



Create Safe and Healthy Warehouse Environments Through Data-Driven Technology

Third-party logistics providers are implementing new technologies, such as advanced Internet of Things sensors, to prevent injuries, reinforce safety protocols and reduce COVID-19 spread.

By Miguel Trivino, Allen Polk & Kristi Montgomery

Maintaining a safe and reliable warehouse environment for employees is the top priority for facility managers across the supply chain. As a result, companies go to great lengths to foster a culture of safety. With so

much unpredictability, safety training must be at the core of successful operations to eliminate workplace accidents.



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However, the biggest barrier to delivering this heightened degree of safety is often the high workforce turnover driven by an increasingly competitive industry. It can be difficult to effectively maintain protocols and communicate a consistent level of urgency with a constant rotation of employees.

As a result, leading third-party logistics providers (3PLs) are increasingly turning to the power of technology to reinforce safety protocols and fill any gaps in training created by employee turnover. From advanced Internet of Things (IoT) sensors to artificial intelligence (AI) and machine learning (ML), 3PLs are optimizing their warehouse safety practices with the latest emerging technologies to create a safer work environment.

Innovative Warehouse Safety Starts With Powerful Data

Reliable data has proven to be foundational to warehouse safety. Previously, decisions around safety were made by safety managers who physically monitored employees on-site, manually identified hazards and rectified any potential danger. This method is no longer practical during the COVID-19 pandemic; due to social distancing guidelines, security managers are tasked with maintaining a consistent quality of leadership and safety without being physically available on the floor. Fortunately, safety can be remotely monitored through the collection and strategic utilization of data.

Augmenting existing and traditional tools, such as telematics, with advanced IoT sensors, warehouse managers can gather valuable data to make those technologies safer and more productive. For example, sensors added to materials handling equipment (MHE) give 3PLs greater insight into operator activity and performance by instantly measuring and reporting on factors such as speed, proximity and impacts. The simple presence of safety monitoring sensors can have a positive impact and act as a reminder to employees that their MHE performance is being reported. When

integrated with additional capabilities, these technologies can transform 3PLs' safety strategies.

Turning Real-Time Digital Information Into Actionable Insights

By employing intelligent AI technology, 3PLs can take their data to the next level by strategically turning their existing data into actionable insights. Leveraging AI and ML, advanced solutions can automatically notify warehouse managers of any safety protocol infractions and provide actionable next steps, such as instructions on additional employee training. Management then has the information it needs to quickly intervene and prevent any additional breaches in safety.

These technologies can also send helpful reminders of safety best practices to MHE operators' mobile devices in real time, maximizing their effectiveness. For instance, back injuries are some of the most common workplace injuries in warehouse environments due to the constant bending, lifting and standing that are required of the job. Wearable IoT sensors are proving to be an innovative solution to avoiding these injuries. Clipped to the back of the shirt collar, these devices use ML capabilities to determine a baseline for normal movements. Should individuals make a movement deemed abnormal and potentially hazardous, the device vibrates, alerting them of hazardous body movement. Dashboards provided by the wearable IoT sensor can provide immediate, in-the-moment feedback and coaching to the individuals. That enables individuals to quickly learn and adapt their behaviors.

When leveraged in conjunction with each other, these technologies contribute to the creation of a smart warehouse. This optimized, highly efficient environment provides the data and ML necessary to predict safety infractions or accidents before they happen. Rather than simply waiting for an incident, warehouse leadership can be proactive, glean insight into where additional training is needed. And because these technologies rely on real time and readily available data, they are not impacted by sudden employee turn-



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over. Thanks to technology, safety managers have the tools they need to protect their workforce.

Evolving Warehouse Safety in the Age of COVID-19

The COVID-19 pandemic has completely changed how businesses across industries operate, and this also rings true for 3PLs. One of the most important trends that has emerged during the pandemic is the convergence of safety and health. Due to COVID-19, no warehouse can truly be considered safe for employees if it is not also a clean, healthy environment. As a result, infection fighting technologies have quickly become best practice for safety-minded 3PLs.

Contact tracing devices have been implemented in warehouses to provide management with granular information about employee interactions while remaining respectful of individual privacy. Should an employee contract COVID-19, managers can quickly trace their contact points to determine who must quarantine, helping to mitigate the spread of infection throughout the warehouse. In addition, the implementation of electronic checklists enables touchless operations, reducing the back-and-forth of paperwork that can require close proximity and could therefore potentially spread disease. Installing thermal camera solutions at warehouse entry points enables automated temperature checks, allowing management to prevent possibly contagious individuals from entering the facility.

Finally, robotic cleaning devices assume the risks of sanitizing the entire warehouse from its human coun-

terparts, ensuring all assets are clean and ready for operation. These technology implementations contribute to a healthier, and therefore safer, workplace for all.

Predicting the Future of Intelligent Warehouse Safety

The last few years have seen incredibly rapid innovation in warehouse safety technologies, and this momentum is only expected to accelerate in the future. With emerging solutions ranging from mechanical exoskeletons that augment lifting movements to intelligent dock locking devices, it is clear that 3PLs will continue to turn to technology when crafting their safety strategies.

Whether 3PLs are concerned about workplace injuries or viral infection, there is a technology implementation to meet their needs. By combining a culture of safety with powerful, data-driven technologies, 3PLs can ensure they are providing their workforce with the most comprehensive and resilient safety protocols possible, regardless of workforce turnover.

Ultimately, 3PLs' greatest asset is their people, and when 3PLs let data lead the way, they can protect them with a forward-thinking warehouse safety strategy.

Kristi Montgomery is the vice president of innovation; Allen Polk is vice president of sales; and Miguel Trivino is the director of environmental, health & safety at Kenco. Kenco provides integrated logistics solutions that include distribution and fulfillment, comprehensive transportation management, material handling services, real estate management and information technology.