

HAI ROBOTICS

Booktopia Heightened Efficiency and Capacity with ACR Systems



Australia's largest online bookstore, Booktopia, uses autonomous case-handling robot (ACR) systems to increase capacity and fulfillment.

Booktopia

Booktopia, Australia's largest online bookstore, recently incorporated the case-to-person piece picking method supported by HAI ROBOTICS in its 14,000 sqm distribution center in Lidcombe, NSW. This is the first step towards a solution that will enable the leading retailer to ship up to 60,000 books across 145,000 different titles per day.

Booktopia has partnered with BPS Global, a leading global provider of logistics solutions, to implement advanced robotic automation technology. By working with BPS Global, Booktopia has introduced an innovative robotic solution by Shenzhen-based HAI ROBOTICS.

As a customer-centric organization, Booktopia is constantly exploring the latest innovation and technology to help improve its speed to market and the overall experience for its rapidly growing customer base.

Throughout 2020, Booktopia invested \$12 million in the expansion of its 14,000 sqm DC in Lidcombe, NSW.

"We are consistently investing to meet the growth trajectory of the business," Tony Nash CEO at Booktopia

The Challenges

With a database of more than five million customers, Booktopia wanted to explore ways to increase capacity in its distribution center.

For every title the company holds in stock, they sell four times as many books compared to if they don't have that title in stock.

The initial driving factor for Booktopia exploring new ways of automating its picking, packing and putaway processes was so it could increase capacity.

"Being able to hold more stock was our first driving

factor but we also wanted to explore how we could drive efficiency around picking and putaway and the HAI ROBOTICS solution from BPS Global ticked all of these boxes," Wayne Baskin, Chief Technology Officer at Booktopia.

The Solution

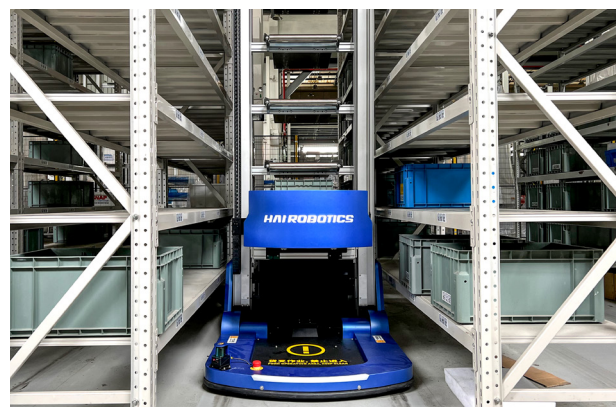
HAI ROBOTICS has introduced a new autonomous case-handling robotic solution to the market, an efficient, intelligent, flexible and customizable automation solution through advanced robotics and AI algorithms.

As the world's first tote and carton picking, double-deep autonomous case-handling robotic system, the HAIPICK ACR system differs from standard autonomous mobile robot solutions in that it can carry cartons rather than merely totes.

Featuring a telescopic fork, which stretches four meters high and a double deep capacity to handle cartons and totes, this solution increases storage density by up to 130 per cent. It gives Booktopia the ability to simultaneously present up to 13 totes or cartons to pickers, focusing only on the inventory that is required for the multiple orders the pickers are fulfilling at the pick stations.

130%

storage density



HAIPICK ACR robot at HAI ROBOTICS factory

Customer Value

1. Doubling Capacity

In a move that will see Booktopia almost double its capacity and enable the leading retailer to ship up to 60,000 books across 145,000 different titles per day, Booktopia has deployed the first stage of more than 90 innovative robots across its fulfilment operations in Lidcombe, NSW.

x2 times

distribution capacity

While capacity was the key driving factor for the project, the efficiency improvements for picking and putaway also give Booktopia further opportunities to improve the customer experience.

The putaway rates have improved by an impressive 800 per cent and benefits roll out further across the business.

“With this solution, the efficiencies we get from pick and putaway drive efficiencies in other areas of the business. For example, our dock is now much more efficient as we can put away so much faster so we can ingest stock more quickly,” Wayne says.

800%

putaway efficiency



HAIPICK ACR robots at Booktopia's distribution center in DC in Lidcombe, NSW

The HAIPICK ACR robots utilizes 3D visual recognition technology to identify goods without the need for codes, resulting in faster inventory count through shelf scanning. It supports multi-

size carton and tote picking and can be applied to multiple business needs.

Furthermore, the robots use artificial intelligence technology to establish which SKUs are in demand and re-organize the inventory accordingly, resulting in further efficiencies.

Like other types of mobile autonomous robots, the solution is easy to move if needed, as opposed to fixed automation that requires upwards of 10 years to achieve a return on investment.

2. Integrating Robotics and Conveyors

The solution integrates with a recirculating conveyor design. The same tote can travel to different workstations and also recirculate in the workstations. It does not need to go back to the robot immediately after picking at the workstation.

HAIPICK ACR robots drop/pick from up to 11 different conveyor locations while in the same spot. What's more, robots can charge between the conveyors saving space and time.

HAIPICK ACR system allowed robots to work directly with conveyors, reducing space and operators while delivering high throughput and storage capacity.



3. ROI in less than 3 years

After completing a proof-of-concept consisting of 10 robots last year, BPS Global analysed the data and established that the HAIPICK ACR system would provide Booktopia with the increased capacity required, alongside a significant increase in speed to market, accuracy and fulfilment rates.



In September 2020, Booktopia made the commitment to order a further 90 robots and the project is ongoing. The project will be cash flow positive in four to six months and the retailer will have a return on its investment in less than three years.

Fast ROI	ROI in less than 3 years
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4. Booktopia Customer Experience

For Booktopia, any investment in technology or innovation is ultimately about improving the customer experience and this new automation solution meets this goal.

"We don't do this to be the first or to get awards, we do this because it is what is best for our customers. The foundation of our innovation strategy is to meet our goal of providing our customers with the best and most efficient service we can," Tony Nash, CEO at Booktopia says.

5. Safety First

The new solution also improves safety in the warehouse. With a reduction in manual handling. There is also a reduction in the travel time for operators, leading to a decrease in trips and accidents.

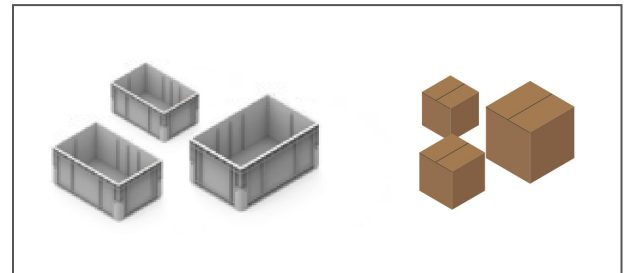
Furthermore, the robots operate in a self-contained area therefore removing the element of interface between forklifts and people, which is one of the most common causes of accidents in the materials handling industry.

A Watershed Moment For Mobile Automation In The Warehouse

With the rising rental costs of warehouse space in Australia, along with a shortage of labor availability, many retailers and logistics providers are looking for cost and storage-efficient solutions.

The HAIPICK ACR system is a great solution as it can expand and contract with demand. Well-suited to a 3PL, retailer or supplier environment, the HAIPICK ACR system was the only option capable of moving totes directly between racks and conveyors without the need of workers as opposed to standard Autonomous Mobile Robot (AMR).

The HAIPICK totes can pick up to 35 kilograms in weight and will pick anything that fits into a 400 x 600 tote size – for example, plumbing supplies, spare parts, clothing, books and cosmetics.



HAIPICK ACR robots at Booktopia's distribution center in DC in Lidcombe, NSW

Committed to innovation, HAI ROBOTICS is working on expanding the solution to go even higher and add more shelves to provide further efficiencies and increased picking rates.

As the solution is mobile, the deployment time can be complete in as little as four to six months and HAI ROBOTICS offers three levels of integration for those who need to start from scratch, or simply plug straight into an existing infrastructure.

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