## SOLUTIONS THAT MAKE THE DIFFERENCE



#### **BENTELER AT A GLANCE**

BENTELER develops solutions that make the difference – for our customers, employees and society. We are passionate about producing safety-relevant products, services and systems for the energy, automotive and engineering sectors that lead to success. And we do that in close proximity and collaboration with our customers. With our technological expertise and strong focus on successful implementation, we keep our promises. At BENTELER we give our all – with courage, ambition and respect – but we never give up.

BENTELER. The family of driven professionals.

Since 1876.



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"When little is certain and much is unpredictable, that's when you need courage. The courage to try new things. To take action. To shape things, not just to stand and wait.

And it is precisely this courage that distinguishes BENTELER. The volatility of the markets drives us on. We face the challenges and bring new products onto the market – and we like to be first."

RALF GÖTTEL, CHIEF EXECUTIVE OFFICER

"What we do, we do right. But we never rest on our laurels, we carry on striving to improve – in cooperation with our customers. That is our ambition."

GUIDO HUPPERTZ, CHIEF FINANCIAL OFFICER

"In the past 140 years BENTELER has achieved much. Knowledge and maturity. What we have always had is passion. And that is what we bring to finding solutions that make the difference. In cooperation with our business partners. For our customers. For society."

ISABEL DIAZ ROHR, MEMBER OF THE EXECUTIVE BOARD

## THE STRUCTURE OF THE BENTELER GROUP The BENTELER Group is organized into the Divisions of BENTELER Automotive and BENTELER Steel/Tube. The holding company, BENTELER International AG, is responsible for the global strategic management of the Group. makes it happen BENTELER employees in Jiading, China. They and their

# #family of driven professionals

### PUSHING BOUNDARIES - TOGETHER

As times change, so do the challenges. How do we know that? Because we have been at the forefront of progress for over 140 years. Some things, however, remain the same. Like the passion that we put into our work. The courage to try out the new. And the ambition to keep improving until we achieve the very best. Other things are created: BENTELER started out as a small trading company. Over the decades we grew. We demonstrated our pioneering spirit. We gathered experience and built up expertise. Often we did this in cooperation with our customers, some of whom have remained close to us for over 80 years.

Today we can make use of our size, our international reach and our expertise across many sectors for the benefit of our customers. We stay agile and always have an eye on the future. We actively shape the rapidly changing market.

From just six employees in the beginning, BENTELER has become a family of 30,000 driven professionals. We are now a global enterprise with first-class competence in metal-based products and services, from individual components to entire system solutions. Our business partners are in the automotive, engineering and energy sectors. For them and with them we develop solutions to the challenges of tomorrow. Just as we always have done. Reliably. And with courage, ambition and respect.

BENTELER. The family of driven professionals. Since 1876.

## #executional excellence

#### BENTELER AUTOMOTIVE

It started in 1935. Back then cars had long hoods, large radiator grills and the doors were attached to B-pillars. BENTELER delivered exhaust pipes for the Ford Eifel. It was our first big order for the automobile industry. Much has happened since then. Today individual mobility is taken for granted – by an ever larger proportion of the world's population. At the same time the demands on vehicles are rising. Cars have to be more comfortable, more economical and safer. Affordable for individuals and at the same time taking full account of social and ecological concerns. Car components, too, are becoming ever more complex. This is a challenge for the manufacturers. And a challenge that BENTELER is happy to take on – for and with our customers.

The Automotive Division offers precisely that: world-wide development, production and service in the field of automotive technology – from individual components through to entire system solutions, from press parts to global platforms. Individually adapted to the customer's wishes. Because as a specialist in chassis, modules, bodies, engine and exhaust systems as well as in e-mobility we know how all these work together.



What do real engineering talent and outstanding execution competence have in common? Both are demonstrated in action day to day by BENTELER employees.

With this knowledge and our broad-based expertise in materials we save our customers time and costs. How do we do this? By developing comprehensive solutions. For example an e-axle and an entire powertrain system. Or a thermomanagement system that cools particularly efficiently, uses waste heat intelligently and at the same time is low in weight.

We are continually improving – we invest in research, we engage in intensive innovations management and automate production processes. And through it all

we pay particular attention to the efficiency of our products. Because that is a win-win situation for us, for our customers and for the environment. In terms of quality and safety we would never settle for anything but the best. That makes BENTELER one of the foremost suppliers worldwide. Above all in areas of importance for the future, such as e-mobility: Already one in ten battery trays worldwide comes from BENTELER.





#### **BENTELER STEEL/TUBE**

BENTELER has been producing steel tubes for 100 years, and we are continuing to develop these products further. With this experience we can offer our customers around the world solutions all along the value chain – from material development to tube applications. And beyond: for example, environmentally friendly surface coatings. Also complex solutions in forming technology, for example for airbag tubes.

Why do we do all this? Because we like to think ahead and we like to do a good job. This attitude has helped BENTELER Steel/Tube become a leading producer of seamless and welded quality steel tubes for the automotive, energy and industrial sectors.

12 13

a special seal that protects tubes from corrosion, in particular after forming. And it does that

BENTELER W makes it happen

entirely without chrome VI – in line with the

European REACh regulation.

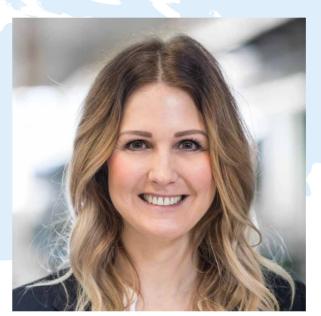
# WORLDWIDE AND LOCAL

With almost 100 locations in around 30 countries, BENTELER is always at the side of its business partners. Not only in terms of geographical proximity, but also strategically: BENTELER supports its partners from product idea to series production. With many years of experience, with expertise spanning all our Business Divisions, and with a determination to develop the ideal solution.

In short: We are where you need us.



The **US** is one of the biggest oil and gas producing countries in the world. Together with BENTELER production is being further expanded: Our high-tech hot rolling mill in the US state of Louisiana is delivering special seamless tube products for the US oil industry.



In **EASTERN EUROPE** BENTELER is also serving the needs of the automotive sector in two ways: with plants in the Czech Republic, the Slovak Republic, Hungary and Poland, and with our central first-stage processing center. This means we can react even faster to individual customer requirements. And we can do it in close proximity to those customers.



CHINA is the most important growth market for the automotive sector. In 2030 half of all electric vehicles will be produced in China. BENTELER supports customers here with technical expertise and a regional presence. We are represented in all relevant provinces and we regularly open new plants there. So we know both the country and its people. We have been successfully working with our Chinese partners for over 15 years.



## #heritage since 1876



## THE FAMILY OF DRIVEN PROFESSIONALS

1876 was a momentous year. Nikolaus Otto started up his first four-stroke engine. Mark Twain published "The Adventures of Tom Sawyer". The first festival of Richard Wagner's works was held in Bayreuth. And in Bielefeld a 23-year-old man took over an iron-mongery store. Carl Benteler thus laid the foundation stone for the success story of this family-owned company. In the following 140 years or so, with a great deal of courage, vision and pioneering spirit, BENTELER grew from a small trading company into an international enterprise.

Eduard Benteler took over the business from his father in 1908. He bought an engineering company and this set the family firm on the path towards becoming an industrial concern. Soon thereafter BENTELER delivered an order for special tubes for brakes for the German and French railways. In 1935 BENTELER received its first major order from a car manufacturer: exhaust pipes for Ford. Later followed axles, axle modules and other vehicle components.

From 1942 onwards the company was run by the third generation of the family. Eduard Benteler's sons, Erich and Helmut, expanded the product range and soon refrigerators and even a small car – the Champion – were part of the portfolio. A little later BENTELER became German market leader in heating systems. The most successful area of activity for the company, however, was automotive technology. By the end of the 1950s all the main German car manufacturers, apart from Adam Opel AG, were on the company's customer list. Opel was added in 1986.

In the early 1980s, the fourth generation of the Benteler family took its place on the Executive Board, in the person of Hubertus Benteler. In 1991 he became its Chairman. Under his aegis the company expanded: New plants were established in the US, Eastern Europe and China, the number of employees tripled and sales grew from 1.3 to 7.4 billion euros.

Hubertus Benteler moved to the Supervisory Board in 2017. We, the family of driven professionals, are continuing the tradition and the company values: The courage to try new things. The ambition to achieve peak performance. And the respect to treat each other as equals.

1	1876
(	arl Benteler opens
â	an ironmongery
S	tore in Bielefeld,
(	Germany

1922	
BENTELER-Werke	
AG founded	

1952
Start of production
of own compact
car, around 2,000
"Champions" are
sold

1980
First plant
of BENTELER
Automotive in
the US

2002
First plant
of BENTELER
Automotive in
China

1916
Purchase of an
engineering
plant, two years
later start of tube
production

1935
First major order
for the automotive
industry
-

**1955**BENTELER produces own steel for the first time

**1991**Specialization in prefinished components and just-in-time delivery

**2010**Foundation
of BENTELER
International AG,
Salzburg,
Austria



#### Patrick Vogl, Vice President Corporate Strategy and Business Development, BENTELER International AG

#### 2015

BENTELER Steel/ Tube opens its first US-based tube plant in Shreveport, Louisiana

#### 2018

BENTELER opens its 5<sup>th</sup> plant in Klášterec nad Ohří, Czech Republic, and 15<sup>th</sup> plant in Chongqing, China

#### 2017

BENTELER Automotive founds Business Unit "E-Mobility"

#### 2019

BENTELER introduces the BENTELER Electric Drive System 2.0 – a series-ready platform solution for electric vehicles

## "E-MOBILITY WILL TAKE OFF"

Patrick Vogl, Vice President Corporate Strategy and Business Development, talking about global growth, the future of spreadsheets and the place to be in Automotive.

Globalization, e-mobility, digitalization – the world looks very different today than when BENTELER was founded more than 100 years ago. How do you deal with these changes?

We have a long history of both adapting to and driving change. Many of today's challenges such as technological disruption are also opportunities – as long as we are close to the customer and build the necessary competences in digitalization and innovation. We are doing this already.

### Where do you see the biggest opportunity for BENTELER?

In global growth, especially outside of Europe. There are great opportunities in e-mobility in China or oil production in the US. These are our growth markets, both geographically and industry-wise. We are well positioned to capture this growth. We have just built a state-of-the-art hot rolling mill in the US.

Our Automotive Division was one of the pioneers in Asia – today, this has become the place to be in Automotive. E-mobility will really take off there. This is why we are building more plants in China, including a large components plant. We are where our customers need us.

### What does being close to the customer mean for you?

First, geographic proximity. Second, moving up the value chain. Already today, we are going beyond delivering individual components and offering entire systems to our customers – for example the BENTELER



PATRICK VOGL studied business information technology at the Technical University of Vienna. He followed this up with further master's studies in Nice, Cambridge and in Singapore and Fontainebleau. After six years in management consultancy, he joined BENTELER International AG in 2016, where he is responsible for the Group's strategy.

Electric Drive System. As car manufacturers are facing ever greater challenges, they are outsourcing a higher share of their production and development. At the same time new players are entering the market, such as high-tech companies that have never built a car. We offer them the systems and solutions they need, which saves them time and money. At Steel/Tube, we are also offering more complex solutions. That differentiates us from the competition.

#### What is the role of Industry 4.0 at BENTELER?

Digitalization allows us to improve the efficiency and accuracy of our processes. Customers will be able to change orders in real time. Machines on the shop floor will independently request maintenance. Reporting will be automated. No one will have to enter thousands of figures into a spreadsheet any more. But we also know that we are still in an early phase of digitalization. There is enormous untapped potential, for example in artificial intelligence. Therefore, we will continue to invest in our capabilities in this area.

In the past 20 years BENTELER has transformed from a mid-sized German company into a global enterprise. What has been the impact on the company?

We have had to adapt processes and structures. The biggest challenge, however, is cultural change. Hubertus Benteler has shaped the company for decades with his ambition, his courage and his respect for the employees. In early 2017 he moved from the CEO position into the Supervisory Board. Now it is up to all of us to continue in his path – to be curious about new things, to strive for excellence and to promote a respectful performance culture.

#### How is that working out?

We have just achieved the highest turnover in the history of BENTELER. The order books are good. That shows that our customers trust us. Because they know: We deliver what we promise.



## #digitalization

#### **UP TO THE CHALLENGE**

The digital shift is changing our world. Long-term only those who welcome this change in an open, active and courageous way will be successful. And BENTELER is doing just that. Our customers benefit too.

We have been investing in innovations management for many years and driving digitalization, especially in the areas of

#### DIGITAL ENGINEERING

The simulation of systems and facilities even before actual construction starts, helps identify where a new plant can be optimized.

#### PREDICTIVE MAINTENANCE

The machines monitor their own status and request maintenance in good time. In this way production stops are avoided and maintenance costs minimized.

#### **SMART GLASSES**

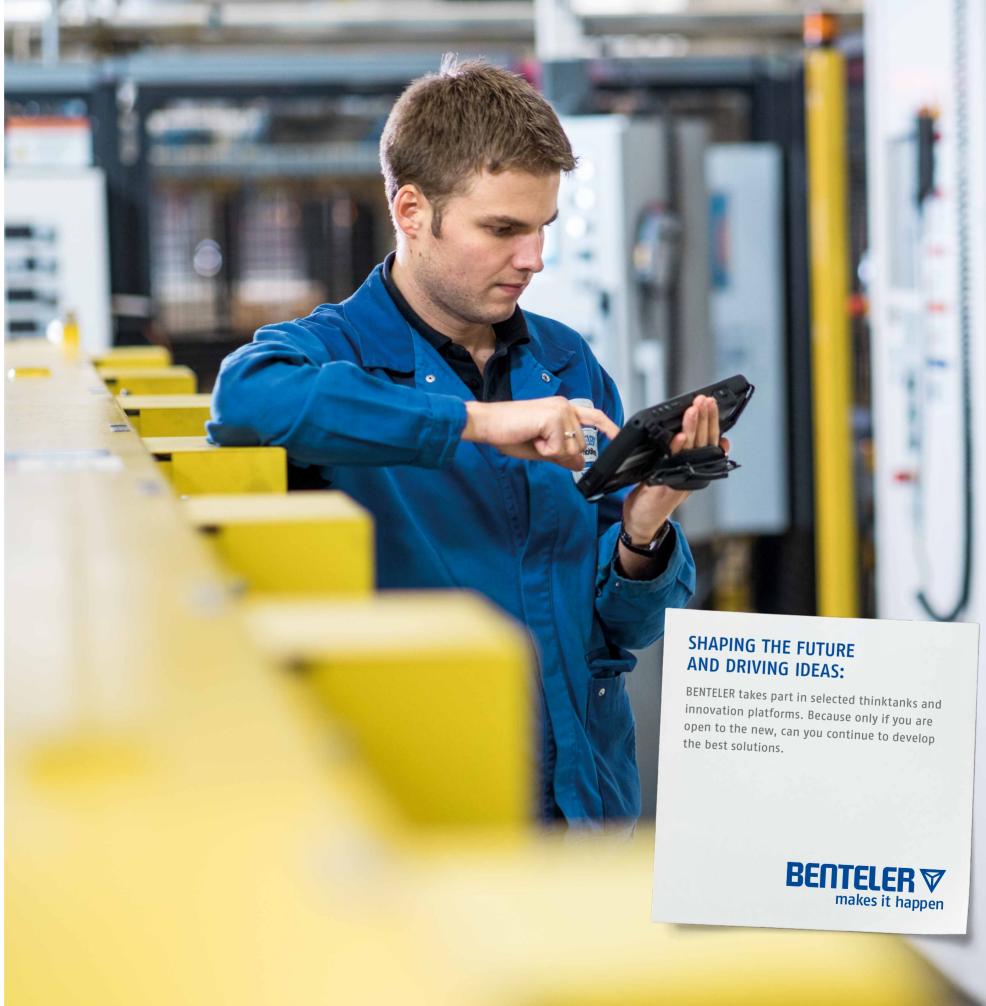
Smart glasses connect local technicians with the specialists. Which means that the specialists do not have to be on site in order to be able to assist in the repair of a machine.

#### **WORK 4.0**

The digital shift affects the entire company: People, organization and technology. How this can be used for the benefit of all is being researched by BENTELER in cooperation with the Fraunhofer Institute.

#### **SMART PRODUCTION**

To ensure optimum quality for our customers, we invest in continuous data analysis of our production processes and intensify the digital integration of our plants.



## SYSTEMS FOR THE FUTURE

It's good to ask today the questions that will need to be addressed tomorrow. Even better to know the answers already. Our answer to the megatrend of e-mobility is the BENTELER Electric Drive System.

## FOR OUR CUSTOMERS THE BENTELER ELECTRIC DRIVE SYSTEM IS THE OPTIMUM SOLUTION.

### It is an entire chassis system that gives automobile manufacturers a flexible platform.

A range of different vehicle models can be built on this system solution.

#### It was developed specially for electric drives.

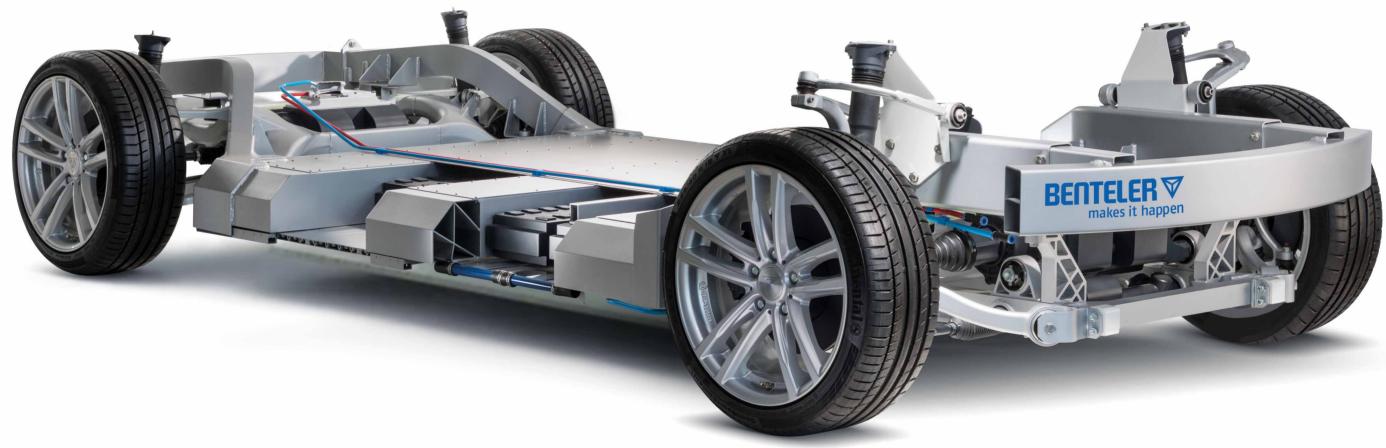
What does that mean actually? Safety structures that were designed specifically for use in electric vehicles. Axles with integrated electric motors. Specially optimized heat management. And battery trays that can be adapted easily to any size of vehicle.

#### It's from a single source.

That ensures all the components work perfectly together. And it simplifies the procurement process for our customers.

#### It saves our customers time and money.

Because we have already done all the expensive and resource-intensive development work. But there's more: Thanks to our very broad-based expertise in materials, we can offer a range of different designs – always closely coordinated with our customers' focus, be it cost-efficiency, low weight or environmental protection. There's only one thing where we are not flexible. And that is safety. Because you are important to us.



## **#system supplier**

The BENTELER Electric Drive System: Flexible, innovative, reliable and excellent. Just like us. More about the BENTELER Electric Drive System via the QR code.



# #makes it happen

## SOLUTIONS THAT MAKE THE DIFFERENCE

Often invisible, but always essential. BENTELER products and services are used in a range of applications.



#### **ON TRACK**

By rain, sun, wind or snow: The regional train to the island of Sylt departs in any weather. The engine that pulls this train was among the first 200 diesel locomotives in Germany to be fitted with corrosion-resistant Zistaplex® tubes from BENTELER.



#### RESISTANT AND RUGGED

Before wind turbines can do their job of generating energy on the open sea, they first have be put into place. The heavy-lift offshore cranes that carry out this work are subject to extreme conditions on the sea. BENTELER delivered 250 tonnes of specially made steel tubes for the construction of these lattice boom cranes.

## TRANSPARENT HISTORY

In 2017 the House of European History in Brussels opened a new glass extension. Our Business Unit "Glass Processing Equipment" played its part in making this kind of breathtaking design possible. The 14-meter high panes of glass were processed by glass manufacturer sedak using machines from BENTELER.



© Didier Boy de la Tour/Architecte Michel Polak 1935 – Atelier d'architecture Chaix et Morel, JSWD architekten GmbH und Co KG



#### WE MAKE CARS LIGHTER

Our innovative lightweight solutions offer significant weight savings in components for our customers. For example, chassis springs of solid material can be replaced with tube springs which are up to 35 percent lighter. Also, tubes with variable internal diameters can bring further component weight savings of 15 percent. Result: Reduced environmental impact.



#### **SAFETY FIRST**

Driving should be fun. But it also has to be safe. That's why leading vehicle manufacturers use products from BENTELER. Chery is just one example – the rapidly rising star in the Chinese export market. Key areas on the body of the Tiggo 7 contain high-strength hot-formed steel from BENTELER.



#### FOR MORE ENERGY

Heat for houses, electricity for industry: Without energy there would be no life. In the US supplies are secured, from North Dakota to South Texas – with the aid of oil and gas tubes manufactured by BENTELER in the US.

# 30,000 GUARANTORS OF SUCCESS

Only people who are happy and motivated will deliver their best. Encouragement and reward are therefore essential for achieving excellence. And the chance to keep learning plays a big part in company loyalty. All good reasons why BENTELER is offering its 30,000 employees worldwide a range of opportunities to develop their skills – from trainees to top managers, from production operators to office staff. Because a company is the sum of all its employees. They are the most important guarantors of success.



## #sustainability

#### WITH A CLEAR CONSCIENCE

The world's population is growing. More and more people want a better life. But resources are dwindling. The BENTELER Group is doing its bit to protect the environment. For example, we recycle 96 percent of the and therefore fuelwaste in the Automotive Division. And the waste heat from one of our process furnaces in our hot rolling mill at Schloss ment. We buy most of Neuhaus is used to heat public buildings. Also the Group has an ongoing drive to keep energy consumption as low as possible.

The products we develop are also sustainable. Such as our ultra-light saving components for vehicle construction. Sustainability also means regional involveour raw materials, goods and services in the locations where we have our production plants. In those areas we also take part in sponsoring and charitable activities. In particular we focus on projects for children and young people, and in education, one such

being the endowed professorship in the lightweight design of cars. Our employees also volunteer to help in social projects outside of their job – some have even dressed up as super heroes to visit a children's hospital. BENTELER takes its responsibility to society seriously – and we are happy to do so. That's also why we develop solutions that make the difference. For our customers, for society and for the environment.



#### **BENTELER International AG**

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