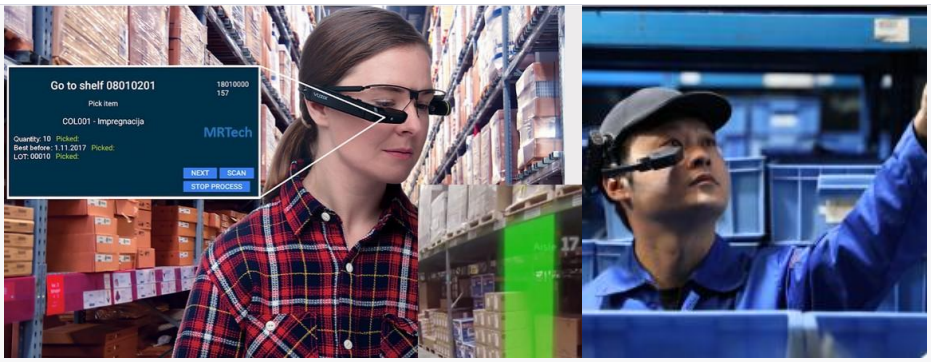

Unlocking Warehouse and Logistics Excellence with MRTech's Smart Glasses and Vision Picking Solutions

The landscape of warehousing and logistics has undergone significant transformation in the last two decades. The advent of Warehouse Management Systems brought forth innovations such as guided picking, mapping for forklift operators, and data-entry systems that drastically reduced reliance on spreadsheets and paper forms. However, even with the advent of automation, the indispensable role of human workers in this domain remains evident. Yet, human error, especially in picking processes, continues to pose significant challenges, with the potential to cost companies hundreds or even thousands of dollars per error.

The Soaring Cost of Errors

As operational costs soar, and trade restrictions tighten, errors in warehousing and logistics become increasingly expensive. Mistakes in stocking, picking, or shipping often lead to returns, triggering additional overhead through documentation, accounting, re-stocking, and customer service. Return shipping costs, coupled with the need to repeat the entire order fulfillment process, further compound the financial burden.

The average picking error rate, although seemingly low at 1% to 3%, accumulates significant costs over time. Studies reveal that per-error costs range from $50 to $300, equating to a reduction in profitability by 11% to 13%. Beyond financial implications, errors can erode customer goodwill and necessitate a relentless drive to minimize them.

The Emergence of New Automation: Robots & Drones

While traditional warehousing systems persist, some operators are embracing Autonomous Technology (AT) to enhance efficiency and reduce errors. AT manifests through mobile robots and unmanned aerial vehicles or drones. Autonomous Mobile Robots (AMRs), equipped with onboard navigation systems, laser guidance, and RFID scanning, are becoming commonplace in global warehouses. These robots efficiently navigate spaces, reducing product damage, traffic congestion, and human injury. Moreover, they undertake hours of repetitive tasks, freeing human workers for more value-added activities.

Drones, although not as widely adopted as robots due to cost and safety concerns, offer unique advantages. They possess sensors that ensure anti-collision measures and

safety, with the ability to count inventory, locate items precisely, recognize images, inspect labels, capture photos, and identify tagging errors. Drones accomplish these tasks up to fifty times faster than humans, saving considerable time and effort.

The Role of Humans in an Automated Future

Autonomous Technology is undoubtedly beneficial in warehousing and logistics, enhancing efficiency, accuracy, and reducing costly errors. However, the ultimate success of AT depends on human performance. AT functions optimally when all other elements in the supply chain operate flawlessly, and the individuals interacting with it make minimal errors. Although AT can identify problems swiftly, human interpretation remains crucial. Machines provide data, but humans must analyze and act on it. While AT performs tasks, human involvement is indispensable for the completion of complex, nuanced tasks.

Contrary to early predictions of complete automation, it is clear that robots and drones will create symbiotic relationships between humans and machines for the foreseeable future. While capital costs and return on investment still pose challenges, widespread automation in warehousing remains a gradual evolution.

The Significance of Mobility in Warehousing and Logistics

Automation or not, mobility and hands-free operation remain crucial for efficient warehouse operations. Many operators have embraced various technologies for mobility, with smartphones being the most prevalent. Others utilize tablets, scanners, and rolling carts equipped with laptops and printers.

However, these systems fail to reduce in-aisle time for workers or alleviate congestion. They also tend to be hardware-intensive, requiring maintenance and posing fragility risks. This is where wearable technology, specifically Smart Glasses, enters the picture.

Wearable Technology: The Power of Smart Glasses

Smart Glasses, a form of wearable technology, connect workers to machines and enterprise management software in a hands-free manner. They facilitate full interaction and communication, including images and audio, among workers, managers, and software systems.

Augmented Reality and Object Recognition

Augmented Reality (AR) is a pivotal component of Smart Glasses, overlaying audio, text, images, and video onto the user's real-time field of vision. AR combines computer-generated virtual elements seamlessly with reality. It achieves this through machine vision, enabling object and character recognition. While humans can easily identify objects, even when partially obstructed, machine vision empowers devices to "see" their surroundings, while Optical Character Recognition (OCR) allows them to process barcodes, serial numbers, and tags.

Hands-Free Image, Video, and Audio Capture

Smart Glasses feature high-definition video cameras and noise-canceling microphones, enabling users to capture images, videos, and audio without interrupting their tasks. With simple gestures, touches, or voice commands, users can access and record information, eliminating the need for paperwork or manual data entry. These glasses record every action, storing it in onboard memory, uploading it to a cloud database, or streaming it to supervisors.

Smart Item Management with Smart Glasses

In warehousing and logistics, Smart Glasses offer significant advantages in picking processes. Workers no longer need printed pick or count sheets; the information is presented directly in their field of vision. They can provide real-time feedback to ensure correct picks and conduct inventory counts while picking. Should they spot an error, instant questions or reference to other documents are possible - and their supervisors can be informed simultaneously.

MRTech's Smart Glasses: Next-Generation Mobility

MRTech's Smart Glasses combine Artificial Intelligence, Augmented Reality, and Machine Vision to deliver real-time visual and audio references and decision-making support. Their functionality, coupled with the depth and breadth of information they can provide, makes MRTech Smart Glasses indispensable tools for warehouse and logistics operations.

These glasses are easy to operate, allowing users to work with both hands while performing tasks accurately. They offer real-time information, reducing reliance on clipboards, binders, and handheld devices that can slow down order completion.

In conclusion, the integration of Smart Glasses into warehousing and logistics operations represents a significant leap forward in terms of efficiency, accuracy, and cost savings. As the warehousing industry continues to evolve, embracing innovations like Smart Glasses promises to be a game-changer, ultimately improving the overall supply chain and customer satisfaction while reducing errors and increasing productivity.

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