LOB

Report 2023

What is Lots of Bots ?

Lots of Bots is the **biggest manufacturer independent comparison platform** for all types of AGVs and AMRs **powered by WAKU Robotics**. The steadily growing database includes **448 different robots by 176 manufacturers**. For each robot **detailed technical specifications** are listed such as payload, certification, sensor or navigation technology. Visitors of LoB can refine their search by using the **broad range of filter options** for example the intended use case or environment.

In addition the platform offers a **constantly expanding list of service providers as well as component manufacturers**. To assist customers in their automation journey LoB provides **professional consulting support**.

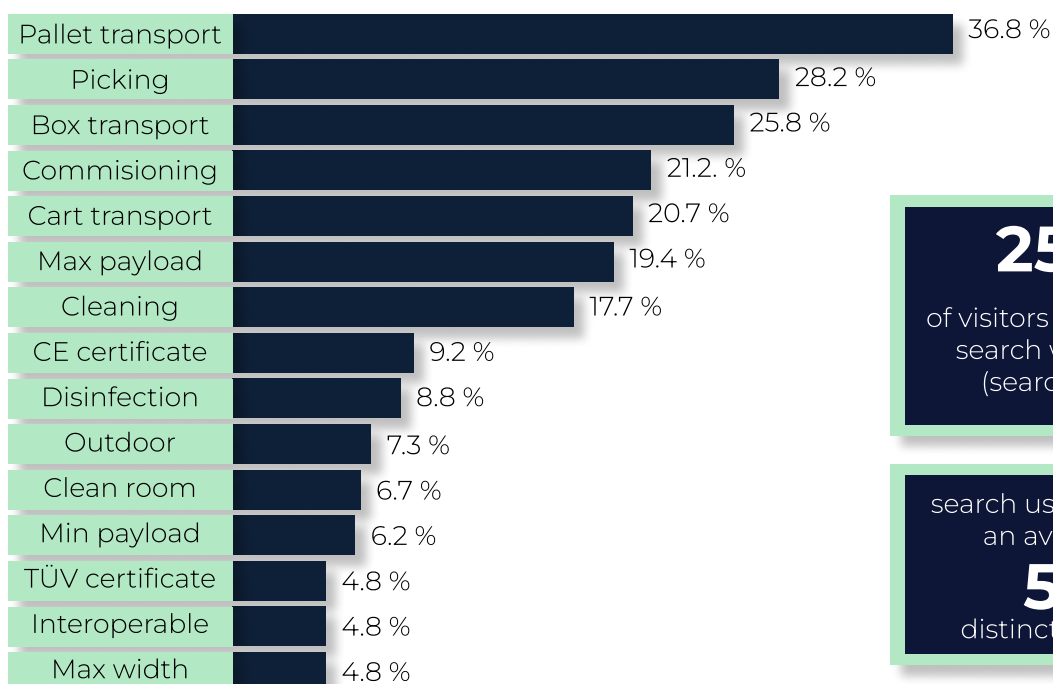| 170+	440+
manufacturers	robots

150.000+	36.000+
yearly visitors	yearly searches

Top 15 used filters in 2023

Our **Robot Finder** provides different filters to find the most suitable robot. Below, we present the most used filters in 2023. These filters could be use cases, operating environments, certifications as well as other relevant criteria.

Filter	Percentage
Pallet transport	36.8 %
Picking	28.2 %
Box transport	25.8 %
Commisioning	21.2. %
Cart transport	20.7 %
Max payload	19.4 %
Cleaning	17.7 %
CE certificate	9.2 %
Disinfection	8.8 %
Outdoor	7.3 %
Clean room	6.7 %
Min payload	6.2 %
TÜV certificate	4.8 %
Interoperable	4.8 %
Max width	4.8 %

25 %
of visitors specify their search with filters (search users)

search users conduct an average of
5.9
distinct searches

The AGV/AMR Market

"The mobile robotics market showed a **tremendous growth** in the last years. For 2024, we expect a **significant uplift** fueled by the huge automation potential in different industries."
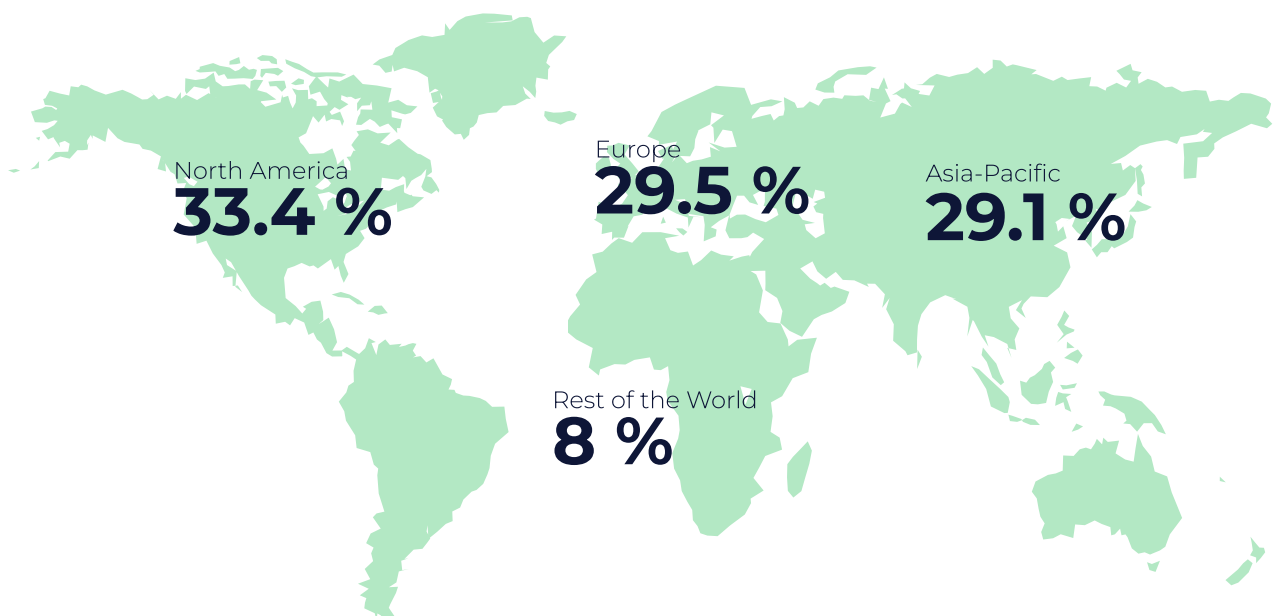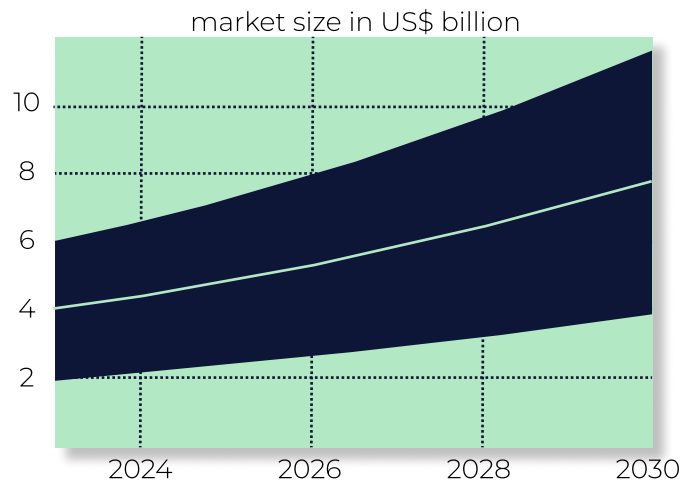
Victor Splittgerber
CEO of WAKU Robotics GmbH

WAKUROBOTICS

8 - 12 % AGR (2023-2030)	**US$ 2 - 6 billion** market size 2023

The global market for AGVs and AMRs has been witnessing **significant growth in recent years**. These robotic solutions have gained traction across industries like manufacturing, logistics, healthcare, and retail due to their autonomous capabilities and efficiency. Annual growth rates for AGVs and AMRs have consistently shown double-digit figures, **driven by technological advancements and the increasing adoption of automation in various sectors**. The expansion is attributed to the need for more streamlined and flexible operations.
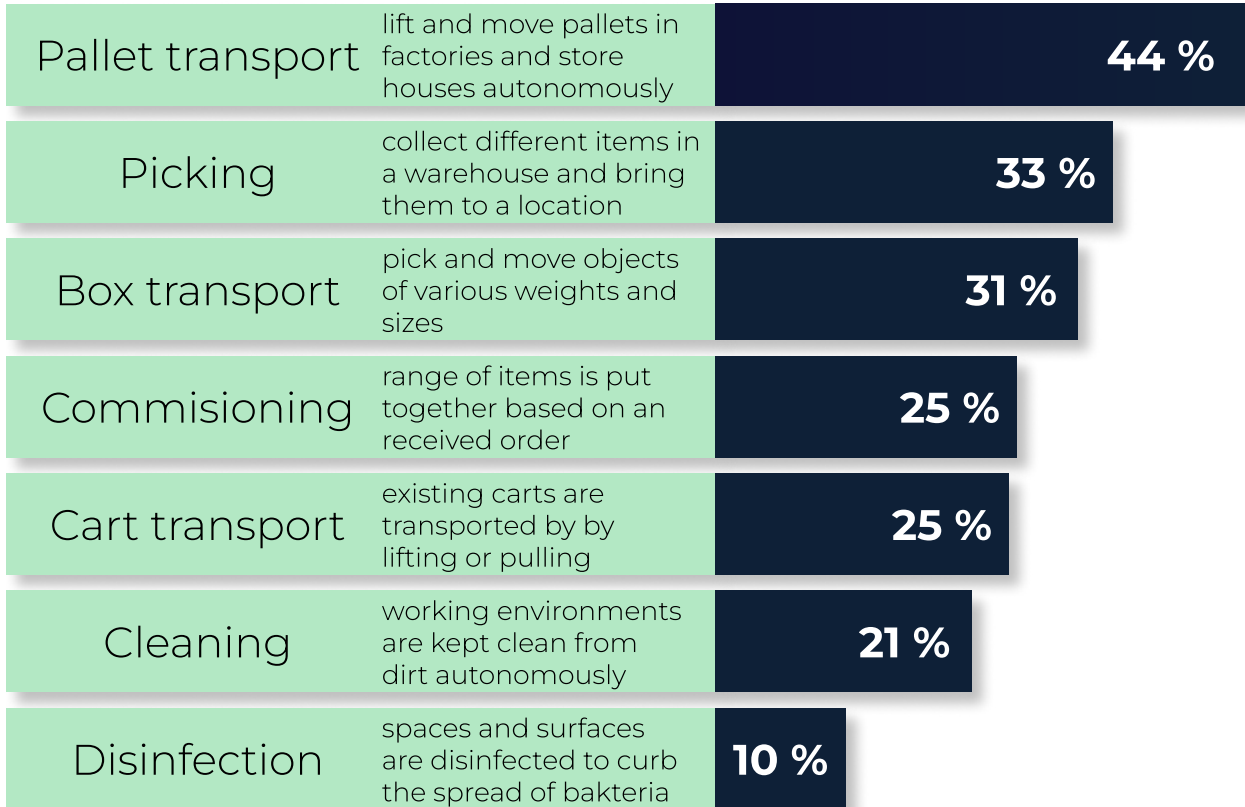
market size in US$ billion

North America
33.4 %

Europe
29.5 %

Asia-Pacific
29.1 %

Rest of the World
8 %

LᴏB Insights

Use cases

Customers conducting searches on LoB can specify for what kinds of cases they intend to use a robot. They can select multiple tasks a robot should perform. The following chart shows what kind of use case those with a specific application in mind were looking for.

81 %
of users have a specific use case in mind

Pallet transport	lift and move pallets in factories and store houses autonomously	44 %
Picking	collect different items in a warehouse and bring them to a location	33 %
Box transport	pick and move objects of various weights and sizes	31 %
Commisioning	range of items is put together based on an received order	25 %
Cart transport	existing carts are transported by by lifting or pulling	25 %
Cleaning	working environments are kept clean from dirt autonomously	21 %
Disinfection	spaces and surfaces are disinfected to curb the spread of bakteria	10 %

Combined use cases

The LoB filter settings allow the users to chose multiple use cases that may be helpful together. The most prevalent combination in the searches were robots that can transport pallets as well as boxes. In the following the most common use case combinations are listed in relation to the number of users that are interested in multiple uses.

19 %
of users look for a combination of use cases

Pallet transport	+	Box transport	31 %
Box transport	+	Cleaning	28 %
Box transport	+	Picking	25 %

LOB Insights

Special Environments

AGVs and AMRs are usually used in ordinary warehouses and logistic centers as well as in production halls. However in some scenarios they are also utilized in more special environments. The following chart shows what kind of environments users with special requirements intend to use their robots in.

13 %
of users search for a special environment

Outdoor	robots are able to operate under all weather conditions	52 %
Clean room	used in fields like semi-conductor production or pharmaceuticals	48 %
Frost env.	additional difficulties for hydraulic systems and sensor accuracy	23 %

Use cases in environments

Together with the insight about the most prevalent use cases the most interesting one in each special environment can be identified. The following table shows the top 3 use cases in each environment in relation to the amount of users that have a specific use case and environment in mind.

7 %
of use cases are in special environments

	Outdoor	Clean room	Frost env.
1	Pallet transport	Pallet transport	Pallet transport
2	Box transport	Box transport	Picking
3	Picking	Cart transport	Box transport

LoB Insights

Certification

AMRs and AGVs are used in a wide range of processes. Some may be critical in safety or production. In that case users may prefer robots with independent certification. On LoB they can filter their search based on if the robot has a CE or a TÜV certificate.
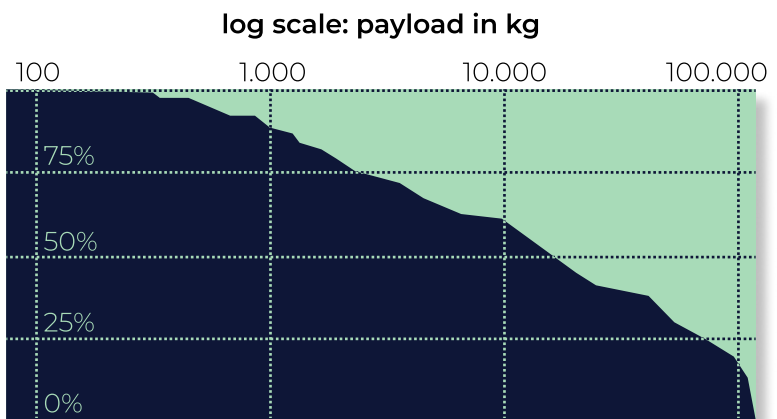
9 %
of users want their robots to be certified

CE certificate	compliance with all applicable EU requirements	96 %

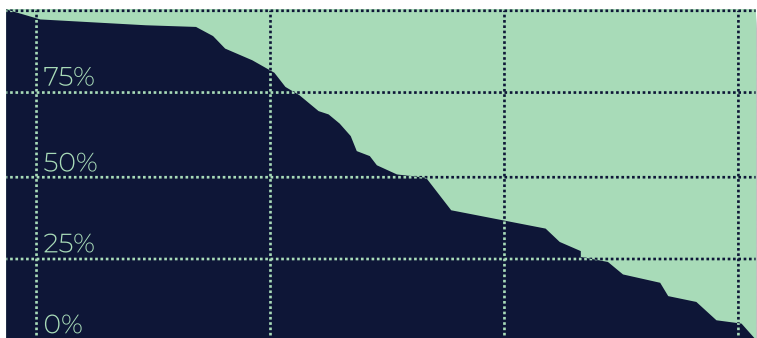| TÜV certificate	tested and meets specific quality and safety standards	50 %

Payload

log scale: payload in kg

Pallet transport

Robots for pallet transport are usually expected to transport heavier loads. 61 % of user that specified a payload for their robots want to move weights up to 10 tons.
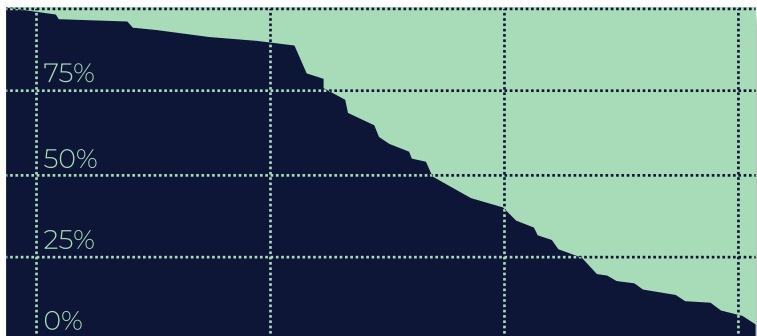
Picking

As expected for picking the payload requirements are shifted more to lighter weights compared to pallet transport.
80 % of users want to transport up to 1.000 kg.

Box transport

For box transport one can see a drop in expected payload at around 1.000 kg. Equally as for picking usually lighter weights are transported.

LOB Ranking 2023

Top Mobile Robots

1	**arculee S** *by Jungheinrich*
2	**SOTO** *by Jungheinrich*
3	**iw.hub** *by idealworks*
4	**SHERPA-B (for bins)** *by SHERPA Mobile Robotics*
5	**AGILOX ONE** *by AGILOX*

1
2
3
4
5

6	AGV X1 1500 *by SAFELOG*
7	EKS 215a *by Jungheinrich*
8	P800 *by Geek+*
9	AGV M4 *by SAFELOG*
10	SHERPA-P (for pallets) *by SHERPA Mobile Robotics*

11	Pudu CC1 *by Pudu Robotics*
12	AGV L2 *by SAFELOG*
13	AGV S3 *by SAFELOG*
14	SHERPA-D (for dollies) *by SHERPA Mobile Robotics*
15	3D Cleaning Robot *by Jingwu Robotics*

Top Manufacturers

1	**Jungheinrich**
2	**Continental Mobile Robots**
3	**SAFELOG**
4	**SHERPA**
5	**AGILOX**

6	idealworks
7	Jingwu Robotics
8	Hikrobot
9	Flexlog
10	Libiao Robotics

11	AgileX Robotics
12	Quicktron
13	YOUIBOT Robotics
14	Geek+
15	Wellwit Robotics

Let's collaborate!

In our report on Lots of Bots for 2023, our dedicated team of robotics experts meticulously analyzed the evolving landscape of mobile robotics. Our Lots Of Bots database stands as a comprehensive resource for those seeking or providing solutions in this dynamic market.

Our Consulting Offers

Exploration
We analyze your intralogistics, identify automation potential, and collaboratively develop an on-site robot roadmap for seamless implementation.

Planning
We design custom automated logistics or manufacturing processes, prioritizing your material flow requirements and sourcing the best solutions irrespective of manufacturer constraints.

Selection
We assist in identifying the ideal partners and robots tailored to your company's needs through thorough analysis and matching for collaboration.

Business Case Calculations
Using vendor quotations and material flow analysis, we compute ROI and predicted productivity boosts to achieve economic optimization and identify the most viable use cases.

Simulation
We specialize in creating tailored simulations using material flow to visualize and validate planning results, specifically designed for selected AGVs or AMRs.

Training
We provide thorough employee training on new technologies, enabling independent robot solution implementation within your organization even post-project.

📞 +49 (030) 62 937 837   🌐 Visit our website

WAKU ROBOTICS

Lots of Bots is a product of WAKU Robotics. WAKU Robotics GmbH is a technology company that, with the WAKU Platform, offers a software platform for the successful operation of AGV & AMR fleets. WAKU Robotics' international customers use WAKU Platform for **efficient maintenance and asset management, analysis and process improvement as well as manufacturer-independent fleet control including order management.**