

When *retro* means forward

For System TM, replacing an outdated control system for wood processing machines with a 100% B&R solution led to a more efficient interface between onboard components and inspired a systematic hunt for milliseconds that ultimately delivered an overall capacity increase of up to 50%. By replacing custom components with standard B&R technology, System TM has streamlined its spare parts supply and can now offer its customers improved service.

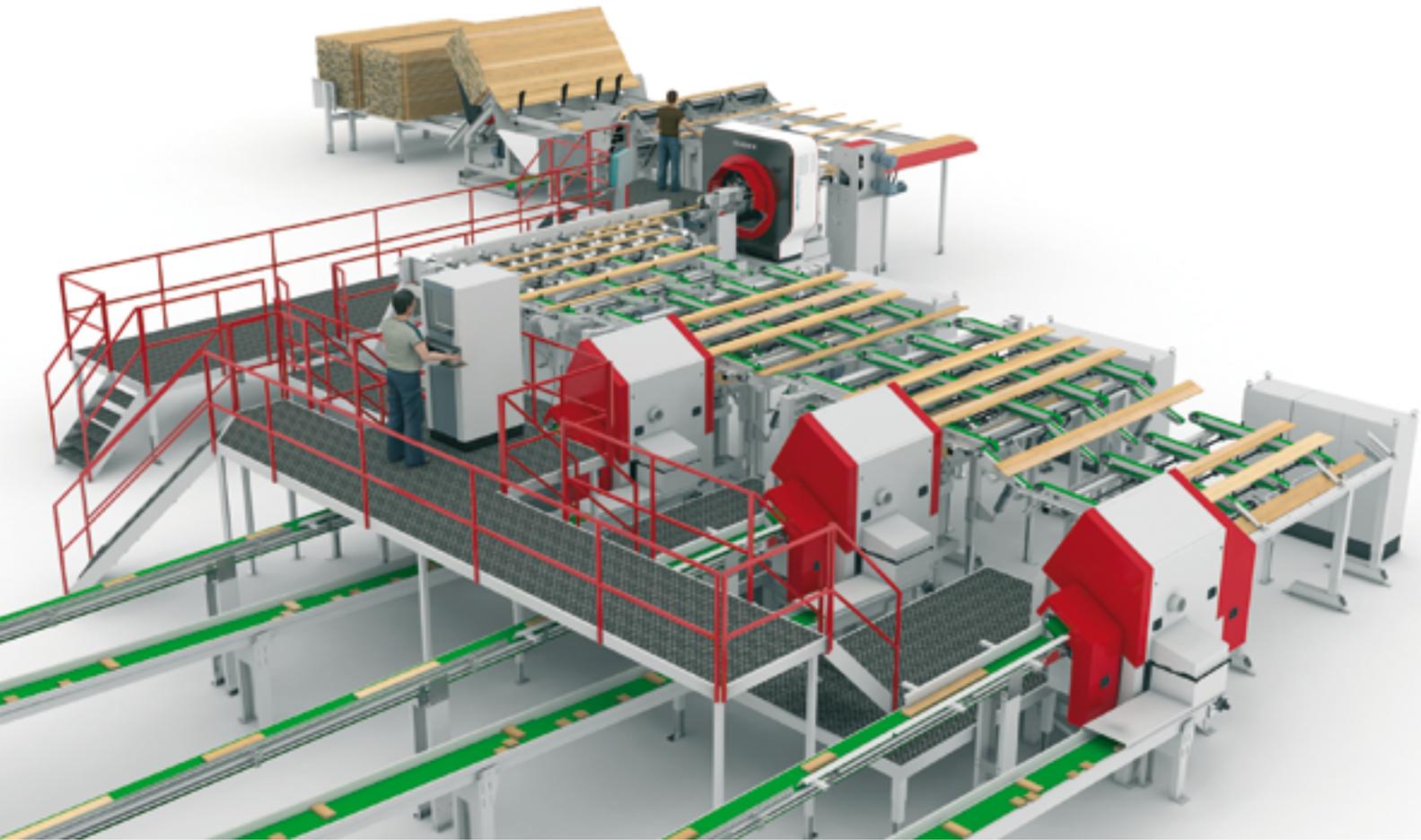


When System TM – a global supplier of machinery for the wood processing industry – needed to replace an outdated control system on its cross-cut series, the original plan was to find a supplier of system components that could solve the retrofit challenge without affecting the overall performance of the machine. What System TM was aiming for was a conversion rather than a development project.

After several unsuccessful trials with other suppliers, B&R was asked to join the project – not only with a complete set of compatible components, but also with its team of experienced system engineers. Shortly after the initial tests in 2011, System TM realized that the task of retrofitting showed signs of numerous small improvements. What started with a 10-millisecond improvement, and thus a capacity increase of one extra plank per minute, eventually added up to a 50% capacity increase of the entire machine.

Timing is everything

The wood processing industry has undergone tremendous changes since the financial crisis. Many small wood processing businesses that typically had 3 or 4 automated cutting machines have been replaced by fewer, much larger sawmills with up to 15 automated cutting machines and a fully automated flow from the in-feed through to inspection, cross-cutting, finger jointing, molding, laminating, stacking and more. The intense competition and



System TM offers wood cutting machines as standalone equipment, or as part of a fully automated flow with infeed, cross-cutting, finger jointing, molding, laminating and stacking.



the absence of human operators on the factory floor create demand not only for further automation, but also for optimized utilization of both human and manufacturing assets. The hunt for continuous improvements – however small they might be – is a central focus of today’s modern sawmills.

According to System TM’s COO Thomas H. Olesen and his staff, the improvement couldn’t have come at a better time, since the market at that point was calling for higher speed and improved capacity. “Although we initially saw the conversion as an inconvenience,” says Olesen, “the outcome has brought us a valuable competitive edge due to the unexpected scale of improvements.”

The turning point

Back in 2011, System TM was in a position where it could no longer supply sufficient spare parts or software upgrades, and the conversion was becoming urgently necessary. At first, the company intended to upgrade the control system with components from their existing supplier. When all trials in this direction failed, however, the company began its search for a suppli-

er that could match the rather strict requirements. In B&R, System TM found a solution provider that was also able put a team of programmers and engineers at their disposal. The joined commitment was, according to Olesen, a turning point and one of the main reasons why the cooperation has yielded such great success.

“At the time of the conversion we were involved in a lot of ongoing projects,” recalls Olesen, who was heavily involved in the selection of B&R and the subsequent system integration. “It was therefore absolutely crucial that the conversion could take place as quickly and smoothly as possible.”

Standard replaces customized

The switch to a fully B&R-equipped control system – complete with an industrial PC, motion controllers, servo drives, PLCs and I/O – opened up the possibility of more efficient internal communication. So, even though the change of interface and communication fell somewhat outside the scope of the planned conversion project, System TM decided to pursue these new opportunities.



With a retrofit of the system based on standard products, System TM's cutting machine is now 50% faster.



Thomas H. Olesen (COO, System TM) and Carsten Clemensen (Managing Director, B&R Denmark) agree that the close cooperation between their engineering teams has been an important factor in their success.



Thomas H. Olesen
COO, System TM

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The Opti-Kap 5003 was the first machine B&R converted – achieving a total capacity increase of up to 50%.

Previously, all communication between the individual system components was controlled by a customized industrial PC. In the retrofitted solution, the customized PC has been replaced by a standard industrial PC that primarily handles the HMI, accessed through a multi-touch panel. All data processing and internal communication between the different components now takes place via integrated onboard controllers. The distributed architecture allowing internal communication between the individual system components has been the main contributor to the capacity increase.

The fact that the entire retrofit challenge has been solved using standard components is of great importance to System TM. "We implement machines and large turnkey solutions around the globe," says Olesen, "so we need to have easy access to spare parts wherever the customer may be situated. The switch from custom system components to a solution based on standard products not only eases the supply of spare parts, it also puts us in a position to offer improved service."

Sharing knowledge is the key to success

Since the challenging conversion project in 2011, System TM has based all of its control systems on B&R components. System TM still attributes the success of the project to B&R's high-end programming assistance.

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System TM A/S

As one of the largest suppliers in the world, System TM specializes in optimizing system solutions for the solid wood industry. System TM takes responsibility for the entire process from infeed to inspection, cross-cutting, finger jointing, molding, laminating, stacking, and all kinds of internal transport. The competencies of its staff range from line design, installation and commissioning to staff training, service and maintenance. ←