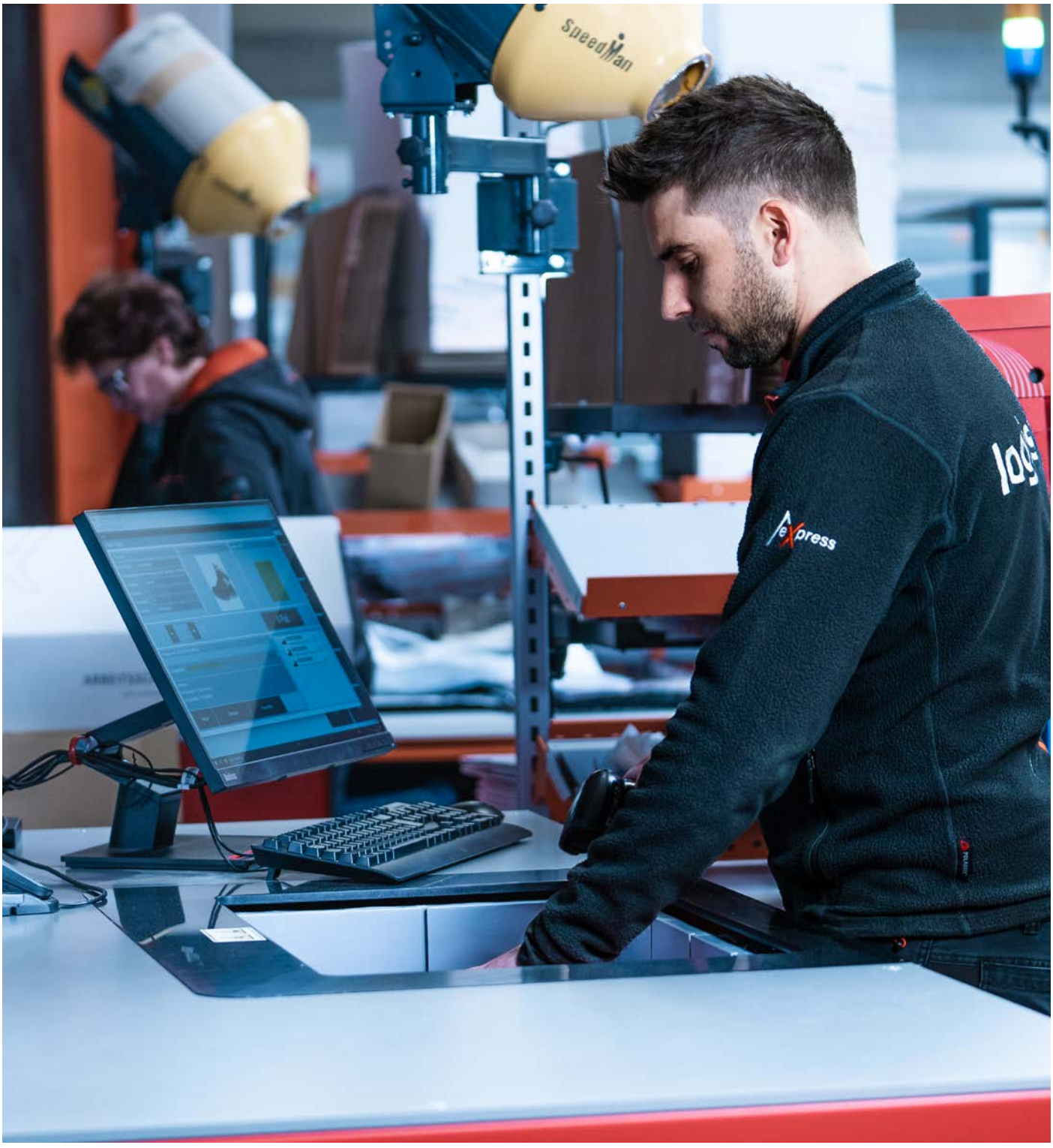
Warehouse Insights

4 Trends Impacting Picking Accuracy



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Enhance warehouse operations

Warehouse operations are under mounting pressure to perform well and increase productivity amidst diverse and ever-changing circumstances. In this context, it is essential to examine the current trends in intralogistics that drastically enhance picking accuracy and inventory control within warehouse operations.

Picking, traditionally a human-only task, involves selecting and gathering items that have been ordered. This process typically follows a well-defined approach considering historical order patterns for all eligible items.[1] However, even with highly skilled warehouse operators, human error is inevitable, particularly in situations with fluctuating personnel, during peak season or training. A significant amount of time, up to 55%[2], is dedicated to warehouse order operators traversing the warehouse to fulfill orders, resulting in considerable wasteful overhead.[3] Mispicks and low picking accuracy, combined with challenges such as escalating energy costs, supply chain disruptions, and evolving customer demands, can lead to costly consequences.[4]

Through the use of innovative technologies, current warehouse productivity trends are improving this time-consuming activity in two significant ways: robots assume certain warehouse activities and technologies which guide human operators. Through this human-machine interaction, human efforts can be matched or even exceeded. Picking activities become more streamlined as the technology guides the operator, thus decreasing hours of training, increasing human productivity, and optimizing inventory control.[4]

Intralogistics technology trends

The future of seamless order picking in warehouse management will be shaped by advancements in automation and robotics, data analytics, smart data, artificial intelligence (AI), and predictive modeling. These advancements directly impact the following four trends:

1. Automated picking
2. Wearable technology
3. Augmented and mixed reality
4. Natural user interfaces

To stay ahead in the industry, embracing these trends and leveraging the potential of advanced technologies is crucial.

Automated picking

Automated picking, technologies such as robotic cube technology, conveyor systems[6], and stacker cranes[7], in combination with the human workforce (known as easy automation), can reduce mispicks and improve order-picking accuracy. An ASRS, in particular, can add further value with high-compact storage and space optimization while reducing personnel resources and costs.[5]

Warehouse picking robots like pick and place robotics[8] can fully automate order picking, (de-)palletizing, and putaway/replenishment by picking, handling, and placing individual items, cartons, and entire totes.[9]
For example, picking robots will collect the load carrier or the unique article and bring it to the next location, where a warehouse employee will receive it for further processing.[4]

By leveraging the automatically logged data and utilizing technologies such as smart data[10] and machine learning, the robot continuously enhances the picking process, optimizes fulfillment, and increases throughput over time.[11] In the context of e-commerce, the robot can handle picking tasks without any human intervention, providing significant benefits in times of labor shortages and training challenges.[12] Smart data also offers solutions to track and make the paths of load carriers visible.[13]

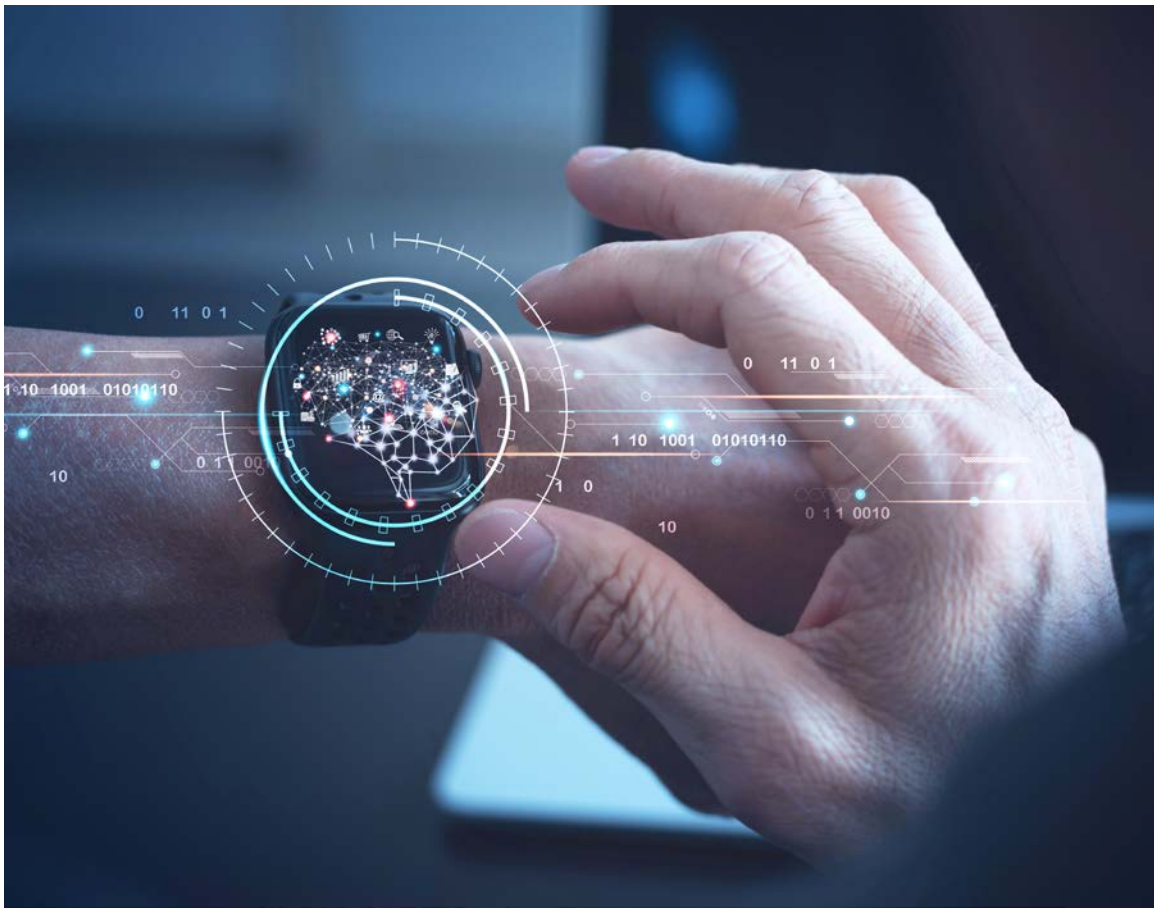
Overall, automated picking systems offer warehouses improved efficiency, increased picking accuracy, and ensure maximum inventory control, making them a valuable asset for modern logistics and fulfillment operations.

Learn more about pick and place robotics

Wearable technology

Wearable technology, such as smart glasses, headsets, or wristbands, introduces a realm of possibilities for warehouse operations.[14]
This integration enables users to interact with virtual objects through clicks, voice commands, or gestures. For instance, glasses can seamlessly integrate digital information or virtual objects into the user's field of vision.

Wearable scanners in the form of rings or bracelets provide real-time feedback, reducing the chances of errors stemming from manual data entry.
By eliminating manual input, voice-activated wearables allow operators to concentrate on picking while keeping their hands free.

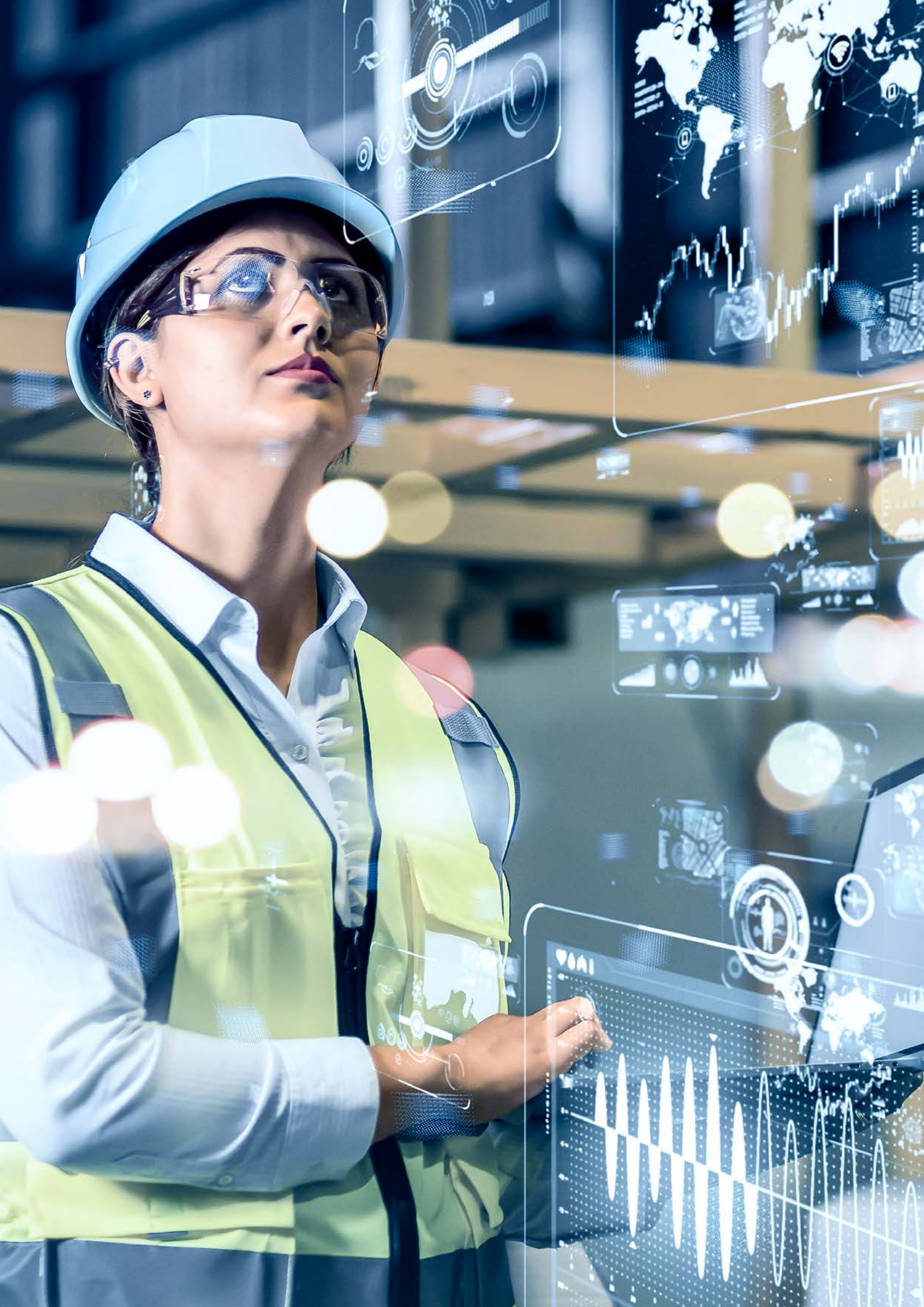


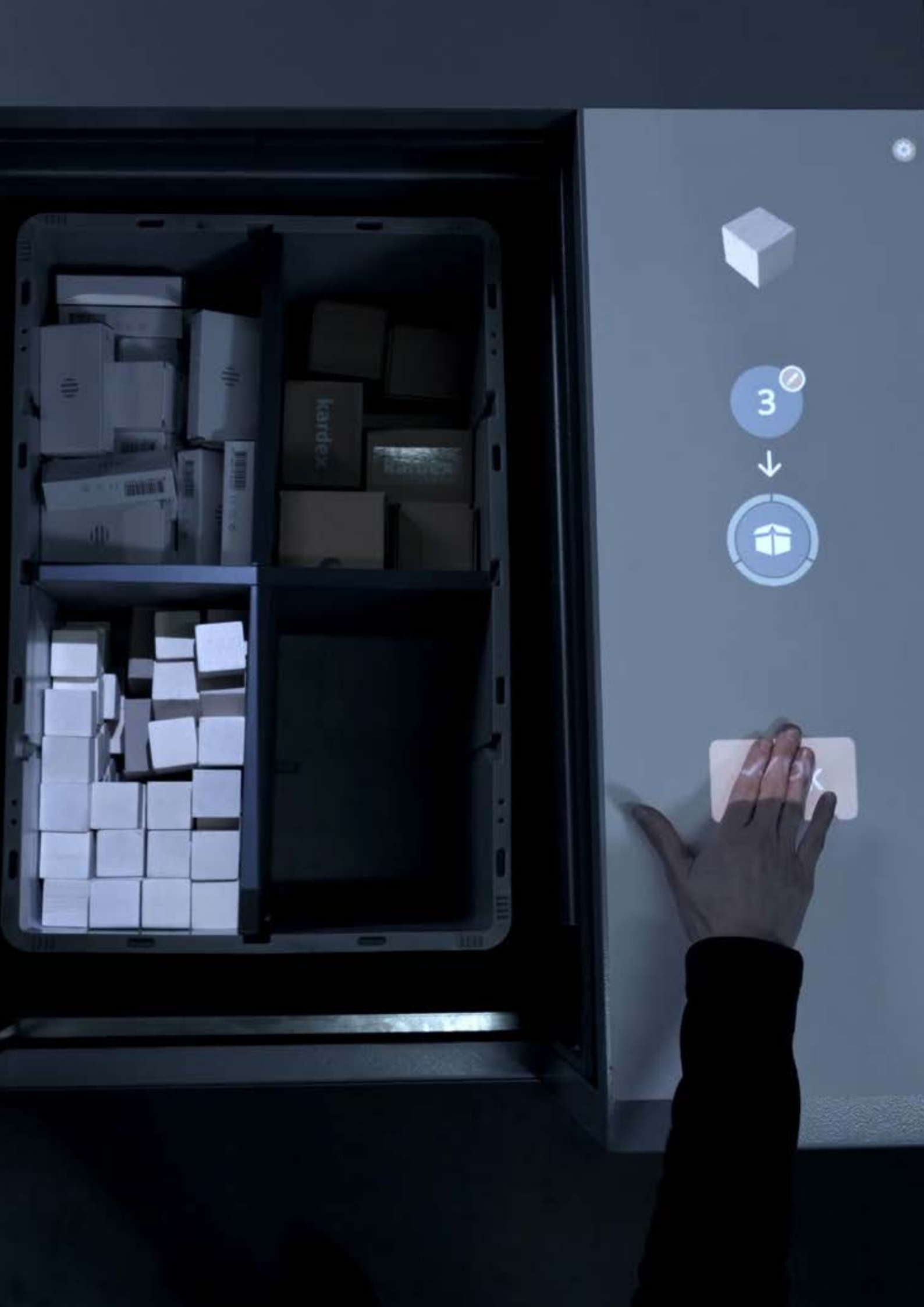
Augmented and mixed reality

As an industry expected to grow massively,[15] augmented reality (AR) and mixed reality (MR) technologies have the potential to revolutionize warehouse operations. These technologies integrate digital elements such as sounds, visuals, or graphics into a real-world view.[16]

AR and MR applications provide operators with visual instructions and real-time feedback. This is particularly beneficial when operators are unfamiliar with specific products or processes, as they reduce human errors by providing intuitive guidance and contextual information.[17] This solution empowers retailers to fulfill online orders more quickly and meet customer expectations of fast and effortless fulfillment.[18]

Looking ahead, we can expect AR and MR to play an even more significant role in automated picking in logistics. These innovations hold tremendous potential to transform the industry, making order fulfillment faster, more precise, and increasingly efficient.

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Natural user interfaces

Natural user interfaces (NUI) is a concept that combines the natural abilities of humans with technology, enabling seamless interaction between users and automated systems.[19] By incorporating elements such as gesture recognition, voice commands, touch interfaces, and augmented reality, NUI enhances the accessibility, user-friendliness, and efficiency of automated picking, ultimately improving the overall experience for warehouse operators.

The advancements in this field have paved the way for Kardex's newest innovation, the Intuitive Picking Assistant.[17] This cutting-edge picking solution revolutionizes warehouse operations by projecting relevant picking information directly onto the operator's workstation. Projection picking facilitates ergonomic, fast, and error-free picking, eliminating the requirement for additional displays or keyboards.

The Intuitive Picking Assistant ensures operators are guided seamlessly through the picking process, receiving real-time guidance and confirmation for each step. This streamlined approach reduces the need for extensive training, allowing operators to quickly adapt to the system and perform their tasks with increased efficiency. Furthermore, the Intuitive Picking Assistant enhances ergonomics by minimizing repetitive motions and optimizing workstation design, improving the operators' overall performance.

Future outlook

By embracing these trends and technologies, warehouses can expect high performance levels leading to more precise order fulfillment and ultimately increased customer satisfaction.

Furthermore, there are significant benefits in cost savings, operational uptime, and safety. Recognizing these advantages, logistics and fulfillment companies proactively invest in automation with plans to allocate 30% or more of their capital expenditure over the next five years specifically to automation initiatives. This proportion is the highest among all industrial segments, underscoring the industry's strong commitment to harnessing the transformative power of automation to drive efficiency, productivity, and competitiveness.[21]

The future in practice

Workforces will be empowered rather than replaced. Implementing automation and robotic systems in warehouses allows for improved order-picking accuracy and inventory management while preserving the human element.[3]

It is important to note that automation does not eliminate jobs but instead creates opportunities for new roles and responsibilities. Intelligent robot systems have revolutionized the fulfillment process and even created 700 new job categories within a single company that employs tens of thousands. This significant expansion of job opportunities is directly attributed to the introduction of automated picking technology.[22] Another example of automated packing solutions that have benefited warehouse operators is using robotics and human operators to handle packing and stacking pallets for transport. This solution has led to savings on operators' time.[23]

Move ahead with Kardex

Our efforts to stay on trend mean that measures to improve order-picking accuracy can be taken without making risky investments or substantial physical changes to infrastructure, so warehouses can do what they do best, but even better.

Sonepar Suisse AG[26] recently experienced picking improvements after investing in pick and pack robotics solution from Kardex.

"With automated and digital processes, we increased our quality while saving time when processing orders, [...]"

Benjamin Ertl, Supply Chain Lead at Sonepar Suisse AG[26]

By incorporating automated picking and the technologies that support it into warehouse operations, Kardex aspires to create game-changing solutions that enhance performance, prioritize operator comfort, and reduce the risk of errors. This innovation sets a new standard for ergonomic, efficient, and error-free picking in the industry.

Contact us

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