

PRESS INFORMATION

The fourth industrial revolution: more of an evolution?



Image 1: The SmartFactoryKL concept

The Internet of Things has been hailed as the fourth industrial revolution, but can it warrant this title at its current pace of development?

The potential of Industry 4.0 remains an important talking point for members of the international coil winding, transformer and electrical manufacturing communities. And it's hardly surprising. Following revolutions in steam power, electricity and digital technology, the Internet of Things (IoT) is tipped to completely transform the way factories operate.

Much of the buzz can be traced back to when Professor Detlef Zühlke, director of Innovative Factory Systems at the German Research Center for Artificial Intelligence in Kaiserslautern, Germany, presented his SmartFactoryKL concept at CWIEME Berlin in 2015.

However, widespread take-up has yet to materialize. At CWIEME Berlin 2017, Alex West, principal analyst for smart manufacturing and industrial communications at IHS Markit Technology, said that Industry 4.0 still offers “no clear return on investment” for manufacturing operations and is seen by some as a “solution looking for a problem.”

Nevertheless, investment in Industry 4.0 technology is on the rise. By the first quarter of 2017, the industrial automation equipment market had already increased by 1% on 2016 figures. West’s colleague Andrew Orbinson, a senior analyst in industrial automation at IHS, predicts investments to pick up throughout 2017 and peak in 2018, especially in the US. According to Orbinson, increasing capital spending, reduced tax rates and a strengthening US dollar will help to drive investment, spelling good news for manufacturers of electric motors for industrial automation applications.

Keeping production lines running

IHS believes improvements in uptime and efficiency are some of the main reasons for the increased investment. In his CWIEME Berlin seminar, West highlighted that downtime in an automotive plant can cost 20-30,000 USD per minute. With this in mind, asset health – including condition monitoring and predictive maintenance – is a major focus area for manufacturers. West pointed to a growing market for electric motor sensors that monitor temperature and vibration and could suggest impending failure.

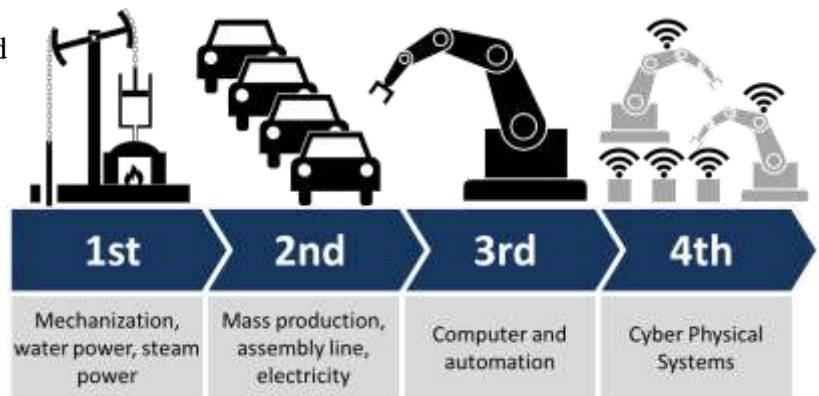


Image 2: The four industrial revolutions

“This intelligence is not feeding into maintenance, however – it’s still reactive,” he said. “Devices are connected and collecting data but the next step is to do something with that data – to have advanced analytics, use of the cloud and open applications, and standards around that.”

Meeting new customer demands

IHS also made reference to the fact that customers are increasingly demanding more customization and shorter lead times. CWIEME Berlin exhibitor Voestalpine echoed this trend at the event in June. The Austrian steel producer revealed that half of the pole sheets it sells today are customized. The Voestalpine Group likewise prides itself on its predominantly European and high-tech manufacturing.

“Automation allows companies to bring production closer to the customer because a robot is cheaper than a real person,” West said.

Andrew Orbinson also reported that between 2001 and 2013, the US lost 3.2 million jobs to China – especially in computer and electronic parts manufacturing and motor vehicles and motor vehicles parts manufacturing – but increasing automation and smart technologies are supporting a trend for reshoring. “Lower skilled jobs are becoming redundant as robotics can be used, creating higher skilled jobs. We’re seeing labour shortages emerging because these jobs didn’t exist before. New skillsets are required to work in the factory of the future,” he said.

New business models required

A significant issue for manufacturers looking to implement Industry 4.0 principles, however, is that no single supplier has all the expertise. In his CWIEME Berlin seminar, West described a clash between operational technology and information technology with no clear view as to who would own the project. He suggested that widespread implementation would require new vendors with new business models.

“There needs to be a shift from selling hardware and software to services – or rather selling uptime. Customers could pay a service contract for ‘power by the hour’,” he said.

Misconceptions about cybersecurity

Another major issue slowing the development of Industry 4.0 is concerns about cybersecurity. West spoke of a “misunderstanding of the perceived problems”. “You could put your money under your bed or in the bank – experts in providing security and access to assets. The cloud makes sense,” he said.

IHS carried out a survey among 915 companies on the reasons for investing in Industry 4.0 and while improving cybersecurity came bottom of the list, Orbinson expects it to move up in a few years’ time. “It’s going to take some time for widespread take-up,” he said. “Cybersecurity is a key challenge, but it’s a speed bump more than a complete roadblock. The technology needs to evolve along with applications, business models, and ways of operating. Industry 4.0 is an evolution, not a revolution.”

The discussion continues

Industry 4.0 will once more be an important topic for discussion at the next exhibition in the CWIEME series, CWIEME Istanbul, which takes place 2nd-4th November at the Istanbul Expo Center. Under the theme ‘new pathways to optimisation and efficiency’, the CWIEME Istanbul seminar programme will explore the many areas of electrical industries on the brink of disruption at a time when demand for more efficient, intelligent and powerful electric machines is reaching new heights. Among the speakers, Alex West will return to discuss the growing impact of the Industry 4.0 movement on manufacturing.

Ends

October 2017

About IoT and Industry 4.0

In the Internet of Things, physical objects or equipment are embedded with electronics, software and sensors that can store data and communicate with each other via a network. In Industry 4.0, machines communicate with each other to coordinate and carry out each stage of the manufacturing process with degrees of speed, flexibility and efficiency never seen before.

Through a complex interplay of devices, software and automation processes, the factory is now able to make smart and timely decisions about matters in the real world and take action to meet constantly changing demands with minimal human input. This factory can identify the location and status of people, equipment and goods in real time, adjusting scheduling, inventory and calibration on the fly. The results are fast, customizable workflows that eliminate defects and downtime, waste and waiting.

The German Research Center for Artificial Intelligence in Kaiserslautern, Germany is considered to be the birthplace of this so-called fourth industrial revolution.

About CWIEME

First held in 1996, CWIEME is the world's largest and longest running exhibition for materials, equipment, components, machinery and services for the manufacture of transformers, electric motors, generators and other electrical devices.

Each year, shows are held in four locations around the globe – Berlin, Shanghai, Chicago and Istanbul.

CWIEME exhibitions provide a range of networking opportunities, as well as an outstanding program of free-to-attend seminars and workshops. Visitors attend to meet new and existing business contacts – and keep up to date with all the latest industry trends and developments.

The most recent show was CWIEME Chicago, which took place 3rd-5th October. The next exhibition in the CWIEME calendar is CWIEME Istanbul, which will be held 2nd-4th November at the Istanbul Expo Center.

For more information and to register for the event, please visit www.coilwindingexpo.com/istanbul

Or contact

Rachel Cowdrey

Ascential

Tel: +44 203 033 2054

Email: rachel.cowdrey@coilwindingexpo.com

Hannah Kitchener

SE10

Tel: +44 (0)207 923 5863

Email: hannah.kitchener@se10.com

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