Open interfaces, flexible solutions and customisable parameters have never been simply a means to an end for futronic but an integral part of the company’s philosophy. The rightness and importance of its decision to pursue an open source strategy embracing multiple systems from an early stage is regularly confirmed whenever machinery or plant needs to be modernised.

Anyone familiar with the history of futronic will be aware that the company originally had nothing to do with glass production. This situation changed when futronic secured a contract from Oberland Glas in Bad Wurzach to design a control system for glass machines. That was many years ago now – in 1978 to be precise – and only a very few people can still remember what these machines actually did or who built them. In any case, all that matters today is that glass has become the essence of futronic’s business strategy.

From the outset futronic has pursued a kind of open source strategy embracing multiple systems. Engineering companies normally have a preference for proprietary solutions.
MODERNISATION

Company competitors likewise see each individual system in isolation and the controls they offer are developed for the machines of a particular manufacturer. futronic, by contrast, designs whole generations of electronic control systems that can be flexibly tailored to each customer’s unique specification regardless of the manufacturer.

These systems describe the differences between machines in a standardised way. All machine parameters, for example, such as the design characteristics, wiring and configuration, are stored centrally in a main control terminal (MCT) and not set to their final values until the equipment is commissioned at the customer’s site.

“We start on a higher, meta level, as it were, and we’ve always been very careful to keep our eye on the big picture,” explains Wolfgang Lachmann, Managing Director Development & Technology at futronic. “Making sure our controls are compatible with various types of machinery and plant is traditionally a key priority. It’s never been our policy to restrict ourselves to just a single manufacturer.”

REFURBISHING HELPS INCREASE EFFICIENCY

According to Lachmann, there was no long-term plan – things simply happened that way: “We developed a taste and it soon became a habit.” It wasn’t long before futronic made a name for itself as an OEM and supplier with this open source strategies.

Engineering companies like GPS fit their IS machines with futronic control systems as standard. Many end users have likewise trusted for years in Tettnang-made technology and insist on it whenever they invest in new equipment. At the same time, futronic’s experts can draw on several decades of experience when it comes to adapting controls and drives to old, freshly overhauled plants or used machines of different types from a variety of manufacturers. In the meantime, refurbishing is one of the company’s core competencies. “A service life of 25 or 30 years is no problem for IS machines, which are very robust provided they’re maintained properly and regularly,” says Marc Meersschaut, who works at futronic as a sales engineer. “There are hundreds of these kinds of plants still operating today around the world,” Lachmann adds. “With new control and drive technology they can run for another 20 years.” He perceives enormous potential in the plant and machinery refurbishing segment. “Customer expectations with regard to efficiency and product quality are rising steadily,” he comments. Since most ‘modern’ functions are defined exclusively via the control system,
replacing this system can lead to real operational benefits. More automation accordingly means improved operator safety in the area immediately surrounding the machine, consistent product quality on a high level and better productivity, for instance because the time required for job changes or for starting up the machine can be significantly reduced. The owners – container glass producers and used machinery distributors worldwide, especially in export oriented markets – will therefore be required to invest heavily in the next few years. Meersschaut: “We naturally want to secure ourselves a share of this investment cake.”

INTEGRATION IN A HETEROGENEOUS SYSTEM

The existing, heterogeneous plant and machinery form a complex system of highly diverse components from multiple manufacturers. The challenge confronting futronic’s engineers is to coordinate these components in a harmonious whole. “All the machines obviously work in a similar way,” says Lachmann. “There can be big differences in the details, however.” The Tettnang specialists are able to build upon a huge knowledge base and their rich experience of the sundry systems is the outcome of partnerships with all leading producers, typically over a period of many years.

As one good example, Ta Hsiang – a glass container manufacturer in Taiwan and a long-standing futronic customer – regularly buys used, completely refurbished machines, which frequently enjoy a second – and sometimes even a third – leash of life at the company’s several factories. The control systems are habitually built by futronic, and each machine and its peripheral equipment has to be integrated into a heterogeneous setup. In 2013 futronic equipped a second-hand Emhart machine that had been acquired by Ta Hsiang with an FMT24S control system and FDU24S drives. “That turned out to be one of our most successful refurbishment projects of the last few years,” Meersschaut reports proudly. In a similar project for O-I in Maastricht, a MAC cabinet – a control cabinet from past times that went out of production long ago but still controls servo gob distributors very reliably in numerous facilities – had to be integrated into new control infrastructure.

TRUSTING PARTNERSHIPS

Projects like these, which can often be complex, always follow more or less the same pattern. They kick off with the initial customer contact, of course – either a visit or at a trade fair – which is followed by preliminary talks about a concrete investment. Project meetings, ideally at the customer’s facility, are the next step. The general conditions and constraints are then clarified along with the technical specifications of the various components to be integrated in the new plant. Finally, the costs have to be estimated and an offer prepared. “During this phase we also check that what the customer wants is actually feasible,” Meersschaut explains.

To make sure they have all the information they need, he and his colleagues generally get in touch with the various suppliers and partners. “We know all the relevant providers and we’ve built up trusting partnerships with them over many years,” says Lachmann. The same applies to...
futronic’s competitors. Once the customer has placed the contract, they can be disregarded because “the cooperation is invariably excellent.”

The engineers then set to work formulating the technical details, designing the cable ducts and planning the electrics – all in continuous consultation with the project partners.

When all the preliminaries have been completed and all relevant information, parameters and additions incorporated, it’s time to pay a new visit to the customer for re-briefing. “Every single project is unique,” Meersschaut emphasises. “The more meticulously we plan and coordinate upfront, the more precise the data and machine dimensions used in our designs and the more attention we devote to critical aspects at an early stage, the smoother the final implementation and commissioning will be.”

Then everything happens at once: the components have to be ordered, the manufacture of the cable ducts subcontracted and the logistics planned and organised compliantly with the customer’s specifications and delivery deadlines. A metalworking firm just around the corner, for instance, which has all the necessary resources to produce smaller quantities or bespoke components and offered “exactly what we were looking for”, makes the ducts. The delivery costs are zero.

The production process proper is eventually ready to start – futronic’s technicians fit out and wire the control cabinets and cable ducts, indeed the entire electrical equipment. Meersschaut attests that all components undergo stringent testing before a machine leaves the loading bay at futronic “to rule out any unpleasant surprises on the construction site.” In many cases the customer sends a representative to Tettnang to carry out the acceptance directly at futronic’s premises. The project is now nearing completion: the equipment is prepped and shipped, if necessary in made-to-measure crates from a specialist supplier in which all components can be vacuum sealed on the spot in seaworthy packaging.

Commissioning at the customer’s facility can take anything from five days to two weeks. It comprises the assembly of the cable ducts at the machine as well as all wiring work and the installation of the control cabinets, in other words joining the new and existing equipment together. “futronic technicians are constantly present on site for this purpose,” Lachmann confirms.

The plant is then started up for the cold run, in which all components are operated overnight at no load. The so-called ‘gob-in’, when the equipment goes productive, tends to be quite exciting: the first glass drops pass through the machine in what the Managing Director describes as “a magic moment”. It can easily be a few hours until the gob weight has been adjusted correctly, the machine gradually increased up to normal capacity and the first container glasses roll off the assembly line. Assuming all of this is accomplished without a hitch, there are no further obstacles to formal acceptance.

### TRAINING AND AFTER-SALES SERVICE

Comprehensive customer training, especially if the operators are new to the machine and not already familiar with the finer details, is always an important part of the commissioning phase. “We prefer to provide it at our Training Centre here in Tettnang,” Lachmann stresses. The advantage: those taking part are no longer distracted by day-to-day business, as would inevita-
bly be the case if they were trained in their normal environment, and they are more able to devote their full attention to the training contents. “That’s far more effective than sending our personnel out to the customer, where interruptions to attend to some urgent matter would be the norm.” It goes without saying that futronic service engineers remain available to deal with any problems that arise after commissioning is over; they can access the plant directly from their workplace in Tettnang or if needed get on a plane or drive to the client’s facility. “Extensive after-sales service is something we take for granted,” says Meerschaut. “After all, we want our customers to be happy in every respect.”