

# Autonomous mobile robots

Optimize efficiency across your entire organization

**Compared to manual operations, or a traditionally automated environment, the use of Autonomous Mobile Robots (AMR) can help improve the efficiency of logistics and supply chain operations of all sizes. From improving floor operations, transportation and processing to generating warehouse layout reports, AMR offers huge advantages for efficiency, growth, scalability and speed.**

## **The next generation of challenges in material handling workflows**

With today's customers expecting faster, more flexible delivery services, supply chains are growing in size and complexity, calling on businesses to develop solutions which are both reliable and adaptable enough to deal with spikes in demand.

Meanwhile, manual labor challenges globally, particularly during peak seasonal periods, raise another challenge. Even when available, short-term temporary labor bought into increase capacity, is typically more expensive and slower to reach optimum productivity than regular staff.

Coupled with this is a general desire for operational evolution, to modernize logistics, to reduce cost and increase efficiency.



“Traditional” automation – conveyor belts, automatic sorting or “fixed asset” operations – can deliver high rates of speed and tremendous efficiencies. But it's very expensive, takes a long time to design and deploy, and once in, it's inflexible, difficult to scale, and nearly impossible to relocate.

And then there's data. The more and better data you have about a system and where its efficiencies and inefficiencies lie, the more equipped you are to improve the operation, and act quickly to fix problems as they arise. But in a manually operated environment such data is often not available, leading to an inability to quickly identify what is working and where improvements can be made.

## **Key benefits**



### **Affordable and flexible**

Low-cost entry with little or no infrastructure impact. Robots are flexible and versatile and can perform multiple functions.



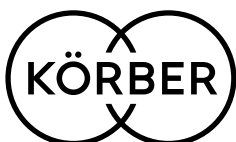
### **Easily scalable**

The system can grow with you or scale up or down as needed, short- or long-term, often with zero ramp-up time.



### **Smooth integration**

The AMRs integrate completely, delivering a constant stream of operational data the back into the warehouse and logistics systems.



## **Robots deliver efficiency, growth, scalability and speed**

A new technology area has recently emerged, built to address many of the challenges related to the current state of supply chain operations: Autonomous Mobile Robots (AMRs).

AMRs improve warehouse efficiency in many ways. These devices take on many of the manual movement activities in the warehouse, which have long been known as the biggest source of waste in the supply chain (non-value-adding movement of material). Across the ecosystem of AMR vendors, there's a wide range of form, function and capability, from intricate picking fulfillment to moving pallets and large payloads.

As opposed to the more familiar Autonomous Guided Vehicle (AGV), AMRs operate from a digital map of their environment and require little or no infrastructure modification. The existing Warehouse Management System (WMS) feeds tasks to the robots, and the digital mapping, sensors, cameras and embedded safety mechanisms tell them where they are and how to get to where they need to be, so they can move around obstacles or take alternative routes without instruction.

AMR is far more affordable than traditional automation at the entry level, and easy to scale once in place, either for long-term growth, or for short-term seasonality. Seasonality is a big issue in many areas, especially e-commerce, which has distinct seasonal peaks involving many times the usual throughput.

**“Customers expect a greater variety of products available next day. For companies to compete in that environment, they need speed and they need flexibility, and that's what AMR technology delivers.”**

**John Santagate**  
Körber

It's highly flexible – scaling an operation can be as simple as just adding more robots. Once the system is in place, there is zero ramp-up time, you can add more or fewer robots as needed. The system is so flexible that you can literally just pick it up and move it to another facility should the need arise.

AMRs are a connected asset – robots feed a continuous stream of data about the warehouse operation back into the WMS to allow complete visibility about speed, mistakes and efficiencies, promoting a far greater level of analytics.

Robot as a Service (RaaS) is a fundamentally new way of looking at automation, allowing the transition from a capital to an operating expense. This also means upgrading is built into the service, rather than a fixed infrastructure which all has to be replaced at great cost when it comes to updating.

### **The Körber difference**

Körber has a truly global network of reach and infrastructure, with a deep expertise in warehouse and automation technology. This, coupled with a portfolio of partnerships with the leading manufacturers and innovators in the market, means we can extend to our customers a wider range of product offerings that are relevant to their businesses, uniquely placing Körber as the strongest AMR partner in the world, guiding our customers and helping them evolve their workflows.

