

# A START-UP AND ALMOST ONE HUNDRED YEARS OF EXPERIENCE

**The idea on which MAHLE was founded was new and different, and it went one step further. This idea, conceived almost one hundred years ago, was to replace pistons made of heavy gray cast iron with light-alloy pistons, thus revolutionizing the entire automotive industry. By thinking differently, MAHLE has developed into one of the largest suppliers in the automotive industry. Today, approximately 78,000 people in 32 countries are shaping the mobility of tomorrow and driving forward its development.**



At MAHLE, processes and communication channels are firmly established to guarantee the quality and supply reliability required by all its customers around the world. However, the process of change in the mobility sector and in the international automotive industry demands ever-increasing speed. One of MAHLE's responses to these new customer requirements is based on faster and more streamlined processes. This basic principle can be briefly described as corporate mode versus start-up mode. Tried-and-tested, established processes and structures are now complemented by the use of teams that are put together at short notice and are able to independently convert ideas into new projects with agility and speed, thus developing innovations, attracting new customers, and opening up new markets.

MAHLE's innovative strength is based on cooperation, creativity, and acquisition. As such, MAHLE invests in young start-ups and enters into cooperative agreements with other companies, leading MAHLE employees to work together with external start-up teams and share their knowledge. MAHLE also develops internal innovation programs, such as the MAHLE Incubator, which was launched in 2017. A glimpse behind the scenes at the innovation workshop and into another, rather unusual, project. Both of these bring to life the particular importance to MAHLE of extraordinary idea generation and the willingness to take risks. We meet employees who are coming together across hierarchies, time zones, language barriers, and cultural differences. They are all working toward one goal: they want to improve mobility for people around the world through solutions from MAHLE.

# Hand in hand for innovations INCUBATOR



Mujib Bazhwal, Innovation Management

»The Incubator is the symbiosis between corporate mode and start-up mode.«

An industrial area in Böblingen, 20 km from Stuttgart/Germany. It is day four of the boot camp and a high point of the Incubator program. A total of 30 MAHLE employees have been based here for almost a week, refining their ideas.

There is no sign of MAHLE's large, blue lettering. Instead, the location is a coworking space in line with the approach that new life needs to be breathed into the world of work. This is the perfect environment for the participants in the boot camp because it is hoped that their ideas will ultimately have a real impact and improve mobility in everyday life. Instead of comfortable office chairs, there are benches—you can't get too cozy if you're going to be agile. Dynamism is important so that ideas can flow. Walls are not barriers, but rather surfaces to be painted. "This is how it was done in the past; we're thinking back to the time of cave painting," explains the operator of the coworking space. Going back to our roots to develop ideas for the future.

Magazines are spread across the table. The one on the top, a prestigious German business journal, bears a rather blunt title, roughly translated as: "The plan was crap." That's appropriate. After all, the same applies to the MAHLE Incubator: lots of ideas are developed—and many of them will fail. That is precisely what is intended and will ultimately lead to the best results. "The spearheads of innovation in this year's MAHLE Incubator are sitting here in this room, working on the final six ideas." Mujib Bazhwal, an employee in the Corporate Planning division at MAHLE, is supporting the boot camp as project manager.

#### chargeBIG

The idea is called "chargeBIG." It is an innovation for the e-mobility market. With the future in mind, old, gray folders and iPads now sit side by side here on the table. Employees from various departments are contributing their own particular working methods and ideas to one big, shared idea.



INCUBATOR

## MAHLE INCUBATOR

Employees from various business segments across the whole of Germany submitted more than 100 ideas to the MAHLE Incubator program.

Submission of  
**> 100**  
ideas

The top 18 ideas were presented by their originators via an internal marketplace. In this process, it was also important for the originators to inspire other colleagues for their individual ideas and recruit them into the project teams.

The best  
**18**  
ideas

Following the selection of a short list, ten teams were formed from different divisions, levels of the hierarchy, and locations, and they developed their ideas at a Concept Day.

Total of  
**10**  
teams  
shortlisted

At a subsequent pitching session in front of a MAHLE jury, six of these teams then qualified for the next stage: the boot camp.

**6**  
teams  
qualify to pitch to  
the MAHLE jury at  
the boot camp

The jury then picked the winning teams from this selection.

**4**  
winning teams  
named

Provided with their own budget and largely released from their usual tasks, up to four of these teams are now working to refine their solutions and develop them into marketable products in the next three to six months.

**Franziska Erhardt (left),  
Account Manager Independent Aftermarket**

**»The Incubator is a great chance to think out of the box. I can imagine that a great many people have been waiting for the chance to try out something new at some point.«**

Differently. Back to front. This is how the start-up scene operates. “The Incubator is the symbiosis between corporate mode and start-up mode. The best of both worlds. It’s about opening up new business segments and developing innovative new products. Sometimes these are far removed from MAHLE’s traditional business, sometimes they are closely related to it.” The MAHLE Incubator is a melting pot of different ways of thinking, know-how, and mindsets. Colleagues from all business units as well as from purchasing, development, marketing, sales, and HR work together in small teams in the Incubator on their respective projects. The Management Board acts as the jury panel, which assesses the projects in a final pitch and decides on their future.

Start-up processes are not unusual in large companies, but it is rarely possible for everyone to get involved. At MAHLE, it’s different. “We simply sent an e-mail to all employees in Germany. More than 9,150 colleagues were asked to submit their ideas. We were struck by the fact that our colleagues in production also had very advanced ideas.” Mujib Bazhwal is really fired up by the Incubator. “The boot camp week has shown once again how much creative potential MAHLE has to offer. We will take greater advantage of this in the future.” There are already plans for an international rollout of the Incubator. Being agile and having a good plan—at MAHLE, this is not a contradiction, but rather the MAHLE start-up mode, which is becoming integrated into the company’s established standard processes as if it were the most natural thing in the world.

**Frank Rohde (right),  
Head of Segment Filter Elements & Filter Media**

**»The employees are really motivated; they want to take part. It’s absolutely astonishing how much potential we have in the company.«**



**Yvonne Maier (right), Project Manager  
Development Engine Mounted Heat Exchangers**

**»We like the product because we think that MAHLE should reach everyone.«**

**Filling the spot with blue**

“Comfort is cool, comfort is hot. MAHLE is good at helping others to succeed,” states the writing on the walls. There are bright colors and Post-it notes everywhere. A participant writes with a blue pen: “Filling the spot with blue.” Satisfaction: “I like being able to use our MAHLE blue.”



Dr.-Ing. Mario Wallisch (below), Technical Project Manager  
Corporate Research and Advanced Engineering,  
Thermal Management

»Everyone has a different opinion.  
That helps us to reach  
a common denominator.«



**Drawing, designing, building**  
A participant draws a cloud on the wall.  
"I should have drawn a prettier cloud."  
Laughter. There is a good atmosphere.  
Almost everyone in the room is on their  
feet, walking around. People are drawing,  
making things, doing calculations.  
When no one is sitting down, it's another  
sign of an agile team.

Dr. Walter Krepulat (below), Team Leader for  
Valve Train Product Development, Engine Systems  
and Components

»We all get on so well together because we  
respect each other despite our differences.  
And it doesn't matter whether you're a man  
or a woman, young or old.«



Nicole Heinrich (above),  
Account Manager Sales

»It is good that we are taken  
away from our everyday  
surroundings. At MAHLE, we  
know what we need to do in our  
jobs. Here, everything is new—  
it's motivating.«



# Trying everything possible to achieve the impossible

## THE PROJECT

When the conversation turns to change in the automotive industry, the term “e-mobility” is often mentioned in the same breath. When a young company on the Californian coast was missing a crucial assembly for its electric vehicle, it launched a tender. This called for a concept that MAHLE had already applied in a similar way. So far, so good.

But the major challenge was to supply the customer with the desired, specific solution based on this concept within 13 months. The norm for product development of this scale is usually 24 months. This would be a risk for any supplier that doesn't make compromises in its development and production. But MAHLE accepted the challenge. An international team of experts from the USA, Germany, Japan, and Mexico was assembled. Over 13 months, it proved—across time zones and despite the shortage of time—that, however difficult it may appear to be, MAHLE is ready to make any customer idea possible. And, above all, ready to deliver an outstanding product.

### Stuttgart/Germany

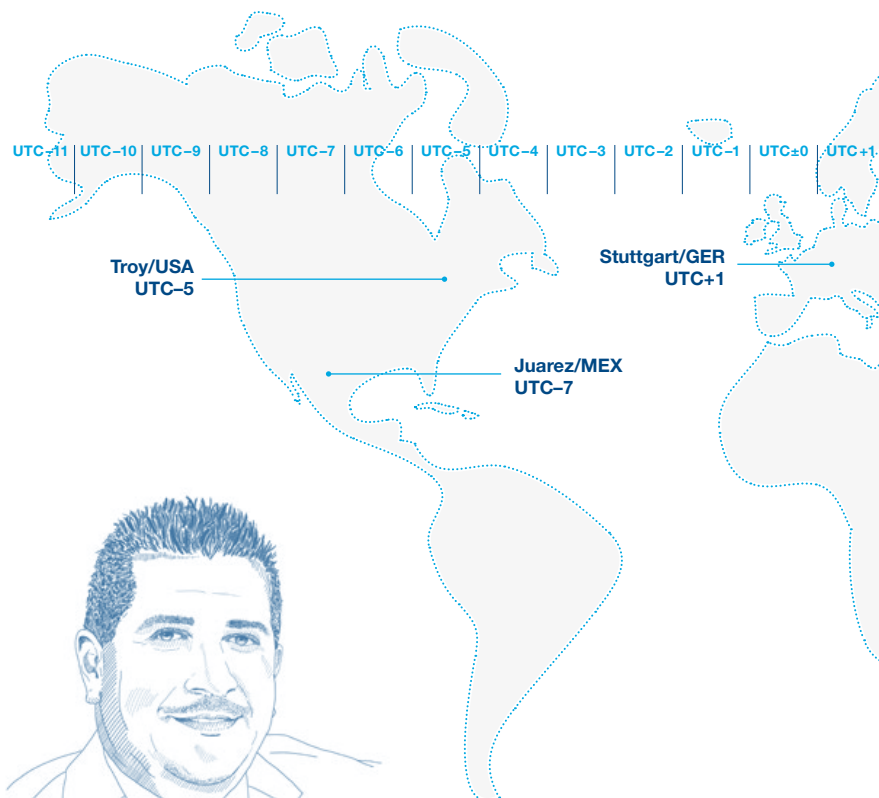
The cooling module developed for the new electric vehicle sits on the conference room table in front of Dr. Brigitte Taxis. Finished. According to plan. “It's an unusual technical concept. The whole process has been very, very dynamic.” The greatest challenges were time and the customer's completely different way of working. Dr. Taxis was responsible for the acquisition stage in Germany and remembers asking senior management the critical question in a meeting: “Our roots are in a conservative automotive industry. How does the mindset of a start-up fit into this model?” The answer: “That's precisely the challenge we want to tackle.” By putting in a huge international effort, the team pulled out all the stops to land the order. And the next steps were taken at the same pace, with lots of processes that would normally take place sequentially now running at the same time. While their colleagues in Germany were still developing the design, the team in Japan was building prototypes. “We took a big risk,” Brigitte Taxis recalls. “But many years of experience have made us at MAHLE aware of risks, and we're not afraid of them.”

### Numazu/Japan

“The greatest hurdle was sharing our knowledge across continents in a project where time was not on our side.” As the Japanese project manager, Tetsuya Handa was responsible for building the motor for the cooling fan module. Overcoming time zones and language barriers is absolutely standard in a globalized business world. But what do you do if the team lacks confidence? In

Greg Belloli, engineer in the  
Engine Cooling department, in Troy/USA

»We had to wave goodbye to lots of things: strict schedules, conventional tools, and familiar ways of finding solutions!«



Rodrigo Ledezma,  
Launch Manager, in Juarez/Mexico

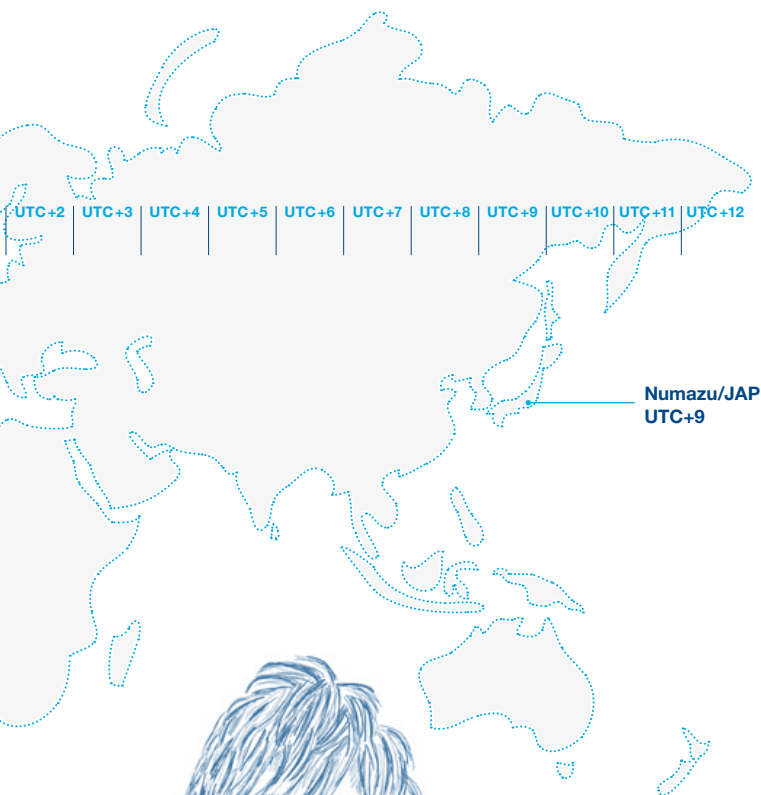
»We needed to draw on all our experience for this project and concentrate on implementing it as a team.«





**Dr. Brigitte Taxis, Head of Product Development Components, Powertrain Cooling, in Stuttgart/Germany**

**»It's an unusual technical concept. The whole process has been very, very dynamic.«**



**Numazu/JAP  
UTC+9**



**Tetsuya Handa, Project Manager, MAHLE Electric Drives Japan, in Numazu/Japan**

**»The greatest hurdle was sharing our knowledge across continents in a project where time was not on our side.«**

addition to the major challenge faced by the team, Tetsuya Handa was also confronted by a significant personal task: his first order as a project manager—for a project that was totally new to MAHLE. “I had absolutely no experience of leading an international team. During the fast process, I learned at a similarly rapid pace about cultural differences and communication difficulties and, above all, that no one can manage something like this on their own. The success is down to the whole team. And the team surpassed itself. I really appreciate their huge effort and contribution. And I am thankful for my superiors, who greatly supported the launch of this challenging project.”

#### **Troy, Michigan/USA**

Greg Belloli and his colleagues Jean-Francois Battello and Justin Smolarek were the customer's direct contact partners and responsible for the design of the module. And the customer's requirements sometimes changed from week to week. “I don't like to use the word ‘micro-management,’ but we had to wave goodbye to lots of things: strict schedules, conventional tools, and familiar ways of finding solutions. We did a lot of things for the first time. Our team spirit was essential. When one of us didn't know how to move forward, another jumped in. We maintained a positive attitude at all times and kept the same vision in mind. At the kick-off meeting, 80 percent of the team was certain that we wouldn't manage it. Despite all the obstacles, all that we thought in the next 13 months, every day, in every customer meeting, in every team meeting was: ‘Yes, we can make it!’”

#### **Juarez/Mexico**

“It was my job to ensure the production ramp-up at the Juarez location in Mexico went without a hitch. The validation process was an important project step that required good coordination between MAHLE in Troy/USA, and MAHLE in Mexico—as well as between other regions. A good flow of information between Mexico and the other regions was the key to the success of the project. We are used to an energetic pace in Mexico. Nevertheless, we needed to draw on all our experience for this project and concentrate on implementing it as a team. On the other hand, the constant close communication of information about the project status with the top management in the United States and in Germany helped to ensure effective oversight of the progress of the project and thus the opportunity to make improvements. Each MAHLE location operates slightly differently, so we learned a huge amount from each other during the start-up phase. And cooperation with the customer was extremely close. To give just one example: It is normal to have a ‘black-out’ period during development—a time when you can't give any further input on the design. But we repeatedly engaged with the customer during precisely this stage. This was unusual and very complicated, but it worked—because everyone acted in concert.”

