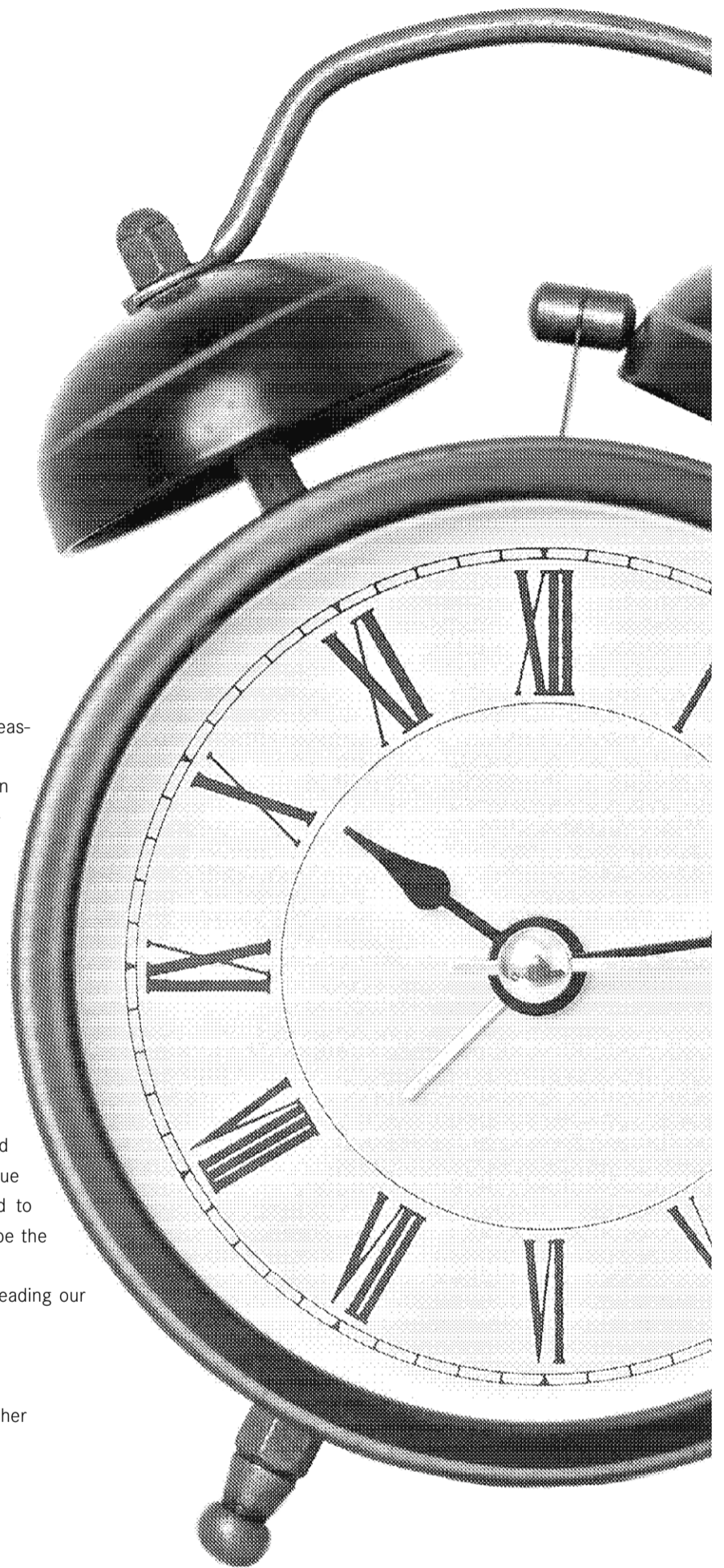


RE- ANNUAL REPORT REPORT 2019



Our future is digital. Be it aids for everyday life like kitchen appliances, fitness gadgets for sport or voice-controlled lighting – our world is becoming increasingly networked. What was laughed off yesterday as a mere gimmick, is seen today as a pioneering innovation and an indispensable part of daily life. Here at STAR COOPERATION, we build on this, following the motto “Changing today to create a digital tomorrow”. Together, we address the current trends and focus

**CHANGING TODAY
TO CREATE A DIGITAL
TOMORROW.**

on state-of-the-art technologies. We keep our ears to the ground and listen out for the latest challenges. For us, unlike the three earlier examples, this is far from being about household appliances or consumer goods from the entertainment industry. We bring digitalization to complex business processes and get companies fit for the future.

What are the latest developments?

It is clear that the classic after sales is evolving. The spare parts business in its purest sense is being pushed increasingly into the background, while other new services are being established. At the same time, vehicle electronics is rapidly gaining momentum. Networked vehicle systems, autonomous driving and electromobility are just a few of the trend-setting issues. Automated content management systems, business intelligence applications and next reality

concepts are also becoming increasingly significant.

In 2019, our employees once again proved that they are more than capable of dealing with these changes and new challenges. They used their extensive expertise, tremendous thirst for knowledge and their passion to make impressive projects a reality. From award-winning sales literature to automated logistics concepts and e-mobility test benches – the range of issues covered was diverse. It makes us proud to look back at these successes. And it motivates us even more to continue pursuing our strategy in 2020 and to work with you now, so we can shape the future together.

On that note, we hope you enjoy reading our 2019 annual report.

Kind regards,
Professor Alfred Neher and Sofía Neher

VIRTUAL

STAR brings VR and business intelligence together. The result is an application that revolutionizes claims management.

Economy, page 4

SMART

The STAR Content Builder connects digital systems and gives structure to companies’ content management.

Panorama, page 12

SUCCESSFUL

Review of the year in numbers: the development recorded by the Group in 2019.

Finance, page 19

SUSTAINABLE

Environmental and social issues are coming to the fore and influencing STAR’s corporate responsibility.

Policy, page 28

ECONOMY

**“AN INVESTMENT IN
KNOWLEDGE ALWAYS PAYS THE
BEST INTEREST.”**

Benjamin Franklin

AFTER SALES TECHNOLOGY REACHES A NEW LEVEL

How connected services are created by digitalization

Classic after sales services are developing into connected services. For a long time, a product's maximum functionality was the overriding objective of the after sales business. Service, on the other hand, focused on repair and maintenance.

A second phase followed in which the profitability of the after sales business was discovered and further optimized. Additional services were used to increase customer satisfaction and brand loyalty.

A third phase is now underway and is benefiting from the increase in digitalization. Completely new opportunities are emerging under the heading of “connectivity”. The networking of devices is on the increase. New business models and services are emerging that are only loosely related to the classic after sales. Former analog processes are being digitized and simplified.

The digital aspects of the after sales

Following the economic successes of recent years, manufacturers have expanded the equipment they use. A natural consequence of this was growth for the after sales: more equipment entered the ecosystem than left it. Growth strategies were required.

At the same time, after sales organizations were also pursuing efficiency strategies and attempting to use digital technology and minimal resources to meet the increasing demands.

Digitalization is becoming a challenge for the after sales. However, this is being rapidly offset by the countless possibilities offered by digital transformation. Logistically complex on-site meetings are being replaced by video conferences. Workshops are being held as webinars and e-learning courses in virtual seminar rooms. And why not replace huge trade fair exhibits with an interactive app? This not only allows complex interrelationships to be explained more easily, it also encourages visitors to get actively involved.

Digitalization of the after sales takes place on all three axes: digital company, digital product and digital customer. The difficulty here is that if two of the axes control a digital application that the third axis cannot process, the digital initiative comes to nothing. All those involved need to be working on the same level.

Customer expectations add a further dimension. These are a key driver of change in the after sales sector. Seeing an online store as just another sales channel won't cut it. At the very least, companies will run into problems when it's past normal closing time and the customer still expects to get the same support online as it gets from bricks and mortar retail. Companies need to embrace digital natives and everything they demand. Through

their use of digital services, they have set benchmarks for digital life and developed specific expectations. It is important that companies are clear about what these are, as they will be measured against these benchmarks. Analog business processes used previously are no longer relevant.

The customer journey of the future

The digital world of after sales sales promises manufacturing companies profitable extra business and new sources of income. Companies no longer just earn when a part fails, but also from services like predictive maintenance and optimized price calculations using big data, from digital services like pay-per-use models and dynamic pricing or by using parts produced decentrally on a 3D printer. At the same time, customer communication is gathering speed and becoming more personalized. Databases and marketing automation concepts are delivering information and enabling the customer to be provided with the right content at the right time.

The after sales is no longer just a spare parts business. It is becoming more diverse as digitalization increases, overlapping with related disciplines and building product ranges full of new opportunities. Achieving the optimal interplay between the product, customer expectations, strategy and technology is crucial in shaping after sales services. These elements will ensure the best possible experience throughout the entire customer journey.

SET THE RIGHT COURSE FOR THE FUTURE WITH STAR

Sophisticated concepts are essential for successful after sales services. The experts at STAR apply customized strategies, tailored to the needs of their customers. They analyze after sales pricing strategies, along with guarantee and warranty processes, define any recommended actions and implement these where required. This enables companies to develop their areas of business and to lay the foundation for sustainable success.

Actively shaped after sales businesses and unique customer service experiences impress the end user. Professional sales concepts and sales presentations also inspire in the retail world. Although this all sounds obvious, however, it is often easier said than done. STAR COOPERATION has a proven track record as a strong partner here: it understands the retail business and helps companies to position themselves successfully in the market – from the service concept to customer support, right through to any technical documentation. It also offers customized logistics solutions for the spare parts business.

STAR's aim is to give customers the tools they need to inspire long-term product and brand loyalty in end customers – so that they can use profitable business models to set the right course for the future.

Further information about our after sales expertise can be found at aftersales.star-cooperation.com.

VR CLAIMS MANAGEMENT IN REAL TIME

How next reality is revolutionizing claims management

The games industry without virtual reality (VR)? That is almost impossible to imagine. Players immerse themselves in an alternative world, become as one with it and feel completely connected to that situation. This effect is not just limited to video games; the business world can also make effective use of the benefits offered by this technology.

STAR COOPERATION makes these benefits tangible: the prototype of a VR4BI application was the result of a joint innovation project conducted by our experts in business intelligence (BI) and next reality. The project was based on the business analytics application STAR ITQS. This actively records vehicle damage during transport and prepares it for the assertion of recourse claims. (The article on page 15 describes the project in detail.)

Greater transparency in the claims process

Data plays a key role in the claims process. It allows in-depth analysis of anomalies. When combined with damage, process and shipping costs, it provides a sound basis for making important strategic decisions. Examples of such decisions include the selection of logistics partners or the optimization of transport packaging. Artificial intelligence (AI) can also support the system. It automatically detects damage from the images in the ITQS application and assesses it independently.

BI and VR create transparency in logistics through their combined method of reporting. Models of vehicles or other cargoes visualize key indicators such as damage rates, damage costs or total costs, based on a number of factors, and thus expand on traditional data sets and dashboards. The specific example of the VR4BI application demonstrates the benefits of VR in everyday business quite clearly.

Benefits of the VR4BI application

The VR model of the vehicles, the BI tool and the data are all fully integrated in the application. This means that the vehicles are not only displayed, but can also be used interactively. This is a distinct advantage, especially in terms of filter functionality.

The full spatial dimension is available to VR users, leading to innovative operating and display options. The well-known data processing provided by BI comes into its own and enhances the existing dimensions. Data that could previously only be seen on a dashboard is made tangible. In some cases, above all else, VR makes it possible to visually display the data.

The virtual space allows proportions and distances to be shown, so the users can estimate sizes and numbers in relation to themselves. They can move around in their own data model and immerse themselves completely in their data. By being fully present, they can concentrate on the analysis without any distractions. This enables them to incorporate the reason for their assessment

of the facts much more easily. The realistic representation also increases emotional awareness. This helps with memory recall in the longer term.

In a nutshell, VR analysis helps to define potential areas for optimization. The simulation of any effects makes it easier for the user to make sound decisions. In the specific case of the ITQS application, the company can be more confident about deciding whether just optimizing packaging will suffice, whether it should choose a different transport route, or whether it should even consider changing its logistics partner.

Possible uses of a virtual space

VR is ideal for collaborations between widely dispersed parties. An avatar enables each team member to have an identifiable presence in the virtual space. They can move around within it at the same time, carry out analysis together, exchange ideas and respond immediately to any queries. The lifelike avatars make communication appear real. This leads to immersion; the feeling of having a real discussion. Users experience situations together and no longer appear to be sitting in front of a monitor in their office. The intuitive experience of data and information is the main focus of the VR4BI application: claims data is visualized in 3D using VR. Being able to create customizable environments stimulates genuine emotions and creativity. This increases the user's motivation, results in new ideas and improves decision-making. In short, the benefits of the multi-user mode revolutionize collaborations between dispersed people. The seemingly real communication replaces on-site meetings. This saves not only travel time, but also cost.

The business intelligence and next reality experts at STAR have managed to turn fully digital claims management into an experience offering fantastic benefits in terms of visualization, identification and collaboration.

The prototype was presented for the first time at the Cubeware customer day in Munich in November 2019. You can find further information about this on page 24.

EXPERTS IN DIGITALIZATION

Heaters that control themselves and optimize the room temperature. Sound systems that can be flexibly extended and interconnected. Refrigerators that allow you to look inside them using cameras and a smartphone while you are shopping. The opportunities offered by the Internet of Things are numerous and are becoming an indispensable part of daily life. Applications are constantly increasing and also becoming more and more inventive. Companies therefore need to make sure they are not left behind. Digitalization strategies prepared today pave the way for successfully networked communication with customers in the future. STAR COOPERATION recommends that companies don't just sit and wait, but proactively inspire their target groups about the digital world. As a digitalization expert, STAR supports companies in their digital transformation using specialist skills, expertise and a passion for the technologies of tomorrow. Be it through an online store, a marketing campaign or test management, STAR can help a company to sell its products and services effectively online. By combining the right sales and marketing strategies and the digital tools to match, companies will easily achieve their goals.

The experts at STAR COOPERATION are characterized by their courage to strike out on new paths. They show their customers how they can profit from digital technologies and break down old structures, as this is the only way they will be able to help shape their digital future.

Further information about our expertise in digitalization can be found at digitalization.star-cooperation.com.

AUTOMOTIVE INDUSTRY ON THE ROAD TO THE FUTURE

How networking, safety and sustainability are changing the industry

The future of the automotive industry is being shaped by three key issues: networking, safety and sustainability. Demand for traditional combustion engines is reducing and the car buyer is no longer focusing purely on horsepower. Manufacturers and suppliers need to realign themselves and cater for these changing consumer needs. Just as for other industries, digitalization is the key to doing this.

Networked vehicle systems can replace drivers

Accident-free roads and as little congestion as possible – that is what the ideal traffic scenario looks like. To achieve this goal, the development of assistance systems and autonomous driving is in full swing in the automotive industry and regularly shows good progress. Vehicle networking is an important prerequisite for successful development. The best-case scenario is for all vehicles to be connected via the cloud one day. Vehicle and traffic data could then be read and evaluated continuously. At the same time, vehicles would communicate with each other. Autonomous driving will become mandatory and gradually replace the responsible driver. Human error will be eliminated.

In the meantime, level 1 of autonomous driving is being included as standard in new vehicles. In the case of assisted driving, the driver is supported by driving assistance systems, such as collision prevention and lane departure warning systems. Significantly, the systems only give assistance; the driver still has to control the vehicle and keep an eye on the traffic at all times.

Level 2 is now also ready for serial production: in semi-automated driving, the vehicle takes over the driver's tasks from time to time. For example, it parks itself independently or can maintain the distance from the vehicle driving in front. Automobile manufacturers are now working hard on level 3 vehicles that allow for highly automated driving. The intention is for the driver to gradually relinquish more and more responsibility. For that to work, however, safety must be guaranteed.

Automotive cyber security is increasing

When it comes to automotive safety, it is no longer just about the personal safety of the driver and other road users. In addition to passing crash tests and successful test drives, it is also important to guarantee automotive cyber security. The networking of vehicles opens up numerous new opportunities, but the element of risk also increases at the same time. System security with respect to data connectivity is becoming increasingly important. Manufacturers and their suppliers need to ensure that vehicles and their data are protected from cyber attacks.

Sustainability is becoming a major focal point

In addition to networking and safety, the issue of sustainability is also coming to the fore. In 2019, the Fridays

For Future movement shifted the focus of consumers, as well as of industry, back onto sustainable mobility once again. It is clear that electromobility is an integral part of our mobile future. However, automotive manufacturers still face challenges requiring considerable action. For instance, the relatively limited driving range of the vehicles. Combine this with long charging times and a weak charging infrastructure, and the supply of power for these vehicles becomes an inconvenience for the consumer. Added to that is the need to make electric vehicles accessible to all consumers. Currently, purchase prices are still relatively high. Despite government subsidies, this still puts many buyers off and this further prevents widespread expansion of sustainable mobility.

These trends clearly indicate the direction required in the STAR field of expertise of vehicle electronics. The key now is to identify needs promptly and to develop customized solutions and tools. STAR can rely here on the close contact it has with customers and with the automotive industry.

The experts in vehicle electronics understand the market and the challenges it faces. As a development service provider, the Group supports its customers from the initial concept to the final implementation. Sophisticated concepts are fully implemented and use appropriate tools and innovative technology to achieve new milestones in automotive E/E systems. Sustainable mobility solutions are created as a result, which invest in the on-trend issues of networking, safety and sustainability.

In short, by working in partnership with the experts at STAR COOPERATION, automobile manufacturers can shape and change their mobile future right now.

Further information about our expertise in vehicle electronics can be found at vehicle-electronics.star-cooperation.com.

HEAD INTO THE MOBILE FUTURE WITH STAR

**“THOSE WHO ACT WHILE OTHERS
ARE STILL TALKING ARE A GREAT STEP
AHEAD IN LIFE.”**

John F. Kennedy

PANORAMA

DO YOU HAVE QUESTIONS OR CONCERNS?

The STAR experts will be happy to advise you:

+49 7031 6288 - XXX

Dr. Natalie Kienzle, -3493

MARKET RESEARCH TO ACHIEVE THE BEST USER EXPERIENCE

User survey provides valuable insights

Böblingen. A German automobile manufacturer wanted to improve the user experience provided by its store system. For several years now, STAR COOPERATION has been supporting the tire search and ordering portal for its customer's dealerships in 13 markets worldwide. In 2019, the customer commissioned a survey of the portal's users. What is your perception of the portal? How do you rate its usability? Are there any potential problems or suggestions for improvement?

Networked experts implement the project

The inquiry for this project was directed initially to the IT experts at STAR who had supported the customer up to that point. However, they soon approached the market research team to request their support. Working closely

with the customer, it was then possible to compile a comprehensive list of questions. Participants from a range of customer and user groups received specific questionnaires in 11 languages. Once the survey had been completed, the market research team evaluated the responses. It highlighted the users' pain points, determined the required measures and discussed specific recommended actions with the customer. Based on this, the customer was able to identify selected areas that needed to be analyzed more intensively afterwards.

The plan is to repeat the survey every year in future to enable changes to be tracked and make them measurable.

Guido Klöfer, -5010

LAUNCH INNOVATION PROCESSES WITH DESIGN THINKING WORKSHOPS

How prototypes get future projects underway

Karlsruhe. A design thinking workshop always starts with a question, e.g. "How can we enable innovation to take place in marketing?", "How can we reach customers more effectively and stay in touch with them long term?", or "How can we use a digital solution to tap into a new market?" Answering these questions should trigger a process of innovation which doesn't exclude any target groups and considers every eventuality.

A vehicle manufacturer's internal innovation team, for example, decided to promote and inspire innovative and effective working within its group. Within this context, and with the STAR agency sense&image as an objective moderator, the innovation team held design thinking workshops and searched for answers to their questions.

Innovation team develops prototypes

sense&image organizes and leads design thinking workshops in the areas of innovation, digitalization, marketing and technology. Prototypes are created for innovative solutions that meet the needs of target groups in the best possible way and which help the company to gain a competitive advantage. The workshops establish a culture of innovation within the team which breaks through silos and promotes collaboration. At the same time, the collaborative and iterative approach reduces the risks involved in projects.

The workshops mentioned above showed this, among other things. People from all the different target groups participated in the workshops – from production through to senior management. They were not just local; participants from around the world contributed to the workshops via Skype. Subjects covered included the opening up of new markets and the promotion of change management in individual departments. New concepts emerged from the workshops held over several days, also resulting in prototypes. These prototypes were sketched out initially on paper and then digitized – in the form of website or app layouts or videos.

The prototypes, together with the follow-up steps defined during the workshop, went on to form the basis for participants to successfully develop their innovation.

Achieve results quickly

By using design thinking workshops, companies are able to design practical concepts there and then and develop new products in no time at all. Challenges can be identified at an early stage and solutions found for them – always with the involvement of all participating target groups.

Christian Langer, -300

SUPERLATIVE DIGITAL TRADE FAIR EXPERIENCE

Video walls and app
captivate visitors

Paris. A unique and unforgettable customer experience was created for visitors and invited guests of Johnson & Johnson Vision at the ESCRS event. In the field of ophthalmic surgery, ESCRS has become the biggest exhibition in Europe for refractive and cataract surgery. In addition to its exhibition stand, Johnson & Johnson Vision created another area at the Paris site where visitors were able to test products live, listen to specialist lectures and take part in workshops. At an evening event at the Paris opera house La Seine Musicale, the company invited doctors to hear a series of presentations giving them exclusive insights into current research and future innovations.

Interactive exhibition concept

For the fifth consecutive year, sense&image, STAR COOPERATION's customer experience agency, was responsible for the design and implementation of all digital activities at the exhibition and at related events there. It prepared all of the Johnson & Johnson Vision employees for the exhibition, the products and any questions from visitors by developing special product and training videos.

The LED video walls on the exhibition stand used special broadcasting software to play live social media content, together with product and image videos designed and created by sense&image. During the talks on the stand, the producer superimposed slides from the presentations over the videos. Short call-to-action clips made visitors aware of specific activities, sessions and points of contact. On six columns fitted with touchscreens, they were able to experience the latest products and their features using an e-detailing app.

La Seine Musicale has one of the largest LED video walls in Paris. At the evening event, sense&image used it to play a specially designed video loop. In the concert hall, a spontaneous introductory video and countdown created a positive mood for attendees.

Monitoring digital success

Measuring the success of the digital support at the exhibition and other events included checking the coverage and activity on social media channels. Success was also determined by the number of leads gained. However, for those behind the scenes, the positive direct and personal feedback received was the greatest success.

Michael Hoeckle, -5677

HEAVY-DUTY VEHICLE

STAR supports the further development of SUVs

Graz (AT). STAR COOPERATION coordinated the development of control units. An long-established automobile manufacturer needed a strong partner to assist with the development of a new SUV model. This partner needed to take responsibility for the functionality of the interior on-board electronics. It also needed to have in-depth process and system expertise, as well as strong communication skills with all those involved.

Prototype control unit created

The experts at STAR COOPERATION, together with their comprehensive network, took on this partner role. They took responsibility for the organization, handling and documentation of the development of the control units and systems. They ensured that the time schedule, the costs and the quality were adhered to by all those involved in the project.

STAR supported the OEM and one of its suppliers in keeping the development time for a new gateway short after it was only possible to make the selection of the series supplier at a later date. It used its in-house rapid prototyping configuration tool, FlexConfig RBS, to do this. As a result, it was possible to present the first prototypes of the envisaged control unit soon after the collaboration began. Based on this, a gateway combination of FlexRay, CAN and LIN was developed. At the same time, STAR set up the networking board with real control units for the complete architecture.

A prototype of the associated switch box also had to be designed in combination with IOs (input/output *interface*) for digital and analog signals, in addition to a 3D housing. This was the only way to verify that the device could be used in a very small space, including the required plug outlets. Various versions of the elements were made available for use by STAR's in-house development team within a very short space of time.

Successful development and integration

During the entire project, STAR wrote the matching requirement specification for suppliers, adjusted it and carried out E/E tests at the end of each release. The pooling of skills and careful operational support enabled the successful development and integration of the systems and control units.

Patrick Pflüger, -3681

OEM TACKLES PRICE PRESSURE

New pricing strategy secures positioning in the Turkish market

Böblingen/Turkey. The after sales experts at STAR have optimized a German automotive manufacturer's price positioning in Turkey. The market is facing a difficult economic situation. An economic downturn and growing uncertainty about the country's economic development are unsettling end customers. They are increasingly hesitant about making investments. Purchases of new vehicles are being delayed indefinitely. Repairs are frequently only carried out in an emergency or in a more limited way. At the same time, price pressure from independent after sales competitors is increasing. The result is that when end customers

need a repair, they often don't buy original parts, but turn instead to alternative products. In order to remain competitive in this context, the automobile manufacturer developed a new pricing strategy as part of a project conducted in conjunction with STAR COOPERATION.

Performance analysis enables successful repositioning

At the start of the project, during workshops at the customer's premises, STAR carried out detailed analysis of the current situation and discussed the results. It conducted a performance analysis, based on historical data,

Martin Mielcarek, - 3648

NEXT LEVEL TECHNICAL TRAINING – VIRTUAL PRODUCT TRAINING

STAR programs augmented reality app

Sindelfingen. STAR COOPERATION introduced an AR application for a premium automobile manufacturer using the expertise of its vehicle technology engineers and experts in new media. The automobile manufacturer had previously supplied technical instructions for its SUV in printed form for its workshops. The aim was to make the content more attractive and illustrate complex issues more simply by making use of the opportunities now offered by digital media.

CAD data brings vehicle to life in 3D

The experts in vehicle technology prepared the specialist storyboards in order to determine the basis for the content. The experts in new media then programmed an interactive real-time application in the form of a tablet and HoloLens app. They also prepared 3D CAD vehicle data and animated it. Interaction options were programmed in line with the storyboards. The objective

to create transparency about the most significant action required. Working with the client, the Böblingen-based experts defined specific areas for action and measures that were developed during the course of the project. The main focus here was the repositioning of selected ranges of spare parts. The project team took the individual vehicle categories and the age classes parts were fitted in into consideration.

ANALYSIS CREATES TRANSPARENCY AND REVEALS ACTION REQUIRED

The willingness to pay is very specific to the particular customer group. STAR took this willingness and the price positioning of comparable spare parts by other competing brands into account in determining new pricing structures, as well as in making specific suggestions for optimized and market-based price points. Various simulations and business cases ensured that a prescribed sales and profit target could be achieved, despite the repositioning of prices. The implementation of the new prices in the system marked the successful completion of the project.

The automobile manufacturer is now able to make more attractive offers to its customers. This secures its economic sustainability for the long term, even in difficult economic situations and under increasing pressure from competitors.

was to provide the customer with an app in the Unity development environment that combines the educational engineering expertise from the storyboard with real-time programming. The app needed to serve as a knowledge database for the user, allowing them to access the required level of information as content that could then be implemented in practice.

Cutting-edge training materials

The project required intensive interdisciplinary cooperation between the vehicle technology, next reality and product data management teams. This collaboration successfully enabled training materials to be provided that used cutting-edge technology. Having STAR involved as a strong partner for vehicle technology and new media enabled customer training methods to be raised to a whole new level.

Heiko Haist, -5636

CUSTOMIZED TEST FIXTURES

atec innovation produces from a single source

Sindelfingen. The STAR subsidiary atec innovation produces test fixtures for an automobile manufacturer with a long tradition. The customer notified the atec innovation team about a requirement for new test benches. It had already worked on similar projects with them in the past. Previously, the manufacture and assembly of parts needed to be carried out using external partners. In 2019, atec innovation extended its mechanical workshop and reorganized its processes. It was then possible to bring the production of small components and the final assembly in-house, with immediate effect.

Design of bespoke parts

The OEM provided a comprehensive requirement specification for the collaboration. Within a short space of time, design experts developed and created the individual components of the test fixture as 3D models. In production, they milled, turned, drilled and welded the corresponding parts on their own machines and finally assembled them.

The reliance on external suppliers and partners was reduced significantly during this project. For the customer, this meant being able to get high-quality test fixtures from a single source within a short time. These were then used by its development department.

Michael Hoeckle, -5677

CUSTOMIZED CRASH TESTS USING STAR DEVICES

Safe test environment for high-voltage batteries

Sindelfingen. STAR COOPERATION has created a safe test environment for the crash testing of electric vehicles. A premium vehicle manufacturer has to carry out mandatory crash tests to ensure the safety of its vehicles. Particular care has to be taken with the tests for electric vehicles. The high-voltage batteries, classified as hazardous goods, are extremely sensitive: in the event of a – potentially also delayed – thermal incident, it would not be possible to prevent a chain reaction. A battery cell would then burn inexorably at over 1,500°C. Just for comparison, the melting point of steel is 1,200°C. The high-voltage battery is therefore removed after the crash test and tested in controlled conditions. However, this monitoring can only take place if the unit thinks it is still installed in the vehicle. The system's own sensors can then be activated and evaluated.

FlexDevice-S monitors crash test

STAR COOPERATION designed a solution for the customer that could be used to carry out safe monitoring. Electronics experts used a special wiring harness to connect the high-voltage battery to the FlexDevice-S by STAR. This tool is able to use a restbus simulation to trick the battery into thinking that it is still installed in the vehicle and simultaneously test the sensor values. Modern bus systems like Ethernet, CAN-FD and FlexRay are used to achieve this. The data received from the sensors is encrypted and transmitted via wifi to an Android tablet. The app installed on the tablet can not only visualize the data, it can also log and trigger it. This means that when a predefined voltage or temperature value is reached, an audible warning signal is emitted. An external speaker also amplifies the signal. An impending thermal incident can therefore be indicated in a timely manner and the data is stored in the tablet's internal memory for subsequent analysis.

The most flexible solution on the market

STAR provided the customer with a solution using components developed by two teams from Göppingen and Sindelfingen. It also developed a bespoke connection cable and rounded off the solution with a standard commercial speaker. There is currently no other product on the market that makes the monitoring of high-voltage batteries safe in such a flexible and cost-effective way.



Michael Hoeckle, -5677

IMPRESSIVE QUALITY

Production of wire harnesses enables accurate validation in E/E development

Sindelfingen. The wire manufacturing facility at STAR COOPERATION equips development departments. A German vehicle manufacturer needs extensive testing in labs and on the road to ensure the safety of its E/E developments. To do this, it has to collect and record all data in accordance with the specifications. Its central measurement technology department therefore developed special wire harnesses together with the development departments. These are used for tapping the electrical system and the respective components to enable the data to be logged. Compliance with the high quality standards is essential for ensuring that developments can be validated afterwards. The special wires and connectors are used to test state-of-the-art networking technologies like Ethernet, FlexRay and CAN-FD. These modern bus technologies require specific wire harnesses, otherwise measurement data could be falsified.

Wire manufacture sets quality standards

The collaboration between the vehicle manufacturer and STAR COOPERATION began with a three-year framework agreement. At the start of the particular project being described, the customer defined 89 different wire harnesses. This number has since increased to over 100. All the wires are produced to the highest quality at the STAR wire manufacturing facility in Sindelfingen. The flexible production processes, together with the clearly defined products and quick call-offs made this an optimal project for the customer and also financially attractive.

Frank Marquardt, -5663

DEVELOPMENT OF CUSTOMIZED MEASUREMENT TECHNOLOGY

Test vehicles are tested trouble-free

Sindelfingen. A premium automobile manufacturer commissioned the experts at STAR to develop measurement technology for power and voltage distributors (MTPVD). These MTPVD need to ensure a consistent, stable and configurable power and signal supply in test vehicles using a range of measurement technology, such as data loggers, sensors, etc. The aim of an electronic circuit is to guarantee that the vehicle is able to start at all times. It is essential that the safety-related communication is not interrupted at any point during the vehicle testing.

Requirement specification produces ready-to-use MTPVD

At the start of the project, the STAR developers only had a requirement specification defined by the customer. The challenge was to schedule the development of the MTPVD so that they could be ordered by the customer's development departments at the same time as the analysis wiring (see "Impressive quality" on this page).

The STAR experts in vehicle electronics designed the housing for the customer and developed the circuit diagram and the layout for a board with a high current-carrying capacity. In accordance with the requirements outlined in the specification, they took the numerous different terminals and the interfaces typically used by the OEM into account during the development phase.

Thanks to the close collaboration with the customer and the extensive expertise involved, STAR COOPERATION ensured problem-free transmission via data lines and connections with currents of up to 40 amperes in the circuit board layout. In less than three months, the developers' work had reached the point where the customer was happy to approve it.

Continuous maintenance of the wire harness data is needed in order to guarantee all the development departments in the German market a smooth ordering process in the in-house purchasing tool. International markets, in contrast, do not have access to the shop function, but have the option to place orders on the basis of offers given previously.

Focus on the customer

For STAR, the success of the project was based on being able to produce quickly, cost-effectively and flexibly, without building up stock. It was able to impress the customer with its adherence to schedules, open and close communication, and the quality of the delivered products.

Markus Böhm, -5626

ON CHARGE

Mobile network simulation extends HV test benches

Sindelfingen. A well-established automobile manufacturer was looking for a partner for the type-testing of its electric vehicles. In this specific case, type-testing meant that the customer had to prove how long a vehicle's battery charging process would take in individual markets. The reason for this is the difference in mains voltages in the different countries. For example, the mains voltage in Germany is 230 V with a frequency of 50 Hz, but in the USA, it is only 120 V and 60 Hz.

HMI carts for space-saving testing

For the simulation, STAR COOPERATION developed two compact systems for high-voltage mobile test benches. The systems each consisted of a mobile cart, the so-called HMI cart (Human Machine Interface), with a switch matrix, control unit and socket panel for positioning it close to the vehicle being tested. Semi-mobile power system simulation sources were added to generate the respective supply.

Once both systems had been built, commissioned and then handed over on-site, the customer was able to simulate each country-specific mains power supply, including potential faults like power cuts, and output it to a corresponding country-specific socket. The power output was measured using the customer's certified measurement equipment and shown on the users-side network.

By using the high voltage test bench with power supply simulation, the manufacturer was able to ensure that its charging system worked properly in every country.

COLUMNS

DIGITALIZATION IS NOT A TECHNOLOGY ISSUE

But it also won't work without technology

Digitalization? That's for IT to sort out! Our travel allowance applications need optimizing? Then the software developers just need to build it into an app! Unfortunately, anyone still thinking like this about the current revolution in our (working) world is behind the times. Replacing a bad paper-based process needing lots of approvals with a digital process that is just as bad – great idea!

Digitalization is much, much more than this. Use of the term has now become rather excessive. Everything is "digital", often expanded into terms like "digital revolution", "digital business" or "digital life". And, in my view, it is exactly this concept of "digital life" that gets to the real heart of the change being seen in our workplaces and in our society.

Let's start with technology. Our behavior and, above all, our expectations are changing, driven by the "consumerization of IT" – meaning that we are now using the same devices (smartphones, tablets, etc.) in a business context as we do in our private lives. Why do I need to issue a "purchase requisition" at work in order to "create an order"? Why can't I just order in my supplier's online store and complete the transaction using PayPal? Why am I not allowed to use the same useful apps on my smartphone at work that make my private life so much easier? Okay, so just saying "bring your own device" and allowing people to use their personal devices at work without adapting any infrastructure, systems and processes accordingly isn't the right solution either. But maybe it's a starting point...

In addition to the growing expectation of having easy operation of business applications on smartphones and

the like (question: are there actually some users who still want a desktop PC?), needs and wishes in terms of working environment, management models and methods within companies are also changing to the same extent. Take flexitime, for example: now a thing of the past. People no longer want to have the freedom to start work between 8:00 am and 9:00 am. The millennial generation – also often called Generation Y – that is, employees born around 1990, aspire to have freedom of choice about their working hours and their place of work. No option to work from home? Forget it! Fixed working hours? No way! But, of course, still fair pay, plenty of benefits and, above all, interesting projects.

The working environment also needs to be reviewed. "Cubicle offices" with gray furniture for employees and an individual office with a glass desk for the boss? Boring. Different zones for quiet working, collaborative working or creative working are the order of the day. Or even having no fixed allocation of workplaces at all – new working instead of office routine.

Hierarchy? Not interested in that, either. It's all about the team – a boss isn't necessary. Management models and methods may also need to be completely called into question and sociocratic approaches like "holacracy" or "agile management" introduced. All the old ways need to be questioned and rethought. Other issues are formal clothing (does anyone actually still wear a tie?) or initiatives like #CallMeByMyFirstName.

And why not? Changes happen in every generation and every change keeps us moving forward. And if it turns out to be a mistake, then we can also change it back again together. But at least we'll have given it a go. If

things are to improve, then sometimes they just need to be done differently. Otherwise, at some point, present-day companies with classic influences and cultures will just become a footnote in history.

Oliver Messer, -421

” CONSUMERIZATION OF IT IS CHANGING OUR BEHAVIOR AND, ABOVE ALL, OUR EXPECTATIONS.

André Flemming, -3950

SHARING ECONOMY IN INDUSTRY

Start-up establishes new business model

Ostfildern. Start-up V-INDUSTRY has used the sharing economy concept to bring Industry 4.0 to manufacturing companies. This has been standard practice in B2C for a long time: whether it's Airbnb or Uber – underutilized assets are put on offer via a platform and used by third parties. V-INDUSTRY has transferred the sharing economy principle to industrial machines. The start-up uses a web platform to advertise available machine resources in an agile and transparent way.

Companies can just upload their orders via the platform.

Algorithms evaluate the orders and match them with the appropriate resources or providers. Customers get offers they can compare, at no cost, and can then choose the supplier they want. The key thing is that customers and suppliers know each other. This transparency ensures there is less risk and a high level of trust.

By using V-INDUSTRY, companies can find manufacturers quickly and easily and can cover their varying production needs. At the same time, V-INDUSTRY helps manufacturing companies to use their capacity more effectively

and to increase the profitability of their machinery. Centralized, automated processes also replace individual, time-consuming administrative procedures and simplify order processing.

STAR COOPERATION, together with its companies atec innovation and STAR ELECTRONICS, has been a pilot partner of V-INDUSTRY since 2019 and is supporting the start-up with a convertible loan.

David Gawenda, -3947

IN-HOUSE PRODUCTION OF SPECIALIST TOOLS

STAR equips engine plant

Sindelfingen. A premium vehicle manufacturer is building new engines using STAR equipment. The customer was looking for a strong partner for the production of new specialist tools. These were needed so that serial production of its new engine could start within a short period of time. Using the engine's environmental data, the STAR experts developed bespoke tools and also modified existing tools.

At the same time, they digitally simulated the installation and removal of the engine parts, checked for potential clashes and identified optimal packaging. Even minimal changes made to the parts during the process ensured their buildability and optimal design.

Start of serial production after test phase

Following an intensive test phase using prototypes, the design data was approved and serial production and assembly was able to start at the factory of STAR company atec innovation.

All of the parts were given an identification number during the design process and STAR inputted these into the customer's system. This meant that, once the engine plants had been successfully supplied with the initial equipment, any defective tools could be found in this system and re-ordered.

Philip Glasbrenner, -3341

EFFICIENT CONTENT MANAGEMENT

STAR CMS revolutionizes content preparation for digital media

Further information about our Content Builder can be found at: content-builder.star-cooperation.com

Böblingen. As a hybrid headless CMS, STAR Content Builder optimizes content preparation processes. The tool stores product information, irrespective of its use, and then processes it. This data can then be outputted via interfaces to any other channel. What makes Content Builder unique is the frontend for authors. Here, the user can adapt product structures and add to the editorial content, as well as update the layout or create previews for coordination. No programming skills are needed to do this.

Why companies benefit from CMS

Sales and marketing are in a state of constant change as a result of digitalization. One of the biggest changes is the increasing number of touchpoints. Customers are using countless different channels to get information, such as websites and online stores or product catalogs like brochures or specialist magazines. This means that companies need to decide which channels to focus on. Which channels may promise the most success? Then there is the need to have constantly updated and consistent content. Faced with this situation, companies are reliant on

having a solution that can display content quickly and efficiently in digital media. The Content Builder is such a solution.

The benefits of Content Builder

The STAR Content Builder is the first CMS to close the digital gaps when it comes to dovetailing editorial content and product content with each other. The CMS assists with the definition of country-specific product portfolios and simplifies coordination and approval processes. Videos, 3D illustrations or other content enrich product content, while additional media-specific applications can be used in apps. The Content Builder overcomes previous issues around the updating of content. Content is now displayed automatically, and any changes or updates take place in real time. No system updates or time-consuming frontend programming are required to do this. Whether it is for a sales app, website, intranet or B2C apps – the STAR Content Builder has a diverse range of applications. Digital expert Philip Glasbrenner presented some of them at the Industry Communication Day. Further details can be found on page 23.

Inka Philipp, -522

CROSS-MEDIA MARKETING SUPPORT

Bosch TT relies on STAR agency services

Böblingen. STAR has been supporting Bosch Thermo-technik GmbH (Bosch TT) as an agency for the creation of marketing materials since April 2019. Bosch TT then uses these both internally and externally. STAR provides cross-media implementation, from the initial concept for the materials to the graphic design, such as creation of logos, graphics and charts, right through to the final artwork. The portfolio is supplemented with the creation of storyboards and the production of short films and 3D product animations.

STAR COOPERATION SUPPORTS BOSCH TT FROM THE INITIAL CONCEPT TO THE DELIVERY AND PRODUCTION. THIS KIND OF COLLABORATION ILLUSTRATES THE AMBITION AND PHILOSOPHY OF BOSCH TT: "EVERYTHING FROM A SINGLE SOURCE".

Product example: launch document

STAR created a document for the market launch of a new gas-condensing boiler. This formed the basis for the creation of all additional documentation and marketing materials relating to the device.

The document was devised in close collaboration with the product management department at Bosch TT. The STAR experts had to gain in-depth technical knowledge about the heating value of gas for the implementation. They also consulted existing launch documents for other products. They designed graphics and charts and described the market situation using two case studies.

STAR prepared an online version of the launch document, which fitters could then use as a quick and easy digital reference guide. A navigation bar and content index with links also make it more user-friendly. The fitters are now able to use the document as a web-based PDF or can print it out, as they did previously.

Robert Wiedemann, -5017

STATIONERY PRODUCED ONLINE

Sustainable production concept future-proofs correspondence

Böblingen. Mercedes-Benz has declared war on wasting paper. In the past, the vehicle manufacturer printed stationery on a huge scale for subsidiaries, dealers and sales partners. The reason for this was that, despite digitalization, on certain occasions, correspondence by post is still a necessary legal requirement. The stationery has an elaborate corporate design and a high-quality visual appearance. However, it takes a huge logistical effort to deliver the centrally produced paper to all subsidiaries. It can take weeks between ordering the stationery and receiving it. To make matters worse, the stationery has to be destroyed if the Executive Board changes and then an updated version produced.

Sustainable production solution

STAR created an "e-stationery" solution that makes production more sustainable and efficient. By using the PubliXone system by the company Konzept-ix, there is now an online store where subsidiaries, dealers and sales partners can customize their own letterheads. A professionally designed template is selected via the browser

and can be modified within a predefined framework. All the necessary corporate design guidelines are adhered to automatically. Extensive information, such as telephone numbers, addresses, bank details, etc. are taken from the user's master data and added to the layout. The names of the current Board members and other group-wide information is kept up-to-date by STAR and incorporated into the relevant templates. This means that only up-to-date templates are available to users at all times.

Delivery within just a few minutes

Users can select the template that suits their needs from a choice of over 120, fill it out and print it. The customer is making huge cost savings on the printing, storage and distribution of stationery as a result. The time between placing the order and delivery of the stationery is now just a matter of minutes. There is also a huge drop in environmental impact at the same time – not just by eliminating the storage and distribution, but also because of the reduction in stationery needing to be destroyed.

Xingyue Zhu, -3547

PRICE NEGOTIATIONS 4.0

Automated database simplifies negotiation processes

Böblingen. After sales services are using automated database processes to improve efficiency in the spare parts business. A German premium automobile manufacturer had previously handled its negotiation processes entirely manually. It carried out the data preparation and subsequent data evaluation for the “tires after sales” negotiation process in Excel and PowerPoint. As it was preparing everything by hand, it couldn’t re-use the data for a new round of negotiations. Added to this, it was also necessary to adjust the base data completely several times during the negotiations. This approach had now run its course. The OEM had originally developed it for a market with five suppliers, but it now had nine suppliers in 12 markets to take into consideration. It was also planning to expand to 36 markets. The manual effort involved threatened to increase significantly.

Data analysis software enables dynamic negotiations

The STAR COOPERATION after sales experts therefore recommended using KNIME software for interactive data analysis. That way, there is automatic data control and, where possible, immediate correction. The checked data is then transferred to an SQL database for further processing and analysis. STAR used Power BI for the visual presentation. This allowed dynamic structuring of the negotiations.

Multidimensional analysis was now carried out at different levels of granularity for negotiations, such as cross market, cross supplier, intermarket, etc. The analysis took different criteria, like price trends, sales development and B2B prices, into account, but also factors like the level of official approval and the competition index.

Automation successfully replaces manual work

Together with the customer, STAR was able to reduce the manual work required by up to 90%. It also incorporated other analytical approaches into the new process and refined them: the high level of automation enabled good scalability to be achieved. This provided the necessary infrastructure for integrating new markets. Furthermore, the use of advanced analytics and the associated identification of areas for action, implausibilities and price differences enabled the customer to experience significant added value during its negotiations.

Franziska Mews, -4249

PAPER INDUSTRY PREPARES FOR DIGITAL FUTURE

Agency supports further development of corporate identity and brands

Karlsruhe/Heilbronn. The paper processing industry is experiencing major upheaval as a result of increasing digitalization. Europe’s leading envelope producer, Mayer Group, confronted this situation confidently and realigned its business. The Mayer Kuvert-network consolidated its service areas and supplemented them with a digitalization strategy. The core strategy included combining the classic envelope range with a new digital division – by opening up new markets, on one hand, and developing modern corporate communications on the other. What the Mayer Group was still missing, however, was a strong partner for the implementation. This is where sense&image, STAR’s customer experience agency, came into the picture.

Strengthening corporate identity and brand awareness

The collaboration with Mayer was launched with a joint kick-off workshop to determine the project’s objectives. The first step was for sense&image to support the roll-out of the new B2B online store for the mayer-network subsidiary. The agency’s UX/UI designers and graphic artists created the screen designs and imagery for the store. They optimized the website navigation and redesigned an existing user interface so that it was possible to successfully launch the online store at the beginning of 2019. After that, they continued to develop the store’s screen designs until, in the end, a completely new corporate design had been created, including a style guide. This formed the basis for all other communication chan-

nels and for the corporate identity of the entire Mayer Group. Based on this, the next step was to redesign the customer magazine. Firstly, the layout was reworked from a graphics perspective and aligned with the new corporate design. The STAR experts in text and design then took over the editorial preparation of the content going forward.

The agency also redesigned the Mayer Group’s presentation materials, developed newsletter templates and created screen designs for an app that connects the physical envelope to the digital world. Added to this was logo development, interior design and communications support for mayer-digital, the new digital division. It also developed screen designs for the company’s new website. The comprehensive support provided for the campaign and the development of the new corporate design turned sense&image into an expert in communication for the Mayer Group. The agency was able to improve the company’s brand awareness and ensure it had a consistent presence – fully in keeping with its corporate identity.

Future-proof brand identity confirms positioning

sense&image developed a future-proof corporate identity with Mayer and also designed a visually consistent brand identity for the entire Group. The result was a new corporate design and a new brand perception which enabled clear, unequivocal positioning and formed the basis for the realignment of the Group. The modern design emphasized the market leader’s expertise in the digital age

while not forgetting the company’s roots and heritage. As a result, the Mayer Group successfully proved itself as an attractive producer and service provider in the market and was able to lead its companies into a bright future.

” THE AGENCY WAS ABLE TO IMPROVE THE COMPANY’S BRAND AWARENESS AND ENSURE IT HAD A CONSISTENT PRESENCE.

Philipp Hohenstein, -3478

CLAIMS HANDLING OF THE FUTURE

Track transport damage effectively and in real time

Böblingen. STAR COOPERATION has developed a database-supported system for efficient damage claims handling based on digitalization and Industry 4.0. Damage occurs repeatedly during the transportation of new vehicles to global markets. It is a huge challenge for German car manufacturers to track all stages of the supply chain and assert recourse claims. In this particular case, vehicle damage had previously been recorded on the consignment note by the logistics service provider or captured on digital cameras by auditors and quality managers at transshipment facilities and then manually cross-checked with the vehicle data later. It was difficult to determine those causing the damage, and identifying clusters of particular types of transport damage required considerable effort and could only be done with a time delay.

Mobile recording of vehicle damage

To solve this problem, STAR adapted its own existing STAR ITQS software solution to meet the customer’s requirements and developed a mobile damage recording app for Android and iOS, together with a web app. Vehicle damage, in combination with the ve-

hicle identification number, can now be recorded on the go and in real time, even during transportation. The data is transferred to a backend system and stored in a database. This, in turn, is enriched with additional vehicle and

STAR ITQS MEETS VIRTUAL REALITY: READ MORE ON PAGE 4.

transport information via interfaces linked to the customers’ systems and assigned to the relevant transport hub. A linked business intelligence solution supplements the system. The digital damage files are transmitted directly to the loss adjuster and

the transport companies for comment and processing of the claim. This enables a transparent supply chain, reduces the legal costs for the claims settlement and increases the success rate for compensation claims. STAR ITQS has been rolled out by the customer worldwide and now has over 50,000 users.

Christian Huschle, -5336

STAR BRINGS AUTONOMOUS DRIVING TO THE ROADS

FlexDevice supports development of the next generation of vehicles

Göppingen. STAR COOPERATION is supporting the development of autonomous driving with its FlexDevice range of devices. A German automobile manufacturer steeped in tradition has tested new control units for future generations of vehicles. The tests were carried out on test benches in an adapted environment as well as in test vehicles.

Test vehicles at an early stage of development usually contain a host of control units from current production vehicles. The purpose of this is to connect current control units and control units in the development stage with the resulting data specifications. The challenge is to establish the connection with minimal manual programming effort. In this particular case, the customer had the added requirement of being able to create and modify projects quickly using graphic project planning and automated code generation. It also expected an advanced level of networking expertise using state-of-the-art products.

Greater flexibility during development

A crucial factor in the collaboration was STAR’s core expertise in FlexConfig RBS development tools and the FlexDevice range and its ability to create tools to connect control units with various automotive bus interfaces. Its flexibility and short response times when integrating new features were additional plus points.

During the test phase of the vehicles, one or more Flex-Devices were installed each time as translators, or so-called gateways. Each of them provided a range of bus interfaces. The vehicle’s non-matching components thereby became usable and testable as one unit for the first time. At the same time, each FlexDevice was also a control unit that could be extended with an additional customer-specific C-code using an editor from the associated FlexConfig RBS configuration tool.

Efficient test phase thanks to FlexDevice

Over a period of approximately three years, the STAR

electronics experts incorporated numerous customer-defined features into the FlexDevice. It was therefore possible to avoid integrating other third-party components in the vehicle.

Thanks to STAR’s comprehensive expertise, the vehicle manufacturer was able to dispense with defining long requirement specifications. The graphic project plan could be amended directly while a rapid prototyping tool immediately generated the code. The FlexDevices from earlier test vehicles could also be reused and cost savings made as a result.



Vincent Buttez, -5624

HIGH-VOLTAGE BATTERIES IN TESTING PHASE

Test adapter ensures safe software updates

Sindelfingen. An automobile manufacturer with a long tradition called on STAR's expertise for the development of its electric and hybrid vehicles. Potential electric shocks from the high-voltage batteries fitted in the vehicles pose a major risk. For that reason, the manufacturer has to incorporate shut-down systems in the vehicles to ensure the safety of the user. It also continuously develops its vehicles and installs software updates accordingly. These updates also need to be tested in test vehicles. The key thing is to check whether the shut-down systems still work following the update and that safety is guaranteed in the event of a fault.

STAR enables fault simulations

To test the software bundles (software bundle check, or SBC in short), the vehicle manufacturer needed a test adapter that could generate an insulation fault, an interlock interruption and a terminal 30c interruption. The STAR electronics experts developed a high-voltage box (HV box) for the systematic generation of insulation faults. Using three different predefined resistances, this HV box – or HV SBC test adapter – can connect the positive lead in the HV circuit (HV+) with terminal 31 via an HV relay. Terminal 30c can be interrupted by using another low-voltage relay. The user can operate the HV box either manually via a switch on the box, by using an added wired remote control or via CAN bus. LEDs also indicate the current operating status.

Comprehensive development of the HV box

STAR cooperated closely with the customer to implement the project. It designed the housing for the test adapter and developed a circuit diagram as well as the layout, including high-voltage and low-voltage isolation. It also developed the software for activation by CAN bus. Following the construction of five initial devices, the customer is now able to carry out the relevant tests on its HV vehicles.

Verena Götz, -3568

EXPLOITING POTENTIAL

After sales realigns price positioning

Böblingen. There was confusion in the after sales service of a sports car manufacturer about its current price positioning in Germany and three other overseas markets. On one hand, there was unexploited price potential in the after sales. On the other, the price positioning of particular ranges of parts was too high and was having a negative impact on customer satisfaction. This, in turn, was jeopardizing vehicle sales in the longer term.

3C pricing model provides price recommendations

STAR has been working with the sports car manufacturer on the issue of price positioning for three years now. Each year, the focus is on a different issue or product. In 2019, realizing potential was the main priority for the collaboration. However, this wasn't just about raising prices. Using the elements in the 3C pricing model, STAR mapped out the existing price position in terms of customer, company and competition. It then adjusted the price position in accordance with market-based pricing. To enable analysis of the individual elements, the STAR after sales experts determined the willingness to pay (customer), analyzed performance and potential, as well as the pricing structure (company) and identified the current OEM and IAM price positions (competition). The key factors for all three elements were brought together using a scoring model and translated into pricing recommendations. STAR implemented the pricing recommendations in consultation with the customer and thus successfully realized the business case in Germany and the three overseas markets.

Markus Böhm, -5626

TEST BENCH EQUIPMENT MADE BY STAR

Construction of an IO frontend

Sindelfingen. STAR COOPERATION has provided the test bench equipment for a German automobile manufacturer. The customer uses this test bench for engines with full valve timing. The problem, however, was the potential for the engine to interfere with the measurement equipment. For this reason, an interface was needed between the test bench and the computer. This interface, an IO frontend, needed to process and electrically isolate analog and digital signals from the combustion engine or test bench. It was then possible to ensure that malfunctions were eliminated and also to make the electrically isolated signals available as an option to two different computer systems.

Requirement specification successfully implemented

The customer formulated these requirements in a predefined requirement specification. STAR COOPERATION subsequently assumed responsibility for the construction of the housing. Its vehicle electronics experts developed the circuit diagram and the layout for the electrical isolation of all the interfaces. It also coordinated the joint commissioning and approval with the customer and produced an accompanying handbook.

The customer is now able to test the full valve timing of its engines on its test bench with minimal signal distortion or signal delay.

Does your test bench need an update?

Find out more at

vehicle-electronics.star-cooperation.com

Florian Jonitz, -5016

BMW RELIES ON PRINT

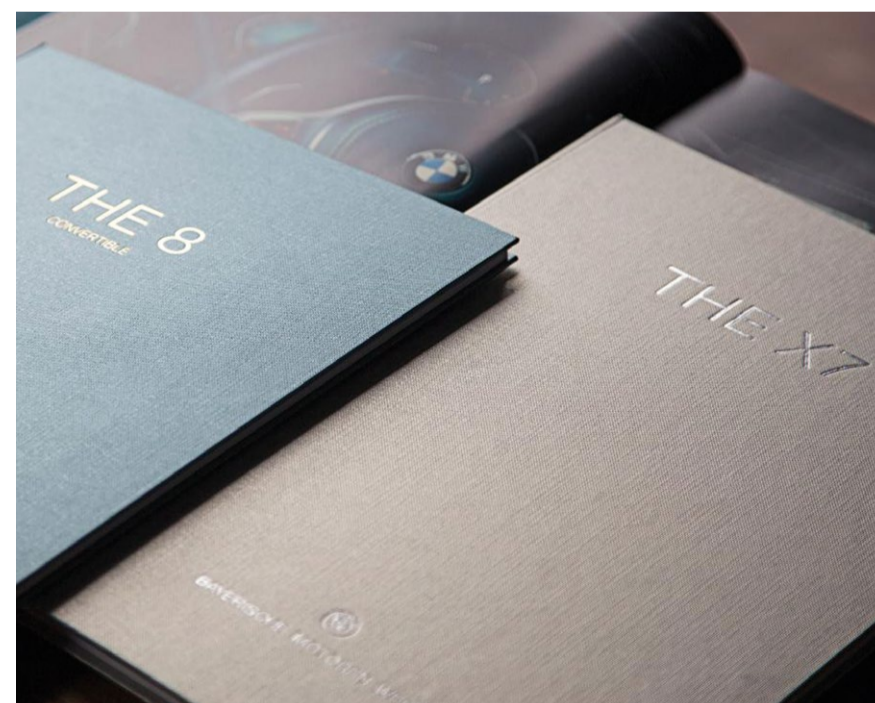
Sales literature wins Gmund Award

Munich. Print is dead in sales and marketing? Not at BMW! Going against the current trend, the car maker decided to take one of its advertising media to the next level: its sales catalogs would no longer be just printed catalogs, but fully produced books. STAR COOPERATION supported BMW during the preparatory phase, as well as with the selection of materials and finishing options. To do this, the STAR media experts performed extensive tests, then evaluated and documented them. During the production process itself, STAR was responsible for managing all the partners, including the final printing approval, quality checks, controlling tasks and litho revisions. Added to that, it also coordinated the translations and adaptations for around 20 country-specific versions. Premium-grade paper from the company Gmund was used for the seven hardcover catalogs with stylish embossing.

The original creative concept for the sales literature was developed by the Hamburg agency Serviceplan.

Winner of the Gmund Award

Customers and markets alike gave wholly positive feedback about this prestige project by BMW – and that rubbed off elsewhere. Other markets, like the USA, are now considering reintroducing sales literature, having discontinued it over five years ago. The success of the sales literature was rounded off perfectly with the presentation of the Gmund Award 2019, one of the most prestigious awards in the printing industry. BMW, Serviceplan and STAR COOPERATION successfully impressed the jury in the "Corporate" category.



Julia Ritter, -3346

TELEMEDICINE FOR THE CAR

Online repair shop optimizes usability

Böblingen. RepairSmith brings the car repair shop to the customer's home. The principle behind the American repair shop chain is easy to explain: when the customer has a breakdown, it gets a diagnosis easily online and can then find the right mechanic to fix it. Previously, the tool was based on a written inquiry using a list of questions. Sometimes, however, the inquiry needed to be extremely technical in order for the problem to be identified accurately. In this case, it was difficult for a layperson to use the tool correctly. To ensure that incorrect information and also incorrect diagnoses could be avoided in the future, help was needed for inquiries using images and animations. A layperson would then be able to recognize the structure of a brake quickly and easily, for example, and compare it with their own vehicle to decide for themselves whether this was the actual repair required or not.

Pilot project successfully visualized

RepairSmith specified around 140 repairs needing to be depicted for the project. The STAR COOPERATION experts assigned these to different assemblies. On average, they were then able to illustrate 10 potential repairs with one animation. STAR completed the animations for the pilot project within four weeks. Once the 3D data had been revised, the individual assemblies prepared and the branding eliminated, they were able to present the animations and still images for a brake and the air conditioning system. Other components will follow after the test phase of this initial content, so that all 140 repairs can be illustrated.

Vincent Buttez, -5624

NEW TEST BENCHES FOR OBC

STAR develops and builds switch matrices for test environment

Sindelfingen. STAR COOPERATION has extended test benches for a premium vehicle manufacturer. For a number of years, STAR continuously developed a test bench as part of a work contract. The customer was able to use this to test the software for on-board chargers (OBC) as well as the alternating current and direct current charging processes. The number of connected OBCs for this was limited to two or three, but usually, a large number of different versions needed to be tested quickly and this therefore involved a huge amount of work. For this reason, the customer asked the STAR experts to look into additional connection options and functions.

OBS sockets developed

Right at the start of the collaboration, it was decided that two new test benches were to be built. One of the benches was to be designed specifically for alternating current processes and the other exclusively for direct current processes. This would enable the vehicle manufacturer to massively increase the number of OBC sockets. A close collaboration was established between the employee involved in the work contract, the STAR development department, in-house production in Sindelfingen and Göppingen and an external company. During the course of the project, STAR built two switch matrices for the test benches, each with about 1,200 low-voltage contacts and around 100 high-voltage contacts. The customer is now able to connect and test 12 OBCs on the first bench and another 16 OBCs on the second.

Lukas Elosge, -3553

INCREASED EFFICIENCY WITH BOT

Robotic process automation performs monotonous processes

Böblingen. An after sales service has optimized the global planning of its spare parts business. A well-established company in the automotive industry was using the latest sales data from its spare parts business to create a daily report. Staff in all the different markets had to enter the data in an Excel file that was located on a central SharePoint. Graphs were generated from this Excel file and then issued to the management. This manual process not only required an enormous amount of time, it was also so monotonous that it was extremely prone to error. Added to that were the different time zones, meaning that the report had to be manually updated several times a day.

Automation of the update process

The experts at STAR COOPERATION fully automated the daily update process with the help of robotic process automation (RPA). The RPA workflow includes all of the previous manual process steps, from the downloading of the Excel files to the data processing and updating of the report, through to the final uploading back onto the reporting server. This RPA workflow is carried out automatically several times a day. The customer's employees now save time every day as they have fewer monotonous tasks to complete and are able to work more efficiently. Apart from anything else, this has also increased their motivation. At the same time, the automatic and rule-based update process has significantly reduced the potential for errors.

SPORT

“IF YOU DO THE BEST YOU CAN, THEN YOU HAVE NOTHING TO BE ASHAMED OF.”

Dirk Nowitzki

CYCLING TO HELP THE CLIMATE

STARS support city cycling campaign

In May and June 2019, four teams from our Berlin, Böblingen, Göppingen and Munich sites abandoned their cars and jumped on their bikes instead. As part of the city cycling campaign, they traveled 5,634.1 km by bike in 21 days and saved around 800 kg CO₂ as a result.

The city cycling campaign was organized by the Climate Alliance, the huge network of cities, municipalities and districts working to protect the world's climate.

The aim was to record as many kilometers traveled by bike as possible within a period of 21 days. The Alliance promotes sustainable mobility and wants to make a long-term contribution to climate protection. The main focus is to experience cycling in your own municipality and so be able to initiate targeted improvement measures. An additional objective is to persuade as many people as possible to switch to using their bike in their everyday lives.

In 2019, over 400,000 cyclists took part in the campaign in Germany. They traveled 77,719,428 km and thus saved over 11 metric tons of CO₂.



STAR RUNS

Employees in company races in Böblingen and Karlsruhe

Böblingen/Karlsruhe. STAR COOPERATION competed in the company race on the Böblingen airfield. The race took place in September 2019 for the eighth time. With 34 runners, STAR had one of the biggest teams among the more than 3,000 participants. They completed 4.9 kilometers under the motto “Run together – work together”. In July, colleagues in Karlsruhe had already run around 400 meters further than that around the local castle. Their motto: “#AreWeThereYet”. In hot summer temperatures, the seven-strong team covered kilometer after kilometer and were able to cross the finishing line together after 38 minutes.

HIT FOR STAR

Table tennis tournament at atec innovation

Sindelfingen. atec innovation held a company-wide table tennis tournament. It took place in March 2019 and aimed to cultivate cooperation among the subsidiaries and encourage more contact between colleagues. With the rules of fair play always in mind, the sports men and women soon established a spirit of fierce ambition and a passionate desire to win. Trying not to give away any points to their opponent, they played match after match and gave their all. Eventually, an experienced table tennis player, who has been wielding a bat for his sports club for 15 years, was able to celebrate victory in the tournament.

After the prize presentation, all participants were invited to see out the evening while enjoying restorative sausages, steaks and salads.

“WHAT I ALWAYS FIND BENEFICIAL IS THAT YOU OFTEN ONLY KNOW PEOPLE BY NAME AND THEN HERE YOU CAN PUT A FACE TO THAT NAME AND CONNECT WITH THE PERSON REALLY WELL.”

Organizer Steffen Heiny summed up the day: “What I always find beneficial is that you often only know people by name and then here you can put a face to that name and connect with the person really well. For example, colleagues from atec have now met a few colleagues from the accounts department and know who they can contact if they have a query. For me personally, the tournament was a great success.”

FINANCE

“THE ONLY WAY TO DO GREAT WORK IS TO LOVE WHAT YOU DO.”

Steve Jobs

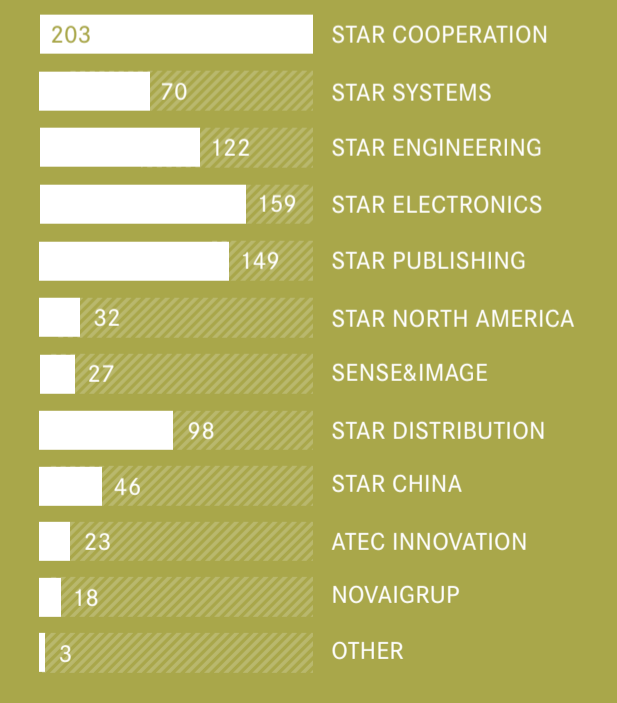
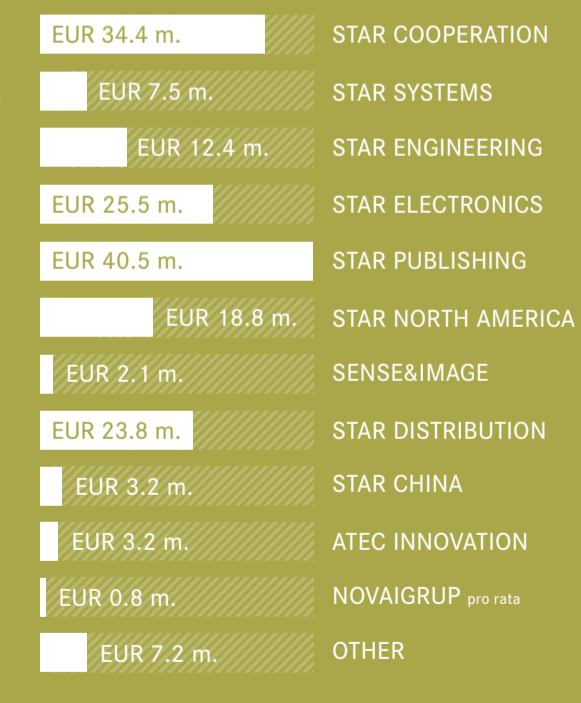
STAR COOPERATION®

MILLION
140.3

EMPLOYEES
950

Employees of STAR COOPERATION Group

Sales of the STAR COOPERATION Group
Total value = consolidated



2019	EUR 140.3 m.	2016	EUR 100.7 m.
2018	EUR 132.9 m.	2015	EUR 97.3 m.
2017	EUR 108.9 m.	2014	EUR 89.1 m.

2019	950 employees	2016	677 employees
2018	955 employees	2015	648 employees
2017	824 employees	2014	635 employees

Please note: the figures for 2019 are quoted prior to the conclusion of the ongoing annual audit. Employee figures exclude trainees, interns, working students, bachelor's students, postgraduate students, temporary workers and contractors. Figures: as at the end of the quoted year. The total value of the individual Group companies was adjusted for intragroup sales to represent group sales (consolidation).

WORLDWIDE

**“YOU CAN ONLY BE INSPIRED
WHEN YOU ENGAGE WITH THE
WORLD AROUND YOU.”**

Sunnyi Melles

STAR COOPERATION is a global network, with locations in the US, Europe, China and South Africa. All around the globe, our employees contribute their personal experience and inspire by offering fresh perspectives. Their individuality is what makes STAR into a unique and strong company. Everything we do is always focused on the challenges

and needs of our clients. Interdisciplinary and complementary teams come together and work hard until they find the right solution. The basis for everything is the STAR SPIRIT. It embodies all of the company's values and empowers us to achieve what the individual cannot do alone.

The networked expertise and passion at STAR leads us to be successful across the world.



Böblingen	Aguascalientes
Berlin	Atlanta
Göppingen	Barcelona
Heimsheim	Granollers
Karlsruhe	Johannesburg
Kornwestheim	Madrid
Ludwigsburg	Beijing
Magdeburg	Shanghai
Munich	Vance
Obertürkheim	Zug
Sindelfingen	

SPACE TO CREATE INNOVATIVE PROJECTS

Ideal conditions for digitalization

Böblingen. The new development area has been opened at the STAR COOPERATION headquarters as part of the first in-house DevCon, short for Developer Conference. “The main focus of the event is the exchange of ideas and the networking of our developers from the ENGINEERING, IT and MEDIA departments,” said Frank Stiefel, Head of Software Development for STAR IT. He continued: “The diverse range of participants shows that digital transformation is an important subject.” The DevCon is the first of a series of internal events that aims to share knowledge within the team, discuss the latest trends and provide insights into new issues in the areas of IT and digitalization.

One of the subjects covered at the first presentation evening was Kubernetes. This open source system was intro-

duced, together with specific application scenarios: how do containers and Kubernetes clusters work and how can development steps, features and bug fixes on a complete system be tested easily, reliably and comprehensively on the target platform using real data?

Expertise for innovative IT projects

Companies are faced with ever more complex requirements during their digital transformation. In order to meet these requirements, they need bespoke, future-oriented applications. From complex backend solutions to SharePoint and e-commerce systems, right through to user-optimized virtual reality applications – in the Dev-Area at STAR COOPERATION, more than 40 developers are designing the solutions of the future.

SUMMER, SUN, STAR AND SPAIN

Novaigrup joins the Group

Granollers (ES). The Spanish Novaigrup has joined STAR COOPERATION. The digital agency from Barcelona has been a member of the Böblingen network of companies since May 2019. Its focus will be to attract new customers in Spain and to further expand local operations. This will not only strengthen STAR's portfolio through the pooling of IT and media expertise, but also enable the Group to continue positioning itself as a digital pioneer. Novaigrup specializes in digital strategy consulting, online marketing, web design and development. The company was founded in 1999 and has made a name for itself in the Spanish market in the area of fast-moving

consumer goods. As an expert in content marketing and e-commerce – and particularly in this respect for Amazon Advertising and Google Ads – Novaigrup has been able to establish itself in the past as a leading digital agency for food corporation Nestlé and its associated pet food producer Purina, among others.

The new management team under Fernando Checa and the long-standing site manager of STAR Barcelona, Emili Battle, is pooling its expertise to create groundbreaking ideas. Sofia Neher and Professor Alfred Neher are taking on the executive management of the new STAR subsidiary.

RÖHRER WEG FACILITY OPENS

Three months taken to open new workshop

Böblingen. STAR COOPERATION has set up a fully equipped workshop within a very short space of time. Having opened three new workshops in quick succession in Böblingen's Amundsenstrasse and in Heimsheim, STAR then won a new order at the beginning of 2019 that required an even larger workshop space. Previously the smallest partner in a network of service providers, STAR's electronics department was commissioned by a long-standing customer in the automotive industry to implement the biggest part of the order being awarded. More specifically, it was to do with the modification of prototype vehicles, release conversions and E/E vehicle bodies.

New site makes project implementation possible

To enable the order to be executed, it was necessary to find new workshop space in the area around Sindelfingen and Böblingen. The stipulation was for it to be at least 1,000 square meters. Once found, the workshop had to be converted and equipped. The electronics experts at STAR arranged the procurement of 18 lifting platforms, air-conditioning units, tools and specialist tools. At the same time, recruitment of the new personnel went full steam ahead.

The workshop on Röhrer Weg in Böblingen went live and ready for operation in February 2019. Since then, all activities involved in the repair of passenger vehicles,

YOUNG GUNS GET NEW OFFICE

STAR subsidiary sense&image moves to Weststadt in Karlsruhe

Karlsruhe. STAR's customer experience agency sense&image has moved into larger offices. The experts in digital media and applications have been planning, designing and developing exciting customer projects in Weststadt since May 2019. The intensive relocation and set-up phase was completed in July when the new website www.sense-and-image.com went live. The relocation enabled sense&image to bring a new source of innovation and digital progress to Weststadt. Artificial intelligence and virtual reality are just two of the topics now being explored in greater depth at the new location.

WE NOW HAVE SPACE FOR
CREATIVE EXCHANGE, WE



CAN EXPERIMENT AND PUT
INNOVATIVE IDEAS INTO PRACTICE.
THIS ENABLES US TO GROW IN TERMS
OF OUR SKILLS AND EXPERTISE,

said Benjamin Hillscher, General Manager of sense&image. Individually designed team spaces and meeting rooms create an ideal environment for creative exchange. Seemingly conflicting elements from German folklore and technical gadgetry have been combined in a novel way to produce a creative environment that is packed full of ideas – between space invader Nanoleafs, historic hunting rooms and Black Forest chic. “We need exactly this kind of creative tension for successful projects,” explains Oliver Messer, Managing Director of sense&image. “We use proven processes and innovative technologies to challenge established ways of thinking. STAR strengthens its digital expertise as a result and encourages inspired thinking in the Group.”

including retrofitting, have been carried out there. The workshop staff also do release conversions on disguised prototypes for the successor models of the latest generation of vehicles.

The opening of the new location enabled STAR COOPERATION to once again successfully demonstrate its expertise as a service provider in the field of vehicle electronics. Huge thanks go to all those involved in setting up the workshop and who thereby made it possible to fulfill the customer's order.

CULTURE

“LIFE IS SERIOUS,
ART IS JOYFUL.”

Friedrich Schiller

CONFERENCE

INTO THE FUTURE WITH PIM

STAR COOPERATION invited to Industry Communication Day

Fürstenfeldbruck. What does the future of B2B marketing look like? Attendees at the seventh “Industry Communication Day” hosted by the Bundesverband Industrie Kommunikation e.V. or BVIK (German Association for Industry Communication) in June 2019 asked themselves exactly that question. STAR COOPERATION had a stand at the event and advised companies about how to successfully overcome digital challenges.

Digitalization is achievable

Philip Glasbrenner, digital expert at STAR, encouraged companies not to shy away from current developments, but to see them as opportunities. “That is how productivity and efficiency are increased in retail and e-commerce,” he explained.

Topics featured on the STAR stand included the STAR Content Builder. The tool is a new innovation in the PIM systems (product information management) market and it enables data and content to be organized, maintained and updated centrally and in real time. All data and information is collated in the Content Builder and then exported to all connected media and systems without requiring excessive human effort. Its key feature is that users don’t need to install app updates to ensure they always have access to the latest content. The simple and homogeneous networking of the data is a clear benefit of this solution. According to Glasbrenner, companies often use numerous different systems and are not able to connect them effectively. PIM systems counteract this discontinuity between systems, and data-driven marketing can also be initiated.

Customer communication gets personal

Data-driven marketing aims to achieve an individualized customer approach. Customer data is collected and analyzed throughout the entire customer journey and then ultimately used to address them on a personal level. Companies work more efficiently and in a more targeted way as a result and are able to continuously optimize their customer communication.

In conclusion, Glasbrenner made a clear recommendation: “Companies should take full advantage of digitalization by defining strategic goals and meaningful measures – preferably working with a skilled partner.”

Are you interested in the STAR Content Builder?
content-builder.star-cooperation.com

STAR INSIGHT

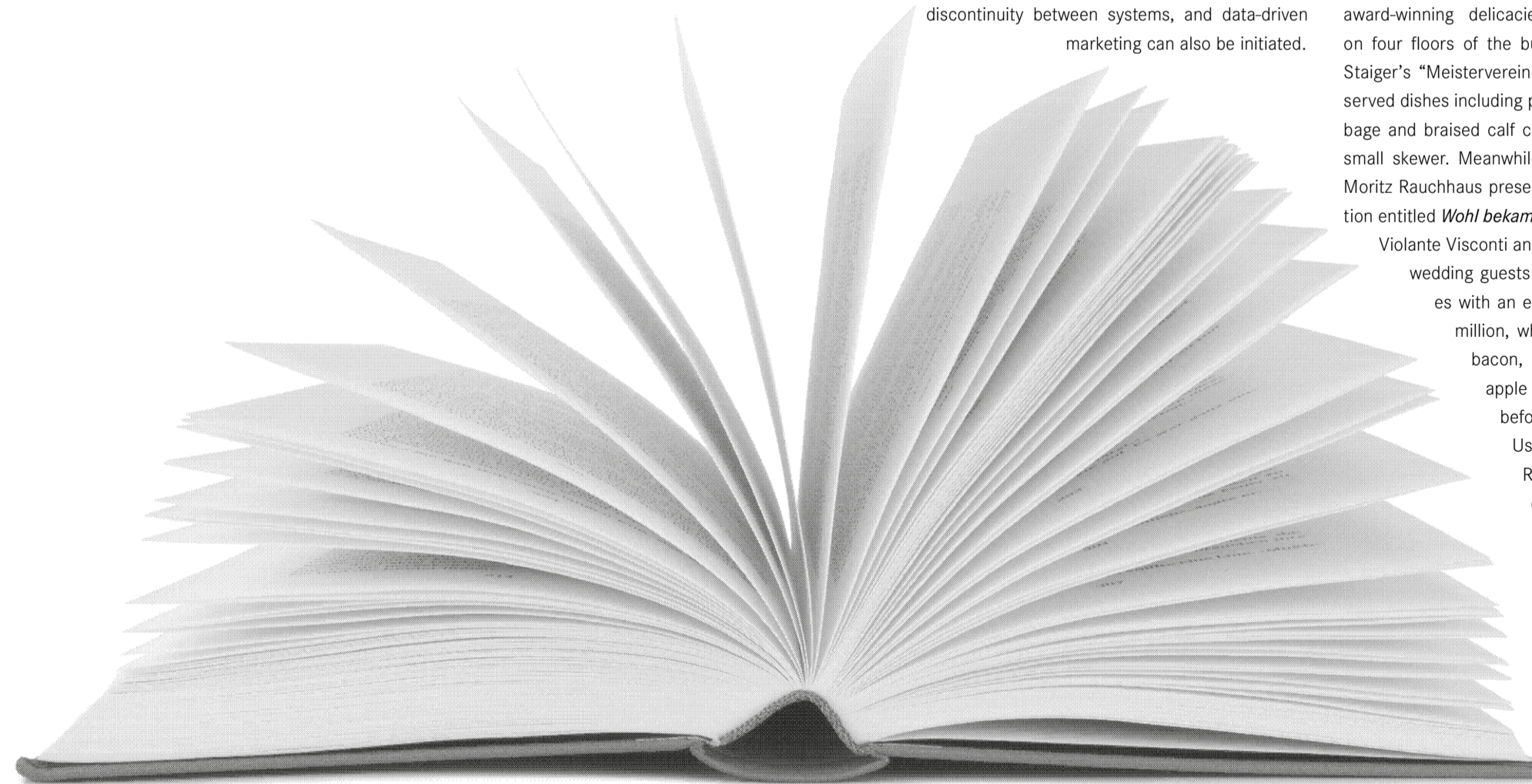
WHEN THE BEATLES MET ELVIS...

STAR Insight lecture gives food for thought

Böblingen. In October 2019, visitors to STAR INSIGHT experienced a very unusual lecture. They were fed award-winning delicacies at various stations found on four floors of the building. Young chefs from Uwe Staiger’s “Meistervereinigung” gastronomic association served dishes including pastry pockets with pointed cabbage and braised calf cheek or galantine of quail on a small skewer. Meanwhile, philologists Tobias Roth and Moritz Rauchhaus presented their literary recipe collection entitled *Wohl bekam’s!*, explaining, for example, that Violante Visconti and Lionel of Antwerp served their wedding guests more than 30 fully gilded dishes with an equivalent value of over USD 10 million, whereas the Apollo 11 crew had bacon, peaches, sugar cubes, pineapple juice and coffee for breakfast before setting foot on the moon. Using various anecdotes, Roth and Rauchhaus took the visitors on a culinary journey. They explained what the Beatles ate when they were guests of Elvis Presley,

and what meal Barack Obama feasted on when he left office. They garnished the menus from their book with guest lists and explanations about the events. Not all of the dishes were suitable to be reproduced, but the outlandish menus and surprising insights still gave guests just as much to talk about as the delicacies prepared by the award-winning chefs. Christian Baudisch from the German Butcher’s Museum in Böblingen, the partner for the occasion, described the evening accordingly as a “multi-sensory event”.

Would you also like to enjoy a unique evening?
Visit us at
events.star-cooperation.com
and make a note of the next date.



STAR INSIGHT

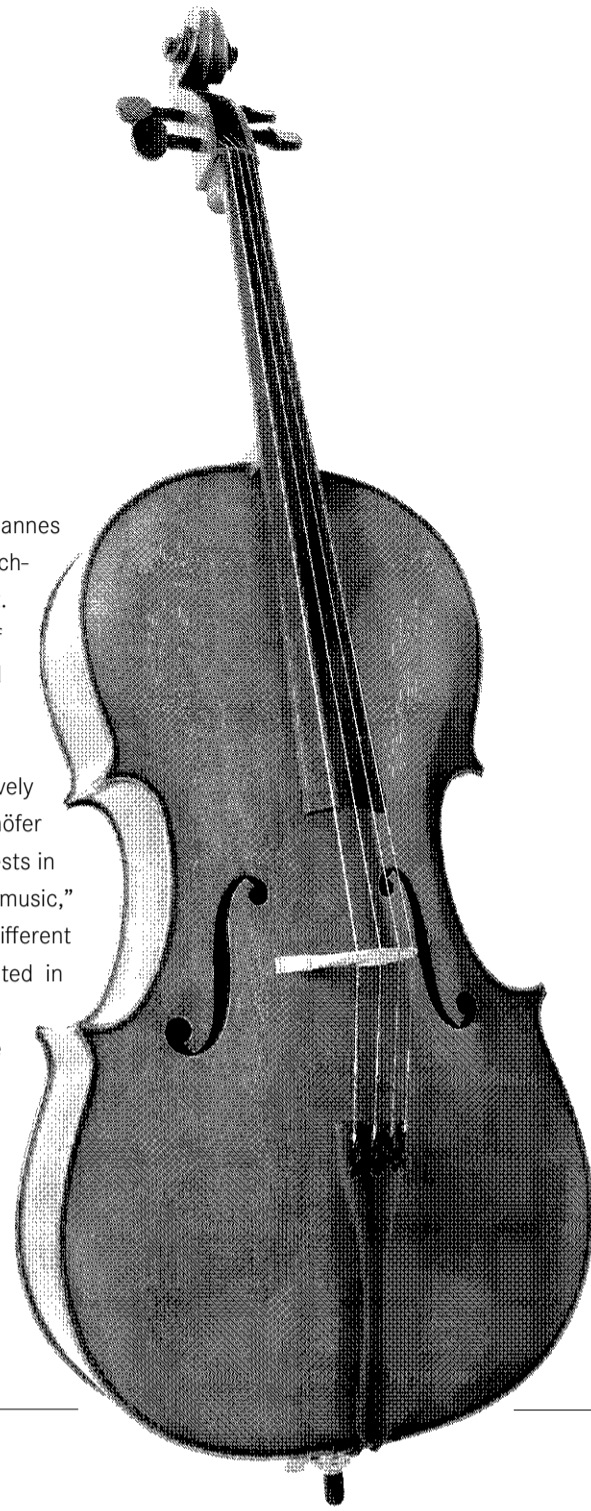
STAR AT A CHAMBER MUSIC CONCERT

A special request concert

Böblingen. Renowned musicians Victoria Y Mar, Johannes Meyerhöfer and Moritz Ebert inaugurated the new Bechstein wing with a STAR Insight chamber music concert. Around 80 guests were transported to the world of Bach and Wagner and on to Queen and Morricone and were captivated by virtuoso interpretations.

What made the evening unique: the audience actively shared in shaping the program and Johannes Meyerhöfer improvised based on musical wishes submitted by guests in advance. “Improvisation is the most vibrant kind of music,” confirmed the experienced cellist Moritz Ebert. A different room and different audience would also have resulted in completely different music. The performance at the STAR INSIGHT chamber music concert was therefore a unique one-off.

Afterwards, while enjoying finger food and cool drinks, the guests were able to chat about the music they had just heard and also use the relaxed atmosphere to discuss other current issues. A repeat of the event has not been ruled out.



STAR INSIGHT

THREE PEOPLE, THREE LIVES

Entertaining insights into the diversity of life

Böblingen. An MMA fighter, racing driver or photographer – host Steffen Volkmer presented three different people as part of his NightTalk who have the courage to pursue unusual lives. The relaxed talk in the style of the German bar-style TV show “Inas Nacht” earned praise from the large audience.

Still fighting, despite defeat

Mert Özyıldırım is one of the best mixed martial arts fighters in Germany. At the start of 2019, however, the Plochingen-born fighter had to overcome the first defeat of his career. This meant being not only physically, but also mentally strong. How do you recover your strength after a defeat like that? The 25-year-old sportsman has been dealing with that ever since and shared his insights with the audience.

New perspective for photography

Photographer Norbert Nieser and his “Galerie Nieser” gained international fame as a result of his artistic de-

scription of human eroticism. The passionate images are as incomparable as his vernissage parties. 2020 was an exciting year for the gallery owner – he also took some time out to travel and to gain a fresh perspective for his photography. The gallery? This year, interested artists can use it completely as they wish.

Confidently achieving goals

The ambitious racing driver Laurents Hörr is a talent not to be underestimated in the world of motor racing. The 21-year-old already stood on the podium in 2019. In the first race of the season, he confidently claimed second place. Self-confident and determined, he is now striving to take part in the 24-hour race in Le Mans; not a safe undertaking, considering that a collision of two racing cars in the 1955 race caused the most catastrophic accident ever seen in motorsport.

Would you also like to enjoy a unique evening?

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and make a note of the next date.

CONFERENCE

DATA ANALYSIS UP CLOSE

STAR presents VR4BI solution at Cubeware customer day

Kolbermoor. Experts in business intelligence (BI) and next reality from STAR COOPERATION presented a new prototype at the Cubeware customer day. Cubeware, producer of BI software, held a customer day in Kolbermoor, Bavaria, in November 2019. As a partner of the company, STAR was in attendance and presented a joint innovation project. The resulting VR4BI application uses virtual reality (VR) to support the tracking and analysis of vehicle damage in real time during the full duration of the vehicle transportation (read more about this on page 4).

The prototype presented includes a web app to record vehicles and license plates. Python AI ensures license plate recognition while IBM Watson AI identifies and classifies damage from the photos of the vehicles. On one hand, this combination of VR and BI assists with the analysis of the collected data on a case-by-case basis and, on the other, it also supports analysis at the mass data level. In addition to its participation in creating the solution and the presentation as a highlight feature, STAR also managed an exhibition stand at the event. Here, they invited guests to try out the VR solution and to immerse themselves in virtual data analysis.

COOPERATION

STAR MOVES INTO DIGITAL HUB

Official opening of new point of contact for digitalization

Böblingen. The founding of the ZD.BB digital hub marks a huge step into the future for Baden-Württemberg. In February 2019, together with the state of Baden-Württemberg, STAR opened the Digitalization Center (ZD.BB) in the Herman Hollerith Center in Böblingen, one of 10 digital hubs. The aim of ZD.BB is to provide companies in the region with a central point of contact for digitalization. At the opening ceremony, Minister of Economic Affairs, Labor and Housing Dr. Nicole Hoffmeister-Kraut emphasized: “Our clear ambition is for Baden-Württemberg to remain a leading center for innovation and business in Europe, including in this era of digitalization.” STAR COOPERATION will support ZD.BB as an expert in

matters relating to digitalization and vehicle electronics. Its extensive expertise will enable it to be a skilled partner for the center’s main areas of focus – automotive construction, information technology and knowledge-intensive services.

Together with the Böblingen district, the Herman Hollerith Center at Reutlingen University and other consortium partners from the local region, the plan is to develop 80 regional business models and to found five start-ups during the center’s three-year duration.

TRADE FAIR

LED WALLS BECOME A MAGNET FOR TRADE FAIR VISITORS

STAR impresses with new exhibition stand



Throughout last year, STAR COOPERATION and its companies guest exhibited at numerous trade fairs. The Group designed and built its own new stand concept in order to make its presentation at trade fairs completely unique. LED walls in black and green showcased the design in a spectacular way and made the stand a real eye-catcher at every trade fair. The new stand made its debut at embedded world in Nuremberg. For three days, STAR electronics experts were able to discuss the latest developments and trends in the area of embedded systems with long-standing and new customers. STAR also

exhibited at the Automotive Ethernet Congress in Munich and at evtech and ATE in Stuttgart.

In 2019, STAR COOPERATION presented its STAR Tools online store at a trade fair for the first time: at FLORIAN, the trade fair for the fire service, civil protection and disaster control, where STAR was able to stand out successfully from other exhibitors. Owing to this huge success with its online store, STAR will also be represented at the next Interschutz in Hanover, the world’s leading trade fair for fire and rescue services, civil protection and safety and security.

STAR EXPERT DAY

DIGITALIZE LIKE A STAR

Expert day discusses the future of effective marketing

Böblingen. A meeting of experts to discuss effective marketing was held at the STAR COOPERATION headquarters and had over 40 participants. Under the motto “Digitalize like a STAR”, experts from STAR’s own ranks, together with experienced invited partners, shared their insights into e-commerce and ventured a glimpse into the future of marketing. In three presentations, they debated which technologies and store systems were particularly profitable, how innovative tools could make everyday life easier and which strategies companies could use to increase sales. The guiding theme of the presentations was the common question of how to impress end customers for the long term.

Effective marketing using PIM systems

Consumers are increasingly becoming the focus of marketing, while data about their purchasing behavior gains ever more importance. As a result, companies are opening up new opportunities to support their customers proactively throughout the entire customer journey. The challenge here is the need for many marketing channels to be used in real time. The speakers at the meeting were agreed: companies should therefore break loose from having a central lead medium, be this printed or web-based, and generate their content in a media-neutral format. Product information systems offer a solution to this. The consistent data provides target groups with huge added value, combined with well-written texts and attractive images, and is the safest way to achieve successful e-commerce.

State-of-the-art technologies for success

Technologies are constantly evolving and related opportunities increase exponentially as a result. For companies, this means being brave and embracing these technologies. In practice, this means that companies need to use automation, individualization and customer experiences in their e-commerce.

Deep-dive sessions after the expert presentations provided the space to discuss and exchange ideas in small groups. The speakers presented first-hand examples of best practice, answered any questions and discussed the previously raised issues in more depth.

CAREER

**“ I COULD EITHER
WATCH IT HAPPEN – OR
BE A PART OF IT. ”**

Elon Musk

GERMANY’S BEST EMPLOYER

STAR COOPERATION honored in employee survey

STAR COOPERATION has been chosen as one of the best employers in Germany in a survey. STERN, the weekly magazine, honored Germany’s top 500 employers for the first time. The Böblingen-based SME STAR came in at 283 in the overall rankings, competing with big names like Bosch, BMW and Porsche. In the subcategory “Service providers”, the company was ranked seventh, and in the area of “Consulting and research”, it was ranked 14th.

“These rankings make us very proud,” stated Sofia Neher, Managing Director and Head of HR at STAR. “They make us proud of our STARS, without whom it would not have been possible, of their achievements and the fantastic teamwork.” The ranking gives a major boost in motivation to remain focused on pursuing the company’s goals, to support customers and to work together to realize their projects, Neher continued.

What lies behind the honor

STERN joined with the market research company Statista to carry out the study and questioned over 45,000 people about their employer. With over 50 questions, the survey inquired about the image and growth of the company, about the interaction and the behavior of superiors, as well as about conditions, facilities and remuneration. Key to gaining a good ranking was the answer to the question

about whether employees would recommend their employer to others.

In the run-up to the study, Statista researched over 2,500 companies with 500 employees or more and divided them into 24 industries. Participants in the study were contacted by professional market research providers to enable them to take part in the survey independently and anonymously. Those companies with more than 100 evaluations were included in the analysis for the study.

The detailed article about the employee survey can be read in the April 2020 issue of STERN.

STAR IS A TOP EMPLOYER

IN 2017, STAR COOPERATION WAS RECOGNIZED BY THE TOP EMPLOYERS INSTITUTE IN THE AREA OF AUTOMOTIVE FOR THE FIRST TIME. THE OFFICIAL SEAL CERTIFIES COMPANIES WORLDWIDE FOR PROVIDING OUTSTANDING CONDITIONS FOR EMPLOYEES. STAR WILL STRIVE TO ACHIEVE RECERTIFICATION IN 2020.

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» Professionals

Advance your career as a specialist or manager at STAR. Get involved in exciting and global projects.

» Young professionals/graduates

Kick-start your career: start your professional life at STAR when you finish your studies.

» Students

Get started in your working life, bring all your strengths to the table, and inspire. Come to STAR and put the knowledge you gained at college into practice.

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Does our power match your goals perfectly?

Then come and join us and get off to a flying start!
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SUSTAINABILITY IN ACTION

STAR COOPERATION's corporate responsibility

Böblingen. Three pillars of sustainability unite STAR COOPERATION. Social, environmental and economic sustainability form the core of its corporate responsibility. "Because we know that we can only guarantee long-term growth and commercial success – for both us and our customers – if we tackle environmental and social issues in a credible and sustained way," explains Sofia Neher, Managing Director of STAR.

People at STAR

The employees at STAR COOPERATION are as unique as the services they provide. Their diversity characterizes the Group. It drives STAR forward and is the key to every success. For this reason, it is extremely important to STAR that it creates a working environment that values this diversity, provides scope for development and ensures a good quality of life. Only then can it be guaranteed that the smartest and most dedicated people will continue to be found at STAR – and this then also benefits customers.

New ideas and suggestions can be sent at any time to greenstar@star-cooperation.com

Look, think and feel green

Environmental protection is not just an afterthought at STAR. It considers protecting the planet and handing it over to future generations in the best possible condition one of its most important tasks. The Group therefore strives to reduce CO₂ emissions in order to make a positive contribution to climate protection. It is clearly also necessary to be resource-efficient in the area of mobility. Service and pool vehicles have already been systematically changed to more efficient models using the latest diesel technology. This enabled the fuel consumption of the vehicle fleet to be reduced considerably. In addition to that, some electric vehicles were purchased and these have since clocked up over 17,000 kilometers. This has saved more than 1,000 liters of fuel and over 1.7 metric tons of CO₂.

Towards a greener business

Sustainability is an ever-present issue in our private lives. However, when it comes to products or services, it tends to get forgotten. Not at STAR COOPERATION: considering resource-efficiency is an integral part of the service portfolio.

The concept of sustainability is incorporated into individual aspects of the projects that we realize for customers. Green products are therefore offered – for example, environmentally friendly media productions using FSC-certified paper and non-polluting printing methods. Sophisticated distribution processes continue the interplay between economics and sustainability. Logistics experts help, on one hand, by sending fewer trucks onto the roads and by reducing emissions. On the other, they help customers to release valuable and expensive warehousing resources.

Sustainability concepts are, however, not only related to physical products. Digital projects can also be implemented accordingly, e.g. in the area of e-commerce. "With the help of carefully selected partners, we ensure that all the processes in the operation of the online store are fully climate-neutral, starting with the software development, through to the sales activities and the support service," explains Neher. Any emissions caused are offset by supporting climate protection projects.

Certified environmental policy

Taking responsibility is a priority at STAR COOPERATION. That is why the environmental and energy policy, including the Group's overall aims and principles with respect to the environment, is set out in a management handbook. STAR reviews its environmental policy regularly. Continuous adjustments are made as a result to reflect new developments and this helps with the ongoing improvement of environmental protection. For the third consecutive year, our energy and environmental policy has also been officially approved: STAR COOPERATION is certified according to DIN EN ISO 9001:2015, ISO 50001:2011, ISO 14001:2015 and ISO 45001:2018.

CHRISTMAS ROAST AVAILABLE FOR ALL

STAR cooks in the Café Volle Kanne

Sindelfingen. In December 2019, STAR COOPERATION handed out hot meals once again at the Café Volle Kanne. The café is organized by the local Protestant community in Sindelfingen as a drop-in center for people who are experiencing homelessness, addiction, mental health problems and unemployment. In addition to providing meals, the visitors have space there to chat and to get support in dealing with the authorities. In winter, the café gives out hot meals. On one of the days, this is always supported by STAR. Barbara Zecha was there as the food was being handed out and found just the right words for the commitment of the voluntary helpers: "It can happen to anyone, but it is lovely to know that there are people who are willing to help."

STAR PRODUCES LIQUID GOLD

Bee colony moves to Sindelfingen

Sindelfingen. The site in Amundsenstrasse welcomed 20,000 new employees in spring 2019 when a colony of honey bees started work there. Just a few months later, the population had already doubled to over 40,000. After only a short time, it was possible to fill jars with the naturally produced blossom honey, under the label of "Wabenglück" (honeycomb happiness).

This colony of bees has enabled STAR COOPERATION to make a positive contribution to the environment: 85% of the agricultural yields in plant and fruit cultivation are still dependent on natural pollination by bees – ensuring a healthy future.



STAR IS A TISAX-CERTIFIED OEM SERVICE PROVIDER

Groups now meets VDA standards for information security

Böblingen. Awareness of information security management systems is steadily increasing. Many automobile manufacturers therefore now require their service providers and suppliers to have corresponding certifications that assess the quality of their information management. STAR has complied with this requirement and selected companies within the Group have now been certified by TISAX since 2019. TISAX stands for Trusted Information Security Assessment Exchange. The certification program was created by the members of the German Association of the Automotive Industry (VDA) and sets a standard for information security requirements. TISAX is based on the international standard DIN ISO/IEC 27001 "IT security procedures – information security management systems – requirements". Cross-industry standards like this, however, are universal in nature and do not address the specific requirements of the automotive industry. That is why TISAX goes beyond DIN ISO/IEC 27001 and also shows industry-specific requirements, such as prototype protection. TISAX makes individual testing procedures carried out by automobile manufacturers obsolete. Time-consuming testing processes and duplication of tests can now be avoided, meaning that STAR COOPERATION is ready to start a successful collaboration from the moment the project begins, with no delays.

POLICY

“PEOPLE WHO SAY IT CANNOT BE DONE SHOULD NOT INTERRUPT THOSE WHO ARE DOING IT.”

George Bernard Shaw



**“NOTHING IS MORE POWERFUL
THAN AN IDEA WHOSE
TIME HAS COME.”**

Victor Hugo

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with a focus on mechatronics. We help you succeed -
every day.

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dealership for the future.*

STAR digital dealer check

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With us, you will get genuine recognition of your achievements.

We want you to enjoy working for us and to be proud of what you do. That's why we offer attractive benefits and a working environment that you actively help to shape.

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- Professional car hire
- Sale of premium vehicles

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EFFICIENT CONTENT MANAGEMENT

for digital media – with

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STAR COOPERATION GmbH

Otto-Lilienthal-Strasse 5 | 71034 Böblingen | Phone +49 7031 6288-300 | www.star-cooperation.com

STAR COOPERATION is certified according to the management systems DIN EN ISO 9001:2015, ISO 50001:2011, ISO 14001:2015 and ISO 45001:2018. Certificate registration ID: 12 340/100/104 26131 TMS