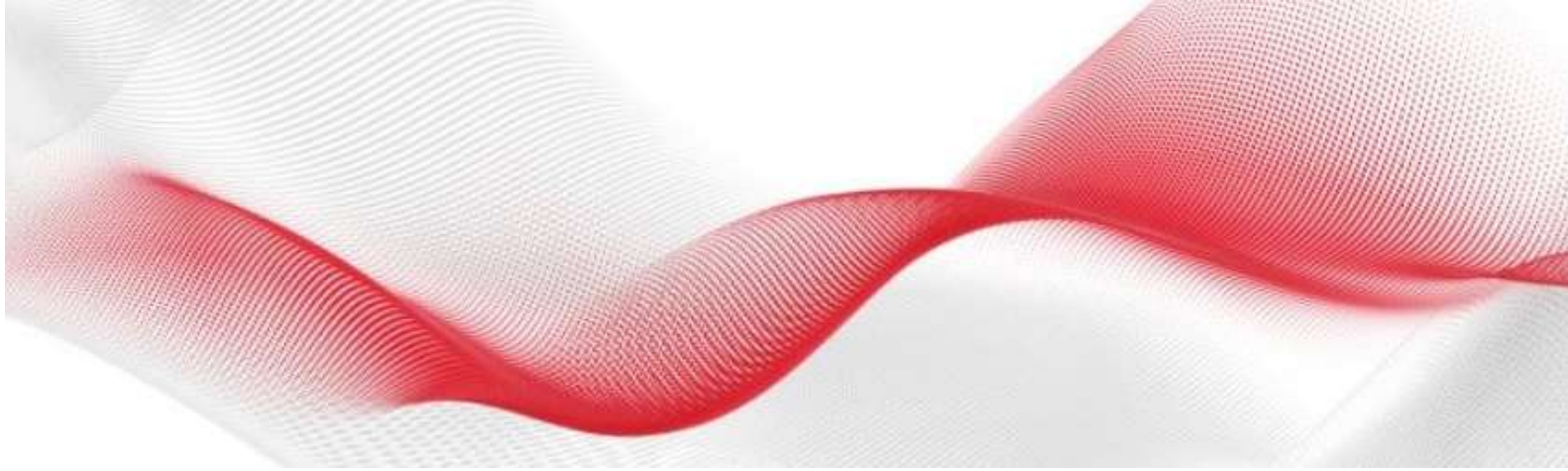


## Case study: Robotics re-shape the supply chain



Automated systems are being used more than ever in warehouses, logistics and distribution centers. Why? Because robots give companies a competitive edge by reducing costs and streamlining the supply chain.

Historically, robot applications have been limited to the automotive and electronic sectors. But over the past decade, growth in material handling orders indicates that the robotics industry is exploring new avenues, particularly in consumer goods such as food, beverage and pharmaceuticals.

## Demands from retail customers

Robotic-based material handling in distribution systems is among the fastest growing applications in flexible automation, alongside packaging. This is due to manufacturers and distributors responding to the demands of their retail customers – particularly large, influential ones – who require that products come to their facilities palletized in a structure that suits them.

The configuration of each pallet is customized to meet their specific needs, a task that has been difficult to execute in the past. Mixed load pallets are emerging as one of the most efficient technologies currently available for the supply chain process. And robots are the only viable and flexible option for creating mixed load pallets.

## Broad range of products

Diversity of products handled by distribution centers and warehouses is expanding at an enormous rate. At the same time, these facilities are under immense pressure to reduce costs. Accommodating the broadest range of products, keeping capital expenditures low, and meeting quick return on investments are tough challenges faced by material handling facilities.

Although packing and palletizing involve a unique set of requirements for each and every order, managers responsible for warehousing operations are recognizing that an automated solution with rapid changeover capabilities can accommodate a wide diversity of operations and material while maintaining productivity.

## Robotics an alternative

Robotics is becoming a viable alternative to achieve yet a greater degree of flexibility in today's more complex material handling operations. A survey conducted by the United Kingdom's Material Handling Industry Association (MHIA) indicates that automated order picking and palletizing are some of the operations that companies are considering to automate.

As with any other machinery application, end users need to be able to justify such capital investment. The most obvious benefits of installing robots are reduction in sickness benefits, the overcoming of potential and existing labor shortages, better package quality, and improved working conditions.

Less obvious are savings linked to a reduced head count such as a reduction in staff recruitment and training costs, tax and health contributions and even the number of parking spaces required. In many cases a work area reduction alone offers cost savings in real estate.

The cost savings above coupled with falling robot prices, increased speeds and improved accuracies, are imperatives for materials handling facilities and prompt a turn to robotics as the preferred solution.

## Axium - experienced player

Axium Industrial Automation understands that robotic automation offers a complete solution. Drawing on its 15 years experience in the manufacturing industry, Axium specializes in complex robotic

palletizing/depalletizing solutions for warehouses. Working in partnership with ABB Robotics, Axium believes that robots play an important role in the future of warehousing.

Marc Ducharme of Axium says, “We have developed a unique solution for mixed-load palletizing that has received very positive responses when demonstrated to distribution centers. I believe that there is a very strong market for robotics in the future, although it is still in the early stages.”

Axium works exclusively with MagicLogic Optimization Inc., which developed Cube-IQ. Cube-IQ is an advanced load-planning program, capable of achieving the best possible loads for pallets. It has a complete graphical user interface, with point-and-click and drag-and-drop to build up loading pallets, and with on-screen and printed graphics.

Says Ducharme: “The concept of Cube-IQ is very simple, but the software is very powerful. It uses the same concept as configuring truck combinations, but just builds pallets. We have demonstrated this with potential customers using their real-life scenarios, and results have shown that the cost savings can be substantial, especially when order errors, inaccurate shipment, improper stock rotation and double deliveries are eliminated.”

## User friendly

The fast handling speeds are due, in part, to the fact that today’s generation of robots have high speed, low inertia motors and fast processors within the controllers. PC-based controller solutions, with their open architecture, have really made their mark.

Users are now able to control robots via user-friendly programming interfaces. These have been simplified so that engineers familiar with programmable logic controls are also able to program robots. The user interface for every robot is an intuitive screen.

The user can easily implement parameter changes during operation, which significantly increases the quality and efficiency of the system. Simple machine programming can also be used for new product shapes and sizes as well as provides the possibility of viewing production statistics.

## Partnerships

ABB Robotics believes that the best way to deliver robotic automation within materials handling applications is to establish formal alliances with system designers, builders and integrators.

This enables information, technology and experience to be shared in a mutually secure manner to the benefit of the end user. The ABB Robotics Partner Network allows customized solutions to be developed to maximize economic benefits and ensure efficient robotic configuration for warehouses, logistics and distribution centers.

## Robotics solutions the future

Materials handling facilities need to reassess their strategy to identify key opportunities to gain the advantage of integrating robotics into the operation. As the tangible benefits of using robotic solutions are revealed, it is widely expected that robotics will be adopted at a much higher rate in industries outside its strong concentration in the automotive sector.

As robotics makes a stronger appeal to a broad range of industries, the overall life cycle costs will follow a faster decent as initial purchase, integration and maintenance become standardized.

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