

ABB'S FAUSTO BELOTTI REVEALS HOW AUTOMATION IN THE PLASTICS INDUSTRY WILL CHANGE THE WAY WE PRODUCE AND USE PLASTIC.

Automation REVOLUTION



ABB, along with its Austrian subsidiary Bernecker & Rainer Industrie-Elektronik GmbH (B&R), will feature its automation and motion drives and motors applications during the K 2019 event in Dusseldorf, Germany, in October. K is the number one global exhibition in rubber, plastic and plastic machinery and ABB has agreed with major OEMs in these sectors to join them in showcasing their automation products.

With automation, the IoT and greater connectivity transforming the ways in which industry operates, eppm caught up with Fausto Belotti, the Global Segment Manager for Rubber and Plastic at ABB, to discuss what automation means for plastics specifically and how plastics is leading the way for other industries when it comes to catching up with trends, demands, machinery, and environmental issues.

Fausto Belotti
Global Segment Manager, ABB



HOW IS AUTOMATION CONTRIBUTING TO CHANGING DEMANDS IN THE PLASTICS INDUSTRY?

The market in plastics has changed from high volume batch production, with machines set up to run uninterrupted for long periods, to small batches. Producing smaller batches creates the need for more frequent machine set-ups. It means that the new imperative for machine builders is to design equipment that can be re-set quickly to match production demands.

ABB has responded to this challenge by developing automation products and drives that can easily be reconfigured to suit changing production needs. One approach is by embedded product macros that are prepared in advance to change the setup of the machinery. Reconfiguration can be done locally, i.e. beside the machinery, and remotely with what we call the 'networked machinery automation and drives' system, which enables production to be controlled remotely using the internet.

IF THE INDUSTRY IS MOVING ON FROM HYDRAULICS, WHAT ARE THE MAIN ADVANTAGES OF ELECTRICAL MACHINERY?

The main advantage of electrical machinery is less maintenance. There is

also the possibility of easily modifying production profiles because everything can be done with digitalisation, including controlling processes remotely. Furthermore, there is an improved efficiency of the complete production chain. Efficiency means that production uses less energy and greater productivity means reducing process costs. Another important point is, of course, the impact on the environment. Full hydraulic systems require regular maintenance and there is the challenge of correctly handling the oil waste.

HOW QUICKLY ARE INDUSTRY PLAYERS AND STAKEHOLDERS CATCHING UP WITH INDUSTRY 4.0? HOW QUICKLY IS IT GAINING MOMENTUM?

I will start by saying that the rubber and plastic sectors – certainly more plastic than rubber – are historically always ready to adopt new technology. This is a good place to start because history has shown that the plastic industry is prepared to move forward rapidly. That doesn't mean from monomer to polymer, I mean that even since the 1960s the industry has embraced new technologies, including mechanical processes, thermohydraulics, bio-plastics to address recycling, full automation, and the IoT and Remote Condition Monitoring as provided



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by our ABB Ability™ platform. Industry 4.0 is revolutionising the ways in which we work. It's pushing us towards the change from high volume production based on standard machinery to machinery customisation.

For each automation solution, customers have different options and different specifications. What we want to offer to our customers is a 'pre-design concept' that can be finalised by the OEM. This is based on patterns already identified through experience drawn from our extensive customer base, which has helped create what is effectively a 'master model'. In this master model, we can define the variables of the process and all relevant customisations required and identified by the OEM and the system integrator to meet the specific needs of the equipment end-user.

HOW DOES THIS 'MASTER MODEL' THEN CONTRIBUTE TO AN AFTERSALES SERVICE?

With a master model you can prepare and predict from the very beginning how you will need to manage your machinery fleet over time according to the defined working profile and load; you can predict and prevent maintenance before machinery stops working and reduce the downtime rate; this enables you to maintain the highest level of productivity. When you start to design the machinery according to this master model, you will be able to offer end users insight into how, over the next five years, maintenance can be planned and scheduled to ensure the best productivity and product quality, as well as output reliability. Again, these activities can be done locally or remotely



within a networked automation and drives system.

WHAT CHANGES CAN AUTOMATION BRING ENVIRONMENTALLY?

I am really happy to say that in plastics again we will see a big revolution. We cannot avoid the environmental concerns relating to plastics, and it is clear that the industry has made mistakes in creating these problems. What I have understood whilst travelling around the world and meeting many plastics operators, is that the message, politically, was at first a sort of ban on plastic; then there was a move to try to get to recycling; now we are moving in the direction of biological plastics. So, what is happening now in the market? Let's start with one baseline: We cannot do without plastic – it's like going back to travelling by horse now we have cars.

However, the impact of plastic is there and is visible. We have to clean what has happened and then we have to prepare for greater recycling and for biological

plastics. This is already visible in the market. A lot of businesses and OEMs are coming up with new machinery for recycling and are moving to new technology such as biologically recyclable plastics.

WHAT WILL BECOME OF AUTOMATION AND CONNECTIVITY IN THE FUTURE? WHAT DOES INDUSTRY 4.0 LOOK LIKE FROM HERE?

This trend will continue, I think, to gain control of the production of every single line or plant – or more than one plant – by matching the best efficiency in terms of productivity with demand and production. The point is to be able to match all your sales demands in different locations, or even regions, and match them with the right MES system to adjust production so that it meets the market demand as fast as possible, especially in minimising the distance and time between demand and supply.

The challenge of simultaneously and flexibly managing different production units, and matching them as closely as possible to the market demands, requires remote automation solutions, and especially the IoT in Industry 4.0 – and this has been a key driver in the development of ABB Ability™.

I believe these trends will be visible in the plastics industry in 2019, and then one-by-one other industries will follow, e.g. metal forming and paper converting. I expect the textile industry will also go in this direction, but plastics are leading the way.

