

GMH Gruppe // Future technology

GMH keeping pace with the 3D-age

New production processes will also be of importance for GMH Gruppe. First in-house trials give reason for optimism.

> page 2

GMH JOINS FACEBOOK

Carefully planned over a considerable period and well thought-through: GMH Gruppe now also has a presence on Facebook and Xing (network especially for professional contacts).



Christoph Dransmann explains this decision and why it makes sense to join such networks on ...

> page 6

THERE'S LIFE IN THE OLD DOG YET!

Many experts had only given the use of steel in electric cars a slim chance of success but steel is proving more competitive than presumed.



> page 7

KANBAN

Optimal inventory maintenance requires a great deal of time and human resources. Kan-Ban minimises this significantly.



> page 9

3D info on the Web

Those wishing to know more on the topic of 3D printing, please take a look on Youtube where an abundance of illustrative material can be found:



At www.youtube.com/watch?v=FSu19nz7NIE, you will find (in English) a few spectacular examples of 3D applications - ranging from animal prostheses to autobodies and houses (!).

3D in GMH Gruppe

Lessons learned in GMH Gruppe demonstrate: use and prospects of success are promising, but depend on the materials used.



Author:
Nicolas Kardalo
(Operational Excellence).

Is this the future? Will we simply be making our cars, our bicycles or even our meals with the aid of 3D printing technology in future? Will industrial enterprises be turned into giant "printing establishments"?

We do not know that yet, of course – but within GMH Gruppe we want to be soundly prepared for any new developments.

Although 3D technology is still in its infant stages, it undoubtedly offers lots of potential. And its value in business, education and research is already growing at a steady pace.

But what precisely does the term mean?

3D printing is also known as rapid prototyping or additive manufacturing. It is a process for fabricating three-dimensional objects where the material is deposited layer by layer and it is possible to use different materials such as sand, plastics or metal. These layers are joined to one another in diverse ways, depending on the process variant, such as by fused deposition or adhesive bonding.

This manufacturing method offers many benefits. For instance, 3D printing is very material-efficient, as it uses only those materials that are actually needed for the product. "Excess" material is simply re-used for the next product. Yet what role might this technology play for GMH Gruppe?

A significant and varying one, depending on the material involved. 3D applications, processes, difficulties and solution approaches depend greatly on the material in use. Which is why we of GMH Gruppe have decided to

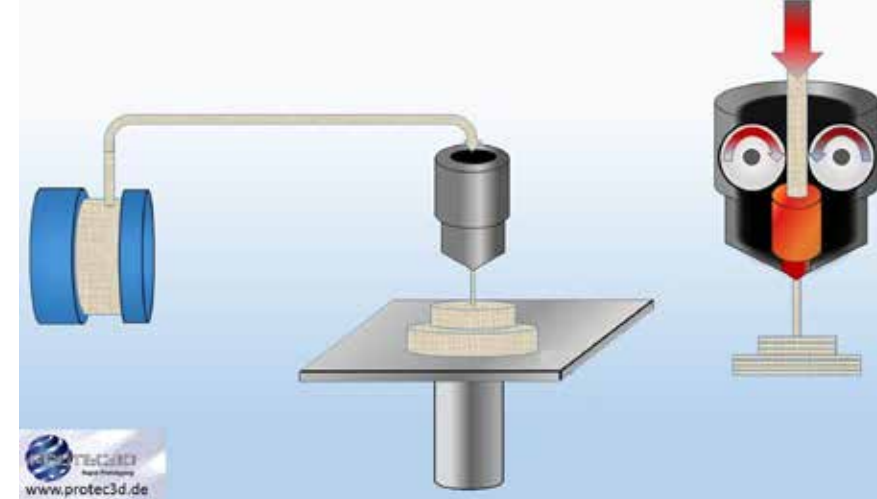
treat sand, plastics and metals as different areas (see the information on the right).

So as to keep pace with the rapid changes currently taking place in the 3D world, GMH Gruppe is cooperating with various research networks, among them TechnOs of Osnabrück University of Applied Sciences, the Aachen Center for Additive Manufacturing (ACAM), and also Mobility goes Additive. By doing so we will also be keeping our finger on the pulse of the 3D-age.

So let the future come.

3D strengths at a glance

- Material-effective process
- Faster production and time-to-market
- Just-in-time production
- Functional, complex and bionic components
- High flexibility in the production process
- Lightweight design because of few geometrical constraints
- Filigree models
- Lot size number of pieces, from 1 upward
- Individualisation of models
- Swift adaptation if changes are required



In fused deposition modelling, a plastic is fed by way of a filament spool to a printhead fitted with a heated nozzle, where it is deposited layer by layer at just above melting temperature

Source: protec3d

3D printing with sand is relevant particularly for our Casting business unit. To be more precise, for the manufacture of cores and moulds. We have already concluded first experiments involving specific applications – with a positive outcome. Both Pleissner Guss and Friedrich Wilhelms-Hütte Eisenguss have undertaken promising initial trials, prompting us to invest further in this technology.

Of all the materials we have tested so far, 3D printing with plastics appears to offer the greatest process reliability – along with actual applications. We already have various printers operating in GMH Gruppe, used for tooling and physical modelling. Such printers are in use at Mannstaedt, Friedrich Wilhelms-Hütte, Wildauer Schmiede- und Kurbelwellentechnik and GMH Holding.

3D printing with metal is still in its infant stages. Producing the metal powder is a challenge in itself and calls for high metallurgical expertise.

A second problem is printing with that powder, as not all materials are suitable for deposition, for instance.

What is more, there is no standardised quality control or replicability, and so, despite identical conditions and identical methods, the products always turn out somewhat different.

But however the individual printing techniques evolve in future, 3D will have an ever greater influence on our lives – both for enterprises and in the private sphere.

3D support contact

Interested in individual applications? Any questions? We would be pleased to help you further! And we are also open to ideas and suggestions: nicolas.kardalo@gmh-gruppe.de

We are on the right track

But there's still plenty to do, so let's keep up the momentum!

glückauf: *The 2017 business year has now been concluded. What is the overall situation with GMH Gruppe?*

Frank Koch: The all-prevailing theme in 2017 was the implementation of our "Future GMH Gruppe" restructuring programme. Changed structures have been incorporated into our group of companies as well as a – partially new – way of thinking focussed on our GMH Gruppe. In view of the extreme complexity of this programme, we can say – by way of a preliminary conclusion – after one year: this strategy is beginning to pay off, GMH Gruppe has become more close-knit through the new structure, the effects actually achieved in fact exceed our expectations. This is a great success for all of us which will also ensure that we remain competitive and profitable in future. The implementation period for the "Future GMH Gruppe" began in 2017 and lasts until the end of 2019. This means that a considerable number of individual measures either still need to be instigated or their implementation needs to be pursued further. On 31 December 2019 the project will officially be concluded, but not the change process, within the context of which we subject ourselves to constant scrutiny and undergo consistent improvement. There's still plenty to do.

Thomas Löhr: We are concluding the financial year with a turnover of

approximately 2 billion euros, and therefore actually exceed our expectations according to the budget. GMH Gruppe is once again moving in the right direction. This is also necessary, if we want to expand again. 2018 has got off to a good start, the order books are full and virtually all companies are on target. But this is no reason to rest on our laurels. The currently good fortunes of the steel industry are of a temporary nature, our market environment is extremely challenging, and aggressive in many areas. International competitors have cost benefits and potentials which we need to compensate. Our quality has to be as much superior by comparison on the international market as our prices are higher. At the same time we always have to keep a firm eye on our own cost structure and keep optimising it, wherever possible.

What challenges confront us?

Koch: To use sports imagery: a project like "Future GMH Gruppe" is not just a sprint – it is a marathon. At the same time, however, it is not an individual performance – but rather a team effort. We want to be perceived as a strong GMH Gruppe and we define ourselves by reliability, speed, productivity and efficiency. The expertise for the manufacture of our products

and the proximity to our customers remains where responsibility begins: at our sites. At the same time we collaborate across the group on areas where we need to work quicker, more efficiently and proficiently together – e.g. with regard to innovations and purchasing – to consolidate the value stream within our group, and for all of us to become more international. There are numerous other examples of our new way of thinking to be found along the entire value chain – from the acquisition of scrap and subsequent steel production via processing to manufacturing of components – which prove that, working together as GMH Gruppe, we are in a better position



“GMH Gruppe has become more close-knit through the new structure, the effects actually achieved in fact exceed our expectations.”

FRANK KOCH
CEO of GMH Holding

to face the challenges of the future. Discussions with colleagues at the individual sites also show me that there are plenty of ideas in relation to our new common direction on which we are embarking together. These

strategic changes require time and mutual trust, in many cases they also need new perspectives and an appreciation of how important it is to look beyond the immediate horizon of one's own department and company.

Do you have an example?

Löhr: As Frank Koch quite correctly says, there are lots of them. One example which illustrates the new group thinking particularly well is the change in the purchasing structure. This is now organised on a centralised as well as a decentralised basis. The centralised group purchasing is responsible for product groups which are relevant right across GMH Gruppe, and it also formulates standardised purchasing guidelines and develops methods and standards which apply to all purchasing units, and gives colleagues a greater sense of security in their work. This enables us to pool our purchasing potential effectively, which – quite logically – involves cost savings. Such a change obviously begins in people's heads, but other prerequisites have to be created as well, of course.

Which prerequisites?

Harald Schartau: In order to introduce such a change, we have also reorganised the management team to ensure that we are better networked. Organisational structures are not an end in themselves. They are the consequence of strategy and a business model. Particularly in the environment of changing circumstances regarding the market as well as competition, a sound and future-orientated organisation is

required to operate successfully on the market. We have summarised our



“2018 has got off to a good start, the order books are full and virtually all companies are on target.”

THOMAS LÖHR
CFO of GMH Holding

new structures in a so-called matrix organisation. In this way we create a transition from parochialism to a management model with clearly defined responsibilities. To put it simply: the organisational change reinforces a change in the business culture towards collective decision-making, networked operations and open transparency and communication across all levels. We want to pool our knowledge, develop it and share it. Against the background of the increasing insecurities which confront us, this is essential. Our service centre "GMH Akademie", formerly known as the Berufsbildungsgesellschaft, has also been reorganised. It is, so to speak, also a laboratory for learning 4.0 for employees who engage with a continuous system of further training at GMH Gruppe, and have no need to fear change, quite simply because they can be involved in establishing it.

Löhr: With regard to IT, we are also getting GMH Gruppe fit for the future and establishing an infrastructure

Continued on the next page

which makes it possible for us to collaborate across the entire group and, in this way, create binding standards. The future collaboration becomes particularly clear in this connection: isolated solutions in the context of which each company went its own way and looked for its own solutions, are now a thing of the past. Our flagship project in this regard is most definitely "Future ERP", which is currently in the process of implementation and, from 2019 onwards, will allow all companies in our group to work on one ERP system. This project is of fundamental importance and creates the necessary prerequisites for the future of our business.

2017 was referred to internally as the "year of the group". 2018, according to your statement, is the "year of the market". What does that mean?
Koch: Yes, indeed. In 2017 we really did apply ourselves very intensely to improving our internal processes. In spite of everything which still needs to be done in this respect, we should not forget to present ourselves on the markets and to our customers as a reliable and future-oriented solution provider. This includes the fact that, in addition to our established and successful fields of business, we will also be penetrating new markets. In addition to market-oriented aspects, the "year of the market", however, is clearly also to be understood in a strategic context. How do we



“We as the management team obviously have a vested interest in continuing our collaboration with the employees' representatives in an atmosphere of trust.”

HARALD SCHARTAU
Labour Director of GMH Holding

The works council elections have already begun. What result are you hoping for?

Schartau: Following a hopefully good turnout, all the works council committees will be constituted by the summer. We as the management team obviously have a vested interest in continuing our collaboration with the employees' representatives in an atmosphere of trust. That involves transparency and the ability of both sides to handle constructive criticism. The changes

develop regional markets together? How can we and must we develop our products further to ensure that they continue to suit the fast changing technologies? What form will these requirements take and who will be the impelling force behind the spirit of change in our group of companies? How do we consolidate the growth which we have planned? All these challenges mean that, in the "year of the market", we will be even more concerned with the "outside", the external challenges. In this context also, we will be thinking far beyond the end of 2018 as well – this year is only intended to be the starting point.

described in GMH Gruppe cannot simply be imposed from the top. The necessity for change has to be understood, and also embraced, by all colleagues, even if this involves new orientation and the renunciation of established structures which have become obsolete. The support of committed works council representatives is also essential to handle such a shift in perspective effectively. The management of GMH Gruppe and the group works council are in ongoing dialogue. Informing, consulting and bearing responsibility together – this is what it is all about. Increasingly group contracts are being concluded. Whenever matters which are of equal concern to all business units under the umbrella of GMH Gruppe need to be regulated, the group works council is involved as a negotiation partner on equal terms. Jointly used IT systems and applications are a classic field of activity here. Standards in the administration context – payroll accounting, for example – leave us more time for human resources activities which create added value. Human resources work which improves family-friendliness, promotes health management, and provides answers in connection with demographic change.

The evaluations of the employee survey conducted last year are now available. What conclusions can be drawn from this?

Schartau: First of all, 55 percent of employees across the entire group participated. That is not at all bad, also compared to other surveys in our sector, although it is just marginally below average. A higher

level of participation would have been better, of course, because that would have helped us to recognise quite clearly where the problems are, as well as what is good, of course, and what can be developed further. After an initial review of the results, however, the survey seems to provide us with quite a clear reflection of the current mood. Detailed evaluation reports for the individual companies are being compiled at the present time. In a next stage, we will be holding workshops to plan specific measures on site. The survey results show us that there are still some areas which require improvement and where there is a lot of catching up to do if we want to improve the working atmosphere on a sustainable basis. And indeed, this is exactly what we want to do.

Helping you to present your best side

A modular system enables you to create customised Powerpoint presentations – with the option of supplementing them with your own slides.



Author: Christoph Dransmann
(GMH Gruppe Business Communication).

Within the scope of our rebranding, we are also giving our Powerpoint presentations a fundamental overhaul. This has already been done in two significant areas:

1. For some weeks it has been possible to download company-specific master templates for new Powerpoint presentations on the portal (portal tile: communication). Important – please note: old templates featuring old logos are no longer to be used!
2. We have also created an image and sales presentation. This is to be used whenever GMH Gruppe, GMH companies, areas of expertise and products are to be presented using Powerpoint. This template is to serve as the basis for all appointments, visits, presentations, etc. (portal tile: sales).
The presentation has been created in a modular design so, instead of



Extensive: the new basic image and sales presentation

Source: Screenshot

being a set presentation to be followed from the first to the last slide, you can choose the appropriate slides for your purpose from our selection of topic areas.

Whether you are visiting a new customer, giving a company presentation or holding a discussion with an existing customer, you can compile the slides from our stock. Simply choose the aspects that you require for your appointment or event. The modular system includes a broad

range a material on GMH Gruppe, individual GMH companies, products, areas of expertise, sectors as well as key topics. There are also several animated sections (BU overview, group overview).

By clicking on one of the elements listed there, a corresponding slide automatically opens featuring supplementary information. These slides are greyed-out in the slide overview on the left. Be careful here – to be able to use the animations, it is

We welcome constructive feedback

The modular Powerpoint system in its current form is not by any means complete. For example, information is still needed on our product portfolio and our manufacturing expertise. These aspects will be continuously updated. We would be grateful for any comments and constructive feedback. Please get in touch with the following contacts:

Steel production: **Melanie Moschner, Stefanie Ehemann, Marcus Wolf**

Steel processing: **Romana Binder**

Steering systems: **Bianca Deck**

Forging technology: **Ina Klux**

GMH Guss: **Dr. Ulrike Libal**

GMH Holding: **Iris-Kathrin Wilckens, Christoph Dransmann**

essential not to delete the greyed-out slides in the slide overview.

Of course it is always possible to add your own slides, as required for the specific purpose of the presentation. A variety of template slides can be used, inserted and, of course, completed by clicking on the “new slide” button.

What works now must also continue to do so in future, and this is why the basic presentation will be centrally maintained and administered by the persons responsible for business communication at the Holding as well as in the Business Units. This will ensure that the most up-to-date version of the presentation is always accessible in the portal.

Please note!

Old templates featuring the old logos must no longer be used. We will soon be issuing a training video with detailed information to help you understand the new basic presentation better and use it successfully.

One click ahead with social media

GMH Gruppe also present on social networks in future.



Author: Christoph Dransmann (GMH Gruppe Business Communication).

Although having a presence on social media such as Facebook, Twitter, YouTube etc. has been part of the daily lives of many individual persons for a very long time, it still remains unknown terrain for many companies.

As far as GMH Gruppe is concerned, acquiring a presence on such networks also marks the start of a new era. Individual companies such as Schmiedewerke Gröditz and GMHütte have already been on Facebook for some time, and now we have a new GMH Gruppe account on this site – as well as being represented on Xing, the career portal.

So why social media? There are essentially four important reasons for becoming involved:

Firstly: generate coverage and clicks for our website

Having the best possible website is pointless if it doesn't generate any traffic. This is where social media, especially Facebook, comes into play. We share targeted content, provide

snippets of what is going on at the company and add links to our websites – which then take visitors to more detailed information and contact partners. We have already launched the new design for some of our websites and the rest will be following suit between now and early summer.

Secondly: do good and share it

In future, we would like to re-establish our strong market presence – with success stories and innovations which attract global attention. Our objective is for the “GMH Gruppe” brand to occupy a very specific position and to present ourselves as solution providers. This new GMH Gruppe profile will glean its content and dynamic nature from contributions provided by individual companies.

Thirdly: employees of the future

The sixty-four thousand dollar question is, of course, if or when we will sell more steel as a result of our new websites or social media activities. This is obviously still a subject of some controversy. Very apparent, however, is that with these activities

we are creating a positive image – and it is already attracting interest on the market.

The issue is even more clear-cut in the area of recruitment. The market for skilled employees and trainees is fiercely competitive. Today, employees are spoilt for choice when it comes to which company they would like to work for. And what happens if a company is left trailing behind in terms of their online presence, and if there is no information to be found about them on social media? For many prospective applicants this would provide reason enough to rule out a potential new employer.

Fourthly: reaching potential customers

Our customers and potential customers are active online and in social networks. In the search for information, practical examples or contact persons, the role of expert forums is increasing in importance – as a means of gaining new contacts. We also need to be represented in such forums to present our company.

We are currently discovering more – supported by our communications agency, Territory – about how we can most effectively use social



media, particularly Facebook. This also includes initiating a continuous, cross-company flow of communication and news to add new information via this channel once per week, if possible. This poses a challenge, but one to which we will gladly rise.

Social media: addresses

Visit us at www.facebook.com/GMH-Gruppe/. This channel will combine our Facebook activities; the accounts of individual companies will no longer be updated. This also applies to Xing: www.xing.com/companies/gmhgruppe. Activity on the international counterpart to Xing – LinkedIn – is to follow.

Steel enjoying new popularity

Steel can also score points as regards environmental performance: Surge in demand for producers and processors.



Michael Zuber is the Technical Manager at Stahl Judenburg.

The future of mobility is spurring a great deal of imagination: vehicles that drive without any errors, move autonomously, and are also environmentally friendly. The automotive industry is working with unprecedented meticulousness so that the last-mentioned aspect in particular becomes a reality. Auto makers demonstrated this recently, for example, at the Geneva Motor Show, a flagship event for the industry that was once a Mecca for purring engines: top makers such as BMW, Daimler & Co. are now seeking to capitalise long-term on the development of hybrid and electric vehicles. Michael Zuber, a post-doctoral materials scientist, explains in an interview with glückauf why steel has a future in electric cars not simply because of its positive environmental legacy:

glückauf: *To date, auto makers have laid themselves open to criticism of treating electromobility poorly - yet*

maintain that is not the case. Is there proof of this?

Michael Zuber: I think so. The best proof is that, since early 2016, VW, BMW and Daimler alone have launched electromobility investment projects worldwide to the tune of 4.7 billion euros.

That, probably, is spurring not only the auto makers' imagination.

Zuber: No, the steel industry can also be expected to benefit from this 'electric drive train'. According to studies, the amount of steel needed to produce automobiles will stagnate in relative terms by 2050 - but in absolute terms will increase by almost 25 percent.

How is that possible?

Zuber: Primarily because the number of vehicles produced per year, which is currently around 83 million, will continue to rise. Steels offering low weight and high rigidity will, according to analyses, account for a major share of the additional capacities thus created.

How will this impact on the production of electric vehicles?

Zuber: It's paradoxical. A few years ago, electromobility was still consi-

dered a potential threat to the steel making and processing industry. Mixtures of aluminium, titanium and steel were often used to start with, before carbon - or carbon fibres - came more and more into play.

That has now changed?

Zuber: Indeed it has. Automotive suppliers and manufacturers are looking to innovative steel and intelligent processing solutions.

Why is that?

Zuber: Because of the high quality and cost-effectiveness that steel offers. The recycling of carbon vehicles at the end of their life involves horrendous costs. Steel, in contrast, is able to score full points for its sustainability. The holistic approach, or life cycle, is important in environmental considerations.

How does steel perform in terms of life-cycle assessment?

Zuber: Manufacturing autobody sheet from aluminium requires four times the amount of energy compared with a steel variant. The energy input for carbon fibres is even 15 times higher. This demonstrates that steel offers great potential. It will continue to

be indispensable to the automotive industry in future.

But not to electric vehicles?

Zuber: On the contrary. Experts around the world forecast that, in future, in addition to autobody panels, steel will also find uses in electric motors and batteries, such as battery cell casings. We are only at the beginning of this development - steel offers a multitude of possible uses.

Many thanks for the interview.

Working upward, storey by storey

Century-old Sagrada Família project:
If you haven't seen it, you haven't been to Barcelona.



Author:
Sven Alisch (Sales).

It is still under construction, and we, SMB Schwermetalltechnik, are helping in its realisation.

The basilica is to have a total of 18 spires: twelve are dedicated to the apostles, four to the evangelists, and the remaining two to the Virgin Mary and Jesus Christ. The main spire dedicated to Jesus Christ will be the highest church spire in the world at 172.5 metres.

The spires are scheduled for completion in 2022, and the entire "Sagrada Família" by 2026, the centenary of the death of its architect, Antoni Gaudí (1852–1926).

Will it be at all possible to keep to the schedule, though?

A new construction technique is enabling construction work to progress at a rapid pace. It involves pre-fabricating stone wall facings with an internally tensioned steel structure in workshops, transporting them as finished parts to the Sagrada Família site and then installing them there.

A Berlin-based company first of all welds the very demanding structures in specially fabricated fixtures (only thus can the necessary repeat accuracy be ensured). The over 5.6 metre-long weldments are then machined to the required final dimensions on a mill at our company.

This includes particularly the face milling of later connecting surfaces and the drilling of diverse holes. The required machining tolerances present a challenge and go beyond what is "normal" in general structural engineering.

After completion of the machining work comes the moment of truth. An independent enterprise commissioned by the customer inspects each component at our company by means of a 3D laser tracker for acceptance purposes.

The target/actual comparison takes place on the basis of a measurement programme provided by the Spanish end customer. A precise measurement report is produced for every component.

We have already machined the weldments for the first storey of the

Jesus Christ spire. Before that, we had demonstrated our capabilities by machining comparable, but smaller components for other spires.

We completed both jobs with the required precision and on schedule and, consequently, have been awarded a follow-up project for the third storey of the Jesus Christ spire.

In 2015 the Sagrada Família basilica still looked like this!

Photo: Ina Klix



KanBan – yes, we can!

Less expense, more free capital: How to optimise inventory control and material flow by the simplest of means.

Beside the manufacture of retaining rings, Energietechnik Essen (ETE) is known for producing nitrogen-alloyed steels. Precursor material from Schmiedewerke Gröditz (SWG), among others, is used – namely electrodes. Since only recently, storing this material has been managed on the basis of the so-called KanBan method – with astounding results. In an interview with glückauf, Ronny Käßpler describes what this method is all about.

glückauf: Mr Käßpler, can you explain to us what problem has been solved with KanBan?

Ronny Käßpler: Previously, ETE would stockpile 36 SWG-sourced electrodes on average in order to ensure supplies for its production. With KanBan the maximum is now only 24.

But what makes that better than before?

Käßpler: One point is that more used to be stockpiled than was really necessary. And, because of that, a great deal of capital was tied up which was needed more urgently elsewhere.



“KanBan yields astounding results that may also be of interest to other business units of GMH Gruppe.”

RONNY KÄSPLER



Always keeping a firm eye on the status quo.

Photo courtesy of the company

What magnitude are we referring to?

Käßpler: Around 90,000 euros on average.

That is quite a figure. But at what cost have you achieved this?

Käßpler: The expense is lower than it used to be, which is, of course, another major benefit of KanBan. The method makes optimum inventory management possible without any great administrative expense, without having to check the inventories, and without any lengthy consultations. You always stockpile only the quantity needed for an optimum production flow.

And how does the system function precisely?

Käßpler: For the sake of clarity, we have four areas marked in different colours (KanBan containers). A maximum of six electrodes may be stored at a time in each area. ETE consumes a maximum of six electrodes per week, incidentally. Once a delivery for one of the four KanBan areas arrives in Essen, that area/container is marked as full using the corresponding KanBan card.

How is an order placed when the KanBan container is empty?

Käßpler: By email, using a QR code.

A QR code?

Käßpler: Exactly. As soon as the last electrode has been withdrawn from an area and that area is therefore empty, a work colleague takes the Kan-

Ban card, which displays a QR code, to scan it in. The QR code contains information about the material, replacement time, supplier and lot size. This now generates an email automatically, which then only has to be sent on its way.

And where does that email end up?

Käßpler: In the Logistics Department where, for the time being, orders are still being placed manually and sent to SWG, the supplier.

Why “for the time being”?

Käßpler: Because we wish to automate this process; once this system has proven itself in a trial phase, orders will then be generated automatically in the SAP system after the QR code has been scanned. And the production order in Gröditz will also be placed automatically.

Let us return to withdrawals: what happens if that colleague needs further electrodes?

Käßpler: He then draws from the next area/container. Through the number of containers I am able, by the way, to determine on the basis of production flow and precursor material deliveries how large the necessary inventory buffer should be.

And how have you calculated how many containers you need or how large that buffer has to be?

Käßpler: Through ABC and XYZ analyses, process flow analyses, and numerous discussions with

What your curiosity?

If you would like to learn more about the eKanBan system, please contact Ronny Käßpler (Head of CIP, GMH Schmiedetechnik). He will gladly provide further information: +49 (0)35263 - 62-740

shopfloor and managerial personnel in Essen and Gröditz. On that basis I have been able to do simulations to obtain appropriate data.

How are the colleagues coping with the KanBan method?

Käßpler: Very well. On account of there being only a few, simple and clear rules to follow. And with those few rules they control the necessary supplies and material flow at shopfloor level – completely without any regulative intervention from other planning and control elements.

How will KanBan now be implemented further? What is planned?

Käßpler: The method is far from having been exploited to the full. The aim is firstly to reduce the inventory to 18 electrodes on average. After its trial operation we then wish to apply it to other materials and other locations. There are still many inventories that can be controlled by this method – anywhere that there are no extreme fluctuations, but where a steady flow of material predominates.

In other words: whether reducing administrative expense, or releasing tied-up capital, there are still many potentials lying dormant in the companies of GMH Gruppe.

Käßpler: Definitely.

You are also qualified as Lean CIPPro expert. How would you rate KanBan from that aspect?

Käßpler: The method is a fine example of applied lean management. Our inventories are lean and the processes are lean.

Many thanks for talking to us.

Offering customers what interests them

New lightweight solution approaches are already at the development stage.



Author Melanie Moschner (Corporate Communications Consultant, Steel Production business unit) is a member of the glückauf editorial team.

TechDays offer steel makers and forming/forging enterprises an outstanding opportunity to broach the topic of "lightweight forging" with potential customers. On these occasions, latest developments and study findings can be showcased to them in short presentations and then discussed directly.

That was the format for the most recent TechDay on 17 January at

the Volkswagen (VW) research establishment in Wolfsburg, where the programme included 17 presentations and 17 exhibiting project partners.

On behalf of GMHütte, Dr. Thomas Wurm (Head of Technical Customer Support and Applications Development), Dr. Sergey Konovalov (Applications Development) and Thomas Rinke (Technical Customer Support) gave a short presentation on the topic of "Steels for efficient processes and lightweight construction". It addressed material solutions in the field of precipitation-hardenable ferritic-pearlitic and case-hardening steels as well as bainitic

steels, taking into consideration increasing requirements and trends.

It combined excellently with a presentation given by automotive supplier Hirschvogel, making it possible to demonstrate in practical terms how exchanges function at the development level.

The short presentation concept was very well received in general. It provided good impetus, helping to "think outside the box". An exhibition also offered the possibility for face-to-face hands-on discussions between supplier company experts and designers, developers and VW purchasing agents. The bottom line for GMHütte's Techni-

Project phases I, II and III

Phase I was launched in 2013/2014 with the involvement of 24 enterprises. They investigated the lightweight potentials of forged components for a medium-sized car. All told, a weight-saving potential of 42 kg was achieved where the drive train and chassis were concerned. Phase II was launched in 2015/2016, involving 28 enterprises, and looked at light commercial vehicles up to 3.5 t in weight. It identified realisable lightweight potentials amounting to 99 kg in the drive train and chassis. Phase III is currently in progress and involves 39 international partners from western Europe, the USA and Japan. It is examining the lightweight potential of forged components for the drive train and chassis of a hybrid car as well as lightweight potentials in the transmission and drive train of a conventional truck fitted with a drive shaft and differential.

cal Customer Support was exceptionally positive: "We are very satisfied with the feedback from the 3rd TechDays. The event offers a good platform for making direct contact with the decision-makers of automotive

enterprises. And we have the opportunity to demonstrate to them the enormous potentials of lightweight forging."

Dr. Thomas Wurm, as spokesperson for the initiative for the steel makers, assessed the further development in similar positive fashion: "Phases I and II have shown that there are already high-strength steels on the market today for making transmission designs lighter and more efficient. The new study in Phase III will now address what measures customers should take to adopt newly developed extra high-strength gear steels."

Lightweight Forging Initiative



Since 2013, a total of 36 forming/forging enterprises and steel makers have joined forces in the Lightweight Forging Initiative to work collectively on the major trend of automotive lightweight design under the guidance of Industrieverband Massivumformung e.V. and Steel Institut VDEh.

TechDays

These one-day in-house events offer automotive enterprises and systems suppliers the possibility to present the latest lightweight developments to staff and employees on their own premises. The project partners involved in the Lightweight Forging Initiative give presentations to customers locally using their own exhibition stands and organise a day of keynote speeches. The first TechDays took place in 2016 at Opel AG in Rüsselsheim, and the second in 2017 at GETRAG FORD Transmissions GmbH in Cologne. Further TechDays are planned for 2018 and 2019 (see: www.massiverLEICHTBAU.de or also www.gmh.de)

Mexico remains optimistic

Mexico's steel market expects rising demand. Two new GMH representatives provide greater assertiveness.



Authors:
Jörg
Multhaupt
and Thomas
Rinke.



The Hatebur Congress was one of the highlights of our Mexico tour. But before that we had visited several potential customers together with the new GMH representative, Fernando Cardosa, and his co-worker Raul Sanchez. It was in doing so that our first good impression was borne out: they are all greatly interested in new sources of supply for SBQ, or Special Bar Quality (bar steel with untreated surfaces).

There were just under 100 participants attending the Congress, among them also several who we had already gotten to know beforehand. Thanks to Fernando Cardosa we were also able to contact many further prospective customers. As a Hatebur representative he was also

involved in the organisation and had built up relevant connections. The venue for the event was the centrally located Hotel Hacienda Jurica in Queretaro. Two interpreters provided simultaneous translations, and a compère entertainingly presented the programme. Tremec managing director Antonio Herrera gave the welcoming address. He not only highlighted Mexico's importance within NAFTA. He also pointed out how important the Cluster Queretaro is for the strongly evolved vehicle manufacturing and supply industries, a sector in which Germany is one of

Hatebur-Congress

Hatebur is a global leader in the development and marketing of forming machinery and tooling used in the high-volume production of metal precision parts.

the most important partner countries with an investment share of 27 percent.

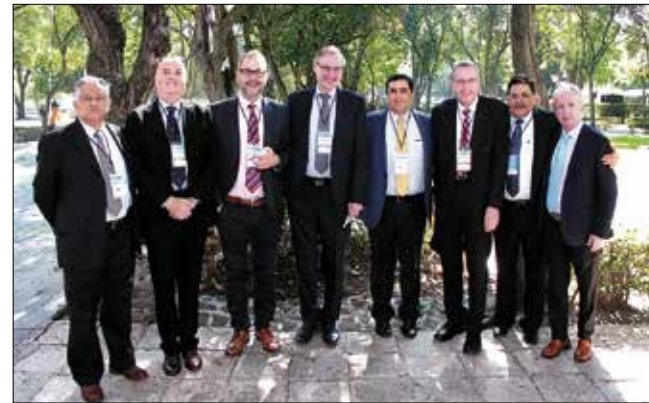
After the welcoming address, enterprises had the opportunity to present themselves and their respective product ranges. Thomas Rinke presented GMH Gruppe under the title "GMH: a specialist for automotive steel applications".

On the fringes of the presentations there was ample opportunity to strike up conversations with diverse participants. Mexican representatives of our key customers were also present. They reported about new production locations and the first forging lines put into operation there. They, unfortunately, are sourcing from local steel suppliers to a very great extent.

Overall we gained a very positive impression, both of the event and of how the market is developing. What is clear is that the relationship with the "new America" is strained and the new "zeitgeist" anything but positive. But there is

"Door opener"

Since late last year, GMH Gruppe has had two new representatives for the Mexican market: **Fernando Cardosa** (61 years of age) has worked as an engineer in management positions for diverse enterprises in the USA and Mexico including, for over 20 years, Dana (initially as operations manager in two forging enterprises, later as purchasing manager for all of the Dana plants in Mexico). Last year he became the representative for Hatebur. As he already qualifies as a senior citizen in Mexico, he can work as a representative for more than one enterprise at the same time. **Raul Sanchez** (63 years of age) had frequent affiliations with steel during his regular working life. Among others, he worked for Mexican steel company Simec and, for the last 20 years, Metal One, a Japanese trading company with which we are well familiar. He also freelanced for an American and a Canadian enterprise.



Jörg Multhaupt (4th from left) and Thomas Rinke (not in the photo) took part together with our new Mexico representatives Raul Sanchez (left) and Fernando Cardosa (2nd from right) at the 1st Forging Congress in Mexico

Photo: 1st Euro Mexican Forging Congress

the feeling of being optimally positioned to soundly weather the current problems.

Regarding American import tariffs, the conviction is that the measures will be more damaging than beneficial for the American market. What is more, there is the general expectation of rising demand and output figures on the part of potential customers. The actual problems in need of

attention are other ones: for example, further new enterprises are entering the market; there is a shortage of skilled labour; and in-company fluctuation is higher.

The majority of those attending were in agreement that this conference should definitely be repeated in two years' time.

Automotive Cluster of Queretaro

The Automotive Cluster of Queretaro (Mexico) is an organisation focusing on developing and strengthening the automotive industry in Queretaro. Its members include major enterprises, universities, research institutions and the state government.

glückauf // Contacts

Would you like to write an article for our **glückauf** magazine? Or perhaps you have an idea for a topic or story which could be of interest? Do you have any critical feedback or suggestions for improvement? In any of these cases, please get in touch with one of the **glückauf** contacts in your business unit. Simply give them a call or talk to them in person – he/she will be happy to help.

Holding



Iris-Kathrin Wilckens

iris-kathrin.wilckens@
gmh-gruppe.de
+49 40 28406912



Christoph Dransmann

christoph.dransmann@
gmh-gruppe.de
+49 5401 394466

Steel Production



Marcus Wolf

marcus.wolf@
gmh-gruppe.de
+49 5401 394910



Monika Hansen

monika.hansen@
gmh-gruppe.de
+49 2241 842001

Steel Production



Vera Loose

vera.loose@
gmh-gruppe.de
+49 5401 394392



Matthias Krych

matthias.krych@
gmh-gruppe.de
+49 541 9612413



Melanie Moschner

melanie.moschner@
gmh-gruppe.de
+49 5401 394436



Stefanie Ehemann

stefanie.ehemann@
gmh-gruppe.de
+49 5401 394447

Steel Processing



Romana Binder

romana.binder@
gmh-gruppe.de
+43 664 80770430

Steering Systems



Bianca Deck

bianca.deck@
gmh-gruppe.de
+49 7171 1042424

Forging Technology



Ina Klix

ina.klix@
gmh-gruppe.de
+49 2154 941529

Casting Technology



Dr. Ulrike Libal

ulrike.libal@
pleissner-guss.de
+49 5521 83237

glückauf // Masthead

Please note: Your letters, articles, suggestions and critical feedback for the next edition must be received in good time by the contact person in your business unit. The latest possible date for submission is:

Editorial deadline:

June 2018

Publisher:

Georgsmarienhütte
Holding GmbH
Neue Hüttenstraße 1
49124 Georgsmarienhütte
www.gmh-gruppe.de

Responsible in accordance with press law:

Iris-Kathrin Wilckens
Head of Business Communications,
GMH Gruppe

Production and graphics:

elemente designagentur,
www.elemente-designagentur.ms

Editorial review:

Peter Karl Müller

Translations:

Carol Hogg
Michael Snowley

glückauf is published
four times per year.



You can also find more photos and interesting topics
online at:

> www.gmh-gruppe.de.