



ABB leads the industrial digitalization charge



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More countries are starting to see the advanced manufacturing sector as a key catalyst for GDP growth and competitiveness in the global market. The arrival of the fourth industrial revolution will be driven by a growing range of next-gen digital technologies, including advanced networks that go beyond connectivity and sensors and will achieve unprecedented productivity improvements.

By Justin Springham, Mobile World Live & Linda Xu

The common elements that governments around the world are looking at to drive growth are automation and digitalization, according to Joni Rautavuori, group vice president and head of ABB Robotics and Applications. “Many nations have launched similar manufacturing-led initiatives, but call them different things,” he explained. For example, China has Manufacturing 2025

and Germany has Industry 4.0.

Jerry Li, VP and head of business development, digital solutions and CIO at ABB China, agrees that digital technology is fueling a new round of innovation in industrial markets, with industrial digitalization certainly attracting a lot of attention globally. “I think most governments and businesses are looking for



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– Joni Rautavuori, group vice president and head of ABB Robotics and Applications

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energy efficiency, productivity increases and safer operations. These require all businesses to find a better way to operate,” Li said.

Rapid adoption

Over the last couple of years, he said many innovative technologies have been introduced – from cloud computing and mobility to the Internet of Things as well as advanced materials – and they’re being quickly adopted in industrial areas. In the manufacturing sector, ABB sees a clear need for businesses to improve their production efficiency and energy efficiency.

While ABB offers a wide range of products and services in its portfolio that support improvements in productivity, Li said, “We’re also a manufacturing company and we produce a lot of equipment.” ABB, with operations in more than 100 countries, isn’t just a robotics company. Its solutions range from the software layer to automation systems and to products such as robots, motors and drives. It employs 136,000 staff globally, including 17,000 in China. The company has connected more than 70 million digitally enabled devices and installed more

than 70,000 digital control systems and 6,000 enterprise software solutions for its customers. “All of this makes it a really great foundation for digitalization,” said Li.

The combination of its digital solutions and a platform that connects customers’ devices to perform advanced analytics on the cloud side and control the physical world through its automation systems, robots, and motors creates a huge amount of value for companies.

Partners

ABB is continuously looking for partnerships with all the major players in the industry. Li believes that, “With so many elements in the digital world, there’s no single company that can do everything by itself. If you look at digitalization, we’re talking about IT and OT convergence.”

The company, which is partnering with Huawei in smart manufacturing as well as industrial robotics, is looking at how to combine the latest wireless connection technologies and smart sensors to find new solutions to solve manufacturing challenges. “We’re also working

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together in many industries to look for joint solutions and joint market developments,” Li said.

Forecasts estimate that there will be 2.6 million industrial robots by 2019, and the density of robots will jump from 36 per 10,000 workers in 2014 to 150 per 10,000 workers by 2020 in China. This will create exponential growth, he said.

Rautavuori noted that China is now the largest robotics market as well as the fastest growing. However, when comparing the density of industrial robots to the country’s entire manual labour force, China is still far from the top in the world, with Japan, South Korea, Germany, and the US leading. “China is still catching up, but catching up very, very fast, and we’re very excited to be part of that journey,” said Rautavuori.

Teaching robots

On artificial intelligence (AI), Rautavuori said that ABB focuses on machine learning, “The development of smart components and sensors makes it possible to use machine learning to develop new ways of programming robots.”

For example, he said, instead of programming, the company is moving towards teaching the robot. “We’re showing it how to do things. And with smart components and sensors, the robot will figure out and learn by itself, a little bit like a child learns. You teach them and then they try. So that’s an area where we’re developing solutions that will simplify and make it easier to use robots in the future.”

Industrial robots need to be flexible to meet the needs of mass customization, he said, adding that ABB is well known in the market for its software capabilities when it comes to motion control and online and offline programming. Rautavuori believes the industrial robotics market is still a huge untapped market and ABB, which has been in the robotics industry for more than 40 years, is focused solely on the industrial space.

But looking at how robotics is likely to impact people’s day-to-day lives, Rautavuori concludes, “We see lots of companies going into the consumer space. And I’m sure there will be lots of, whether we call them robots or not, technology that will help you in your daily life.” 