A renewed focus on the **chemicals business**

Process automation giant ABB is looking to take its chemicals business to the next level, says Joerg Theis, ABB's global Product Group manager for Chemicals.

BB HAS ALWAYS been strong in the chemicals and refining business, and we still have quite a big footprint in the market with our existing installed base," explains Theis. "We have been looking for some time at how we can refocus on this sector and offer more to our customers by leveraging the more mature values and solutions we are offering in sectors such as food and beverage. We are seeing certain trends that started in foods and beverage and are now moving to chemicals and other sectors."

Theis highlights in particular the move towards scalable DCS and modularisation. "A modular plant allows the customer to have different products running through the plant modules over the life of the plant. If you make everything exchangeable, you make yourself a little more independent from the supplier, which is on the one hand, increasing competition but on the other, helping everyone to standardise and focus on value. We also see a trend for helping everyone to get a bit more momentum in place in the development of petrochemicals."

Theis cites Exxon Mobil's tie-up with Lockheed Martin as an approach which ABB is looking to emulate. ExxonMobil Research and Engineering Company (EMRE) has awarded a contract to Lockheed Martin to serve as the systems integrator in the early stage development of a next-generation open and secure automation system involving advanced processing architecture, the goal being to control and optimise refining and chemical manufacturing facilities while enabling future equipment and information services such as preventative maintenance and fleet optimisation. The design and implementation is based on architecture standards that will ensure modularity, interoperability, extensibility, reuse, portability and scalability of the new system.

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"What they are designing there is more or less standard in the food and beverage industry, and we are now seeing a slow evolution into other industries," says Theis.

"Our main focus is on automation; the trend now is for smaller, multi-purpose plants, which you are able to change over a lifetime. That involves scalable DCS, it involves modular automation, these are



the trends we see in the automation area, and where we offer fit for purpose solutions, connecting to various PLC (programmable logic controllers), and also supporting the trend towards software. More and more value comes in the software, ie Level 3, DPM. Today when you want to optimise production you have much more data and a huge cost structure; maintenance for example has a huge cost structure, so if you can go from periodic maintenance to conditionbased or even predictive maintenance, that will have a huge impact on your plant.

"The second element which we are seeking is more collaboration with OEMs, especially with process OEMs," Theis continues. "ABB is a big supplier of EICT (electrical instrumentation control and telecoms), and we see that the next logical step as a supplier is to package it with process equipment. In some countries, for example, we are delivering complete compressor skips which the customer can simply connect for complete functionality, without needing to worry about all the various elements and functions. So you don't look at electrical and automation separately, you see the function from a process point of view. This aspect is something where we see ABB can definitely add value and where there is an increasing demand; we are delivering a large number of analyser houses every year out of Shanghai. We can ship over a complete e-house in a container, already tested and commissioned, which saves a lot of time and effort for the customer.

"As well as automation and integration, another element where we see ABB can and should bring more value is in software, where we have some ongoing pilots. Everyone is talking about the internet of things, of Industry 4.0, but there is still a lack of standardisation. We are working with a broad cross-section of interests including customers, universities, and our research centre to address issues such as: What is the real standard? What is the data model? What should be in the cloud, and what should be local? We are looking to find the most efficient, reusable solution, so you really focus on value."

How is ABB helping to promote safety and reliability with its solutions?

"There is a need in the industry to cut costs, while at the same time overall risk is increasing," says Theis. "We are seeing a big move towards remote technologies, where we have a number of solutions we are able to install locally with scalable delivery, from Level 0 to Level 4, working with process specialists and certified safety personnel. We can help with safety requirements, from cybersecurity to plant safety, according to customer requirements, covering responsibilities such as defining hazard zones and making audits.

"We also have software tracking elements where we can indicate to the customer what is working, what is not working, where we have a breach of safety, and so on. We can mix the expertise of a consultant with new technology to bring value to the customer, so he can pick the most suitable solutions according to his specific needs. Our approach is to make it remote, make it scalable, make sure there is the right level of expertise at the right time for the customer."

Promoting operational and cost efficiency

In the current low oil price scenario, there is an increasing interest in automation and solutions promoting operational and cost efficiency.

"It's all about people," comments Theis. "In Europe the focus is on using more software and sensors to reduce the number of operators because of the cost impact; however, in the Middle East it's less about the cost of the people, and more about the quality of the product and reducing human error; here the focus is on using software to get more out of your plant, to bring it to the top potential for productivity. ABB has identified ways that we can help fill these gaps to reduce overall risk and increase productivity.

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"This is what automation is about; the more you automate, the more it impacts on costs," stresses Theis. "We have put a lot of effort into high performance HMI (Human Machine Interface). The operator room, for example, can be designed to enable one operator to look after multiple parts of the plant at the same time, while sound and light schemes and alarms can be designed to facilitate a faster reaction to abnormal situations.

"One customer wanted to be warned three hours in advance if they were running into a problem, so we have to go back and look at

