
  - involvement in European brokerage events and technology transfer events as well as company missions and delegations
  - targeted searches in databases

## Steinbeis Centers attend the “Zukunft Kommune 2010” trade fair

# Bringing insight to communities

How can communities prepare for what the future holds – and retain their appeal? Plenty of exhibitors at this year's “Zukunft Kommune 2010” trade fair were eager to answer this question. Held on 18 and 19 May in Stuttgart, Germany, this trade fair highlights local solutions, services and provision. Several Steinbeis Centers shared a booth among the exhibitors. It proved the perfect setting for countless in-depth discussions between concerned mayors, county council members and representatives of public institutions.



Steinbeis exhibitors share ideas at the “Zukunft Kommune 2010” trade fair

Representatives of organizations and public institutions gathered at the Neue Messe convention center in Stuttgart to learn about current and sustainable issues from over 180 exhibitors. This fair has evolved into the defining one of its kind in south-west Germany. It also doubles as a platform for various community functions, such as recognizing the winner of EULE Baden-Württemberg, a lighthouse project and competition to unearth the region's best ideas.

ing a complete spectrum of services, Steinbeis offers highly specific solutions – just like the ones presented to visitors at the trade fair booth. Six Steinbeis Centers were on hand to introduce their broad range of services for municipalities. Visitors also had the opportunity to speak with Steinbeis representatives about consulting, R&D, evaluation, expert reports, training and employee development across the entire Steinbeis Transfer Network.

“The initiative to band together and present a united front at ‘Communities for a Future’ came from the Steinbeis Transfer Network,” explains August Musch, managing director of the consulting service Steinbeis Beratungszentren GmbH. “Many Steinbeis Centers have government clients and offer services tailored to cities and municipalities. Being here at this trade fair – all together – boosts our public image and our ability to acquire new business.”

Communities face a growing number of challenges. And they need sustainable, efficient solutions that solve very specific problems. Offer-

When speaking to community representatives, Sebastian Dürr (Steinbeis Consulting Center, Development Renewable Energies and Energy Efficiency) explained how renewable energy could be put to use in cities and municipalities. “Public institutions are sometimes unaware of where there's a potential to save, or where things could run more efficiently. Not only does our center help them identify these areas, we support our clients in developing concepts and running campaigns that promote renewable energies,” continues Dürr.

The Steinbeis Consulting Center for Regional Development and Economic Development showcased best practice for regional economic development initiatives as well as the opportunities that result from making projections about commercial real estate, investigating locations and bringing defining characteristics to the fore. “By consulting with third parties to take an active role in economic development, municipalities and cities can help companies already on the ground to survive and thrive in today's difficult economic environment. It's a completely different approach to keeping what you already have intact,” notes Alexander Fromm, a representative for the Center at the trade fair.

One of the things the Steinbeis Transfer Center Applied Systems Analysis focuses on is analyzing and forecasting how regions change in terms of socio-demographics. “Complex relationships between on-the-ground factors, patterns of migration and

earning power are well-suited to short to medium-term projections of the region's economic and labor market indicators," states Professor Günter Haag. These projections help decision makers to improve an area's economic infrastructure.

Dr. Leonhard Stiegler heads up the Steinbeis Transfer Center ExpertCom. For him and his team, "securing bandwidth in rural areas remains a top priority. And we have what it takes to give communities the information they need to give the infrastructure an extensive yet necessary overhaul." This includes starting with an analysis, identifying needs and providing expert support in submitting funding requests. The Center sets great store by assisting clients throughout the entire project and crafting individual solutions to meet each challenge.

The Steinbeis Consulting Center Regional and Economic Development was represented by Dr. Hans-Jörg Domhardt. "Consultations with communities about regional and local development reveal that clients are not always aware of where the journey is heading. We have a number of tools at our disposal to

set our clients on the right path. Our expertise, our designs, our expert opinions. Add to that results-based project management and a track record in regional development," said Dr. Domhardt in explaining the Center's aims. What makes the whole process work: direct access to decision makers at local and regional levels.

Walter Seeger, director of the Steinbeis Consulting Center Healthcare Consulting Institute, told visiting health care professionals about how clinics are undergoing strategic realignments to achieve better results over the long term. "We consult with and support our clients in end-to-end, process-based clinic management. This takes costs into account, such as process cost accounting and market analyses. But it also uses analyses to look at what's happening in terms of revenues price calculation and risk assessment," explains Seeger.

Final thoughts: Steinbeis exhibitors called the trade fair a rousing success. It was an excellent opportunity to meet with community representatives, share ideas, even discuss working partnerships. What's more,

Steinbeis Center professionals met like-minded colleagues in their network. So it's no surprise that talk is already spreading about attending the "Zukunft Kommune 2011" trade fair in Cologne.



Secretary of State Richard Drautz (of the Baden-Württemberg Ministry for Economic Affairs, third from right) visiting the Steinbeis exhibitors

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## Steinbeis among the winners in the “Automobile Summer 2011” idea contest

# Eco-friendly mobility on holiday

In 1886, Carl Benz officially patented his “motorized carriage”. And in 2011, the German state of Baden-Württemberg will be celebrating the 125th anniversary of this momentous occasion. The state tourism board and finance ministry will be launching “Automobile Summer 2011”, featuring a variety of events throughout Baden-Württemberg over a symbolic period of 125 days. The Steinbeis Consulting Center for Innovation and Energy in Trossingen was one of 10 winners in a contest to come up with project ideas for the Automobile Summer.



From left to right: Andreas Braun (Tourismus-Marketing GmbH Baden-Württemberg), Sebastian Gries (IHK Schwarzwald-Baar-Heuberg), Christian Kläiber (Steinbeis), Annette Barth (Steinbeis), Heide Glasstetter (Schwarzwald Tourismus GmbH)

Entitled “Future mobility in the Black Forest holiday region”, the award-winning project is also known as ZUMO, from the German word Zukunftsmobilität or “future mobility”. Borne out of a partnership between the Steinbeis Consulting Center for Innovation and Energy, the Black Forest Tourism Board and the Chamber of Commerce and Industry for the Black Forest-Baar-Heuberg region, the project was one of 10 winners out of over 200 submissions. ZUMO examines the complete “mobility chain” of the Black Forest as a tourist destination, showing how this can be made as environmentally friendly as possible. The aim: to ensure holidaymakers in the Black Forest have unlimited mobility to enjoy leisure activities, while doing as much as possible to protect the environment.

So here in Germany, the cradle of the automobile, the project team decided to take a fresh look at the issue of mobility from the angle of tourism. “As the birthplace of the

Hotzenblitz electric car, and the region where the world’s first car race was held, the Black Forest is the ideal place to set a bold new example when it comes to mobility,” explains Christian Kläiber, head of the Steinbeis Consulting Center.

To turn the project into reality, the project partners will develop holiday packages with eco-friendly guest arrivals, accommodation, local transport and leisure activities. Available during the Automobile Summer, these packages balance car travel with eco-friendly alternatives, resulting in a positive net effect on the environment, thus leaving holidaymakers with a clear conscience. Since May, applications have been open to regions and communities in the Black Forest to become model partners in the project. Combining forward-looking modes of transport with new and existing tourist services sets a vital precedent, both for the Black Forest tourism region and the state. What makes this project

so remarkable is the novel combination of environmental issues with automobile use, reflecting the Black Forest region’s successful marriage of innovation and tradition.

Next summer, visitors to the Black Forest will be able to choose from a futuristic fleet of innovative electric vehicles throughout their stay: from cars and motorbikes to scooters, bikes and even Segways. Then there’s always public transport, of course. The packages are rounded off with eco-friendly leisure activities, such as a Black Forest electric bike rally, or an electric car convoy along the scenic Black Forest mountain route. Going by the slogan “Mobility without a car”, holiday packages will highlight alternative modes of transport – including activities such as guided walks, bicycle tours and hiking in the Black Forest.

As part of “Automobile Summer 2011”, the “Future mobility” pilot scheme aims to develop lasting new mobility concepts in the Black Forest tourist region and economic area. After next summer, the project partners plan to broaden the scheme by expanding the mobility concept (for tourists) while continuing to invest in infrastructure. This way, both holidaymakers and local residents can benefit from a lasting, comprehensive eco-friendly mobility concept throughout the tourist area.

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## Steinbeis Award bestowed at Otto-von-Guericke University in Magdeburg

# Award winning!

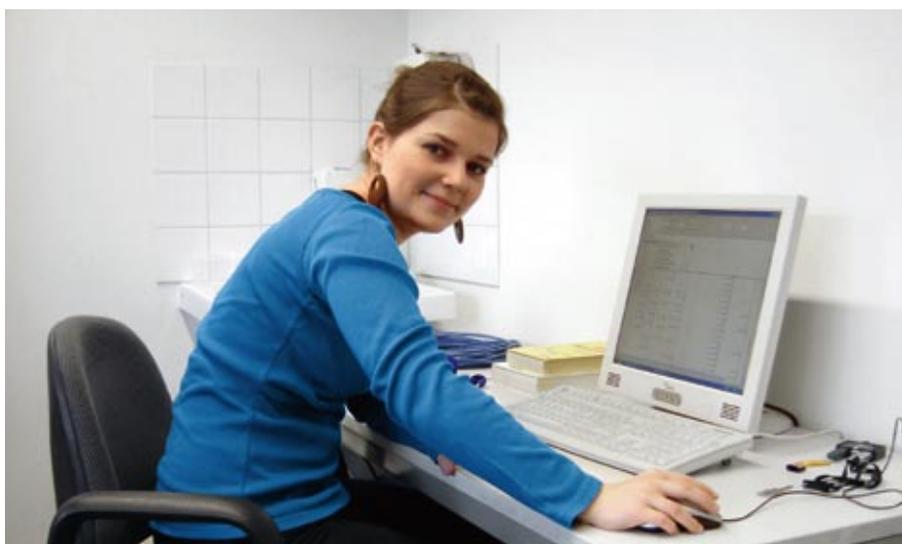
Two young master's students have become the first winners of the Steinbeis Award at the Otto-von-Guericke University in Magdeburg. Anke Fröbel and Marcel Böttcher each received 3000 euros for their excellent exam results. The money will go towards their 2010 summer semester. The prize is awarded by the Steinbeis Research Center for Electrical Networks and Regenerative Energy Sources and the department of electrical engineering and IT at Otto-von-Guericke university.

Anke Fröbel completed a B.Sc. in electrical power engineering at Brandenburg University of Technology in Cottbus. After two semesters at the Technical University of Wrocław, where she also wrote her bachelor's thesis, Fröbel started her master's degree in electric power systems and regenerative energies at Otto-von-Guericke University in October 2009.

The 23-year-old has already gained work experience through a variety of student placements, including at Vattenfall Europe Transmission (now called 50Hertz Transmission). Fröbel is also involved in a voluntary extra-curricular project with the Association of German Engineers (VDI) called MINT Role Model. In partnership with other organizations, the VDI wants to highlight positive examples of women who have made successful careers in engineering.

Marcel Böttcher studied electrical engineering at the Magdeburg-Stendal University of Applied Sciences, majoring in power engineering. In April 2009 he successfully completed his B.Sc. After a number of placements in which he focused increasingly on network planning – including at public utility firm Stadtwerke Schönebeck and E.ON Avacon – in October 2009 the 24-year-old started his master's degree in electric power systems and regenerative energies at the Otto-von-Guericke University in Magdeburg.

The Steinbeis Award was introduced in early 2010. All students reading electric power systems and regenerative energies were invited to participate. The award aims to foster talented students and generate outside interest for degrees at the university's department of



Anke Fröbel



Marcel Böttcher

electrical engineering and IT. The award commission comprised Prof. Dr.-Ing. Andreas Lindemann (head of department), Prof. Dr.-Ing. Zbigniew A. Styczynski (head of the Steinbeis Research Center) and two departmental assistants at the Institute for Electric Power Systems.

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## Student representatives meet up at Steinbeis University Berlin

# Support shaping studies

The student representatives of a variety of Steinbeis University Berlin (SHB) schools and institutes met up in April 2010 in response to an invitation from Markus Kwincz and Markus Göttfert, their representatives on the university council. The student meeting took place at the Steinbeis study center on the SIMT campus in Stuttgart.

The main focus of the student representative meeting was a tête-à-tête with Johann Löhn, President of Steinbeis University Berlin. The lively discussion was an ideal opportunity for the representatives at the meeting to echo the issues and opinions of the courses they represent. The resulting discussion was highly constructive and a list of key actions were agreed.

Another important reason for the meeting was to agree and sign off an updated version of the student representatives' statutes. At the beginning of 2010, the representatives decided to set up working groups to follow up key issues over the course of the year. At the meeting, it was time to formalize this by updating the previous statutes. The new set-

up makes it possible for all students enrolled at the university to take an active part in the work of the student representatives.

The newly formed working groups are looking specifically at

- organizing a inter-faculty party at the university
- assessing ways to communicate with all enrolled students
- finding ways to reach out to students in other countries

To reflect the interests of the large number of courses at the university, the representatives hope that a variety of students will become involved in the working groups. All students currently enrolled at the SHB are warmly in-

vited to get involved and contribute to the projects. If students are interesting in playing a part, the two university council representatives would be delighted to help.

Once the working group approach had been agreed, the representatives' meeting drew to a close after what had been an intensive and insightful session. The second meeting this year is scheduled to take place in the autumn in Berlin.

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## New certified course for sales engineers

# Based on practice, for use in practice

In late 2010 the School of International Business and Entrepreneurship at Steinbeis University Berlin launches a new certified course for sales engineers. Training is offered in parallel to full-time work in five separate blocks. The course is targeted at engineers, scientist, IT experts, product managers in technical markets, people working at the interface between technical systems and the market, and of course existing and future sales engineers. Participants should already have work experience.

Companies offering technical services are increasingly calling out for more sales-oriented engineers. More and more purchasing decisions are based on technical and commercial criteria. There seems to be a dearth of people able to match their highly regarded technical training with - more often than not randomly managed - sales skills. This hampers communication between departments, who can sound like they are speaking a different language.

Yet sales is the bridge between the company and the customer base that everyone is constantly trying to expand. How professionally this interface is managed dictates the strategic options open to the company. This really becomes noticeably when companies enter new markets, competition intensifies, or the service portfolio diversifies - in short, whenever customer contacts are pivotal to success.

The lecturers are drawn from a variety of companies to give students an opportunity to learn from their rich experience. All participants conduct a project on behalf of their company and apply lessons learned and feedback from the experts to live issues. Dovetailing the project with studies leverages the learning effect for each student and offers special added-value to the company. Two competence tests, at the beginning and the end of studies, highlights the lessons learned by the students during the certified course and captures it for future reference.

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## Steinbeis Bachelor graduate wins Bad Krozingen Nursing Award

# An award-winning change management concept

**On 28 April 2010, Birgit Wernz beamed proudly as she received the Nursing Award from Bad Krozingen Heart Center. She earned the award for a project carried out as part of her studies at the Steinbeis Business Academy (SBA) at Steinbeis University Berlin. Titled "Change Management in Ward Direction at the University Hospital of Freiburg", Wernz's project contributed to changes currently affecting the whole of the German health system – on a scientific and practical level.**

In her ceremony speech, Professor Dr. Ursula Immenschuh of the Freiburg Catholic University of Applied Sciences praised the valuable contributions the project could make to ongoing developments in patient care. An other nursing award was given to Prof. Dr. phil. Ursula Geißner, professor of management science and organization at Freiburg Catholic University of Applied Sciences for outstanding contributions to professional care.

Hospitals in Germany are having to look more and more closely into cost-cutting strategies. A ward manager herself, the prize winner Birgit Wernz stated that as managers at the middle level, ward directors are being expected to make organizational changes, adapt processes, and optimize the fundamental use of personnel resources. As part of her analysis, Wernz noted that it is becoming increasingly important to teach ward directors about project management, change management, leadership skills, management principles, system theory and staff motivation. She also recommended the introduction of an in-house "change agent" to provide ward directors with individual support based on diagnosis, goal-setting, and identification of resources and hurdles.

A number of speeches on contemporary challenges were given at the official awards ceremony. Andreas Westerfellhaus, president of the Deutscher Pflegerat (the long term care advisory board) warned delegates not to oversleep the nursing shortage. Given the wide-sweeping demographic changes, he recommended that politicians define strategies to foster new nursing staff, promote further

academic teaching and provide staff with training in a consistent and organized manner. Speaking on behalf of the Council of Experts, Professor Dr. rer. pol. Eberhard Wille of the University of Mannheim said that adjusting to the changes in nursing, and improving quality and economic viability, required a step-by-step approach. His recommendation for seeking the much needed alternatives: a phase of delegating doctor's tasks to nurses. Andreas Hoffmann, regional member of parliament and health care spokesman for the CDU faction in the Baden-Württemberg state parliament, emphasized that, "Nurses are more than 'little' doctors," saying that given the existing inequalities, it is also necessary from a political point of view for nurses to assume more responsibility, mirroring the approach common in countries like Switzerland, where they take on a much broader range of responsibilities. Professor Dr. jur. Christian Katzenmeier, Director of the Institute for Medical Law at Cologne University, looked at the legal challenges this would present. Ludger Risse, director of nursing at St. Christophorus Hospital in Werne, appealed on behalf of nursing managers for a shift in responsibilities – away from doctors,

to nurses, and away from nurses, to house-keeping staff.

The awards ceremony took place at the 11th Nursing Management Seminar in the Bad Krozingen assembly rooms. At the event, which was organized by the Bad Krozingen Heart Center, around 300 people joined leading representatives of the affected professional groups, the council of experts and politicians to discuss the opportunities presented by redistributing responsibilities in the health care industry.



From left to right: Birgit Wernz, Prof. Dr. Ursula Immenschuh, Peter Bechtel (Bad Krozingen Heart Center)

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## SHB student receives High Potential 2009 award

# A student with real potential!

**High Potential 2009** – a title Florian Hobelsberger wears with pride. As one of the 10 finalists for the Talent Award scheme introduced by the first Finance Forum Germany, the 27-year-old Steinbeis University Berlin (SHB) alumni earned the award for project reports written as part of his master's degree. The management assistant also collected a seal for his employer, the financial company Wüstenrot, naming them "Fosterer of Talent 2009".

"The Talent Award 2009 is the first to recognize the commitment of both young professionals and the companies that foster them," explains Lutz Pelzl of Finance Forum Germany. Winner Florian Hobelsberger was in no doubt why Wüstenrot deserved the title: "Challenge, and support. It's an exemplary approach, which everyone at the company took – from my direct superior to the head of department and the board of directors." If Hobelsberger needed professional support with an assignment or a question from his studies, there was always someone there to help him.

Hobelsberger originally submitted two projects for the award, both of which he had worked on during his Master of Business Administration degree with Wüstenrot. One involved setting up a "process maturity model" for the credit risk management department. The aim of the project, which Hobelsberger also managed, was to create a model for measuring the status of processes in front-office departments at the company's mortgage certificate division and the Wüstenrot savings bank. The project resulted in the creation of the "Wüstenrot process maturity assessment", which makes it possible to measure the degree to which key process requirements have been fulfilled. Process managers have at their disposal a total of 25 criteria for objectively assessing process maturity.

Hobelsberger was also involved in a project called "eWorld" which looked at the launch of electronic customer records, electronic mailboxes and the upgrading of the existing customer information website. The aim of this project was to digitize internal inboxes



Management consultant Roland Irion (left) with Florian Hobelsberger

and mail forwarding to pertinent addressees, and increase transparency by replacing hard-copy filing systems with soft-copy archiving. As part of his project, Hobelsberger took on a variety of roles: the development of a concept for the electronic information portal, lining up test cases, and coordination of testing in company departments, acting as one of two specialized test managers. He was also one of the five people asked to train more than 1200 people on the new applications in just a few weeks. Digitizing inboxes and files allowed the company to draw level with other companies in terms of competitiveness and process efficiency. Not only that, the new portal marked an important investment in future-proof technology.

While managing the project, Hobelsberger wrote several project reports for his MBA studies, including a strategy plan outlining

the system architecture for ongoing development of the company's IT systems. For his master's thesis, he looked at the effect various programs, projects and other organizational measures have on process maturity. And since March 2010, the successful "High Potential 2009" award-winner now has another string to his bow: Master of Business Administration.

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# New centers in the Steinbeis Network

The Steinbeis Network comprises around 800 Steinbeis enterprises spanning all fields of technology and management. Depending on the nature of their work, these may be Transfer Centers, Consulting Centers, Research Centers, Transfer Institutes or separate legal entities. The following new Steinbeis enterprises have been founded since March 2010:

Abbreviations:

SCC: Steinbeis Consulting Center

SRC: Steinbeis Research Center

SIC: Steinbeis Innovation Center

STI: Steinbeis Transfer Institute

STC: Steinbeis Transfer Center

## SCC Business Performance

Munich

Director: Gaby Perfahl

E-mail: su1410@stw.de

### Range of services

- Corporate development, focusing on communication

### Areas of expertise

- Support and consultation regarding employee ownership (shares)
- Corporate development through expansion of sales and marketing

## STC Professional Learning, Education Management and IT

Weingarten

Director: Prof. Dr. Peter Henning

E-mail: su1411@stw.de

### Range of services

- Educational consultation and evaluation, project consultation regarding computer-aided learning systems
- Evaluation of computer-aided learning systems using technical, educational and content-based criteria, plus research into learning effectiveness
- Content creation and technology consultation regarding computer-aided learning systems
- Design/creation of virtual worlds
- Design/creation of ontologies and semantically rich systems

- Organization of conventions and conferences on the above topics

### Areas of expertise

- E-learning, computer-aided learning
- Virtual worlds and 3D
- Semantic technologies
- Multimedia information systems

## STC Industrial Communications Technology

Pfingztal

Director: Prof. Dr. Marianne Katz

E-mail: su1413@stw.de

### Range of services

- Technology transfer projects (staff training, qualification, feasibility studies)
- ICT (information and communications technology) consultation
- Management of/support with IT projects (such as websites)
- Reactivation of abandoned IT projects
- Expert appraisals for courts, insurance companies, contractors etc.

### Areas of expertise

- Industrial communications technology
- Information and communications technology solutions for small businesses
- Technology transfer from academia ⇔ industry
- Special services (data migration, protection and recovery), IT/CT renovation

## SCC Applied Business Information Technology

Stuttgart

Director: Prof. Dr. Thomas Kessel

E-mail: su1416@stw.de

### Range of services

- Consultation
- Training
- Expert appraisals
- Project management and implementation

### Areas of expertise

- Software engineering and development
- Open source software
- Java technology
- Optimization of software development processes

## SRC Business Performance Institute

Esslingen

Directors: Prof. Dr. Dirk Hesse,

Dipl.-Wirt.-Inf. (FH) Matthias Müller

E-mail: su1417@stw.de

### Range of services

- Seminars, professional development
- Training
- Coaching
- Certification

### Areas of expertise

- Business process management
- Business intelligence
- ERP (enterprise resource planning), QM (quality management)
- PM (project management)

## STI Steinbeis Business School Rhine-Main

Hanau

Director: Prof. Dr. Werner G. Faix

E-mail: su1418@stw.de

### Range of services

- Two-year master's degree in International Management



Photo: © iStockphoto/enviromantic

## Steinbeis University student sets up HR monitoring system

# More than data gathering – the shape of modern HR management

Over the course of time, HR management has been transformed from its classic role of business administration to a strategically oriented department. On top of this, personnel departments are coming under increasing pressure to justify their existence and demonstrate tangible contributions to the value-added of the business. This trend is exemplified by growing demands from companies to measure performance systematically, in quantitative and qualitative terms, and introduce comprehensive evaluation techniques, such as the Balanced Scorecard. Adrian Scherer looked in more detail at the subject as part of his MBA studies at the School of International Business and Entrepreneurship at Steinbeis University Berlin (SHB).

Business management is increasingly looked at from the angle of personnel management. The role of human resources management (HRM) is also gaining a more strategic profile within businesses. Yet it is difficult to point specifically to the strategic advantages of the workforce – and with it, HRM – as the

value-added of personnel management is based largely on soft factors, such as "values", motivation or satisfaction. This was the challenge faced by Adrian Scherer, a project manager in HR auditing at Munich-based Loyalty Partner. The topic was also the main focus of a company-sponsored project as

part of his "Project Competence Degree" at the SHB.

Personnel auditing in its modern guises should be a stand-alone activity, yet no-one would dispute that it is an integral part of management accounting. So it is not just about gathering and processing HRM data, or examining deviations from plan. When Adrian Scherer analyzed the current situation at the beginning of his company project, he found that key business indicators were being measured in each division in completely different ways. Very little was being done to link successful work (e.g. quality, attendance) to remuneration (such as bonuses or performance-related pay). Cost-related figures were being measured in conventional terms, e.g. costs per person, and all measurements were numerical. Key indicators relating to personnel retention and motivation were restricted to staff turnover levels, and wage or salary structures. The value-adding aspects of the key business indicator system was underemphasized. The underlying aim – that announcements or business decisions should be underpinned by personnel figures and cost-related indicators – was not being fulfilled. As a rule, key indicators were being used within individual parts of the company. Nothing was being done to share information throughout the whole company.

Based on his analysis of the current situation, Adrian Scherer laid down his project goals: a value-based personnel auditing system should be introduced to optimize corporate management. Second, standard and uniform key indicators were needed across the whole company. Third, these must go to senior managers and personnel management. Fourth, there should be binding underlying structures across the whole company, which could be matched to individual needs within each division through a selection of other key figures. Scherer could see that people needed to be encouraged to compare their experience more with others, based on key indicators (internal bench-

marking). Further, suitable methods and tools needed setting up. Also, some thought should be put into ways to integrate future issues in existing set-ups. The foundations for this integrated personnel auditing system would be laid by linking up existing systems, removing obsolete systems, and setting up standard reports which could be expanded into a regular reporting system. The emphasis lay in ensuring that legacy data would be transferred properly, without compromising data quality, as this was central to personnel auditing.

The first stage of Scherer's plan was to introduce new HRM software and migrate data. The requirements placed on the new software included extensibility – so that more modules could be added to the system later down the line – and the ability to customize screens – so that users of the hitherto stand-alone solutions would see a interface similar to the ones they were already used to.

After the long-winded task of data migration and processing of legacy data, step by

step new extensions were added to the system. After the original master data management module came a vacancy management module and a seminar management module. While they were transferring personal data to the Loyalty Partner management accounts and finance department, a personnel costs management module was added to make it possible to compare data automatically and even make corrections in the linked up systems. The data warehousing solution has now been extended to off-site staff such that the overall system can now be used to administer all aspects of human resources management – from classic processing of master data, to pay slip data, clocking-in data and even calculating daily allowances for internal and external clients – in short: everything that was previously managed differently, on different systems.

Over and beyond logging key indicators, integrated personal auditing involves introducing corresponding measures to improve these key indicators. Apart from the actual numbers and data, departments within the business are offered interpretations of the

data and recommended actions. The departments can then introduce measures to improve key indicators, individually or with the support of the HR department. Once these measures have taken effect, this is once again measured by the personnel auditing department and the process goes back to the beginning.

By standardizing the system and making everything uniform, there has also been a huge leap forward in terms of the time invested in financial auditing processes.

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## The 2010 Steinbeis Day

Steinbeis once again invites you to the traditional "Steinbeis Day" in Stuttgart's "Haus der Wirtschaft" on Friday 24 September 2010. During the day, a variety of Steinbeis enterprises will showcase their services and provide an insight into the Steinbeis network through a series of short lectures. Entrance is free, although we do kindly ask attendees to register in advance.

Further information and registration on  
→ [www.steinbeis-tag.de](http://www.steinbeis-tag.de).

Program (as of June 2010):

- 10.00 am: **Official reception**
- 10.15 am: Awarding of the 2010 Prof. Adalbert Seifriz Prize
- 11.00 am: **Exhibition opens**
- 11.15 am – 12.15 pm: **Steinbeis Info** (invitation only)
- 12 midday: buffet
- 12.30 pm: **Steinbeisers' corner** (short lectures)
- 1 pm: **Alternative program** (for partners of Steinbeis directors)
- 5.45 pm: Official program ends
- 7.30 pm: **Evening program in the Liederkonvention Halle** (invitation only)



## Steinbeis and partners analyze inborn errors of metabolism

# Clinical diagnosis of lysosomal storage diseases

Lysosomal storage diseases (LSDs) are a group of mostly inherited metabolic disorders caused by the malfunction of lysosomal enzymes. If left untreated, LSDs are terminal – frequently within several years. Since efficient enzyme replacement therapy (ERT) has become amenable for a number of LSDs, such as Gaucher's Disease and Fabry's Disease, rapid and unequivocal diagnosis is critically important. In collaboration with Genzyme CEE and the University of Timișoara in Romania, the Steinbeis Transfer Center for Biopolymer Analysis, Proteomics and Protein Chemistry at the University of Konstanz has developed highly sensitive molecular diagnostic methods for LSDs using both mass spectrometry and fluorescence spectroscopy, and has validated these methods for use in clinical diagnosis.

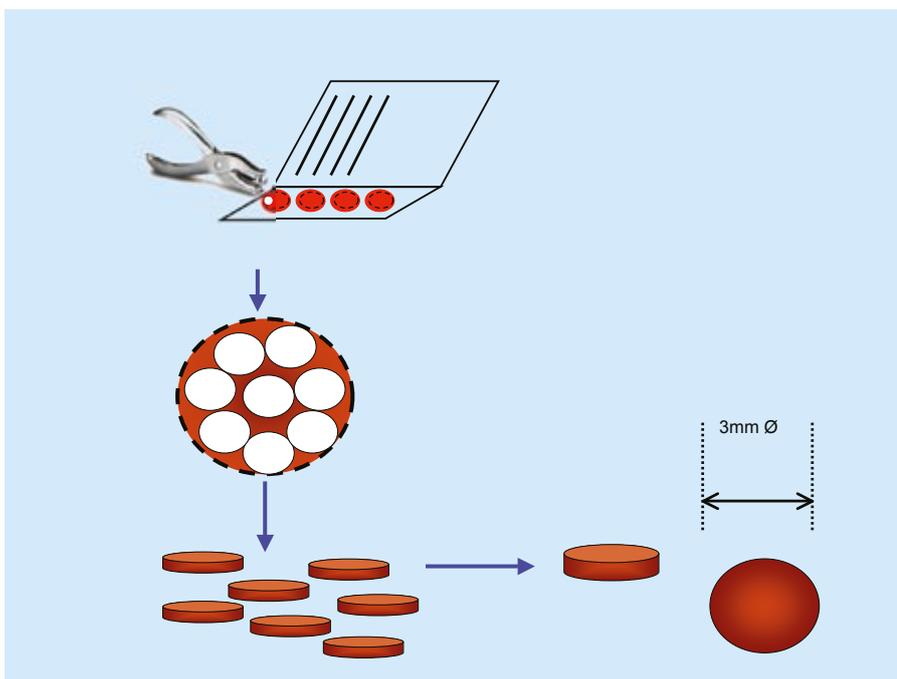
Lysosomal storage diseases are a group of mostly inherited metabolic disorders caused by the malfunction or failure of lysosomal enzymes. As a consequence, the corresponding substrates are not metabolized and thus accumulate in lysosomes, leading to severe pathophysiological effects including hepatomegaly and splenomegaly (enlargement of the liver and spleen), cardiac muscle atrophy, respiratory diseases and multiple organ failure. If left untreated, LSDs are frequently terminal. Of the approximately fifty hitherto known LSDs, some are amenable to treatment using enzyme replacement therapy, including Fabry's Disease, Gaucher's disease and glycogen storage disease type II. Genzyme has recently developed highly efficient

ERTs for treatment of Gaucher's Disease and Fabry's Disease, which present high chances for curative success if early and confirmed diagnosis is available.

Until now, rapid and accurate diagnosis of LSDs is frequently a major problem, and children with undetected LSDs may die before treatment is amenable. In the case of positive biochemical diagnosis, genetic diagnosis can be performed for confirmation and can be extended to the patient's family. Aim of the present study of the Steinbeis Center for Biopolymer Analysis at the University of Konstanz in collaboration with its partners was (i), the development of efficient molecular tools for the clinical diagnosis of LSDs

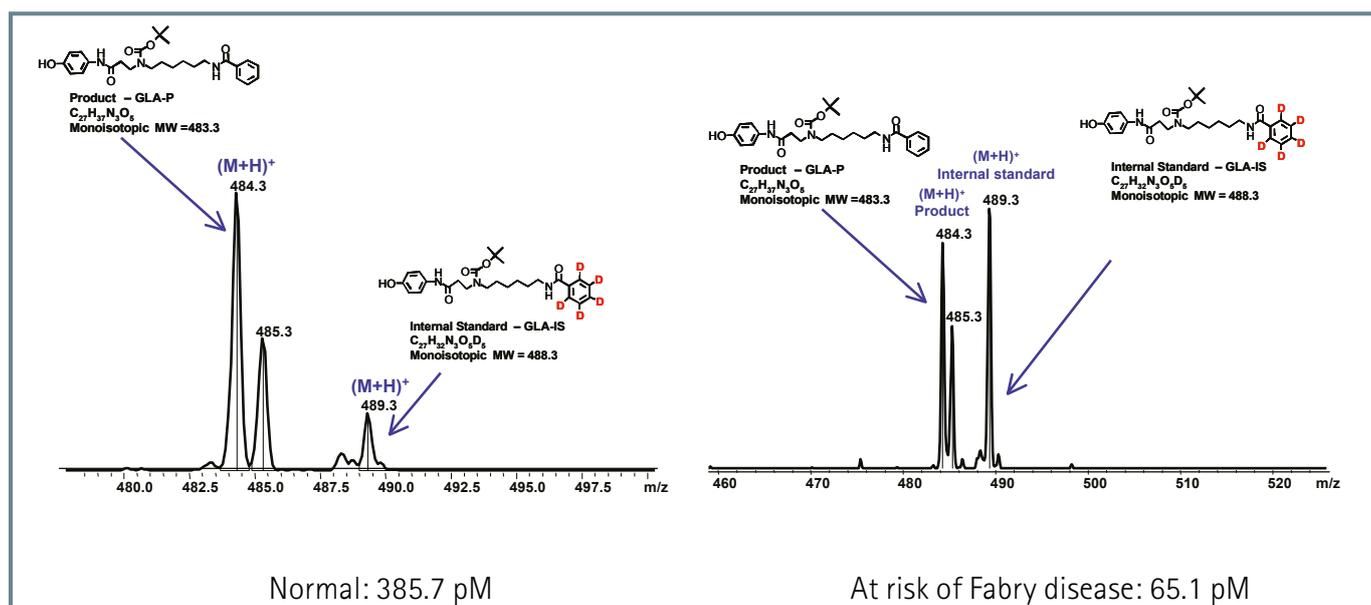
using specific quantitative determination of enzyme activity in blood, and (ii), to validate and establish these methods for clinical application. Furthermore, diagnostic applications were initiated in collaboration with Clinical Departments in Central and Eastern Europe in which no corresponding methods for diagnostic confirmation had been hitherto amenable.

For accurate and sensitive clinical diagnostics of LSDs in blood, techniques for sample preparation and analysis were developed based on the "dried blood spot" (DBS) method. Using the DBS method, blood samples of approximately 30 microlitres were absorbed onto a membrane filter (protein saver card), which in dried and air-tight form are stable for long-term storage and transport. For sample extraction, disk aliquots of 3 mm diameter were punched out of the DBS card and used for multiple determinations (see Figure 1). Two different methods were developed and evaluated in complementary manner for diagnosis of LSDs:



Samples preparation with the Dry-Blood-Spot (DBS) method

(a) Specific determination of enzyme activity using **tandem mass spectrometry**. With the mass spectrometric method, quantitative determination of the product formation of a suitable structural analogue of the natural substrate is performed using an isotopically labelled internal standard (galactosyl ceramide for  $\alpha$ -galactosidase determination in the case of Fabry's Disease; s. Figure 2).



Mass spectrometric determination of  $\alpha$ -galactosidase using a penta-deuterated product analogue as internal standard; healthy control sample (left), FD risk sample (right)

(b) **Fluorimetric** determination of enzyme activity using a fluorescent substrate analogue. In the enzymatic cleavage of the galactosyl-substrate for determination of  $\alpha$ -galactosidase, formation of the product 4-methylumbelliferone (4-MU) is measured. The substrate is placed in a microtitre plate, and following addition of the DBS the pH brought to 4.5 using a buffer solution. Fluorimetric determination of 4-MU is performed at 360 nm excitation, and an emission wavelength of 400 nm. Thus the fluorimetric determination is suitable for rapid clinical screening analysis.

HPLC tandem mass spectrometry analyzes specific fragments of the product of substrate conversion of the respective enzyme. This approach, referred to as Multiple Reaction Monitoring (MRM) enables highly specific ("absolute") diagnostic determinations; the MRM technique is feasible to determine several target enzymes thus suitable for simultaneous diagnosis of several LSDs. Initial clinical diagnostics of Fabry's Disease (FD) were performed by double-blind procedure on DBS samples from healthy control persons and FD patients from Clinical Departments of several Universities. The sensitivity, accuracy and reproducibility of  $\alpha$ -galactosidase determination was validated with approxi-

mately 350 control samples, using both the mass spectrometric and fluorimetric methods. In this study two patients with Fabry's Disease were clearly diagnosed; in addition patients were identified as high-risk cases of FD by their low blood levels, and thus could be classified to further detailed diagnostic determination.

In the present study methods of high sensitivity and specificity have been developed and validated for the clinical diagnosis of target enzymes for Lysosomal Storage Diseases. These approaches providing diagnostic determinations for LSDs with known target enzymes will also enable the development and validation of mass spectrometric methods for identifying biomarkers of LSDs for which presently no quantifications are amenable. Corresponding diagnostic methods are particularly relevant for LSDs in which therapeutic modalities by enzyme replacement are already available. Of particular interest are most recent reports that provide initial proof of the connection between LSD target enzymes and the aggregation of key proteins for neurodegenerative diseases, such as Parkinson's disease, in agreement with established neuropathological effects of LSDs. Protein-analytical methods pursued at the Steinbeis Transfer Center for Bio-

polymer Analysis Konstanz should be suitable to elucidate the structures of aggregation products of LSD target enzymes.

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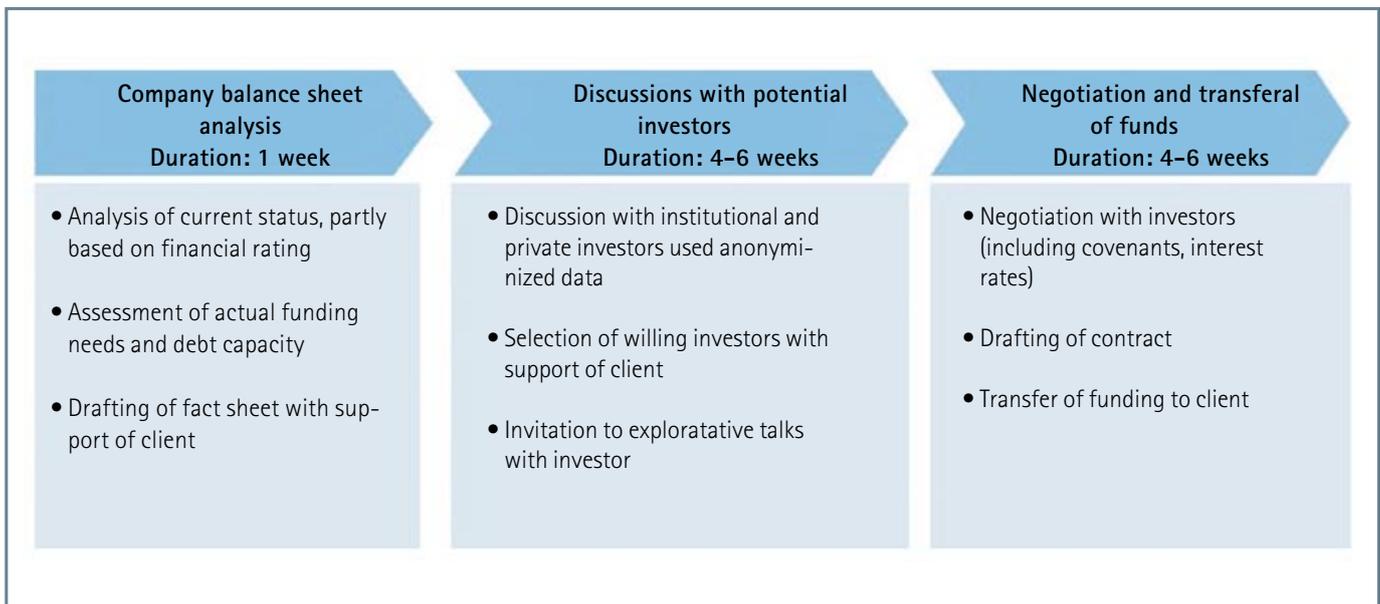
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## Institutional and private backers lend support to companies

# Sealing the budget gap

The mountain of debt that has been imposed on many companies in recent years, including through private equity companies, will be a major challenge for those companies for years to come. This is being exacerbated by expiring funding from standard sources, which will need refinancing. Many of the banks are still being tight fisted about handing out finance, be it follow-up financing or newly arranged investment. The Steinbeis Consulting Center for Medium-Sized Businesses Financing and Investments is helping companies find alternatives.



The consultation process for approaching institutional and private investors

Institutional and private investors have helped many companies over the past 18 months with capital in the form of loans. This independent backing is attractive to companies as it provides financing over a period of between five and seven years. Very often, the loans are at much lower interest rates than existing credit with companies' normal banks. The terms and loan agreement are matched to the individual needs of the company.

The Frankfurt-based Steinbeis Consulting Center for Medium-Sized Businesses Financing and Investments is currently working with a packaging company with a strong leaning towards the drinks industry. The order books are currently quite full and excellent growth is forecast, especially in eastern Europe. At the beginning of 2010 the com-

pany directors turned to the Steinbeis financing experts after its bank said it could not provide the funding it needed to fuel growth.

The first step was to evaluate current finances and estimate the amount of backing actually needed. In close cooperation with the company's managing director, an independent financing concept was drafted. The team then decided which institutional investors to approach, and how to negotiate the covenants and terms. The loan was facilitated in July 2010.

The experts at the Steinbeis Consulting Center for Medium-Sized Businesses Financing and Investments are currently providing financial advice to a number of companies from the food & drink, IT services, sustain-

able energy, electrical engineering, and transportation engineering industries. The center has a reliable network of institutional and private investors.

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**The SEZ celebrates its 20th anniversary**

## **20 years Innovation through European Co-operation**

**The Steinbeis-Europa-Zentrum (SEZ) has every reason to celebrate. 20 years ago, the regional state parliament of Baden-Württemberg appointed the Minister of Economics' first Commissioner for Europe. At the same time, the Steinbeis-Europa-Zentrum was set up in Stuttgart under the responsibility of the new commissioner. The SEZ, which now employs more than 30 people and has a second office in Karlsruhe, helps companies with EU funding programs and provides support with cross-border technology transfer.**

In 1990, the incumbent Minister of Economics for Baden-Württemberg, Hermann Schaufler, appointed Hans J. Tümmers as his first Commissioner for Europe. His role: to boost competitiveness by making it easier for small and medium-sized companies to gain research and technology funding through the European Union. In 1995 Tümmers was succeeded as Commissioner for Europe by Peter S. Nieß who in 2002 handed the task on to Norbert Höptner, who is still in the role today.

As the front-line operation of the Commissioner for Europe, the Steinbeis-Europa-Zentrum distributes the latest information on EU funding programs. As well as supporting small and medium-sized enterprises, it helps universities, research institutions and the public sector submit applications and implement EU projects. It also develops future strategies and sets up targeted cross-border partnerships.

The SEZ ensures that small and medium-sized enterprises also benefit from European funding. In 2009, the SEZ helped more than 9.8 million euros of European funding find its way into Baden-Württemberg. Since its first EU project in 1993, several hundred project partnerships have ensued with companies. Today it is involved in 24 EU projects, affecting 222 partner companies in 33 countries.

To mark their 20th anniversary, the SEZ and the Baden-Württemberg Ministry of Eco-

nomics invited guests to a convention in Stuttgart on "Strategies for Innovation and Competitiveness in Europe". The aim of the convention was to provide everyone involved in innovation with new ideas, especially by linking up two aspects of innovation: "the transfer of knowledge from research into business practice", and "the transfer of innovations throughout the regions of Europe".

"Europe must do more to support innovation!" demanded Ernst Pfister, the Minister of Economics, in his opening address. "I'm pursuing an ambitious goal with this convention: I want us, in Baden-Württemberg, to keep treading the path of success, and nothing less – a path into the future that will safeguard the prosperity of this region, and employment for its people."



The SEZ Team in Karlsruhe



The SEZ Team in Stuttgart

## Obituary

# Prof. PD Dr. habil. Olaf Kos

**Professor Olaf Kos was director of the Steinbeis Consulting Center for Education Management and a lecturer at Steinbeis University Berlin. He worked with great commitment, both at his center and on SHB bachelor's and master's degree programs. Olaf Kos passed away in May after a serious illness.**

Olaf Kos studied mathematics, physics and educational science at the Humboldt University of Berlin, where he also gained his PhD and became a university professor. After time abroad at Pennsylvania State University and Florida State University, Kos became head of the chair for pedagogy and IT at the Institute for Business Pedagogy and Adult Education at Humboldt University. In 2005, Kos was a visiting professor for pedagogy at the Uni-

versity of Ulm, after which he became a freelance lecturer at the Institute for Business Pedagogy and Adult Education at Humboldt University and a divisional head at the Institute for Communication and Mediation. In 2007, Olaf Kos founded the Steinbeis Consulting Center for Education Management, where his research concerned educational reform theories, e-learning, strategic communication, the marketing of education, and

mediation in schools and families. At Steinbeis University Berlin, he lectured on public management, public governance, and applied educational and social management. Over the course of his career, Olaf Kos authored a number of academic publications.

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## Prof. Dr.-Ing. habil. Günter Köhler wins award

# The 2010 Sudeten German Culture Prize for Science

**The Sudeten German Association and the German federal state of Bavaria have awarded Prof. Dr.-Ing. habil. Günter Köhler the 2010 Sudeten German Culture Prize for Science. Köhler, who is head of production and jointing specialist Steinbeis Produktions- und Fügetechnik GmbH, was awarded the prize at the 61st Sudeten German Congress in Augsburg in May.**

Günter Köhler was born in the Czech town of Kadaň and studied and gained his doctorate in Jena and Magdeburg in Germany. In 1986 he was appointed professor at the Friedrich Schiller University of Jena. In parallel to his studies, Köhler set up an optics technology faculty at the school in partnership with the optical systems company Carl Zeiss. After German reunification, Köhler re-

organized his chair into the independent, non-profit Institute for Joining Technology and Materials Testing (now the Günter Köhler Institute). Shortly afterwards, he founded the Steinbeis Transfer Center for Production and Jointing Technology.

Köhler sits on a number of committees, a reflection of his commitment to a broad spectrum of topics. He is member of the Board Council of the German Welding Society (DVS) and Chairman of the Weimar/Apolda counseling foundation (Stiftung Lebenshilfe). An art lover, Köhler has even found time to organize over 40 art exhibitions at his institute, and is publisher of a series of books on "Art and Tech-

nology" for Steinbeis Edition. Everything Günter Köhler does revolves around his goal of building bridges in the now-unified Europe between his hometown Kadaň and the German state of Thuringia. Presenting the award, Otto Hörtler and Ehrfried Starke commented, "If you want to move forwards, you can't keep both feet on the ground all the time. This is the maxim of a visionary – bringing things together that seem like total opposites. Our country needs outstanding scientists like Günter Köhler, with his powers of integration, to bring seeming opposites together."



Prof. Dr.-Ing. habil. Günter Köhler at the award ceremony (2<sup>nd</sup> from right)

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## Recent Steinbeis-Edition publications

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**Recruitment in sales. How to attract and keep good salespeople (Recruiting für den Vertrieb. Vertriebspersonal erfolgreich gewinnen und halten)**

Peter Kolb, Karin Kolb

ISBN 978-3-941417-30-4 | German



First the good news: salespeople capable of making a company successful by attracting custom and continuously honing customer relationships do exist. And there are salespeople who enjoy it, do it well, and thrive on it. Finding these people, filtering out the ones best suited to your company, attracting them, inspiring them and keeping them is an important and challenging success factor in increasingly competitive markets. The book showcases ways to address this challenge and how to turn successful sales personnel recruitment into a safe bet. The book is divided into three key recruitment steps: seeking and finding, assessing and selecting, attracting and integrating. Alongside theory, the book shares many practical tips for implementing and organizing recruitment and selection processes.

### The authors

Peter Kolb works as a consultant and tutor in sales and leadership development, and is managing director of a consultancy that helps companies set up sales units. Karin Kolb works as a sales and leadership mentor, runs seminars on sales management and self-management, mentors individuals and teams, and supports sales organizations with change processes.

**Introduction to commercial biotechnology (Einführung in die kommerzielle Biotechnologie)**

Ralf Otto, Lars Dreesmann,

Frank Mühlenbeck, Christoph Müller

ISBN 978-3-941417-31-1

Revised 3<sup>rd</sup> edition | German



We often read in the media about the ethical reservations concerning stem cells, setbacks in gene therapy and genetically modified plants. Most laypeople don't get to hear about the other side of biotechnology: a fascinating world of helpful technology, attractive markets and useful products. This book provides an overview of the most relevant aspects of commercial biotechnology in a clear and understandable manner. Scientific foundations are explained, making it possible to assess companies and business models. The book also provides a detailed description of the development of biotech start-ups, how they are financed and the role played by biotechnology in the chemical and pharmaceutical industries.

### The authors

Dr. Ralf Otto is a head of biopharmaceutical production at Boehringer Ingelheim Pharma and regularly lectures at the Universities of Karlsruhe, Hohenheim and St. Gallen. Dr. Lars Dreesmann is a manager at Boehringer Ingelheim Pharma. Dr. Frank Mühlenbeck is a partner at aeris Capital and also lectures at the Universities of Karlsruhe, Hohenheim and St. Gallen. Prof. Dr. Christoph Müller is Executive Director of the Center for Entrepreneurial Excellence (CEE-HSG) and a lecturer at the University of St. Gallen.

**Strategic Guide to Successful Use and Dissemination of the Results of Research and Development Projects. Make European research work for your company... for busy professionals**

O. Mc Nerney (Lead author)

A. Stachowicz, P. Czupryński, E. Philpott,

D. Kolman, D. Martin, E. Herrmann

ISBN 978-3-941417-27-4 | English

This Guide is intended to provide Small and Medium Sized Enterprises (SMEs), as well as Universities, Institutes and other Research Technology Development organisations (RTDs) with practical, useful and easy to follow advice on how to maximise the impact of Research and Development projects involving SMEs by ensuring that the results are effectively used and disseminated. The information and advice contained in this Guide is relevant not only for projects that are funded under the Cooperation Programme of the European Commission's 7<sup>th</sup>



Framework Programme (FP7), but the Capacities Programme as well (Research for SME/ Research for SME Associations projects).

### The authors

Co-author Eduardo Herrmann is project manager for business, the arts and social sciences at the Steinbeis-Europa-Zentrum in Karlsruhe.

**Collaboration in Research, Development and Innovation in the Construction Sector. Success Factors and Barriers for Cooperation & Identification of Priority Research Topics for SMEs**

E. Herrmann (Lead author)

P. Capello, P. Czupryński, M. del Vecchio,



J. Loeffler, N. Sennhauser, E. Usobiaga  
 ISBN 978-3-941417-28-1 | English

The construction sector is of crucial relevance to the European economy. It accounts for around 2.3 million enterprises – predominantly small and medium-sized enterprises (SMEs) – which generate an annual turnover of almost € 1 billion, contributing an estimated 10 % of the EU's GDP. Thus, improving the collaboration among different actors in such a key industrial sector in order to improve the uptake of new technologies and innovations is of strategic importance to Europe. PRESTO finds its reasoning precisely in that background. PRESTO is a project aimed at facilitating the identification of priority research topics for associations of small and medium-sized enterprises (SMEsAs) by establishing a close and sustainable dialogue with European Technology Platforms (ETPs). As part of PRESTO activities a series of analyses, studies, surveys and consultation panels with construction experts, ETPs and SMEsAs representatives were conducted. The present publication is enshrined within the above mentioned context and summarises some of the most relevant findings of the project.

**The authors**

Dr. Jonathan Loeffler is director of the Steinbeis-Europa-Zentrums in Karlsruhe. Eduardo Herrmann is project manager for business, the arts and social sciences at the Steinbeis-Europa-Zentrum in Karlsruhe.

**A practical guide to self-motivation. Don't just stand there (Praxisleitfaden Selbstmotivation. Bloß nicht blöd da stehen)**

Walter Beck, Patricia Kuppinger-Beck (Publ.)  
 ISBN 978-3-941417-26-7 | German

So I got to the end of the high street, and turned straight round again because I'd decided I was going to shout out in the middle

of the busiest area. I could feel everything tensing up, butterflies in my stomach, and I could clearly hear my heart thumping. It was unbelievable! To calm myself down, I thought about wandering back down the high street again – just to look for a place to return to later where I could shout. There, I was going to order myself to "Shout – now!".

If you're also looking for a way to kick yourself into action, then you're ready for the "Franz test". "Don't just stand there" is the first book from SCMT Edition.



**The authors**

Walter Beck and Patricia Kuppinger-Beck are directors of the Steinbeis Center of Management and Technology (SCMT), one of the major institute networks at Steinbeis University Berlin.

**Electronics in the Automotive Industry 2010. Focus: Electrics and electronics on the road towards electromobility (Elektronik im Kfz-Wesen 2010. Fokus: Elektrik und Elektronik auf dem Weg zur Elektromobilität)**

Steinbeis-Stiftung (Publ.)  
 Proceedings of the symposium, held 27-29 April 2010  
 ISBN 978-3-938062-20-3 | German

Since 2006, this Steinbeis Symposium has been committed to its mission of solidifying the basic understanding



of electrics and electronics in the automotive sector. It pursues this goal by offering development and production engineers, strategists, program managers, OEM service staff, suppliers, tool and method providers, and development partners different ways to approach their everyday work.

Over the three days of the symposium, recent field developments were examined from a variety of angles, through speeches, panel

discussions, and tours of leading automotive companies. The symposium also covered basic expertise in all areas of automotive electronics. The official proceedings of the Steinbeis Symposium 2010 also include profiles of the speakers and authors, abstracts, and profiles of exhibitors.

The following new titles have been published as part of the Transfer Documentation Reports (TDR) series:



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Holger Döring  
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