

Helping Improve Plant Output and Performance

Avanti Conveyors' core values are Innovation, Support and Flexibility and it is these three values that drive the company forward. An innovation-led company, they are motivated by the desire to dramatically improve converting machine performance through materials handling.



Recent changes in corrugator demand and converting demand with shorter order run lengths mean more complexity on the corrugator. It is now a more complex task in Work In Progress to balance these two very different demands. The layout of box plants 40 years ago actually looks very similar to today. However, one huge difference is the expectation of the machinery in the plant. In the 1980s, a plant would have produced 40 to 50m sqm with 300 people and today you would anticipate 250m sqm from the same number of converting machines and far fewer people.

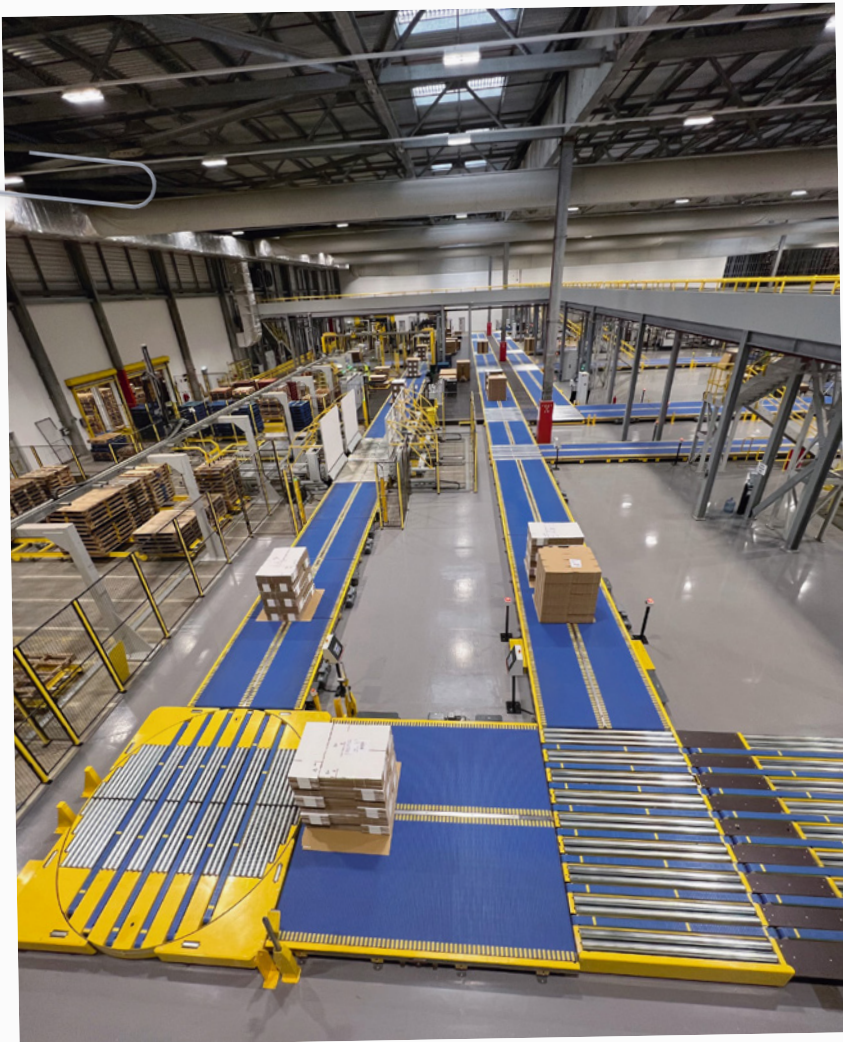
Avanti were approached by SAICA to help them with a greenfield site in the UK and we delivered the first integrated vertical Work In Progress storage

system in the UK alongside partner DF. This system gave SAICA 900,000 sqm of board storage in Work In Progress in a compact 18m x 50m x 15m space. A regular conveyor system would have provided about 200,000 sqm of space. This meant that SAICA could deplete the corrugator by bringing orders forward and still deliver just in time to the converting machines. This is a great step forwards in decoupling the varying demands of the corrugator and converting machines.

Pegasus has been a massive innovation for

Avanti Conveyors over the last five years. "At its inception we looked at how to remove bottlenecks that were inherent in the palletising and separating processes," says Simon Mander, Managing Director. "There were three constrictions: slow separation, slow layer formation and slow layer loading. We worked





through the whole line to remove those bottlenecks to improve efficiency. The all-electric separator has a cycle time of under four seconds and there is a sophisticated layer formation system, which presents multiple logs into the second separator, so it doesn't become a bottleneck. Complex work mixes are handled much more efficiently with Pegasus. The whole Pegasus system has been designed with sustainability in mind and there is no air on the line. The line has an automatic cruise control, which means it defaults to the lowest speed and lowest consumption possible. As the other machine speeds increase

then Pegasus will automatically increase making the machine run in the most economical fashion. Retrofitting a Pegasus palletiser in an existing production line can overcome existing bottlenecks and maximise efficiency.”

Latest Developments

Avanti Conveyors has developed a system called Avantar, which is the digital twin of the Pegasus separator and palletiser. A digital mimic of every action of the separator and palletiser has been created. The PLC code emulates the actions on Pegasus and can calculate the performance of the line. Line performance can also be emulated

prior to installation, which results in faster start-up times.

The company have developed a new software product, which integrates with materials handling equipment to give detailed performance information to our customers. This information can be used to identify any bottlenecks or weaknesses in the production flow and therefore improve efficiency and reduce costs. iMPRESS is the Finished Goods Central Palletising Control System and iMPRESS OEE (Overall Equipment Effectiveness) INSITE is the Information System which runs alongside. The Finished Goods area of the factory has often been a bit of a black hole and lacked feedback about the performance of all the equipment and flow of product. This area has lots of processes including conveying, strapping, palletising, wrapping, top board loading, top sheet loading, sample boxes and fork truck collection and take-off.

iMPRESS OEE INSITE has been designed to integrate with products from other OEMs to give automated feedback to the material handling control system. Each element in the Finished Goods chain has various identifiable issues (for example, wrapper out of film, bar code misreads, loads waiting for unload by the fork truck). The performance report for the shift can then be drilled down into in detailed reports and graphs. This gives the engineering and maintenance teams specific information to allow them to prioritise their workload to address the equipment which is causing the most breakdowns. Once this engineering work has been completed then the

performance report for the next shift can show where next to focus their efforts, making the Finished Goods area as streamlined and efficient as possible. Further, it encourages production teams to analyse throughput, and identify bottlenecks either due to equipment capacity or process, thus highlighting potential areas for future investment.

Avanti provide a comprehensive support service to our customers offering tailored service packages to meet business needs. “We care about your customer experience and we strive to increase our customer engagement and satisfaction by offering you the right tools to realise your

business goals,” adds Mander. As part of this, they offer:

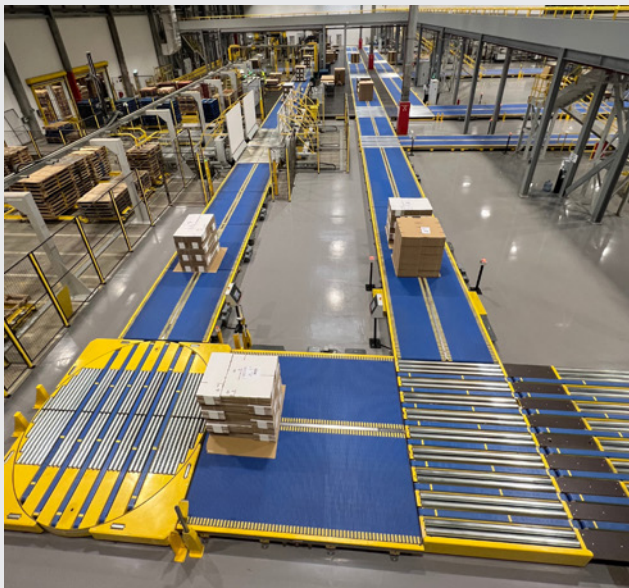
- Software support through dedicated 24/7 helpline and planned site visits;
- Mechanical and electrical engineering support both at site and by phone or email;
- Maintenance contracts;
- Training of operators and engineers;
- Maintenance manuals;
- Technical support from suppliers.

“Flexibility is also important to the team at Avanti Conveyors and our Design and R&D teams thrive on the challenges that customer requests bring,” continues Mander. “The iMPRESS OEE system was

further developed when a customer asked us to data collect from their Finished Goods system to help them measure OEE in what was a black hole in the factory.”

He concludes, “Our experience of working in materials handling in the corrugated industry over the last 35 years has given us a detailed understanding and insight into the common problems experienced by both integrated and sheet plants within our industry, both within Europe and further afield. With our proven record of innovation, support and flexibility, we feel that we are well placed to offer you practical solutions to help support your corrugated business.”

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