



A world of data in tablet form

Blaichach, the global lead plant for manufacturing of the widely selling ABS/ESP® safety systems, is deeply involved in sounding out the possibilities of connected industry. Yet even in this new connected working world, where cutting-edge IT delivers superlative efficiency, the focus is still on people.

How do associates view this change, and how are they trying to shape it? We asked four associates and managers from different departments to share their views. They talk about how their tasks have evolved as a result of connectivity, and what challenges and benefits this new approach brings. They are the ones who work with the information that gets served to them every day – in tablet form.



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A man with a shaved head and a grey V-neck sweater is pointing at a large touchscreen display in a factory. The background is a blurred industrial environment with machinery and overhead lights.

MANUEL LEHMANN

34 years old

At Bosch since 1997

Production planner for the past three years

“We have 150 machine operators using about 20 tablets. Every time we show plant managers from other locations around our pilot shopfloor, they are amazed at what they see. We see to it that the utilization rate of our systems stays high, but we also have to ensure that our associates are in a position to achieve that. By providing training on tablets and smartphones and using computer programs, we get them on board and allay their fears about the technology. We also use examples like the operator support system to show what this technology can do for them. And while associates’ work is more complex than it used to be, some simple routine tasks have disappeared. The days when an associate had to go through the machine shop counting components each morning are now long gone.”

Blaichach is an object lesson in connectivity. Its shopfloor features huge touchscreens. Where production experts used to have to go to the machines to inspect and check parts, the commercially available tablet computer has now become a commonplace workday tool, used to track production processes and help the expert intervene if necessary. This is the new working world, the world of the fourth industrial revolution: Industry 4.0. Blaichach has made the switch. By thoroughly connecting its manufacturing operations with the latest in IT, plus digitalizing and visualizing all its processes in line with the Bosch Production System, the Bosch location has begun to blaze a path to the future.

As the lead plant for an international manufacturing network of eleven locations, Blaichach is the perfect choice for this pioneering role. Each year, its 3,300-strong workforce produces some 6.7 million units of the widely selling ABS/ESP® safety systems alone. Departments for production planning, special-purpose machinery, soft-

SEYIT-ALI YILDIRIM

21 years old

At Bosch since 2009

Trained industrial mechanic, now machine operator

“My friends can hardly believe it when I tell them that I work with a tablet. Of course it took some getting used to, and I needed training, but I soon realized that it meant I could do my work faster and more easily. Now I’m a machine operator overseeing six machines, which are all displayed on my tablet. Our performance tracker detects cycle-time deviations of mere milliseconds, so we can react quickly. And the recommendations from the operator support system for handling errors are a huge help. I know my machines pretty well, but even I sometimes need the system’s help when something goes wrong.”



ware, and system operations all work side by side, constantly sharing information and driving forward further improvements. And Industry 4.0, also called connected manufacturing, offers plenty of new opportunities for making production even more efficient. The wealth of information and data generated by connectivity is something companies need to exploit to their advantage. Super-fast computers are used to analyze this data. If this analysis is done properly, quality can be assured and the process of monitoring workpieces speeded up – saving time and money. There is also the advantage of a global database to reveal error patterns in production. Blaichach has combined these patterns with experience gained from resolving the errors successfully, and developed what it calls its operator support system.

This system not only displays error messages themselves but also tried-and-tested recommendations for dealing with them. Another digital tool, known as the performance tracker, allows experts to keep a close watch on cycle times and to intervene early on, even when deviations are in the millisecond range. In recent years,

A man in a white shirt is looking at a smartphone in a factory setting. In the background, there is a blue sign with a white logo and the text "Industrie 4.0" and "Pilothalle".

Industrie 4.0

TIMO DIVIVIER

31 years old

Returned to Blaichach as a project leader for Industry 4.0 two years ago, after completing a trainee program that included an international assignment

“Connected manufacturing makes a lot of things work better, but now we have to focus on exploiting its full potential. One of the challenges is how to cope with the huge quantities of data. We’re trying to minimize the time it takes to obtain, prepare, and analyze data, so that we have more flexibility when putting any improvements into practice. It’s just a question of finding the right technology. We’re testing ways of making the path to analysis as straightforward as possible. But it’s the associates who play the key role. They have to change their mindset, because being open in how you work with technology requires being open when working with other people. Actively sharing knowledge is a huge step forward, and an important one as well.”

these advances have made it possible for Bosch to increase productivity at its ABS/ESP® manufacturing facilities worldwide by almost 24 percent. One further advantage is that product quality has been given a new dimension. Data gathered directly from customers during product use can be analyzed and transmitted automatically to manufacturers.

Yet the success of the technology depends on people. Their work has changed. They have to work with digital connectivity, understand the technology, and tap the opportunities it offers. People have to interpret the information and make the right decisions. That’s why Blaichach highlights “soft factors” as well. Factors like “rethinking” and “culture change,” or working with technology – an activity that should be as simple as it is effective. Or factors such as the desires and expectations that associates have when it comes to connected manufacturing, which everyone involved now has to fulfill.



HARALD WETZEL

40 years old
Project manager for special-purpose
machinery for six years

“Our software solutions used to be a hard sell to associates in manufacturing. Then we changed tack, and determined first of all what their needs actually were. This, plus our physical proximity to manufacturing operations, definitely encourages the different areas to exchange ideas. We essentially develop ideas together, and they’re always based on technologies that have proved themselves in the Bosch manufacturing network. Our goal is to make it as simple as possible to use the digital tools, and to make displays as clear as possible. But it’s when ideas are shared in our global network that the things we develop really gain traction. The idea that associates who never meet face to face can still share valuable experience that anyone can access at any time truly fascinates me – and I’m not the only one who feels that way. You can find enthusiasm for this and similar topics in all age groups. And expectations are growing. Our associates can feel that things are moving forward.”

Connected Industry innovation cluster:

In 2015, Bosch pooled its expertise in the area of connected manufacturing in its “Connected Industry” cluster. Even now, some 100 experts from every part of the company work together there. And in many plants, there are also expert groups supporting the innovation cluster with more than 100 pilot projects. In its own plants, Bosch uses the knowledge that has been gained in this way to enhance its Industry 4.0 competitiveness and open up new areas of business. But that is not all. It is also in a position to offer external customers Industry 4.0 solutions. In the area of connected manufacturing, Bosch is both a leading provider and a leading user.

