

# AMRs vs AGVs

## How to understand mobile robots in the age of Industry 4.0?

As automation becomes the new norm for manufacturing and warehousing operations in the Industry 4.0 era, the options to help you achieve it are rapidly evolving. Technologies such as unmanned forklifts, collaborative robotic arms, improved sorting / collection, and smart conveyors are advancing as costs continue to decline; making these options more accessible for businesses of all sizes.

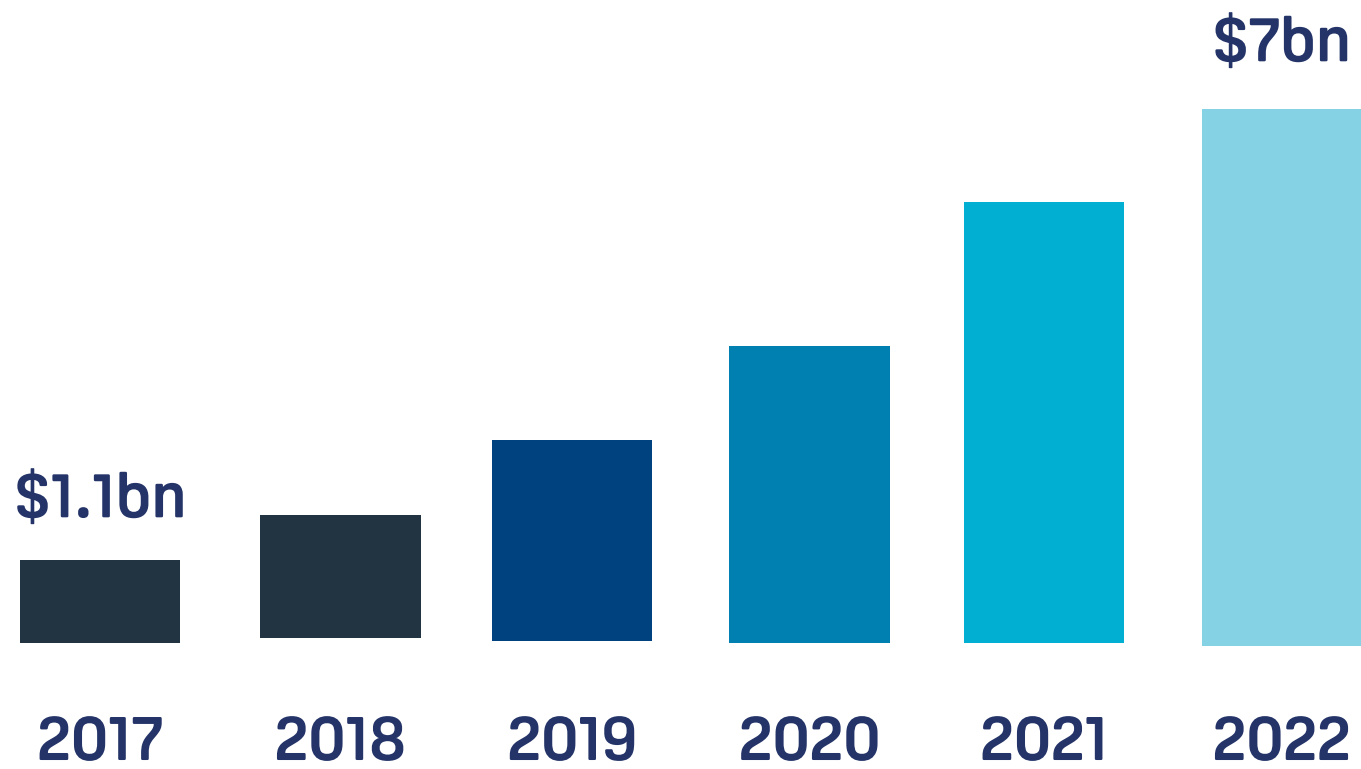
One such advancement that has attracted a lot of attention in recent years has been the advent of autonomous mobile robots (AMRs) as smarter and more flexible alternatives to automated guided vehicles (AGVs) for a wide variety of material handling activities. If you are considering these options to optimize your operations, understanding the difference between these two automation alternatives will help you:

	AGVs - Automated Guided Vehicles	AMRs - Autonomous Mobile Robots
 Navigation	AGVs are guided by magnetic strips or cables installed on or under the floor.	AMRs create and save a map of the facility and use it to dynamically calculate the best route from A to B at any given time.
 Deployment	AGVs require the installation of navigation guides, which sometimes requires a substantial renovation of the facilities.	AMRs require minimal or no facility changes for MiR AMRs, which can be unpacked and deployed in minutes.
 Flexibility	Changing AGVs operational patterns or workflow requires repeating the deployment process.	AMRs dynamically plan the shortest path from A to B, and if the workflow changes from A to C, operational patterns can change with a click of the mouse.
 Responsiveness	AGVs are unable to adapt to changes in the environment or obstacles that stand in their way.	AMRs will automatically detect and avoid obstacles and blocked paths to find the best route to your next objective.
 Accessibility	AGVs generally require experts to configure or reconfigure the system.	Workers can set up and configure MiR AMRs for material handling with no experience required.

## Automation solutions help respond to any problem that arises, now and in the future.

 Increased Productivity	 Ensuring Health and Safety	 Deliver Strong ROI
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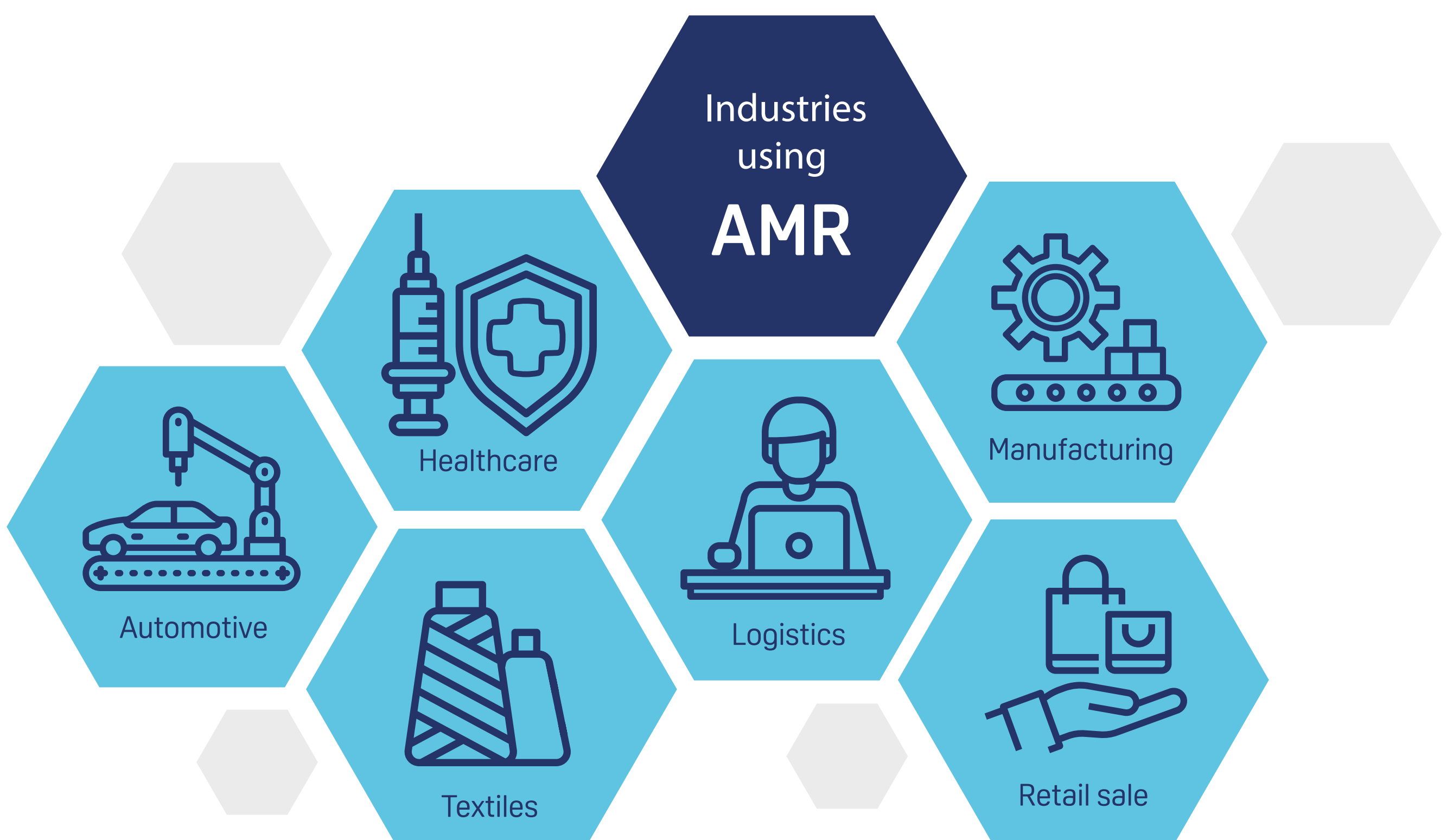
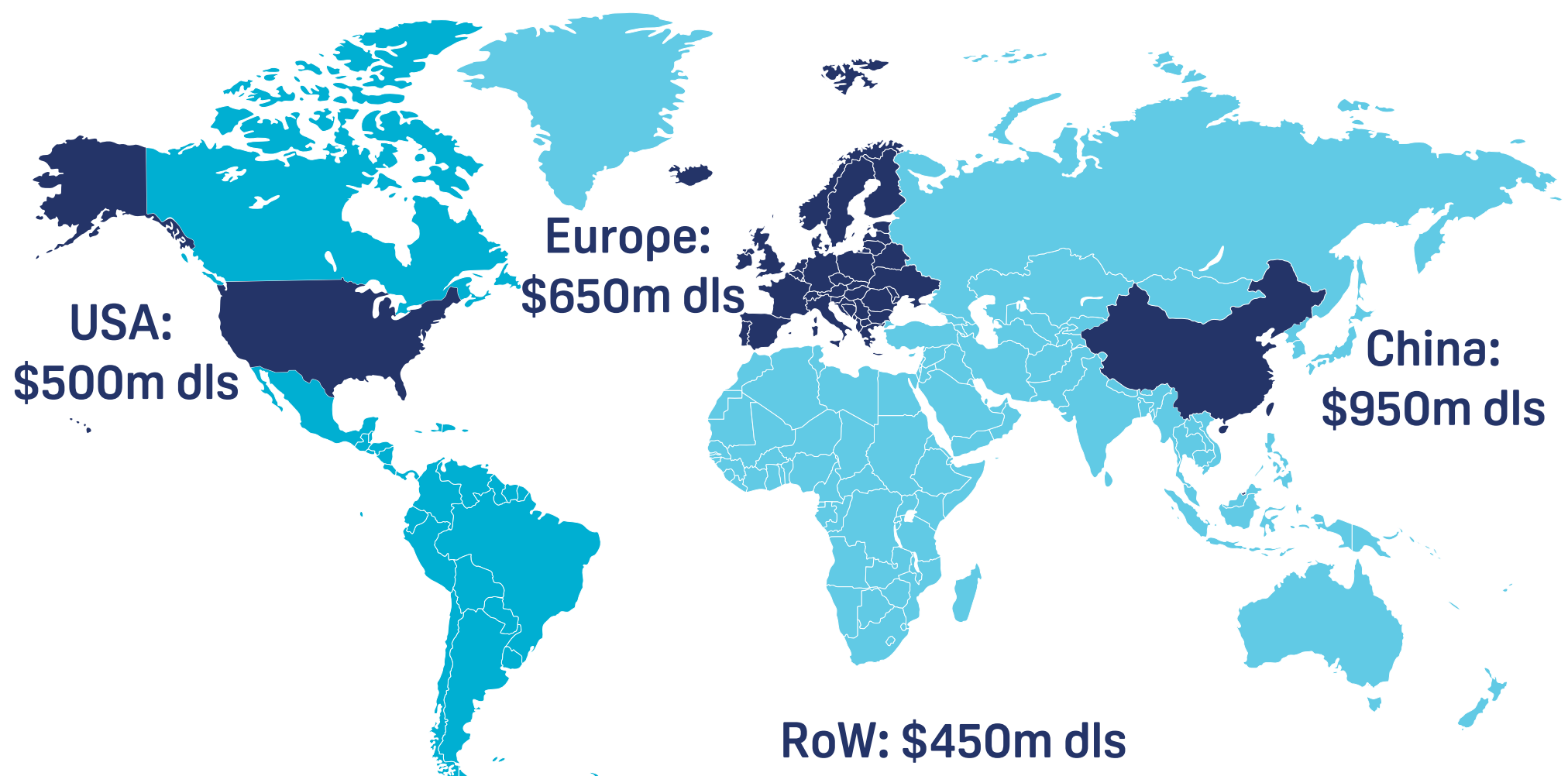
## Global Mobile Robot Market in 2022



The mobile robot market will hit nearly **\$7 billion** by 2022<sup>1</sup>

## China and the US

will drive growth in the short term <sup>2</sup>



### Useful but limited: AGV

If your company rarely changes, in terms of products produced, operational workflow or in its workforce, then an AGV may be a good option.

### Advanced, flexible, accessible: AMR

AMRs are collaborative and flexible to keep up with future opportunities in manufacturing and warehousing operations.

Flexibility, advanced navigation, and ease of deployment make AMRs the perfect solution to start automating your dynamic operations and empowering your valuable workforce on the job today.