Issue 7 | December 2021

HELLER

The Magazine

As early as the 1960s, an inductively controlled floor conveyor system was introduced at HELLER in Nürtingen, which, among other things, supplied the stations in the assembly halls with material.

Dear readers,

For the 7th issue of *HELLER the Magazine*, we have chosen 'Man and Machine' as our key topic – a topic that has always been at the centre of our work as a company. Even though machines are our visible products, they are only achieved through the interaction of man and machine – which is also visible in the 127-year history of the HELLER company. We take a look at the company's headquarters in Nürtingen, thus at the milestones in its development, but also at topics we are currently working on there.

Peter Weber, Managing Director for Sales at HELLER, knows that our sales department brings man and machine together in another sense of the word. In our magazine, he reports on changing markets and the main tasks of HELLER sales, among other things.

Every day, the experts of the Human-Machine Interaction research department at Fraunhofer Institute for Industrial Engineering and Organisation (IAO) investigate the subject of 'man and machine'. In this issue, they are giving us exclusive insights into their work at a literal interface between man and machine – the human-machine interface.

In the interview, Dr. Manuel Gerst talks about how we deal with the wide variety of requirements from the markets and how standardisation can increase the range of products. As the Head of Development in our company, Dr. Gerst is of course familiar with the new generations of our H and HF series. We paid a visit to our customer Stöferle to see how they perform in practice. You can look forward to seeing how man and machine are pushing the performance limits together.

With 'Innovations@HELLER', this issue will be looking at the role our entire workforce is playing for the future of the company. This summer, we started using the innovation process to systematically develop new ideas for potential future areas of business.

Now I hope you will enjoy this issue, providing you with lots of interesting insights and ideas.

Sincerely, Klaus Winkler
CEO of the HELLER Group

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A visit to the Stöferle company

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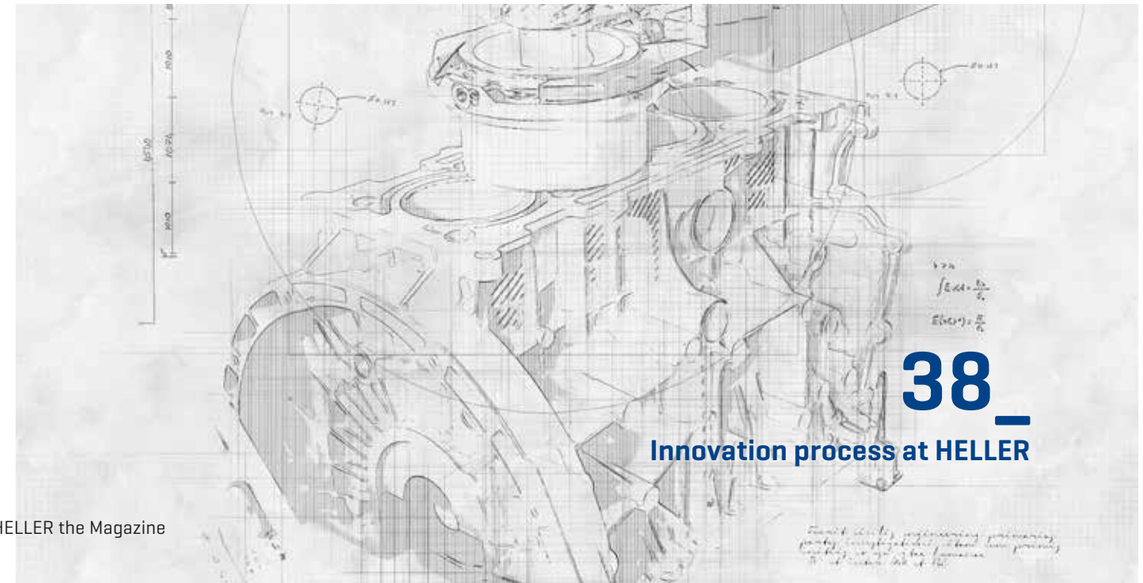

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Innovation process at HELLER

“Today, Sales has a completely different status.”

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FOCUS

moving

human (being), noun

/ˈhjuːmən/

Word meaning/definition

A man, woman, or child of the species Homo sapiens, distinguished from other animals by superior mental development, power of articulate speech, and upright stance.

Examples:
"We human beings differ from most animals in that we act upon nature to produce the things we want and need."

"There is every reason to think that you would come across problems cloning humans."

"If the natural environment is naturally subject to change then what about us humans?"

Synonyms for humans
Human being, individual, person, earthling

Origin
Late Middle English *humaine*, from Old French *humain[e]*, from Latin *humanus*, from *homo* 'man, human being'. The present spelling became usual in the 18th century; compare with humane.

Source: *www.lexico.com*

It began with a stone

Problems spark resourcefulness, as has been proved. Only through technology and ever-new tools, have humans been able to adapt to new environments and conditions and to survive – in contrast to many other living creatures. The oldest evidence of this are tools made of stone. More than two million years ago, the first humans used them as an extension of their hands and arms and as an invulnerable way of specialisation of the fingers, e.g. for hunting, food preparation or defence. Over time, tools continued to evolve with our challenges and needs – developing more and more rapidly with the growth in population from the Middle Ages onwards.

Nothing is more constant than change. Around the year 1800, industry underwent a profound change. From the machine age to assembly line production, electronics and IT through to automation and increasing digitisation: the Industrial Revolution changed the way we live and work forever – and still does.

Today, machines and devices have become everyday companions for us in our private and professional life: we keep in touch with each other at all times with our smartphones, access information in real time using networked assistance systems, and receive support from intelligent applications and systems at work and at home.

"First, we used tools, then we operated machines, now we interact with intelligent systems."
Bruno Gransche, Fraunhofer Institute for Systems and Innovation Research

Ultimately, it can be said that technological development has changed human evolution. All work techniques, adaptation to the environment, advances and innovations would never have been possible without the concept of the tool.

machine, noun

/məˈʃiːn/

Word meaning/definition

An apparatus using mechanical power and having several parts, each with a definite function and together performing a particular task.

Examples:
"The fact that machines perform repetitive tasks better than humans is widely recognized."

"Throughout history, people have been building machines that can perform tasks better than humans."

"But we are suggesting neither that the human race would voluntarily turn power over to the machines nor that the machines would wilfully seize power."

Synonyms for machine
Apparatus, appliance, instrument, tool, device

Origin
Mid-16th century (originally denoting a structure): from French, via Latin from Doric Greek *makhana* (Greek *mēkhanē*, from *mēkhos* 'contrivance').

Source: *www.lexico.com*

The industry's productivity is one of the cornerstones of our society. Machines help to increase this productivity, but also enhance the safety and simplicity of industrial production.
Even today, machines are able to automatically trigger commands to control systems and to proactively pass on information to people. Factories often rely on the support of such machines that can effectively copy the techniques of well-trained and experienced operators.

Intelligent control systems are also finding their way into modern production. While in the past, for example, machines were only able to continue or stop operation when a person was detected in a danger zone, they are now able to react to such situations on a case-by-case basis. For example, the operating speed can be reduced if the person inside the danger zone is a highly qualified person – or it can be completely stopped if this is not the case. That does not only ensure the safety of operators, but also enables efficient and flexible production without unscheduled downtimes.

In short: new technologies such as Artificial Intelligence (AI) have revolutionised the processes and forms of work applied in industry. This requires a new mindset – and newly defined rules for the relationship between man and machine.

The human-machine interface is essential for the safe and convenient operation of a system.
Industry 4.0, digital networking and Cyber-Physical Systems in production enable the mechanisation of previously manual fields of work. With increasing complexity, the interface to technology and its ease of use is becoming more and more important. By now, all employees in operational business have to find their way around in digital working environments – and the effort, if they first had to familiarise themselves with the programming language of the respective system, would obviously be too great for companies. That is why there are visual and audio-supported dialogue systems. So-called Human Machine Interfaces (HMIs) provide an efficient interface and reduce complexity. The many functions of modern HMIs, e. g. remote monitoring or dashboards with KPIs significantly simplify manufacturing processes.

As a result, and through the availability of important data in real time, Human Machine Interfaces not only help operators to precisely record operating conditions, but also to react to changes by making the right decisions.

Despite all the possibilities that are already available today, experts say that we are only at the beginning of human-machine interface manufacturing. It can be assumed that HMIs will become more and more powerful in the future and will even be able to make real-time calculations.

From bench vice production to highly flexible manufacturing system
The story of HELLER began in 1894 when the 25-year-old Hermann Heller founded the company 'Hermann Heller Handelsgeschäft und Fabrikation in geschützten Artikeln und Uhrmacherwerkzeugen' in Nürtingen. The history of HELLER – just like that of working people – began with the manufacture and use of various tools and soon fostered a certain spirit of invention and innovation. At the beginning of the 20th century, HELLER ventured into the manufacturing of milling machines, launched production lines in 1942, introduced the electrohydraulic control in the 1950s and supplied its assembly stations with material by means of inductively guided conveyor vehicles in the early 1960s.

At this pace, the company initially employing seven journeymen and three apprentices developed into a globally operating group of companies with 2,560 employees and a worldwide competence network. Today, the HELLER Group develops and produces state-of-the-art CNC machine tools and manufacturing systems for machining processes. Moreover, in the context of Industry 4.0 and digitisation, the machine tool manufacturer has developed an innovative concept named 'HELLER4Industry' which further increases the machine productivity of HELLER machining centres and redefines the rules of the human-machine relationship, thus creating genuine added value for customers.

We can only guess how the human-machine or human-system relationship will develop in the future – globally and especially at HELLER. An exciting expert forecast says that by the year 2045 AI will exceed the capacity of the human brain. However, companies like HELLER, which have been and will be shaped by people and which operate and produce machines using innovative technologies, may want to add: ultimately, what is AI but a tool that complements and optimises human capabilities?

After all, humans are able to see the big picture, to integrate complex systems and to cope with unusual situations. This is what sets humans apart from machines – the reason why people are still essential in environments requiring complex decisions.

There is no question that the relationship between human and machine, and with it the way we live and work, will continue to change. Whether humans will continue to set the pace or whether intelligent systems will soon set the pace for them: we believe in the potential of the collaboration of humans and machines. We also believe that the two are not as contradictory as they appear at first glance – and that wherever they differ they still complement each other perfectly. That is why we are putting people and machines equally in the focus of our work – and of this magazine.

Fraunhofer IAO

MAN AND MACHINE: STRONGEST TOGETHER

IT'S ALL ABOUT THE DESIGN

Networking and machine learning enable increasing autonomy of technology. This raises new questions in terms of the design of human-technology interaction. How can productive cooperation between humans and intelligent machines be successful? Should we rely on assistance systems to support human activities and decision making? Or do we even want to fully transfer responsibility and leadership for specific tasks to technology? Apart from technical feasibility and economic benefit, ethical and social issues are playing an increasingly important role. What kind of understanding of the roles of man and machine will we have in the future? In the research field of Human-Technology Interaction at Fraunhofer IAO, more than 40 experts are researching the question of how we can make the most of technical progress – for business and for people.

TEXT **Matthias Peissner, Kathrin Pollmann, David Blank** PHOTOS **Fraunhofer IAO**

→ HMI DESIGN – PRODUCTIVITY FACTOR AND UNIQUE SELLING POINT

As a result of the digitisation of production, the interface between man and machine – the so-called human-machine interface (HMI) – has become a strategic productivity factor. Usability is the magic word. The HMI is intended to make operation as intuitive, easy, safe and error-free as possible. With increasing process complexity and if several different systems need to be operated, the standardisation of interfaces becomes more important. The goal is to allow for complex facts and extensive data to be understood as quickly and intuitively as a smartphone app.

"IT for the hall floor – as simple as the app on your mobile phone"

However, HMIs are not only important to increase employee productivity. In terms of the company's public image, they have become a calling card, a quality feature and an expression of innovative strength. Technology leadership or particularly practical functions of a new machine can only be identified and experienced by decision-makers and users through excellent HMI design.

→ THE RIGHT INFORMATION AT THE RIGHT TIME IN THE RIGHT PLACE

The transfer of large amounts of data is an increasingly important aspect of HMI design. With new sensors and a higher degree of network integration of the systems, a vast amount of information becomes available that can be used, for example, for process optimisation. The prerequisite for this, however, is that the data is pre-processed and integrated into meaningful information and eventually made available to the user in the form of suitable visualisation formats.

For data processing, the Fraunhofer researchers use modern machine learning processes in order to gain valuable insights from data, for example about future requirements or tailored use of resources in the industrial processes of their partner companies. As part of the AI progress centre 'Learning Systems and Cognitive Robotics'*, companies receive public funding for AI projects with Fraunhofer under specific conditions.

To ensure optimal visualisation of information, the Fraunhofer laboratories are focusing their research on two specific topics: firstly, modern visualisation approaches are to be expanded by further modalities such as vibration [see tactile vests shown in the figure], allowing information to be transmitted in a casual manner when the visual attention is directed elsewhere. Secondly, the focus is on information management – or the question of how personalisation and context awareness allow the information to reach people in a targeted way and to be presented in exactly the right form so that it can be of maximum benefit.

"Making it possible to experience the digital world with all the senses – that is a key task of future HMI design."

→ PROVIDING 'SUPERPOWERS' THROUGH ARTIFICIAL INTELLIGENCE

In addition to data analysis and intelligent forecasts, artificial intelligence (AI) processes offer numerous other potentials for making processes flexible and efficient. However, the greatest benefit of AI does not lie in automation, but in cooperation with people. The different strengths of AI technology and humans offer optimal prerequisites for a profitable collaboration.

For example, the recognition and interpretation of language and gestures can enable very intuitive and natural forms of interaction with technical systems, which in the future may even extend to simplified programming of a robot. Another area is decision-making support. Using a digital model of a system or a process allows simulation of different options for action and their likely effects in order to support informed decision making. This, for example, allows to determine an optimal set of parameters to make a manufacturing process as fast as possible or as high-quality as possible.

In short: AI can enhance human abilities. It can give us 'superpowers' and significantly increase our productivity. However, to ensure that these opportunities are accepted and able to benefit the individual employees, it is crucial that people receiving support from AI actually *experience* it as an enhancement of their own skills and are able to benefit from it in a sustainable manner. After all, people feeling comfortable in their workplace and enjoying the use of their digital work equipment are demonstrably more committed, more motivated and identify more strongly with the goals of their employer.

OUTSTANDING HMIS COMBINE INTUITIVE USABILITY AND ATTRACTIVE DESIGN. THE PICTURE SHOWS THE HMI FROM A PROJECT FOR VOLLMER MASCHINENWERKE

*The AI Progress Centre is a joint initiative of the Fraunhofer Institutes IAO and IPA with the Baden-Württemberg Ministry of Economic Affairs with the goal to transfer cutting-edge AI research technologies to industrial practice.

→ WINNING EMPLOYEES OVER AND INSPIRING THEM

"Good design starts with the individual and its needs. It is a decision-making process and a success factor – not an art form."

HMI solutions that optimally support processes and inspire employees are not born out of coincidence. Rather, they arise when all groups of people involved are part of the development process and contribute their requirements. Modern HMI engineering processes therefore rely on the cooperation between design, development and the users, because the better we know the target groups of a system, their work context and their work processes, the more precisely can we tailor the functions and the interaction design to their needs.

For the conception, for example, it is important to know whether an application should rather address the employees' understanding of their abilities or the need for security. Fulfilling a user's need creates positive emotions so that the employees are motivated and feel that working with the system is an enriching experience. Failure to meet a need will lead to frustration in the long term.

The principles and methodologies for such a holistic, needs-oriented design have been summarised by the scientists of Fraunhofer IAO in their UXellence® toolbox, which they have applied working with customers such as Bosch, ORANGE, Zeiss, Kellenberger, Volkswagen Commercial Vehicles and Oerlikon not only in the consumer goods sector, but especially for designing work systems.

'Gamification' can create additional added value. In this process, industrial applications are specifically enriched with playful elements, e.g. to strengthen team spirit, to increase motivation and concentration, to avoid monotony or to make learning and further education more exciting. Gamification can unfold its effect when a work task is staged as a playful overall experience in order to emphasise the intrinsic value of the activity. In a cooperation with Volkswagen, gamification helped to produce a major effect on intrinsic motivation and stimulation. Psychological stress was reduced and the monitoring performance was influenced in a positive way. Ultimately, this increased the productivity of the system.

→ SENSITIVE TECHNOLOGY FROM THE NEURO-LAB

Future visions of a technology that consistently adapts to people are developed at the Neuro-Lab of Fraunhofer IAO. Since 2010, the researchers have been working on making neuroscience processes usable for everyday industrial application. One focus of the Neuro-Lab is the neuroscientific expansion of user tests. For example, to better understand emotions or attention processes. In addition, the use of neural signals also provides an interesting new type of input option for interactive systems. In the area of these so-called brain-computer interfaces (BCI), current development projects of the IAO, for example, focus on the following applications:

_ attention monitoring to support demanding tasks in quality inspection
_ recognition of emotional experiences at work in order to take into account factors for stress and flow in the work design
_ deriving positive and negative affect reactions in order to continuously optimise the behaviour of collaborative robots (through reinforcement learning)

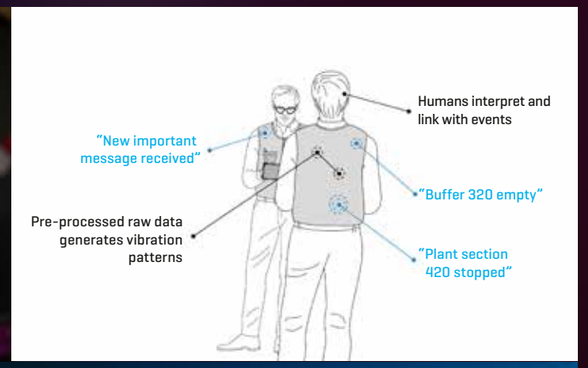
Work at the Neuro-Lab will significantly push the boundaries of what technology can do for us humans. It is still unlikely that we will control industrial processes with our thoughts in the future. Nevertheless, personalised further training offers and empathic work systems that respond to individual needs and situational stresses are a big step towards a human-centred working world.

"Brain-computer interfaces are the most direct HMIs we can imagine today."

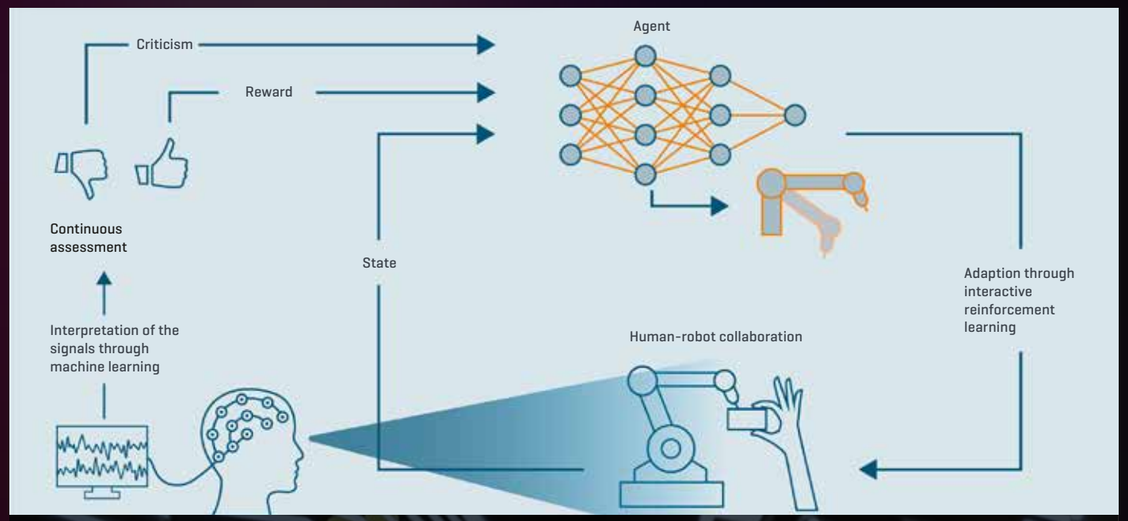
+

Dr. Matthias Peissner is the director of the institute and heads the human-technology interaction research department at Fraunhofer IAO. His interdisciplinary teams work on solutions that enable efficient interaction between humans and intelligent technology. His work focuses on adaptable systems, future work environments and the creation of positive user experiences. He coordinates the AI progress centre 'Learning Systems', which is part of the internationally renowned Cyber Valley in Stuttgart/Tübingen. As an expert in the human-friendly design of AI systems, he is involved in the 'Platform for Learning Systems' and the 'Global Partnership on AI'.

Fraunhofer IAO



FRAUNHOFER DESIGN OF AN INFORMATION WALL TO OPTIMISE VEHICLE PRODUCTION AT VOLKSWAGEN (LEFT). WILL INFORMATION ALSO BE CONVEYED VIA 'TACTILE VESTS' (RIGHT) IN THE FUTURE?



NEUROPHYSIOLOGICAL MEASUREMENTS (HERE ELECTROENCEPHALOGRAPHY, EEG) CAN HELP TO DESIGN OPTIMAL VEHICLE INTERIORS AND SUPPORT THE PROGRAMMING OF COLLABORATIVE ROBOTS.

Man & machine

Intelligence becomes artificial

In 1955, John McCarthy first coined the term ‘artificial intelligence’. At the time, however, AIs did not have any real intelligence, but were rather weak AI algorithms, i.e., systems that only execute what humans have designed using programs.

While more and more activities are being carried out by smart systems, inevitably reducing jobs, digitisation also creates many new occupational fields and jobs. The following are considered professions of the future: tele-surgeon, VR architect, pensioner coach, digital genealogist, urban farmer.

AI conquers the world

The humanoid robot Sophia from Hong Kong imitates human gestures and facial expressions, is able to answer specific questions and can have simple conversations about predefined topics such as the weather. In October 2017, Saudi Arabia granted Sophia citizenship. The Shibuya Mirei chatbot, on the other hand, has been an official resident of Tokyo since 2017.

In the US, there is a church for Artificial Intelligence. Its name: Way of the Future.

Masterminds like Stephen Hawking, Bill Gates and Elon Musk warn of the overwhelming power of AI.

Artificial stimulus

The first pacemakers were designed as early as the 1950s to treat patients whose heartbeat was too slow. The first one was implanted in Stockholm on 8 October 1958.

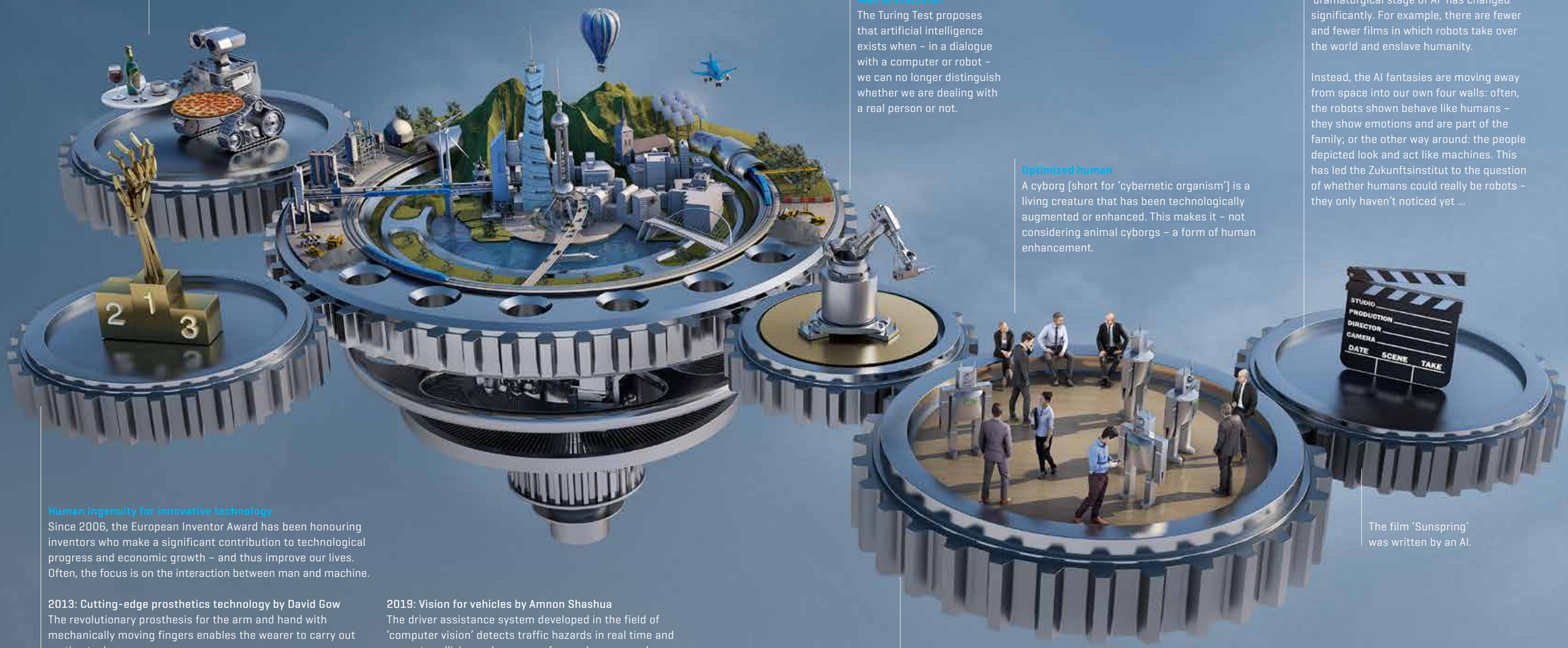
Robots as pizza chefs
Machines have taken over a Parisian fast-food restaurant: from taking orders through to preparing the Italian speciality – at 'Pizza Pazzi', robots do all the work.

Man or machine?
The Turing Test proposes that artificial intelligence exists when – in a dialogue with a computer or robot – we can no longer distinguish whether we are dealing with a real person or not.

Optimized human
A cyborg (short for 'cybernetic organism') is a living creature that has been technologically augmented or enhanced. This makes it – not considering animal cyborgs – a form of human enhancement.

Good robot, bad robot
The Zukunftsinstitut notes that the 'dramaturgical stage of AI' has changed significantly. For example, there are fewer and fewer films in which robots take over the world and enslave humanity.

Instead, the AI fantasies are moving away from space into our own four walls: often, the robots shown behave like humans – they show emotions and are part of the family; or the other way around: the people depicted look and act like machines. This has led the Zukunftsinstitut to the question of whether humans could really be robots – they only haven't noticed yet …



The film 'Sunspring' was written by an AI.

Human ingenuity for innovative technology
Since 2006, the European Inventor Award has been honouring inventors who make a significant contribution to technological progress and economic growth – and thus improve our lives. Often, the focus is on the interaction between man and machine.

2013: Cutting-edge prosthetics technology by David Gow
The revolutionary prosthesis for the arm and hand with mechanically moving fingers enables the wearer to carry out routine tasks.

2016: 'Bionic' knee and ankle prosthesis by Hugh Herrs
Thanks to the invention of bionic knee and ankle prostheses, people with amputated limbs can live without mobility restrictions and even compete as world-class athletes.

2018: Smart 'mixed-reality' HoloLens headset by Alex Kipman
The HoloLens 'mixes' reality with holographic overlays. Businesspeople as well as patients having to undergo an operation could benefit from this – the technology, for example, enables holographic teleconferencing and is used in computer-aided surgery.

2019: Vision for vehicles by Amnon Shashua
The driver assistance system developed in the field of 'computer vision' detects traffic hazards in real time and prevents collisions – by means of a regular one-eyed camera and highly developed artificial intelligence.

2021: Fingerprint sensors with bio detection by Bo Pi and Yi He
This fingerprint sensor is the first able to recognise both fingerprint patterns and the presence of blood flow. This innovation is now used in many smartphone models – and offers millions of users an unprecedented level of security.

Co-working rethought
Last year, the IFR (International Federation of Robotics) forecast that around two million new industrial robots would be installed in factories worldwide between 2020 and 2022 – a big step towards more flexibility in production.

So far, humans and machines have mostly been in the same workspace, performing tasks one after the other. However, now and then they both work on the same part at the same time and even interact in real time. To do this, robots must be able to recognise the human voice or gestures. This form of human-robot cooperation offers many opportunities for companies. Soon, collaboration could be responsive, i.e., instead of merely moving simultaneously, the robot reacts to the movements of the worker in real time.

PORTRAIT

what we move

Two thousand twenty-one

Business development for HELLER in 2021

The economic situation of HELLER has improved significantly in 2021. Incoming orders will reach approximately 500 million euros by the end of the year and have thus almost doubled compared to the previous year. The European market in particular as well as the markets in China, Brazil and the US have meanwhile seen a significant upturn. In terms of single-machine business, orders predominantly came from outside the automotive industry. Given this positive development, we are optimistic about the future. HELLER aims to return to the business volume from before the crisis as early as 2022. Further expansion of regional business, an even stronger presence in Asia and North America as well as the strong market position in the commercial vehicle business will continue to make up for the lack of orders relating to light-duty combustion engines. However, the procurement market remains extremely difficult. It is not only semiconductors that are not available in sufficient numbers. The ability to deliver requires the greatest attention. The current situation concerning the scarcity of raw materials and the associated delivery difficulties and rising raw material prices is a global problem that also affects HELLER. The situation is exacerbated by limited transport capacities for land and sea freight, which is important for our overseas business.

Changes on the shareholder level

In mid-October 2021, the shareholder structure of the HELLER Group was reorganised. In the future, the children of Berndt Heller, Nicole Pfleiderer and Marc Heller, will hold 100 percent of the shares in Heller Holding SE & Co. KGaA via family-owned companies, thus becoming sole owners of the HELLER Group. HELLER will continue to be a family-owned business. This step will not result in any changes in the strategic and operational alignment of the HELLER Group. The board of directors of the managing Heller Management SE will remain to consist of non-family members.

Changes in HELLER Management

On 31 December 2021, HELLER bids farewell to Klaus Winkler, CEO of Heller Management SE. It is planned that he will join the supervisory boards of Heller Management SE and Heller Holding SE & Co. KGaA on 1 January 2022 in order to take over from Berndt Heller who will retire from his post as Chairman of the Supervisory Board after many years. Reinhold Groß, previously Managing Director at TRUMPF Werkzeugmaschinen GmbH + Co. KG in Ditzingen, will succeed Winkler as Chief Executive Officer (CEO) on 1 January 2022. Chief Operating Officer (COO) Manfred Maier will continue in his role as member of the Management Board of Heller Management SE.

Reinhold Groß to become Chairman of the Management Board of Heller Management SE
On 1 November 2021, Reinhold Groß joined HELLER to take over as Chairman of the Management Board of Heller Management SE from 1 January 2022 onwards. Until recently, the Industrial Engineer was Managing Director at TRUMPF Werkzeugmaschinen GmbH + Co. KG in Ditzingen. He brings many years of international management experience in sales and finance functions as well as strategy development and implementation.

Klaus Winkler to join the supervisory boards of Heller Management SE and Heller Holding SE & Co. KGaA
Klaus Winkler will say goodbye as CEO of Heller Management SE. From 1 January 2022, he will be joining the supervisory boards of Heller Management SE and Heller Holding SE & Co. KGaA. From 2003 to 2018, Winkler was Managing Director of Heller GmbH and Gebr. Heller Maschinenfabrik GmbH in Nürtingen. From 2007 to 2020, the Business Economist also chaired the management of Heller GmbH. The father of two has been Chief Executive Officer (CEO) of the HELLER Group since 2020.

Chairman of the Supervisory Board Berndt Heller to retire
At the end of the year, Berndt Heller, Chairman of the supervisory boards of Heller Management SE and Heller Holding SE & Co. KGaA, will resign from his offices and will propose Klaus Winkler as his successor. The 78-year-old joined the company, founded in 1894 by his grandfather, immediately upon graduating as a Mechanical Engineer in 1969. For more than 50 years, he has had a very strong impact on the success of the HELLER Group, both in management and subsequently as Chairman of the Supervisory Board and shareholder.

Klaus Winkler,
CEO of the HELLER Group

Reinhold Groß,
future CEO of Heller Management SE

Berndt Heller,
Chairman of the Supervisory Board of Heller Management SE and Heller Holding SE & Co. KGaA

IN TER VIEW

The future of internal combustion engines is under scrutiny. Any manufacturer of machine tools primarily focused on the automotive sector in the past will have to think again. According to Dr. Manuel Gerst, Head of Development at Gebr. Heller Maschinenfabrik GmbH, this process of rethinking started years ago – and has already resulted in new solutions.

INTERVIEW **Helmut Angeli**
PHOTOS **Tina Trumpp**

It is not so long ago that you were appointed head of the development department …
… I joined HELLER in 2018 and have been in charge of product development for almost a year now.

Then the famous adage of 'a new broom sweeps clean' could still be applied to you. In your new position, where did you see the most urgent need to strike a new path?
A preliminary remark on this: with the development of the H, F and HF series in recent years, the HELLER portfolio has grown into a broad range of products offering cost-effective solutions for many metalworking companies. First of all, it was therefore important to thoroughly assess what has been achieved together with Sales and the Applications department and to ask: where do we have performance gaps, where do we need to further improve consistency of existing solutions? Certainly, the strengthening of product management and its close ties to R&D also helped us. The development roadmap at HELLER now rests on a very stable and broad foundation. It provides the prerequisite for successful innovation and products.

Nevertheless, have some machine concepts not outlived themselves because of the rapid emergence of electromobility? Especially in view of the fact that in the past, HELLER has made a name for itself specifically in areas that could become less important in the future?
I assume you are alluding to the balance of project and regional business. Of course, it is not wrong to say that in the public eye, HELLER from year one has largely – and maybe even primarily – been active in project business. The focus there is on translating very specific customer requirements into a manufacturing system, and so far, we have solved this task very successfully here in Nürtingen – as is exemplified by the many projects we have won against well-known competitors. However, this cannot be achieved with engineering alone. Which means that we also have a lot to offer as far as the machines are concerned. A certain amount of rethinking – and I understand where you are coming from – has taken place insofar as we are more and more providing our machines to an anonymised environment. As a result, the specification sheet then no longer describes a customer-specific system, but rather one that can be configured as widely as possible, often for a very different environment. More specifically, this means further standardisation of individual modules to enable us to increasingly fulfil customer requirements based on a smart modular system.

WE WANT TO INCREASINGLY FULFIL CUSTOMER REQUIREMENTS BASED ON A SMART MODULAR SYSTEM

This will not only save costs, but also help us to achieve shorter delivery times. However, do not get me wrong: this requirement is nothing really new for HELLER, but something that has greatly gained significance with recent market developments. We invest a lot of time and know-how in R&D to ensure genuine consistency for as many peripheral components as possible. A customer who is already operating one of our 4-axis machines and now buys a 5-axis solution should be able to use as many of his existing peripheral units and operating resources as possible, for example, the same pallets and clamping fixtures or the same automation.

In many cases, HELLER machines are not only designed for larger volumes, but also specifically for the machining of engine components. So again, the question is if there is a need for a fundamental revision of the machine concepts.
Being designed as genuine universal machining centres, the use of our horizontal machining centres is not restricted to a limited range of workpieces. As mentioned before, their modular construction allows them to be precisely tailored to the user's requirements.

At the same time, however, I would like to point out that it cannot be the goal for a company like HELLER to 'please everyone'. What we are bringing to the market are the advantages resulting from our very specific strengths. You could call that the HELLER DNA, if you like.

How would you describe this HELLER DNA?
The industry certainly associates HELLER with a sturdy basic design – in particular a robust traversing column, remarkable long-term accuracy as well as reliability and high productivity.

Let us come back to the term 'smart building block system' you mentioned earlier. That sounds very interesting. What exactly does it mean?
We have summarized this principle under the motto of 'reduced internal variance, increased external variance'. By this, we mean all developments that are important in the modularisation and standardisation of our assemblies. For example, at the end of last year, we introduced a new generation of spindles. The HELLER Spindle Units (HSU) available in six variants are consistently equipped with only two different zero spindles (HSK-A 63 and 100). These zero spindles allow for rapid replacement, come at a favourable price and are now consistently available for both the 5-axis HF series and the 4-axis machines from the H series. This results in a significant simplification and cost reduction for our customers. We are currently working on taking a similarly major step in terms of the 5-axis heads. As a result, we will be able to offer our customers a greater variety despite the internal standardisation of assemblies, offering the optimal spindle for each application in the area of 5-axis machines.

Despite this, HELLER is simply not synonymous with single part and small series manufacturing in my opinion. Will you be able to change that by doing what you just described?
Only to a limited extent. However, that is not entirely a disadvantage. We are used to see a machine as part of a larger production network, and today this has increasingly become a prerequisite in small and medium-sized companies as well. More and more, the machine tool is becoming part of a complex and larger entity, which is integrated into the material and data flow as part of a network.

What about Industry 4.0: is the ever-advancing integration of data processing, combined with the trend towards end-to-end automation, not an indication that staff qualification and specific machine know-how are losing significance? Does it mean that Germany as a production location with highly qualified employees no longer holds a trump card?
Specific know-how directly at the machine has meanwhile become a scarce commodity in many companies. However, in my opinion it is something that cannot be replaced. Regardless of the fact that we as a machine manufacturer are doing our utmost to make a machine as easy to automate and operate as possible. Characteristics such as reliable machining accuracy, process stability and accessibility through to ease of use and a wide range of software support play a decisive role in this. Operators should be offered a work environment that supports them and relieves them of simple operational duties whilst giving them the opportunity to use their knowledge and skills for optimisation tasks.

Let us stick to the topic of Industry 4.0. Many of the supposed advantages seem a bit far-fetched to me or are elements that were already discussed decades ago as part of Computer-integrated Manufacturing (CIM). Does HELLER already provide marketable solutions offering very specific benefits to users?
As part of its HELLER4Industry strategy, HELLER offers a range of individual modules that provide high added value in everyday production without any doubt. One example is the HELLER Services Interface module.

Contrary to previous service models, where the machine is examined at predefined intervals, the HELLER service module continuously retrieves and analyses all relevant data while the machine is in operation. Not only does it capture the current machine status, the data collected also allow very precise forecasts to be made as to when wear of the key components will affect the machining quality. Based on this, optimal planning of targeted service measures becomes possible whilst their impact on the ongoing production is minimised.

Regardless of this, it should be noted that demands in terms of machine operation have increased. Do we still have the right training concepts in Germany or is there a need to make changes in this regard as well?
In principle, the dual education system is still the best way to train highly skilled workers. In addition, many companies provide sophisticated concepts, such as learning factories, to prepare apprentices more thoroughly and as practice-oriented as possible for their professional tasks. HELLER too is very happy to be able to train around 30 apprentices here at our location every year. On the one hand, this helps us to cover the needs of our own mechanical production, where the key components of our machines are manufactured to the highest level of precision. On the other hand, we are training highly qualified application engineers who will be implementing the most demanding customer processes in accordance with the HELLER maxim 'Knowing how it's done'.

KNOW-HOW DIRECTLY AT THE MACHINE CANNOT BE REPLACED

Like machines, like people: top-notch

TEXT **Sabine Muth**
PHOTOS **HELLER**

HELLER Nürtingen

Stable foundation – shaped by change and the topology of the location
We are aware of our roots and appreciate their value. They have shaped our development. We are optimally set up at our location and structurally embedded in a way that allows our strength to flow – also and especially in the face of constantly changing challenges. As a result, our customers have been able to rely on innovative technologies and highest quality for 127 years – whilst ensuring maximum productivity. That in turn provides the best foundation for trust and real partnership.

The HELLER Group – managed centrally, positioned close to the markets
With production facilities close to the markets, we can respond optimally to the respective markets and, above all, to our customers' needs: two plants offering a complete value chain are located in Germany and Brazil, three further plants for final assembly and application installation in England, the USA and, since 2013, in China. We support our customers from a network comprising more than 30 local sales and service subsidiaries worldwide. This network is managed centrally from the Nürtingen location. This is where production strategies, policies, methods and tools are developed and tested in the 'spirit of lean management' – and then transferred to the other plants. Therefore, the company is able to guarantee its 'Made by HELLER' brand and quality promise across the world.

Employees	
Production/Logistics	600
Application Engineering	360
Sales	90
Services	240
Administration/IT	180
Apprentices	110
Employees in total	1,580

Facilities	
Manufacturing	9,100 m²
Assembly	29,700 m²
Warehouse and logistics area	19,600 m²
Office and social area	25,300 m²

From trade business to machine factory

In 1913, the first apprentice workshop is set up in Nürtingen. 1938 sees the canteen first opening its doors and the company doctor taking up his work.

In 1942, the company starts to equip HELLER machine tools with hydraulic controls and expands the portfolio with crankshaft milling machines. In 1949, the product range is expanded by heavy bench-type milling machines, special-purpose machines and manufacturing lines in modular design.

Flexible and modular range of machines

The company consistently expands its network with production plants in Redditch/UK and Sorocaba/Brazil (both 1974) and Troy/Michigan, USA (1995).

In 1982, HELLER starts with the series production of BEA machining centres equipped with state-of-the-art HELLER uniPro NC 80 CNC control technology. In the 1990s, HELLER expands its model range, for example, with the MC series of machining centres (1997).

1900–1949

1950–1969

1970–1999

2000–TODAY

1894

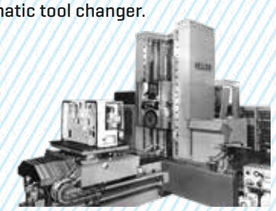
The beginnings

Hermann Heller (1869–1931) establishes the company 'Hermann Heller Handelsgeschäft und Fabrikation in geschützten Artikeln und Uhrmacherwerkzeugen' in Nürtingen, trading and manufacturing patented products and watchmaker's tools. At the beginning, HELLER produces chimney heads, spiral stairs, parallel jaw vices and other tools.

Developing the characteristic HELLER genes

In 1960, Hubert Heller joins the management of the company, followed by his brother Berndt in 1969.

During the time of the so-called Economic Miracle or 'Wirtschaftswunder', HELLER produces an increasing number of special-purpose machines and transferlines to meet the growing demand for manufacturing capacities. In 1962, HELLER starts to build numerically controlled milling machines and machining centres with automatic tool changer.



Industry 4.0 and digitisation

In 2013, HELLER opens the company's fifth production plant in Changzhou (China). In addition, the competence network is expanded over the years – most recently with STS Maschinendienstleistung GmbH in Metzingen (Germany).
In 2012, the first CBC modules for the coating of crankcase cylinder bores are supplied to customers.
In 2016, HELLER introduces an enhanced range of solutions for the digitisation of production with 'HELLER4Industry'.

In 2020, HELLER first the first time welcomes its customers to V-CON, a virtual and interactive international event.
In 2019/2020, the new generations of the H series 4-axis machining centres and the HF series 5-axis machining centres are presented,.

Dynamic kinematics –

HELLER still has the status and flair of a family business. This is noticeable in the corporate philosophy and in employee loyalty. The large HELLER family provides consistency – especially at the Nürtingen location, where it all began. Despite all stability, the company lives, demands and supports flexibility and dynamism. At our HELLER Academy, we provide excellent technical qualifications with a wide range of advanced training courses by our own and external trainers. In addition, promoting young talent has top priority. The success speaks for itself.

"The way employees identify with "their' company is often underestimated." Klaus Winkler

a well-rounded concept thanks to motivated employees

HELLER takes the development of skilled professionals into its own hands
In 2021, HELLER is training 159 people worldwide in six different apprenticeships. 71.1 percent of HELLER apprentices complete their training at the Nürtingen location. The concept of the HELLER Learning Factory is a role model within the industry. The social projects to teach 'soft skills' such as flexibility, social skills and a sense of responsibility also have high priority.

Whoever gained first professional experience at HELLER is well prepared for the next steps:

The HELLER Talent Programme
Particularly in challenging times, HELLER strives to think ahead and relies on the long-term development of specialists and executive staff. The sixth HELLER Talent Programme started in September 2020 with eight participants from different departments. As part of the programme, they have the opportunity to gain practical experience in forward-looking projects, for example: 'Rotary table assembly line at Plant 2', 'Upgrade of control of inspection, measuring and test equipment at HELLER' plus six further projects.

"The colleagues were really willing to take some time out to work on my project" Michael Stippler (OAE) took part in the 6th HELLER Talent Programme – and is enthusiastic about what he experienced in theory and practice during the 8 months. The goal of his project was to develop a concept for the rotary table assembly line at Plant 2 in order to reduce the cycle times of customer-specific manufacturing orders and to improve capacity utilisation at HELLER. The basic idea: neutral pre-assembly. The result: with neutral pre-assembly, the cycle time required for a manufacturing order is now almost 70 percent below the initial time. Precisely timed material deliveries using picking carts and Kanban have resulted in a 20 percent reduction in assembly time. The management was also extremely satisfied with the results achieved.

"In the development of this concept, I closely worked with staff in Assembly. That allowed us to get quicker and better results – also in terms of the implementation." Michael Stippler (OAE)

Powerful drive –

Our innovation motor is driven by our employees and vigorously pushed forward. We are heading towards the future with foresight and confidence, never losing sight of the trust our customer place in us. To achieve this, we are working on various levers in different areas.

Innovation Shopfloor Interface –working together to drive digitisation in assembly
An interview with Ralf Fauser,
Process Organisation at HELLER

with ideas and innovative strength

Mr Fauser, could you explain in a few sentences what the Shopfloor Interface is all about?
The SFI is an application that has been developed in close cooperation between our IT's application developers and Assembly as part of an agile process. It has been tailored to the specific needs and is very easy to use; it runs on a tablet computer and offers the user a 360° view of all the data relevant for the machine and the assembly process.
A 360° view? Does that mean that the operator can call up all relevant documents and no longer has to print them?
Yes, that is one of the benefits, but the SFI is not just about documents. It focuses on the entire assembly process and all of the data related to it. It allows display of assembly instructions, parts lists, electric diagrams, fluid layouts, design drawings, etc., but also the recording of serial numbers and measured values for the quality process as well as the confirmation of completion, which in turn starts a logistics process.
Sounds complicated. Do the users find it easy to work with the system or were there reservations?
They have been involved in the development process from the very beginning. Acceptance is therefore very high and the colleagues regularly contribute new ideas – it is an agile system after all.
Does that mean the system can be expanded and adapted?
Exactly! For example, we are currently working on a time confirmation module for jobs in order to eliminate the need to walk to the booking terminals, allowing all tasks to be performed using the tablet computer. This is a perfect example of our user-centred approach with the SFI – usability is enhanced, processes are optimised while productivity is increased.

Family member with strong roots and great potential for the future

TEXT **Sabine Muth**
PHOTOS **Paatz Viernau GmbH**

The Thuringian Forest with its picturesque landscape is definitely worth a visit. Moreover, it also offers places of interest for those looking for outstanding manufacturing solutions: these can be found in Steinbach-Hallenbach – the home of Paatz Viernau GmbH. At the location, approx. 90 employees produce individual parts and assemblies for HELLER machining centres; the portfolio also includes the manufacture of drilling and multi-spindle heads, complex fixtures and gripper systems. The company looks back on an eventful history since it was founded in 1890 – with a happy ending for the time being in 2018: ever since, Paatz Viernau has been part of the large HELLER family.

Steinbach-Hallenbach is located in the Hasel Valley on the south-western slope of the Thuringian Forest. The ruins of Hallenburg castle tower above the scenery. The globally operating company Paatz Viernau has its roots in the 9,000 strong community. Loyalty is very important here. One example, among other things, is the strong commitment to the region and its people: from tablet computers for the Steinbach-Hallenberg school through to active and constructive participation in the broadband network expansion within the region – Paatz plays an active role.

Despite the company's attachment to its home region and its appreciation for tradition, fresh winds of change are blowing through Paatz. Christian Kurtenbach is set to lead the company into a successful future geared towards growth. The 54-year-old father of three adult children joined HELLER in 2014. He has been Head of Mechanical Production in Nürtingen since 2018 and, among other things, successfully overlooked the expansion and conversion of production in Brazil. He has been a member of the management team at Paatz since 2021.

Digital transformation based on trust

Modern, innovative, digital, and sustainable – these are the attributes that shape the company's understanding of itself. Kurtenbach considers it top priority to push digitisation within the group of companies and especially at Paatz. He can still remember the time without digital support: "When I completed my apprenticeship 35 years ago, the company mainly produced conventional, hand-set machines, tools and components for manual assembly of machines into a functioning machine tool or clamping fixture. Know-how was mainly stored in the minds of employees, whereas all other information was only available on paper."

Today, things look very different, also due a massive expansion of digital infrastructure in the Thuringia region: all the machine data and know-how are stored in the system; the detailed-planning system is used for in-depth, multi-stage, reliable planning. "To achieve this kind of transformation and acceptance, we involved the employees in the process and were very transparent from the beginning," explains Kurtenbach.

Growth succeeds when everyone pulls together

Kurtenbach sees the successful development as a genuine team effort. It runs like clockwork. Paatz management and the employees pull together. That is why it is very important to keep staff informed about what is going on in the company on a weekly basis. The focus is on motivating the workforce. Recently, a new, open performance appraisal system was introduced, offering employees detailed feedback twice a year – a system that have been well received and accepted. However, it is also clear that performance must be rewarded. In addition to monetary incentives, Paatz has recently started offering comprehensive health management: the company organises an annual health day and sponsors gym memberships and the purchase of bicycles. Further motivating factors are the pension scheme and incentive systems for apprentices.

Sustainable development leads to success

The sustainability goals of Paatz are simple and effective: protect the environment, save costs, secure the future. In each quarter of the year, energy consumption, wastewater, waste, and emissions, but also the useful life of products and behaviours of employees are carefully scrutinised, and improvements implemented step by step. Continuous further development is a constant at Paatz – taking responsibility for the environment and society is part of it.

The management and workforce of Paatz agree: joining the HELLER Group was the right step towards a successful future. Much has changed since 2018: processes are structured, possible weaknesses are identified early on in order to take countermeasures. An optimal organisational structure – the result of extensive restructuring in 2020 – laid the foundation for an enormous increase in productivity and steady growth. Today, Paatz is proud that customers can rely on 100% quality, from the quotation to production through to delivery and service.

INNOVATIONS@HELLER

Promoting an agile climate for innovation, supporting ideas and involving employees from all functions

TEXT **Martin Ricchiuti**

Over the decades, HELLER has continued to expand its technological portfolio, aligning it with production-related challenges in close cooperation with its customers. It is not for nothing that HELLER machine tools are considered a guarantee for an exceptionally high level of production performance, productivity and efficiency combined with economically attractive operating costs. These characteristics and the technical maturity of the solutions have consolidated HELLER's position as a global partner for highly productive manufacturing machines and systems. Over the years and decades, the company has strengthened its partnerships with companies from general mechanical engineering, the aerospace industry, power engineering, contract manufacturing and many other sectors. Partnerships with the world's largest automotive manufacturers have grown into solid relationships that continue to surprise with innovations for the benefit of the users.

To this day, no reliable statements can be made about the drive and energy supply technology of the future due to the uncertainty about the concept favoured going forward. All this has caused upheavals in the automotive industry and power industry in particular. Therefore, the alignment of all development efforts to the current situation would lead to a one-sided approach and consequently to a narrowing of the perspective on the wide spectrum of innovation potentials. For HELLER, the development described does by no means provide a solid foundation for determining a strategy for innovation as no final winners have been chosen yet in the race for the drive and energy supply technology of the future – to name just two examples.

Yet, how do you make technological quantum leaps making it easy for companies and users to opt for HELLER as a partner for projects involving highly productive metal cutting with highest requirements on precision, quality and automation?

Bernd Zapf, who has been with HELLER since 1985 and who is responsible for Development New Business & Innovations, provides insights into the various innovations in his field of activity at HELLER. One of the achievements he and his team are responsible for is the in-process coating of cylinder bores, known as HELLER CBC (CylinderBoreCoating): in car engine production, this technology has resulted in a significant reduction in the friction characteristics and CO2 emissions, which in turn contributes to a lower fuel consumption and compliance with environmental standards. The integrated coating technology marks a new standard and has become synonymous with the 'Made by HELLER' technological solution competence in passenger vehicle engine production worldwide. The upheaval in the automotive industry, the shift away from the conventional internal combustion engine towards electric drives currently politically favoured, at first glance diminishes future prospects for the commissioning of new engine production lines, for which HELLER was able to win contracts in the past as part of the upstream and downstream production steps of the CBC process.

Another area HELLER believes to be crucial for its customers' competitiveness and that contributes to the company's success is the digitisation of production equipment. Under the product name 'HELLER4Industry', HELLER brings intelligence into its machine tools and the processes performed on them. Using the collected production data and the data streams generated within the machine tool, HELLER has built a functioning ecosphere, which, supplemented by cloud technology, creates added value for customers in terms of both availability and productivity. With HELLER4Industry, it is thus possible to ensure the safety and operability of the system during operation and to carry out maintenance at the ideal point in time based on the current utilisation. The transparency gained helps to optimise production in the long term and with increasing precision as the volume of data increases. By consistently revealing the potential for improvement, users are able to identify cause-effect chains and make their production resilient.

These capabilities enable HELLER machines to master current production challenges with the reliability, quality and cost efficiency HELLER is known for.

Innovation processes as a compass for new business areas

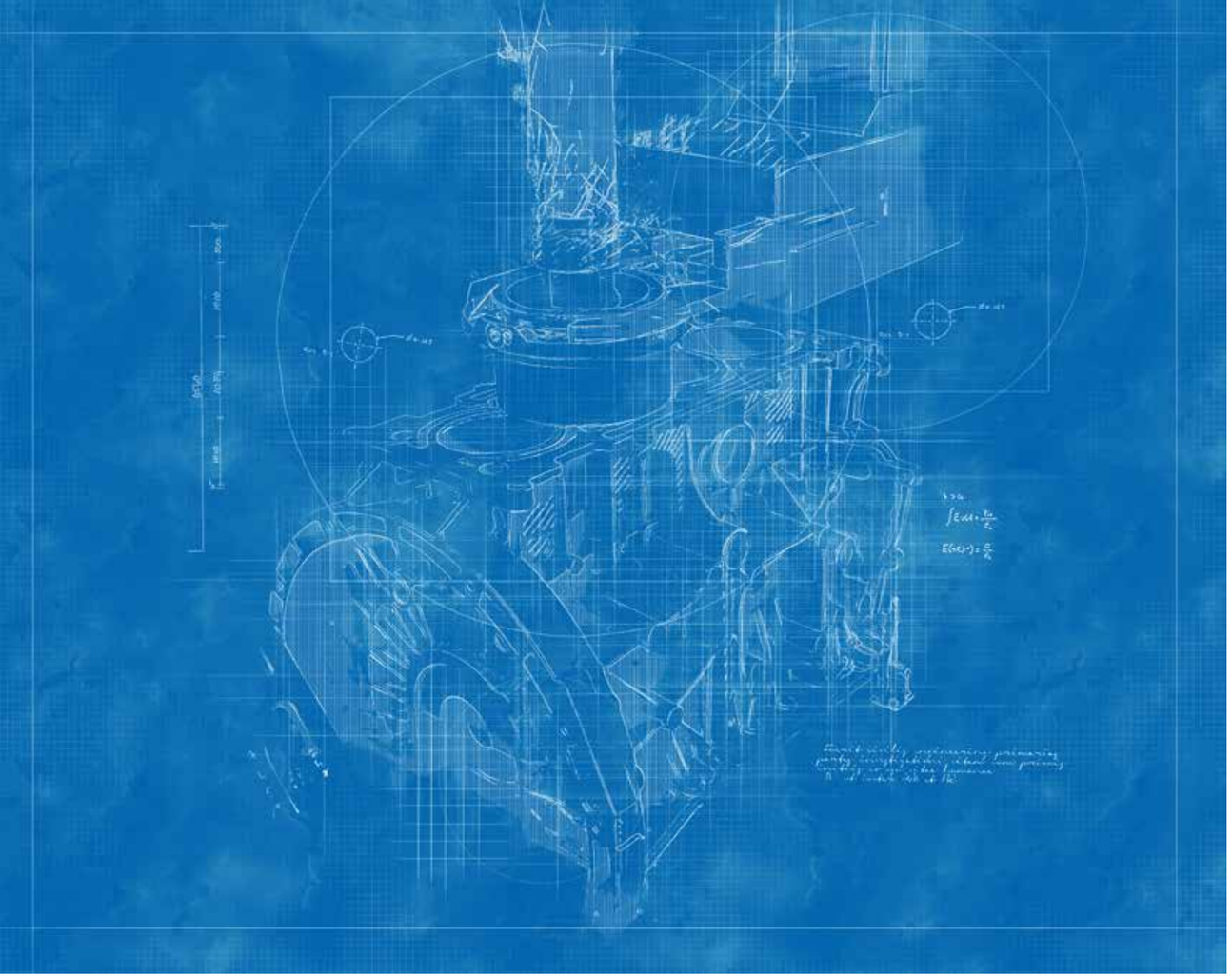
In the course of the transformation process in the automotive industry that fully affects HELLER, the company strives to integrate all available sources into the company in order to make the best possible use of new and reorganised capacities. For this purpose, the machine builder is expanding its innovation process with the aim of evaluating current and future changes in production processes from different perspectives in an open and technology-neutral manner. This allows to explore potentials for the company and its customers without bias, which, in a scenario analysis, also extend beyond the previous focus on metal-cutting processes.

Bernd Zapf explains:"The last major project, HELLER4Industry, has been completed from the point of view of pre-development and has been handed over to Product Development to reach product maturity. Going forward, the supplemented innovation development area New Business & Innovations will devote itself exclusively to the new topics in the context of drive technology and energy supply. The next steps for the coming four to five years are already on our horizon. For this, we are considering various scenarios. However, we are not yet able to say with absolute certainty that they will actually materialise exactly that way. We have to learn to deal with this volatility and have to make our development approaches accordingly agile and comprehensive."

In order to be even more broadly positioned than before and, above all, to systematise the development and exploration of new subject areas, Development New Business & Technology was expanded to include the functions 'HELLER Transfer of Ideas (HIT)' and the newly created 'HELLER Innovation Lab (HIL)' on 1 July 2021. In the course of this process, the division was renamed 'Development New Business & Innovations'. With the name 'Innovations@HELLER', HELLER wants to highlight the synergies contributing to the ideation process through these functions and give them a new format.

HELLER Transfer of Ideas (HIT) – a bottom-up approach to improvements

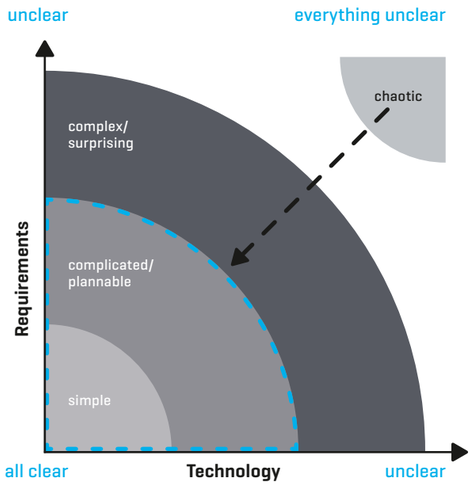
The foundation for internal suggestions for improvement was laid many years ago with the HELLER Transfer of Ideas (HIT). Based on their daily proximity to work processes, employees generate suggestions of their own aimed at internal optimisation measures and process improvements. The goal of HIT is to use the creativity and ideation potential of our employees to gradually improve our processes, to avoid anything unnecessary and to increase profitability to the benefit of our company.



HIT ideas mostly focus on areas such as material and labour time savings, work processes and procedures, quality and environmental aspects, as well as occupational safety and motivation.

Long-time HELLER employee Josef Tischer coordinates the company's suggestion system, channels and categorises ideas, allowing them to be processed, evaluated and implemented as needed in accordance with a clearly defined scheme. To speed up the process, the employee suggestion system was upgraded in 2020 with a web-based process in the HELLER intranet. The digital version allows the idea contributors to select the 'type' of proposal they are making, i.e. an idea with or without a solution. In addition, it is now also possible to work on suggestions collaboratively as a team. All employees have the opportunity to get involved in this process as contributors, participants or experts.

Another new feature is the option to submit ideas without suggesting a solution, which means that they only point out a problem. In such a case, the internal 'HIT fire brigade' is called in. It allows colleagues to contribute creative solutions or to point out existing solutions that are already being used or implemented to the same effect elsewhere in the company. The stages a proposal goes through as part of the improvement process are clearly defined so that the contributors of ideas are kept informed about the status of their ideas.



Topic set by the management

Management decision

Development New Business & Innovations

DN

Development of new business ideas based on Stage-Gate and Stacey Matrix

1. Knowledge building
2. Definition of requirements for future topic
3. Identification of possible business models
4. Pre-development, prototyping, testing, partner project

HELLER Innovation Lab

HIL

Systematic idea generation based on design thinking

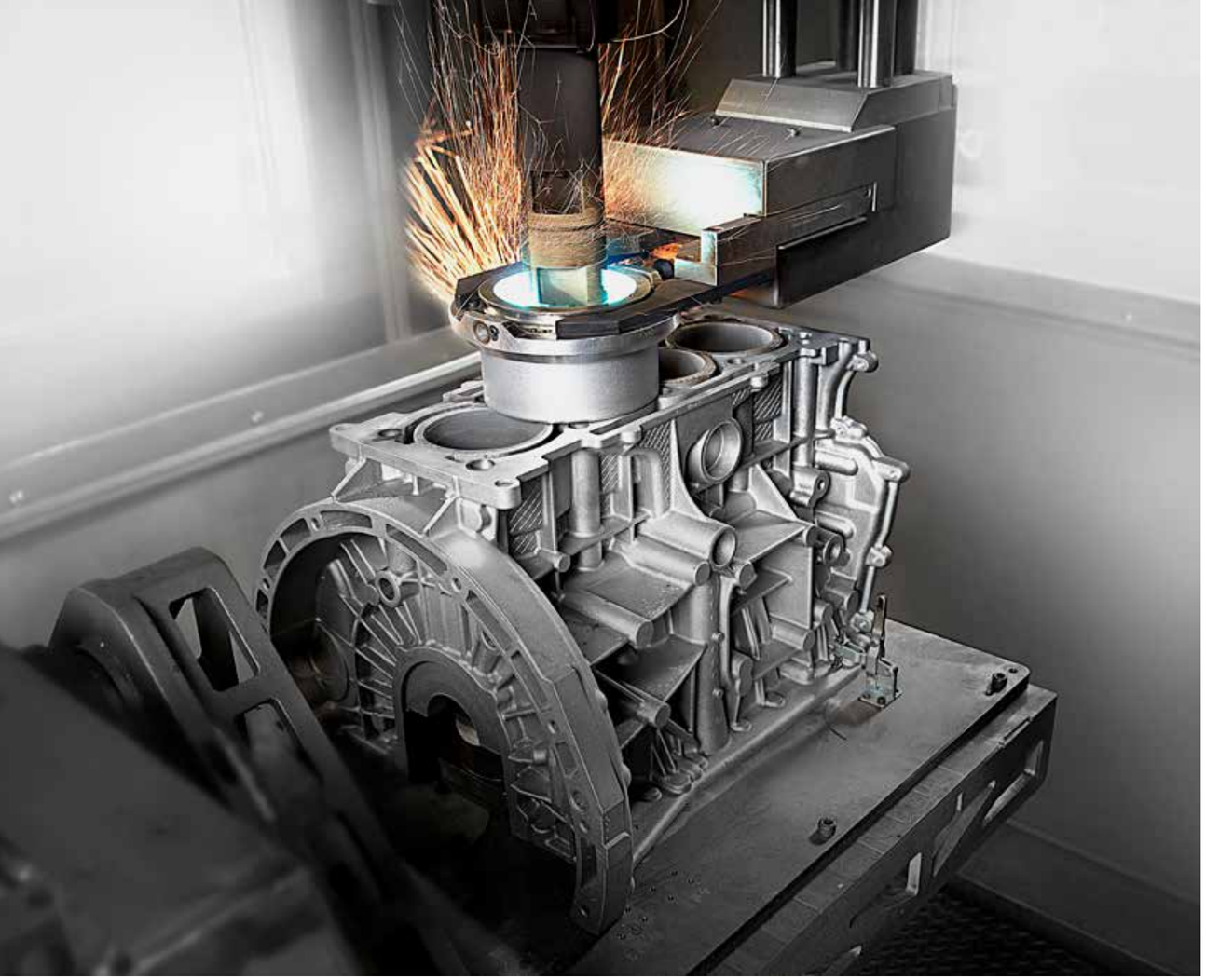
1. Search fields & challenges
2. Idea generation & collection
3. Selection of the best ideas
4. Funding phase I/II/III
5. Implementation

HELLER Transfer of Ideas

HIT

For employees' improvement suggestions

1. Submission & categorisation
2. Initial review by the HIT representative
3. Publication on the intranet
4. Review
5. Implementation



HELLER Innovation Lab (HIL) – the company's own ideas incubator

The third function involved in the process is the HELLER Innovation Lab (HIL), which acts as a connecting link in the interplay of the Development New Business (DN) and HELLER Transfer of Ideas (HIT) functions. HIL can be regarded as a kind of 'natural reserve' for innovative ideas focusing on products and business models. Here, the idea of a 'positive climate for innovation' is not an abstract, but something that is implemented in a systematic way. Following the motto 'Ideation – knowing how it's done', an innovation funnel has been set up, giving the business ideas space and time to grow and to mature sufficiently so that they are able to meet HELLER's criteria for success. Various formats are used to give creativity a boost whilst research into new subject areas is promoted using design thinking methods. Idea workshops and boot camps as well as innovation projects provide interdisciplinary teams of specialists with professional support and coaching that only few start-ups in Germany receive. The ideation process and the selection of the best ideas, in which further resources are invested, is followed by three funding phases before the final presentation to investors. This allows the teams to prepare an ideal basis for the decision-making process after each funding phase to help the steering committee decide whether an idea moves on to the next funding phase. If the idea in question is convincing in the 'investor pitch' following the third funding phase, the idea will be implemented. Once an idea has made it to this stage, questions about the added value of the solution, the business model behind it, market potential and size, the competitive situation and financing plan through to the market entry strategy and the team required for it can be answered. The process ends with the third and final funding phase, which is structured individually according to the type of the idea. Depending on the requirements, elements from the first and second funding phase can be examined further or additional technological investigations up to first pilot projects can be carried out. If necessary, interfacing with the Development New Business & Innovations function takes place at this point or the idea is implemented in cooperation with a relevant department.

Two promising ideas have currently made it into funding phase 3 and are currently being piloted individually together with the relevant departments. Preparations for the next iteration of the innovation process have already started. The innovation cycle is further improved with the support of HIL and based on the feedback received from the people involved. Feedback is kept in a steady flow with ideas being generated and implemented in a practice-oriented way throughout different states according to their prospect of success and expected sales potential.

Development New Business (DN): future topics on the horizon

"The development area that has consolidated HELLER's reputation among its customers as a unique partner providing solution expertise to unlock previously undiscovered manufacturing potential with outstanding inventions such as the above CBC coating technology is currently looking into production-related challenges for the world of tomorrow," says Bernd Zapf when asked how he would define HELLER's foresight. In the recent past, the company has regularly set milestones with additive manufacturing, lightweight construction, sensitive clamping technology or the HELLER4Industry Industry 4.0 topic and has expanded its product portfolio in a sustainable way.

A new field HELLER has identified as a forward-looking topic area is in the broadest sense again related to drive technology but also to energy supply solutions. It is based on a single element: hydrogen. The storage and use of hydrogen involves adapted combustion engines or stationary and mobile fuel cells and despite the unclear initial situation, HELLER already foresees new challenges in the area of hydrogen production. In the short term, the application of HELLER's core competencies and their expansion to new business areas that will play a key role in e-mobility and decarbonisation of the future is based on the company's existing core competencies such as metal cutting and automation. In the long term, we will adapt and expand our core competencies to include new technologies. In order for this to be successful, the necessary expansion of competencies receives support from research and university institutions.

The team around Bernd Zapf continues to work on its key skill of production optimisation using artificial intelligence methods. With the latest developments, the refinement and expansion of self-optimising production continues. These include the 'AutoLearn' consortium project developed in cooperation with the University of Karlsruhe and other industrial partners as well as projects to improve workpiece quality, OEE and process reliability.

To achieve its goals, Development New Business uses agile development methods that organise the innovation process in accordance with the criteria of Robert Cooper's Stage-Gate model. In the model, the innovation process is divided into several stages. Results are checked against the milestones or gates achieved. Tasks that are initially unspecific and complex are converted into manageable development units in accordance with the Stacy matrix. Concepts, specifications and a first technical feasibility study for product generation in product and technology development are developed throughout four stages focusing on the development of basic knowledge, matching with HELLER skills, development of business models and development into prototypes, thus ensuring a well-founded basis for the development work.

Innovations@HELLER strengthens DN with HIT and HIL through systematic ideation using new formats. This enables HELLER employees to participate in the innovation process and increases the speed of innovation.

With its new innovation process geared towards future production challenges, HELLER is taking a big step towards remaining the reliable partner for production tasks its customers have come to know and trust. Technology innovations are driven forward wherever they are needed and are being brought to product maturity using systematic processes. The driving force provided by the HELLER employees remains the most valuable resource for venturing into new application areas and achieving future viability for everyone involved – despite, or perhaps because of, the major challenges the industry is facing today.

In this new innovation process, Innovations@HELLER sees itself as a catalyst for new business ideas and believes that all HELLER employees can make a contribution to this process with great ideas. Innovations@HELLER supports and promotes this approach with systematic methods to ensure that all HELLER employees can become part of the innovations.

MARKET

what moves us

Three-shift operation at the maximum performance limits

TEXT **Manfred Lerch** PHOTOS **Sebastian Grenzing**

HELLER envisioned the application of the first 5-axis machining centres from the HF series, with the 5th axis provided by the workpiece, mainly for medium-sized batches in series production. With the development of the second generation, the range of application has now expanded significantly. The company Stöferle manufactures up to 350,000 components per year on two HF 5500 machines integrated into a production line. In three shifts, the automotive supplier is constantly pushing the limits of the machining centres and convinced that they were an investment in the future. In addition, Stöferle has meanwhile invested in what is now the fourth generation of the 4-axis machining centres from the H series.

The company Stöferle based in Laupheim has been confronted with the development of alternative, CO_2-free drive systems in the automotive industry for years. With the introduction of electromobility and hybrid technology, components are becoming more and more complex. Moreover, the requirements in terms of precise and increasingly inclined surfaces as well as high-quality surfaces are increasing. In 2019, the company therefore started looking for suitable machining centres for the machining of large components for use in mild hybrid car models with fits between H6 and H7 and diameters ranging from 240 to 320 mm. It invested in two HELLER 5-axis machining centres model HF 5500 of the second generation.

Now, however, Stöferle is in a special situation. On the one hand, the company develops special-purpose machines itself. On the other hand, as a partner of HELLER, they are testing machining centres in medium and large volume production, running three shifts, seven days a week. For Managing Director Erich Stöferle, these are real endurance tests: "We are always operating the machines at the maximum limits, including the HF series, going up to ten percent below the performance limits specified by HELLER. If the maximum weight of a milling cutter is specified as 16 kg, we go up to 15.5 kg. We have been doing this for years. For example, we are operating a Ø 160 mm cutter at 15,000 rpm. That may not be a problem in single-part manufacturing, but we produce in three shifts. Another aspect is that the two HF 5500 are part of a manufacturing line comprising five to six machines and that batch sizes have initially been set at 350,000 pieces/year. Therefore, highest levels of reliability and availability are a basic requirement for us." This shows that the HELLER DNA of productivity, precision and reliability has been implemented in a practice-oriented manner in the new generation.

The people in Laupheim believe that the new HSU inline spindles, which are absolutely made by HELLER, provide clear advantages over the first generation. In terms of vibration behaviour, these spindles are much more rigid, allowing a quick and cost-effective replacement for service purposes. Regarding spindle units, Stöferle opted for Speed Cutting (SC) spindles with speeds of 18,000 rpm and 103 Nm of torque. Moreover, the machining centres also provide impressive precision. In terms of parallelism, the large components are within 2/100 mm and regarding surface finish and flatness the valley depth lies at 6. Accordingly, these tolerances can be achieved. What is more, in contrast to the first generation, the new spindles allow to achieve significantly higher quality surfaces. Another and very important change for Erich Stöferle was the shortening of the distance from the spindle front edge to the rotary centre of the B-axis, because until now the people in Laupheim often required an extension for the tools.

4th generation provides significantly reduced chip-to-chip times

Stöferle is also carrying out field tests on what is now the fourth generation of the 4-axis machining centres from the H series. Since February 2020, these machines have been used to the maximum in large-volume production. For Managing Director Katja Stöferle, this is a logical consequence of the experience gained so far: "We have more than 20 machines from this series and have reliably manufactured over a million components on quite a few of them without major repairs. For example, we had an H 2000 that ran for 15 years with the same ball screw drive. For transmission components with batch sizes of 250,000 pieces/year, the stability, the drives and the chip disposal simply have to be right. To put it briefly, these are our best machines. Regardless of this, electromobility not only increases the requirements in terms of the components, but also the batch sizes. That is why we are continuously looking for ways to reduce cycle times. Not much can be said about the reliability of the new generation of the H series, but HELLER has significantly increased the dynamics of this generation, allowing us to measurably reduce the chip-to-chip times for specific components. This is one of the reasons why we have invested in another three H 2000 models." According to René Greising of the regional representative Hans P. Greising GmbH, it is the heart of the machine, i.e., the spindle, which is primarily responsible for this reduction in machining times. "For this generation, HELLER offers three variants: Power Cutting (PC), Speed Cutting (SC) and now Dynamic Cutting (DC). The DC units in particular perfectly combine high torques with high speeds."

Overall, both new generations from HELLER have already been put through their paces in practice and have been available in the market as well-engineered machines since the beginning of 2021.

+

Another plus

For the second generation of the HF series, HELLER also offers a classic gantry drive in the table axis (Z) with two physically separate axes in the control and two direct measuring systems. This increased rigidity in the table axis for the absorption of maximum process forces in Z-direction makes sense, for example, in combination with the high-torque DC spindle units, if the machining centre is to be used even more universally.

With the fourth generation of the H series, HELLER has significantly increased the dynamics. Chip-to-chip times have been measurably reduced on specific components. That is why the company invested in two H 2000 machines of the new generation.

The two machining centres were purchased for the machining of large components for use in mild hybrid car models with fits between H6 and H7 and diameters ranging from 240 to 320 mm.

"With batch sizes between 200,000 and 300,000 parts, we have to be highly productive and flexible. The components are constantly changing, requiring inclined bores, new angles to be approached, etc. Of course we have to be able to respond quickly to these requirements." Erich and Katja Stöferle

"The H 2000 is and has always been an excellent machine. The proportions are just right. It is low, has little movement in the bed, wide guideways, a good spindle and runs absolutely reliably for years in three-shift operation."

Erich Stöferle

+

The company Stöferle

Stöferle GmbH founded in 1992 employs 200 people and focuses on tailor-made, individual solutions for the economic and quick production of medium and large volumes in light-metal processing. This also includes the development of special-purpose machines. Stöferle is a partner and supplier to the automotive industry. In order to make better use of technology transfer and synergies, the company was expanded by Stöferle Automotive GmbH. In this area, Stöferle acts as a system supplier. In addition, Stöferle manufactures parts washing systems, systems for leak testing and assembly as well as additional components such as clamping fixtures, handling systems and production-related measuring and testing equipment.

www.stoeferle-gmbh.com

Stöferle

A new dimension:

mobile automation in production

Efficient and, above all, competitive manufacturing poses ever greater challenges to small and medium-sized businesses. One way to remain competitive and at the same time counteract the shortage of skilled workers is automation. Mobile robotics offer undreamt-of possibilities.

Price pressure, shortage of skilled workers, individualisation – the challenges facing companies in the age of Industry 4.0 affect every sector. What is needed are intelligent solutions allowing to meet the customers' requirements for producing high quality within a short time and often in small volumes. One possibility: mobile automation. The advancing human-robot collaboration allows the industry to develop completely new approaches to support production and logistics with robot technology and to stay competitive at the same time.

Mobile helpers moving around freely

With a combination of mobile platforms and so-called cobots, KUKA offers mobile robot systems that can safely navigate and act within human working environments. This does not only allow automation of fetch-and-carry services, but also the loading and unloading of machines, assembly activities at different locations, measuring tasks at test stations and much more.

The KUKA.NavigationSolution software enables mobile helpers to move freely around the workspace without cables. In combination with omnidirectional wheel technology, navigation is possible in the most confined spaces with very high positioning accuracy. To ensure this, the control software records the data provided by the safety laser scanners and wheel sensors and uses the SLAM method (Simultaneous Localisation And Mapping) to create a map of the environment. Using this map, the platform positions itself in real time and responds to changes in the environment that constantly occur in a flexible logistics system. The mobile platform independently finds its way through production.

High flexibility in terms of size and load capacity

The master control uses the KUKA fleet manager to manage all vehicles and thereby coordinates the planning and execution of jobs coming from the customer's production management system (ERP). The size and load bearing capacity of the mobile platforms and robots can vary, ranging from 200 kilogrammes with the KMP 200 to 90 tonnes with the KUKA omniMove heavy-duty vehicles. Combination with the LBR iiwa sensitive lightweight robot (7 to 14 kilogrammes load capacity) or the KR CYBERTECH with up to 22 kilogrammes is also possible.

The use of special sensors makes the 7-axis LBR iiwa robot particularly suited for human-robot collaboration: in the event of an unforeseen contact, the robot stops automatically to protect its human colleagues. The KUKA.NavigationSolution ensures that the KMR iiwa autonomously processes its tasks, which can be modularly adapted in accordance with the customer's needs and the requirement profile. Due to the omnidirectional wheel drive, the mobile production assistant manoeuvres absolutely safely even within confined spaces: the positioning accuracy is within a range of ±5 millimetres with the optional fine localisation and positioning. With an optional camera on the robot flange, it is possible to improve the positioning accuracy on the robot gripper down to the sub-millimetre range.

Support from professionals

In mould and die production, for example, the mobile robot is able to autonomously pick up workpieces, transport them from one machining station to the next and insert the necessary tools into the machine. For companies this results in a significant increase in productivity: larger series, for example, can be produced automatically overnight, while in normal operation during the day small series requiring a higher degree of manual intervention are produced. At the same time, they enable skilled workers to be deployed efficiently where they are needed. Even complete product changeovers can be performed more easily and more cost-effective with the help of automation: the driverless production assistants work with great precision and almost without errors. The payback period for the mobile production helpers is usually less than two years. This makes them particularly attractive for machine tool users.

The KMR iiwa is a flexible and autonomously navigating platform that takes the sensitive robot to where it is needed.

The KMR CYBERTECH, an omnidirectional mobile platform with robot, opens up new, scalable manufacturing concepts, such as the loading of machine tools with tools.

With the LBR iiwa, KUKA has laid the foundation for a completely new human-robot relationship: direct and safe collaboration – without a safety fence.

From robots to fully automated systems

KUKA is an international automation group with a turnover of approx. EUR 2.6 billion and around 14,000 employees. The company's headquarters are located in Augsburg. As one of the world's leading providers of intelligent automation solutions, KUKA offers customers everything from a single source: from robots and cells through to fully automated systems and their network integration in markets such as automotive, electronics, metal and plastic, consumer goods, e-commerce/retail and healthcare. www.kuka.com

KUKA

HELLER delivers manufacturing performance

Our customers include companies from the automobile industry and their component suppliers, from general mechanical engineering, energy technology, fluid technology, aerospace and many other sectors – worldwide. Their requirements are as varied as their industries and topics. The fact that we are nevertheless able to develop and offer convincing solutions together is proven by numerous successfully completed orders from all over the world, seven of which we would like to show you here.

Germany

Wessel-Hydraulik GmbH

Seat:
Wilhelmshaven
Year established:
1958
Number of employees:
130
Industry segment:
Hydraulics industry
Final products:
High-quality products of standard valves such as pressure valves, directional control valves and flow valves
Final customers:
Mobile and industrial hydraulics
Machinery:
Fully automated production lines, 4-axis machining centres with medium tool storage size and pallet station

Initial situation
Requirements: machining of hydraulic valve housings from 2 to 80kg in small and medium series production with as little manpower as possible, low set-up times despite high part diversity

Why HELLER
Longstanding partnership

Order
Scope of delivery: two H 2000 (PC spindles), three MCH 250 + linear storage unit Fastems FPC-750 (pallet automation)
Workpiece and clamping situation: workpieces made of aluminium, steel and hydraulic casting or also mould casting with weights between 2 and 80kg; single and multiple clamping (clamping towers)
Production volume: complete machining by drilling, milling, reaming
Specialties: high accuracy and surface quality, high number of tools per workpiece, layout planning challenging due to pillars and partly low ceiling height, series start-up supported by training courses

Evaluation
Challenge: optimum use of space
Results: short set-up times, high reliability and availability

Italy

OFFICINE PERLATO SRL

Seat:
Ghedi, Brescia
Year established:
1975
Number of employees:
50
Industry segment:
Precision oleodynamic-hydraulic production
Final products:
Manifolds, hydraulic/oleodynamic blocks
Final customers:
Bosch Group, Sacmi Imola S.a., Moog Inc., Parker Group
Machinery:
Machining centres

Initial situation
Starting position of the customer: new investment due to increased production
Requirements: quality, delivery on time

Why HELLER
Experience, technology

Order
Scope of delivery: one FP 14000
Workpieces: hydraulic blocks of various sizes and masses (up to 4000 x 2500 x 3000mm, weight up to 10t), large components for the plastic deformation (weight up to 15t)
Production volume: one-off production
Specialty: high-precision machining

Slowenia

LTH Castings d.o.o.

Seat:
Škofja Loka
Year established:
1948
Number of employees:
3000
Industry segment:
Complex, high-quality high-pressure die-cast aluminium components
Final products:
Anti-vibration, brake system, steering, electronic, power-train, hybrid and e-engine components
Final customers:
Automotive industry
Machinery:
Die-casting machines, machining centres, fully automatic production lines, assembly lines, washing lines, Friction Stir Welding

Initial situation
Requirements: more complex 5-axis machining, continuous search for seconds, high precision, productivity and availability/reliability, integration in automation systems

Why HELLER
Long-term and honest partnership, positive experiences, good technical support for new projects competition, easily accessible and quickly available service, highest reliability and availability, high-precision machines

Order
Scope of delivery: one HF 3500 (SC spindles), one H 4000
Workpieces and clamping situation: large components with fits between H6 and H7 at diameters between 240 and 320mm for mild-hybrid models made of aluminium; low clamping pressure (60 bar)
Production volume: middle-sized volume; 50,000 units/year (HF series), 250,000 units/year (H series)
Specialties: Friction Stir Welding, high production, production at maximum, three-shift operation

Evaluation
Challenges: bigger parts size, smaller yearly volumes, high precision, Friction Stir Welding; emulsion high-pressure flow control
Result: improved control of the emulsion flow through the spindle

Russia

SAMSON CONTROLS LLC

Seat:
Bolshoy Log
Year established:
1998
Number of employees:
70
Industry segment:
Power engineering, chemical engineering
Final products:
Control valves
Final customers:
Chemical industry, gas and oil industry
Machinery:
CNC turning machines, 5-axis machining centres

Initial situation
Starting position of the customer: new investment
Requirements: productivity and availability/reliability

Why HELLER
All Samson Group production sites have a long experience of successful partnership with HELLER. The machines have shown excellent reliability, high productivity and high precision. Therefore, the machines were recommended also for installation at the Samson production site in Russia.

Order
Scope of delivery: one CP 8000, one CP 10000
Workpiece and clamping situation: large components at diameters between 450 and 1200mm made of steel and stainless steel; single clamping
Production volume: medium-batch production, up to 1,000 units/year
Specialties: high-precision machining, high production

China

Ning Bo Geely Royal Engine Components Co., Ltd./Geely Automobile Research Institute

Seat:
Ningbo
Year established:
2013 (Geely Group) and 2020 (Geely Automobile Research Institute)
Number of employees:
About 90
Industry segment:
Automotive
Final products:
Powertrain components
Final customer:
Geely
Machinery:
4- and 5-axis machining centres

Initial situation
Starting position of the customer: investment in high-end machines for research and development due to increasing production demands
Requirements: large positioning range, rapid traverses speed and torque; production range from light-duty machining to heavy-duty cutting

Why HELLER
Long-term, honest partnership; professional and reliable machines and service

Order
Scope of delivery: three H 5000, one HF 5500
Workpiece and clamping situation: cylinder block/head, gear casing; multiple clamping
Production volume: small batch production
Specialties: multi variety and small batch production, high-precision machining, 5-axis machining

Evaluation
Challenges: high precision requirements, combination of high torque and high speed
Result: HELLER machines are of power and high rigidity. 24/7 production proves long-term reliability. Perfect combination of high torque and high speed thanks to new spindles

Mexico

Haldex Products de México

Seat:
Ciudad Apodaca, Nuevo Leon
Year established:
1887
Number of employees:
650
Industry segment:
Manufacturing of brake chambers, control valves, adjusters and braking equipment
Final products:
Automatic adjusters
Final customers:
Automotive industry
Machinery:
4-axis machining centres

Initial situation
Starting position of the customer: global standardization for machining centres

Why HELLER
Long-erm partnership; HELLER has the necessary versatility and has adjusted the machine's engineering to match Haldex's equipment.

Order
Scope of delivery: four H 5000 + three annual preventive services
Workpiece and clamping situation: modular steel machining; hydraulic clamping
Production volume: large-scale production; 500,000 annual units
Specialties: high-precision machining, high production, operating two shifts 24/7

Brazil

FUNDIMIG

Seat:
Cláudio, Minas Gerais
Year established:
1983
Number of employees:
845
Industry segment:
Spare parts casting and machining
Final products:
Wheel hubs, shaft casings
Final customers:
Heavy Duty, agriculture and general engineering
Machinery:
Machining centres H 4000

Initial situation
Starting position of the customer: Purchase of the first HELLER machine in 2015 to diversify the range of services and products. The strategy proved to be good, so today, the company has eight HELLER machines in operation and two more scheduled to be delivered by the end of the year.
Requirements: quality and productivity

Why HELLER
Standardization, HELLER factory location in Brazil, efficient technical and commercial assistance, adaptability of HELLER equipment to FUNDIMIG products; good relationship between HELLER and FUNIDIMIG staff and technical area

Order
Scope of delivery: ten H 4000 from 2015 to 2021
Workpiece and clamping situation: final pieces between 10 and 70kg; simple and hydraulic clamping
Production volume: currently 1,150 pieces/day on HELLER machines
Specialties: high production, production at maximum, two-shift operation on HELLER machines

Evaluation
Result: high process and product quality with few unscheduled machine stops

Our new performers

The new 4th generation H

Dynamics
Stability
Performance

The new 2nd generation HF

Flexibility
Productivity
Precision

Visit our performance website,

_ get to know the new generation of our H and HF machines in 3D, including all their benefits for your specific tasks,

_ take the PerformanceCheck to get the maximum out of your production and

_ benefit from specially priced packages, including everything that complements the machine to increase your productivity and efficiency!

Modular and tailor-made: build your perfect solution

1. Visit www.heller.biz/performance/en
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We identify your requirements with our concise and compact check:

From the technology used and the financing of your machine through to the relevant training of staff: click your way through the check – alone or together with your HELLER contact – and get a solution package tailored to your individual requirements as a result.

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PEOPLE

who moves us

SALES IN TRANSITION

INTERVIEW

INTERVIEW **Helmut Angeli**
PHOTOS **Tina Trumpp**

The fact that HELLER machine tools are among the best the market has to offer is not even called into question by the competition. However, HELLER is also a company that wants to and has to break away from the dependency on project business whilst keeping a focus on single-machine business. This in turn poses new challenges, especially for Sales. Peter Weber, Managing Director Sales at Gebr. Heller Maschinenfabrik GmbH, has taken on this task.

How does it feel to be sitting at a table with the other Managing Directors and being the one left holding the baby?
I don't understand …

Of all the business areas here at HELLER, you seem to be the one burdened with the responsibility …
I totally disagree. But maybe you could explain what you mean?

You have been responsible for Sales here at HELLER for a little more than five years now. Since then, the situation for HELLER has significantly changed, entirely irrespective of the situation caused by the corona pandemic. The surprisingly rapid growth of electromobility has resulted in a noticeable reluctance to invest among automotive customers which to date have dominated the customer group. In addition, at least the key account sales structures were for the most part logically geared towards the interests of major automotive customers. That alone, I would think, could lead you to believe that Sales was left holding the baby …
This would be true if we had been completely unprepared for this situation. However, this was not the case. Since starting my job here, one of my most important tasks has been to counteract a potential decline in project business by realigning our sales strategy. At the time, a significant part of our sales structure and many internal processes had been clearly geared towards the needs of our major customers from the automotive industry. One could even go a step further and say: Sales, particularly in terms of the single-machine business, was clearly underrepresented and greatly undervalued. With the conditions changing, this was a shortcoming that needed to be addressed. Today, Sales has a completely different status.

That certainly not only required a fundamental realignment of the entire sales structure, but also had certain consequences in terms of human resources. Was that so?
Indeed, we closely looked at everything and everyone and it is true that there have been a number of changes at employee level. For example, we have significantly reduced the number of agencies, replacing them with staff of our own. Today, there should only be five or six agencies in Europe. The decisive factor was the fact that industry representatives usually offer a portfolio comprising a whole spectrum of different products in order to be able to survive. Another reason was the fact that HELLER is not a manufacturer of standard machines, but a real problem solver that develops and produces tailor-made manufacturing solutions for high volumes, regardless for which industry. It means that our machines are not catalogue items, but premium products involving a high degree of consulting. Our customers want to know in detail how quickly and in which quality they will get their parts from the machine. For most agencies, this task can be overwhelming as it requires very specific application know-how …

… and that is not easy to acquire. How do you find the right staff?
This is primarily due to the company HELLER itself. Anybody working in sales in the machine tool segment knows that HELLER centres are very capable and mature products. Moreover, it is well known that HELLER as a family-owned company supports and stands up for its staff wherever possible. I also believe that – please allow a little self-praise – I had already made a name for myself as a fair and reliable Sales Director before my time at HELLER. In any case, we have absolutely no problems finding qualified staff and retaining them.

In your experience, how does the market see HELLER as a company?
The name HELLER is associated with quality, reliability and tradition. Again and again, you hear statements like: "If HELLER can't do it, nobody can."

Nevertheless, I would think, that outside of the automotive sector, HELLER is not necessarily one of the best-known manufacturers of machining centres …
… I would disagree with that. HELLER is actually very well known. However, with the restriction that we are not immediately and not everywhere regarded as a manufacturer of universal centres. Despite this, we have been able to gain a share of new customers of more than 30 percent in recent years and have won quite a number of renowned customers from outside the automotive industry.

Which specific industries are you talking about?
They range from the general machine industry, electrical engineering, power engineering and aerospace through to contract manufacturing and many other sectors. And, to anticipate your question about the die and mould sector: we also see a range of good opportunities there, but at the same time we know that there is a real need for us to take action in this sector.

Die and mould making could well be taken as a synonym for single-part and small series production. Does that not mean that HELLER has shortcomings in a relatively large customer segment?
It is just as I said. We see some positive approaches there, too, and are working on solutions for this particular industry and many others. There are now several automation specialists well established in the market with whom HELLER works as part of a best-in-class partnership. In addition, we have recently started offering our own automation solutions from the HELLER Group – in particular, robot cells and rotary magazine systems – which can be optimally combined with the highly productive HELLER machining centres. I think that those solutions will give us a further boost in the market. Moreover, it has shown that once we succeed in bringing a customer into one of our application and demonstration centres and our engineers have the opportunity to examine the component's optimisation potential, we are usually able to win the contract.

What I have been wondering for some time now is why a company like HELLER does not demand a charge for the effort involved in the application.
That is a good question. Presumably, our customers' efforts to present their technological advantages and, in turn, to outperform the competition, had the effect that many users welcomed HELLER's offer to optimise their production whilst dispensing with their own technology know-how. Moreover, it is known to be difficult to withdraw cost advantages once they have been granted. However, we are headed in the right direction in this regard as well. There are not too many companies left as committed to problem solving as we are. Many other manufacturers focus entirely on standard machines. And should we succeed in delivering better results based on machining strategies, clamping concepts or automation solutions, then I am convinced that customers will be willing to pay for our efforts. In any case, we see ourselves in the position to charge for our engineering offers.

I assume that the necessary know-how and the knowledge of the HELLER specific advantages are most likely to be found in your own company. Is that so?
Yes, absolutely. We have developed a company-wide concept, starting with training at our own apprentice workshop through to specific further training courses enabling suitable staff to qualify as technologists, for example.

Well, HELLER is an internationally operating company. To what extent are the sales characteristics mentioned available outside of Central Europe? Is there still a certain amount of catching up to do internationally, for example in the USA and China?
With regard to the US, there is much more than a need to catch up. Project business in the country is good. In terms of single machines, we still need some patience. There are only a few regions in the US in which metal cutting plays a major role. We have researched these regions and are in the process of looking for suitable dealers, but above all mobile units that are able to convey technology. We are still at the beginning, but I am quite optimistic that we will be able to sell up to 100 machines a year in the foreseeable future. We are much better positioned in China. However, travel restrictions in the country due to corona have dampened our ambitions in the last two years. On the other hand, project business is going very well and the demand for single machines is also impressive. Despite this, we must and will continue to expand our technology department at our Changzhou plant. For the first time this year, Asia will have a larger share in sales than Central Europe. That shows how important this market is for HELLER. Allow me an additional remark to avoid misunderstandings: we also see significant growth opportunities particularly in Europe, for example, in Austria and Switzerland. We had agencies in these markets for many years, however, with very poor results. Today, our own people take care of the Alpine region and we are pleased with the number of incoming orders every year.

Here at HELLER, you are not only responsible for Sales, but also for close cooperation with Services. How well are you positioned in this regard?
Very well. According to feedback from customers, HELLER is among the top 3 providers in this area. And not just in Europe, but also in Asia and America. We offer our customers three fixed packages with service agreements, ranging from maintenance support through to a full-service package, where HELLER acts as an outsourcing partner taking care of all tasks relating to maintenance and repair. We offer companies that prefer individual service with customised contents of their choice the option to compile a tailor-made solution based on individual TPS modules.

INTERVIEW

Vive la France

The HELLER location in France

Beginnings:
HELLER France was founded in 1986 and has been based in Ferrières-en-Brie since March 2008.

Tasks:
_ marketing of HELLER products within the European Union: France, Belgium (Wallonia), Luxembourg
_ engineering and application support
_ order and project handling
_ technical support and service
_ training
_ production support and process adaptation
_ preventive and corrective maintenance and servicing
_ installations
_ retrofits and repairs
_ HELLER sales support

Branch manager:
Claude Ballay

Facilities:
Office floorspace: 248 m²

Employees:
16

Customers:
Our clientèle comprises a large number of companies from a wide variety of sectors ranging from the automotive and general machine industry and the supplier industry through to the steadily growing aerospace industry. The combined mill/turning centres from the HELLER HF series are particularly suited for this sector as they offer a reduced cycle time whilst guaranteeing optimum production quality.

Objectives:
Our goal is to expand the market share in the French-speaking countries throughout the various branches of industry by offering each customer comprehensive and specific support in the sense of a real partnership. To achieve this goal, we build on a very experienced team in the Service and Engineering departments. From the project-planning phase to the start of production right through to the decision about the re-use of equipment, we offer our customers a full range of services to cater to their needs. In addition to repairs, we also offer preventive maintenance and servicing, retrofits, rebuilds, installations and training.

Points of interest in Ferrières-en-Brie

Ferrières-en-Brie is a commune in the Seine-et-Marne department in the Île-de-France region. It is located about 30 kilometres from Paris on the Brie plateau and in the Ozoir-la-Ferrière canton. Ferrières-en-Brie lies between the valleys of the Seine river and the Marne river and also borders on Bussy-Saint-Georges.

The original village dates back to the 12th century and owes its name to the ancient smithies that were once erected on the grounds. Today, the quiet and pleasant town is best known for its castle, whose former owners include illustrious names such as the Fouché or the Rothschild family.

Église Saint-Rémy

The Saint-Rémy church built around 1230 features impressive elements from the 10th, 11th, 13th and 16th century. Inside visitors can admire a beautiful Champagne-style apsis. After the church was burned down by the Calvinists in 1569, its frame was rebuilt using 21 oaks from the forest of Crécy. The style of the rose window and the main portal is neo-Gothic. The glass windows from 1880 were created by the master glassmaker Champigneul after a donation by the Rothschild family. The church has been a listed building since the middle of the 19th century.

Château de Ferrières

Built in the mid-19th century, the castle attracts many visitors throughout the year. The château is a listed building.

Inaugurated in 1862 by Napoléon III, the Château de Ferrières is an icon of French heritage and was built by the French branch of the Rothschild family. The architect Joseph Paxton, who was commissioned to build it between 1855 and 1859, gave it an Italianate and English style. Thus, it is surrounded by a large English park and has beautiful neo-Renaissance façades and an incredible replica of the grand staircase of London's Crystal Palace.

In 2014, the palace was completely restored. Under the direction of the renowned interior designer Pierre-Yves Rochon, the interior was designed. Its 30 or so suites have been film locations for numerous films such as 'Papy fait de la résistance', 'Palais royal!' or '99 francs'.

Today, the listed château is popular as an event location – no wonder, with eight lavishly restored salons and lounges, the park and the 'caves' (the cellars and former kitchens connected to the main building via a tunnel). Facilities include private ceremonies (e.g. weddings), gala dinners in the former ballroom, lunch and dinner cocktails, garden parties and various entertainment/programme items for events with a real castle character.

The renovated building of the former kitchens houses the bistro-style 'Le Chai' restaurant with authentic cuisine and a perfectly matching wine selection. In the centre of the castle, gourmets will also find the restaurant 'Le Baron'.

Machines are on the rise – fortunately

The best innovations for daily life

TEXT **Franziska Rauser**

At the bottom of it all …
… what you find is a dusty floor. A robot vacuum cleaner can be the solution. Depending on the model, the appliances allow you to schedule their working hours. Often, you do not even have to worry about charging the batteries either: the robot knows when its performance is decreasing and automatically returns to its charging station. It gets even better: many of the little helpers can now also do the mopping. Let's be honest – who wouldn't wish for someone else to take on this tedious task?

It's not easy being green …
… not even for our lawns. To stay nice and green, lawns require a great deal of care. Robot lawn mowers take over the tiresome mowing job, working fully automatically – plus they mulch the lawn with the clippings to fertilise the grass and suppress weeds.

Is anyone home?
No? Then a surveillance robot could be a prudent investment. It monitors rooms, provides video recordings and can often even be operated remotely. Allowing you to keep an eye on things at all times.

Clear vision
Window cleaning robots can independently clean windows from the outside or inside. To do this, they are attached to one side of the glass where they use the magnetic principle to adhere to the window and clean it without leaving any streaks.

Worktop with a brain
At the University of Washington, researchers have developed a kitchen counter that automatically recognizes ingredients placed on top of it and suggests appropriate recipes. It can be used as a touchscreen, whilst a built-in 3D camera and a projector even allow direct interaction with the worktop.

Less weight thanks to more technology?
It works – thanks to the weight loss robot. It supports people who wish to lose weight by offering them motivational phrases, tips and, if necessary, words of caution. Bit by bit, it gathers information about a 'patient's' strengths and weaknesses and directly translates it into a suitable diet strategy.

Keeping the peace:
the ideal robot for new parents. A robot baby swing comes as a relief for tired arms and rocks babies to sleep. Some models can even respond to a restless baby by automatically starting a sleep program.

Take a dip
First in goes the robot, then you. It prevents your pool from turning into a quagmire – so you have more time to relax.

"So have you thought about a name yet?"
As the little robots quickly become an integral part of a household, they are often given names. Many of those monikers are rather creative. How about: 'Dustin Bieber' or 'Bill Cleanton' for the vacuum or mopping robot; 'Mr Mowbot' or 'David Mowie' for robot lawn mowers or – regardless of the model – 'Nobody' in case *nobody* cleaned yet again?

News & Events

Welcome to HELLER!

On 1 September 2021, a group of 28 young women and men started their apprenticeship or work-study scheme at HELLER, including 7 apprentices training to become Industrial Mechanics, 8 future Mechatronics Engineers, 4 Metal Cutting Mechanics, 3 Electronics Engineers for Automation Technology and 2 future Technical Product Designers. Moreover, 4 students have started their professional careers enrolling in work-study programmes in Mechanical Engineering. In addition, 5 guest apprentices from other companies within the region will train part-time at our company in order to complete their basic training and parts of their specialist training.

HELLER Head of HR Uli Metz, Chairman of the Works Committee Bernd Haußmann and the team of instructors headed by Martin Schmeckenbecher welcomed the new recruits.

Prize-winning employer

HELLER is one of the best employers 2021: in a ranking published by stern magazine, HELLER came in 42nd in the category Machinery and Plant Engineering. More than 47,500 employees from various sectors participated in the survey. The data was collected and evaluated by the renowned market research institute Statista. “This award is yet another proof of our special corporate culture here at HELLER. Particularly in times of crisis, we are all pulling together,” Klaus Winkler was happy to say.

Based on a study conducted by the ServiceValue Institute and DUB Magazine, HELLER has also been recognised as one of ‘Germany’s BEST COMPANIES’ in the Career category, receiving the rating ‘very highly recommended’.

Prize-winning partner

Since 1995, HELLER has been a supplier of machining centres and transferlines to American Axle & Manufacturing, Inc. worldwide. For the long-term partnership and the ‘cost-effective, technically sound solutions’, HELLER received the ‘2021 Supplier of the Year’ award in the category ‘Indirect Material’ during the 27th Annual Supplier Day.

10 years of health promotion at HELLER

This year, HELLER health management celebrates its 10th anniversary. “The program includes back and crossfit workouts, yoga, massages or skin cancer prevention,” said Birgit Fischer and Constanze Schicht (photo), who are responsible for HELLER health management in cooperation with the BKK Voralb company health insurance. In addition, internal and external health days and thematic action weeks are organised in spring and autumn. The HELLER team made up of company employees also participates in the annual Nürtingen City Cycling and City Run events. There are special courses for the company’s trainees focussing on nutrition and exercise or topics such as time management, stress management and self-management.

HELLER at Metalloobrabotka in Russia

At the end of May 2021, Metalloobrabotka in Moscow showcased technological innovations, products and trends from the international machine tool industry. HELLER also participated in the event. At the stand of our representative MONOLITH, our colleague Andrey Yakovlev competently supported visitors to the leading Russian trade fair for mechanical engineering and machine tools. Approx. 33,000 participants attended the event.

HELLER at MSV in the Czech Republic

The international engineering fair MSV took place in Brno from 8 to 12 November 2021. At the stand of our sales partner ITAX covering 200sqm, HELLER was represented with a model HF 3500 Gen2. The horizontal machining centre was used for a live demonstration of both 5-axis machining of steel and classic high-performance machining of steel. The trade visitors were supported by our knowledgeable employees from Nürtingen and the Czech Republic. Due to the Covid 19 pandemic, only 50 % of the exhibition floorspace was used compared to 2019.

HELLER at the meeting of experts

At the beginning of July 2021, the third seminar on high efficiency, precision and intelligent manufacturing took place in China. Experts from HELLER, HAIMER, TDM and Swiss Tools presented innovative products and solutions to around 80 participants from various industries. Zang Jianglong, our local Key Account Manager, presented a 4-axis horizontal machining centre, a 5-axis horizontal machining centre and a 5-axis mill/turning centre as well as our flexible production systems that also sparked great interest.

HELLER on film

The well-established cooperation between PAM Network Studios and HELLER has resulted in two award-winning films: 'HELLER Spindle Production – High-End Metal Machining' and 'HELLER HF Generation 2 – A New Dimension of Machining'. Both productions were awarded the silver 'intermedia-globe' at the WorldMedia Festival in Hamburg.

In keeping with the times: Industry 4.0 talents and virtual trade fair

1 | At the end of February, training at HELLER was awarded a very special prize from the Baden-Württemberg Ministry of Economics: as part of a virtual award ceremony, representatives of the training department received the 'Industry 4.0 Talents' award from State Secretary Katrin Schütz.

2 | The virtual trade fair V-CON, which caused a sensation throughout the industry last autumn, also received an award. Together with the Stuttgart-based echolot.GROUP, HELLER received the German Innovation Award 2021 in the 'Excellence in B2B Machines' category for the conception and development of the digital event and experience platform. "We will not be resting on our laurels and are already working on further optimising our digital platform, which is now called V-HELLER," said Head of Marketing Marcus Kurringer.

1

Industrie 4.0 Talente
BADEN-WÜRTTEMBERG

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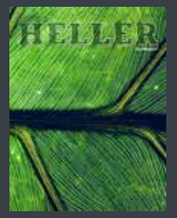

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We are finally back: Visit us in May 2022 at our headquarters in Nürtingen – and experience our company and our solutions first-hand.

You can look forward to three days of technology and innovation, information and inspiration, "real" people and machines, good conversations and much more.

Make sure to save the date – of course, we will inform you in time about all the programme items as well as the hygiene concept on site.

We are already looking forward to welcoming you live again!

Highlights

_ 4- and 5-axis machining centres of the latest generation in operation
_ automation solutions for highest availability
_ technologies, processes and applications
_ services and digitisation
_ guided tours of the plants
_ exhibition with partners and companies of the HELLER Group
_ meeting points for constructive exchange and interesting conversations

Save the date:

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