



Hudson's Bay Company (TSE:HBC) Releases the Robots

- 1) Hudson's Bay Company (TSE:HBC) recently announced the deployment of a \$60 million Perfect Pick case shuttle system that covers the entire vertical height of the building in which it has been installed. The system has the capacity to hold 1 million units of inventory and to process 4,200 customer orders per hour.
- 2) The Perfect Pick system uses autonomous carriers that carry items horizontally and vertically along a rack-style structure, bringing goods to an operator. Other vendors' systems rely on autonomous vehicles that move across the warehouse floor.
- 3) Market research firm IDC expects spending on robotics and related services to hit about \$84 billion this year and to grow at a 17% CAGR during 2015–2019. The firm expects China to drive much of this market growth.
- 4) The investment by Hudson's Bay comes four years after Amazon's \$775 million acquisition of Kiva Systems, and it represents a significant validation of the return on investment that a major traditional retailer can see from a robotics system.

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Executive Summary

Hudson's Bay Company recently announced the deployment of a \$60 million robotic fulfillment system in its warehouse in Scarborough, Ontario, in Canada. The Perfect Pick system can hold 1 million units of inventory and process 4,200 customer orders per hour. It has 15,000 feet of conveyors and 300 autonomous delivery vehicles for inventory storing and shipping.

Amazon led the way in terms of implementing robots with its \$775 million purchase of robotics company Kiva Systems in 2012. The move by Hudson's Bay represents a significant validation of robotics technology, as it is a traditional retailer that is justifying a substantial capital investment. Target, Kohl's and Walmart are reportedly also experimenting with deploying robots in their stores and warehouses.



Source: Shutterstock

Details Of The Announcement

Hudson's Bay recently unveiled the new robotic fulfillment system located in its 752,000-square-foot distribution center in Scarborough, Ontario. The company claims the system is the first of its kind in Canada. More than 300 full-time employees work at the Scarborough facility.

Specifically, the company is using a Perfect Pick case shuttle system, which includes 16 aisles that are each 200 feet long and extend to the entire vertical height of the building. The system can hold 1 million units of inventory and process 4,200 customer orders per hour. It also includes two custom document-handling robots for processing packing lists, 15,000 feet of conveyors and 300 autonomous delivery vehicles for inventory storing and shipping. The total investment was in excess of \$60 million.

The Robotic Equipment

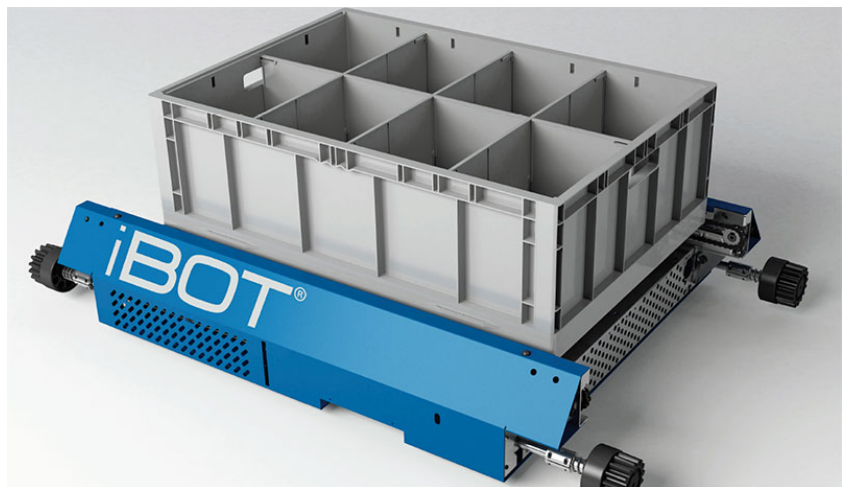
Perfect Pick is a warehouse-automation system offered by OPEX Corporation, which was originally a mail-processing division of conglomerate Kenco. The system is a self-contained, stand-alone point solution comprising modular, high-density racking units plus a fleet of autonomous robotic delivery vehicles—called iBOTs—which can access every storage location on an aisle both horizontally and vertically.



Source: OPEX

A Perfect Pick system has just three components: the iBOT robotic delivery vehicles, a storage rack and a user workstation. OPEX previously developed mail-sorting systems, and the iBOT (pictured below) is based on that technology. Powered by an ultracapacitor, the iBOT has the ability to move along the rack horizontally and vertically to deliver inventory directly to a workstation operator.

Figure 1. iBOT Robotic Delivery Vehicle



Source: OPEX Corporation

The Perfect Pick storage rack (pictured below) runs down both sides of an aisle in the warehouse. The rack contains 20" x 30" custom totes that can be divided into up to 12 storage cells. Its modular format enables flexible expansion.

Figure 2. Perfect Pick Storage Rack



Source: OPEX Corporation

The final component of the Perfect Pick system is an ergonomic workstation (pictured below), from which an operator directs the picking and putting operations.

Figure 3. Perfect Pick Workstation



Source: OPEX Corporation

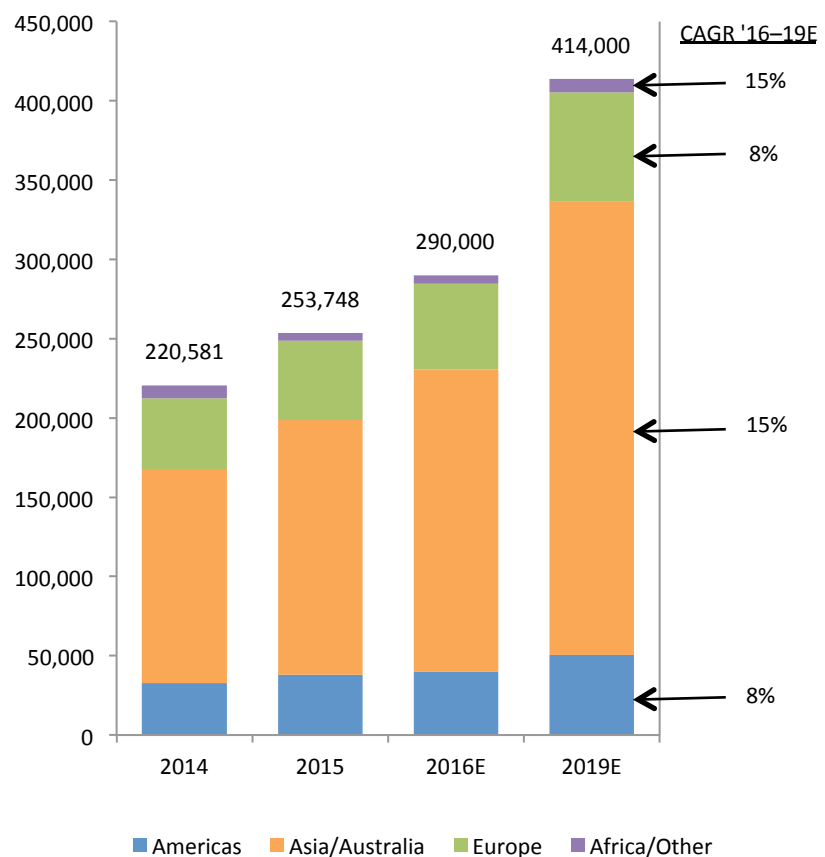
Industry Background

Market research firm IDC forecasts that spending on robotics and related services will hit about \$84 billion this year and grow at a 17% CAGR during 2015–2019. Spending in 2019 is forecast to break down roughly as 24% on systems, 24% on services and the remaining 52% on robotic hardware and software.

In a separate forecast, the International Federation of Robotics predicts that shipments of robots will reach about 290,000 units this year. Dividing the \$84 billion market size by the unit volume yields an average selling price of nearly \$290,000.

The graph below depicts unit shipments during 2014–2019E, and shows that Asia is the largest and fastest-growing major market (comprising more than 60% of the market, versus 15% and 21% for the Americas and Europe, respectively). Asia’s large share is primarily due to China’s deployment of 90,000 robots in 2016, which is expected to increase to 160,000 in 2019.

Figure 4. Robot Unit Shipment Forecast and CAGR, by Region, 2014–2019E



Source: OPEX Corporation



Conclusion

By making a \$60 million investment in robotics technology in its fulfilment center, Hudson's Bay is the first major traditional retailer to validate the economics of the technology, and the company's move is likely to encourage other major retailers to take the plunge into warehouse robotics. Already, Target, Kohl's and Walmart are reportedly also experimenting with deploying robots in their stores and warehouses.



Source: Shutterstock



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