



Staying ahead of the game

Intelligent storage systems give local manufacturers the flexibility and automation they need to maximise productivity and remain competitive.

By Barbara Schulz

In order to survive in today's competitive marketplace, local furniture manufacturers must find ways to cut costs and increase productivity, all without sacrificing quality.

Like many manufacturers in Australia, Melbourne-based AWG Australia is unable to compete on price alone with overseas-based manufacturers and is using quality and a high variety of designs as a key differentiator. However, without investing in automation in order to increase production volume, smaller cabinet makers will not survive, company owner and founder Andrew Wickham says.

"There is not going to be an evolution but a revolution in the kitchen and shop-fitting industry," Mr Wickham says. "We compete with cheaper imports from China and other low-cost countries. At present, it is estimated about 20% of all shop-fitting joinery is imported, as well as a growing proportion of kitchens are coming into Australia from overseas suppliers. That puts increasing pressure for all suppliers to the industry."

As a result, Mr Wickham not only decided to expand his factory, which is now located on a 6,500m² site in Knoxfield, Victoria, he also invested in a Bargstedt storage system after visiting Ligna, the world fair for forestry and wood industries in Germany, and seeing the system in action at Austrian manufacturer Villeroy & Boch.

"When I saw the system at the Villeroy & Boch factory, I instantly fell in love with it," he says. "I saw the benefits of it and proceeded to purchase one later in that year for delivery in June 2010. The storage system is part of the plan to remain competitive."

Fellow local furniture manufacturer Orchid Furniture in Kilsyth, Victoria, was the first Australian company to invest in a Bargstedt storage system – and company co-founder and owner Brett Atherton had similar reasons to automate his factory.

Founded in 1999 by two young and optimistic entrepreneurs, Orchid Furniture services the shopfitting and commercial fit-out industry. At present, Orchid employs 55 people, runs seven machines including CNCs, edgebanders and a beam saw.

Faced with a shop full of machines running 24 hours a day, but not to full capacity, and a busy forklift driver, who became the most important person in the shop feeding and loading the machines, Mr Atherton and co-owner Bernard Galea knew it was time to invest in automation to optimise their production and increase efficiency.

"We already made the decision to buy a storage system in 2007, after visiting Ligna, but at that time the price was too high for us," Mr Atherton says. "We finally decided to invest



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in our storage system in 2009, when the government offered that 30% tax rebate during the GFC."

Remaining globally competitive

"There aren't many options for local furniture manufacturers in Australia," says Antonio Di Conza, Technical Sales Consultant, Homag Australia, Springvale, Victoria. "If you're going to stay busy, and continue to meet the customers' needs, you have to invest in new technology and equipment. For small companies, the future depends on modernisation, automation and just-in-time production to increase productivity."

Moreover, minimising the time frame between the purchase of materials and invoicing/payment is critical to improving cash flow. Local industry competition is increasingly driven by global players, not local, Ross Campbell, Homag Australia's Managing Director adds. "Australia's natural barrier to import, our fantastic non-tariff protection, – being "distance" and "time to market" – is gradually being eroded. Therefore focus on the process to boil out cost, increase the rate of turnover is one of the next natural steps in the refining of manufacture, and remaining competitive and profitable."

The Bargstedt system is a major contributor to implement lean production in order to improve local manufacturers' operations and cash-flow.

Lean production

Just-in-time production is an essential requirement in the bid to comply with wide-ranging and individual customer demands. The Homag Group has responded by orienting its product range right across the performance spectrum towards specific production methods designed to address this growing requirement.

The most important attribute of lean production is the ability to build products quickly and efficiently in batch-size-of-one. In order to do that, all setup must be eliminated including any delays to parts, find and load parts, position workpieces, adjust machine settings, change equipment programs, and find and understand instructions.

The Bargstedt storage system supports the just-in-time process and permits the benefits of high volume production to be combined with economical methods for the manufacture of minimal batch sizes down to as low as one. And it has paid off for Mr Di Conza's customers.



"The Bargstedt has reduced our production time and increased our output out of the machine shop dramatically. Our turnover has increased by 40% since the machine was installed in April 2010." Brett Atherton, Orchid Furniture, VIC.



"We have increased our production by 60-70%," Michael Madden, General Manager at Furniture Concepts Queensland, says. "Cash flow has also improved because the system's coordination of job planning and purchasing means you will order only what you really need. There is no over-ordering happening anymore."

Mr Madden decided to invest in the Bargstedt storage system in November 2009 after touring various factories during a Homag Open-House event in Germany. The business' cornerstone is the production of quality, locally crafted office furniture and seating, and the system's ability to control all stock, orders and off-cuts has improved the company's cash flow, which – as mentioned before – is of paramount importance for any business.

"The system can also work a completely unmanned ghost shift," Mr Madden adds. "During the lights-out unmanned operation, the system prepares tomorrow's sheets in the sequence of the production plan, which saves us a lot of time and money."

AWG has also considerably increased its production on its beam saw by more than 100%, because cutting is now independent of material supply.

Orchid Furniture increased its machine utilisation rate from around 30% to 80-90% and more than doubled the output of the beam saw as well. "The Bargstedt has reduced our production time and increased our output out of the machine shop dramatically," Mr Atherton says. "Our turnover has increased by 40% since the machine was installed in April 2010. That has a bit to do with that the economy has improved a lot, but there is no way we could have done a 40% increase in turnover if it wasn't for that machine sitting next door. I should have put the system in four years ago, when I started thinking about it!"

Training and support

All companies agree that the customised system is easy to program and operate – but it wouldn't be if it wasn't for the



The Bargstedt storage control registers the complete material stock and on this basis it calculates the optimal material flow.

customer support and training provided by Homag Australia.

"We are a 100% Homag customer, we feel we get looked after, their service is very good, you never have to wait long to have someone out here, which is a huge benefit to us," Mr Wickham says.

Mr Atherton agrees and especially benefited from the training course before delivery conducted by Bargstedt, who have a worldwide training system in place. After a two-day training course, Mr Atherton was able to play with the machine software in order to get familiar with it, and once the machine was up and running, he was able to use it straight away, which was a huge benefit after losing precious production time during the installation period.

Homag Australia's Technical Sales Consultant Antonio Di Conza is closely involved in his customers' ambitious projects from the very first customer contact right through to commissioning.

"Australian manufacturers, like their overseas counterparts, typically experience high levels of fixed cost and low margins. Because the market is fragmented, plant and equipment is often under-utilised," Mr Di Conza says. "We adapt the Bargstedt storage systems to the needs of each client to ensure their investment results in a considerable productivity and resource benefit."

The plane storage system TLF410 installed at AWG, for instance, offers a high degree of optimisation and efficiency. With a maximum span width of 12m and a 50m frame length for this particular model (Bargstedt systems are also available from 10m x 5m up to 90m x 16m) it is possible to store almost any type and amount of boards in an area of 600m² up to a height of 2.1m with spacing between stacks of only 150mm. The gantry style system can travel up to 150m/min and features a suction head, equipped with an intelligent material recognition device to move a great spectrum of boards from raw MDF to thin laminates.

Quality and design

For local companies it is important to handle such a great spectrum of boards. Competing with "cheaper" imports by quality and design means they have to stock a huge variety of coloured panels, which can take up a lot of storage space if the panels are stored in a typical colour racking system.

"The automated rainbow stacking system enables us to handle a high variety of panels using minimum storage space," Mr Madden says. "In typical colour racking systems you tend to segregate each colour sheet; with the rainbow stack system the machine places the sheet where it is most suitable and picks it up when needed."

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Mr Wickham is also extremely pleased with the high variety of panels the system can handle as well as the automatic stock control. His system features two infeed stations where the sheets are loaded by the forklift driver. Since this is the only section in his factory where forklifts are operated now, the Bargstedt has not only improved efficiency and productivity, but also safety and utilisation of floor space.

The Bargstedt safety package includes the protection fence for the complete protection of the storage area, electronically protected access doors and places to place the goods and remove them from the storage protected by light-barriers. Personnel are protected from unintentional entry

in the storage area and thus from injuries. As a result, the production process is not interrupted and related expensive downtimes are eliminated.

Complete storage and inventory control

The Bargstedt storage control registers the complete material stock and on this basis it calculates the optimal material flow. All material movements are permanently registered in the background and the storage capacity is maximally used through a best flexible allocation and arrangement of boards and storage places.

"The processing machines connected to the storage system are optimally used considering the process order and corresponding to their capacity," Mr Di Conza explains. "If no material has to be provided for the next processing step the storage system does not stop. Where other storage systems are having a time of non-use, the Bargstedt storage system optimises the existing space and arranges in advance for short distances to the next processing step."

"The storage control system reduces our customers' delivery times, optimises material handling and saves manpower and storage resources," he continues. "Companies are focused on absolutely minimising the time from commencing the manufacture to payment."

"The system has to be optimally integrated into our customers' operations though, in order to deliver maximum benefits. Homag Australia has the expertise and experience to configure each system to individual needs and offers hands-on training and after-sales support."

What is more, the open database system makes a smooth integration possible. The database is moved to the customer's server adjusted to their data security concept. "There are no problems to integrate the database into our customers' IT surroundings and all movements are booked in real-time to the database, so there is no need for further data storage."

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Eliminating waste

Eliminating waste is a major component in an operation's efforts to streamline processes and increase efficiencies. The Bargstedt storage system eliminates growing piles of off-cuts by automatically updating lists of all available off-cuts. Homag Australia's customers can now manage and locate off-cuts at the PC terminals of both, the saw and the storage system.

The system's ability to manage off-cuts has decreased all of their customers' waste, because it retrieves the off-cuts and maintains it in stock. "For example, when only half a sheet was needed and fed to the beam saw, the storage systems returns the other half to the system, registers it as an off-cut and uses it when a suitable job comes up in the future," Mr Wickham says.

Furthermore, the software module "IntelliStore" provides for a storage organisation which adjusts itself automatically

according to the changing production conditions. "IntelliStore" continually analyses all storage movements in the background, which reduces re-stacking by up to 40%.

"It's a fantastic system, it offers complete inventory control, it is one of the most significant things we have bought," Mr Wickham sums up. "We increased our cutting time, use our machines to full capacity and save money."

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Bargstedt storage systems

High productivity and optimal economy of scale

Bargstedt opens up a world of opportunity for Australia to remain competitive in globalised markets. With a considerable saving of space in the storing of boards, maximum material use and increased saw capacity, intelligent storage technology and cost effectiveness go hand in hand in a Bargstedt storage system. For the handling of panels and boards, Bargstedt offers very flexibly combinable plane storage systems which are designed to the special requirements of the furniture industry, including high production quality, reduced production costs or more transparency in order processing.

Advantages:

- Simple handling of a high variety of panels
- Just-in-time ordering, no more over-ordering
- Reduced inventory
- The material consumption is coordinated with the ordering system and the order planning
- Enhanced safety and space utilisation (no forklift corridors)
- Machines are used to full capacity by means of automated transport
- Complete inventory control
- Management of parts stored in external location (including off-cuts)
- Optimal utilisation of off-cuts
- Unmanned operation
- Parts measure in 2-axis automatically, including weight
- Ergonomic user interface
- Optimisation of production sequence