

Process Automation: Harder, More Profitable

During the last 15 years, companies like Baumer, Bürkert, Festo, ifm, Jumo, National Instruments, Phoenix Contact, Rockwell Automation, Sick, Siemens, Testo, Turck, Wago, Weidmüller, Wika and several others have changed their strategies distinctly. They discovered "process automation" (PA) as a new and highly expandable business



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sector and invested heavily in process-capable sensors, actuators and electronics; in improving their PLCs; in new process control systems; in software and system techniques; and especially in relevant marketing, engineering and sales activities. However, users in process industries weren't waiting for new suppliers, nor did they follow the lead of established PA companies.

Why this change? Because "the grass is always greener on the other side of the fence." Booth sizes of PA companies literally exploded at the Interkama and sensor tradeshow, as well as at the Hannover Fair. New companies shot like rockets into the sky, and some renowned PA companies could even afford not to exhibit at all. Gurus of the industry preached that the fall of the wall between factory automation (FA) and PA was only a brief matter of time, that the transition between both—the so-called "hybrid"—was only a progressive one, at any rate, and that whoever was capable of the one (FA) was also downright predestined to offer the other (PA). Technology was just technology, and users only wanted "one-stop shopping."

Above all, demands in the companies of the process industries were growing much faster globally, and the people in those companies were much more proficient and loyal than their counterparts in the discrete manufacturing industries. In short, PA was the land of milk and honey because this was the place where the money could really be made.

But PA and FA are different, as Table 1 (p. 20) will show. Many FA manufacturers pushing into PA noticed this quickly and painfully. A new, very complex world opened up to them: PA users think differently than FA users. They talk differently, act differently, treat new things with more caution (Safety! Operational reliability! Availability!). They first look at costs and then at the price. Their specifications are far more extensive.

Hundreds of national and international standards must already be observed for the simplest instruments. Test certificates have to be obtained from all over the world. If only one is missing everything comes to a halt. To sell just one component, the entire automation pyramid and the process of the customer must be comprehended.

To sum up: Success in factory automation is no free ticket for success in process automation. Whoever wants to be successful at PA has to be prepared to adapt its company culture drastically and needs other associates and managers. Many FA manufacturers are ready for the culture change, be it only to survive. Some are remarkably successful in this respect. Others are still practicing. The German adage is applicable here: The stairs are swept from the top.

The established PA suppliers observed the newcomers with serenity at first: "No one will catch up with our know-how," they thought. This has changed for the know-how is in the minds of people, and slavery has been abolished.

Qui bono (who benefits) from this new state of affairs? Everybody! The PA users benefit because competition always stimulates business and leads to better solutions. The "old" PA suppliers benefit because they are now really feeling the bite marks caused by the newcomers and must fight back with innovations. The FA suppliers also benefit because, apart from many differences, there are also things they have in common with their PA competitors, especially in communication standards (FDT, io-Link, Ethernet) and in information processing, which can and must be used efficiently!

However, there must be a big BUT: In this supplier and market situation inter-company cooperation in research, standardization and on the component and module level is blatantly obvious. This calls for entrepreneurs!

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OTHER VOICES

Process Automation	Factory Automation
Batch and continuous processes in gases, fluids, bulk solids	Manufacturing processes predominantly synchronized
<ul style="list-style-type: none"> - Transporting - Heating or cooling - Mixing and stirring - Separating - Analyzing chemical or physical properties 	<ul style="list-style-type: none"> - Moving - Aligning - Transporting - Mechanical processing - Measuring
Extensive outdoor facilities—high temperature ranges and environmental protection requirements	Compact plants, mostly indoors, therefore only few demands on temperature ranges and protection against the environment
Continuous process control	State detection and binary values dominate
Many analog measured values	
Regulations, test certificates, etc.	
Order of priorities	
- Safety (explosion protection, SIL, operational reliability)	- Productivity (speed, high clock frequencies)
- Availability	- Low purchase costs
- Long plant life periods total (10 ... 20 years)	- Real-time processing
- Long running times without stops (1 ... 3 years)	- High positioning accuracy (drives!)
- Protection of investment	- Scalability
- Cost of ownership	- Flexibility (easy and fast refitting)
- Data authenticity, confidentiality, security	- Predictable maintenance intervals, remote maintenance
- Traceability	- Traceability
- Tools for engineering and asset management	- Fast delivery of spare parts

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