

# Pallet Labeling Intelligence

*The Solution to an Age-Old Supply Chain Problem*



**Intelligent pallet labeling technology is affordable, easy to implement and dramatically reduces operational costs. So why aren't more companies using it?**

Pallet labeling is a seemingly simple fulfillment process, however how well it is handled has a profound effect on business performance. Pallet Labels represent physical inventory and enable warehouse management, enterprise resource planning (ERP), logistics, and automated systems to track and trace items.

Internally, incorrect labels, missing labels, or extra labels can lead to inaccurate inventory counts, untrustworthy financial statements, and wasted scheduling efforts. Externally, labeling issues can disrupt the activities of downstream customers, such as manufacturers and assemblers, and raise concerns over the supplier's commitment to product quality and service. Customer and regulatory mandates often result in fines, returns, or scrapped products hurting profit margins and reputations.

Companies fall short on pallet labeling for a couple of reasons. First, a lot of the work — from data input to applying labels and correcting records — is performed manually, leaving it prone to human error and behavior. Second, the basic labeling solutions many companies piece together are often unreliable and disconnected from core systems. While overcoming these challenges has been difficult for process owners, engineered solutions now entering the marketplace will enable organizations to finally automate the last mile of their increasingly digitized supply chains.

Pallet labeling is routinely assigned to low-skill or temporary operators who receive basic training on how to scan work orders, enter data, print labels, and apply them to the pallets. While the process is not complicated, it is detail-oriented, low-paying, and monotonous work. In today's tight labor market, these factors contribute to annual turnover rates exceeding 100% in some facilities.

The biggest problem is how poorly basic automation systems handle and share data. Modern organizations are data-driven and use ERP, financial applications, and warehouse management systems to track real-time activity, control costs, and optimize efficiency. Errors on pallet labels can cause hard-to-troubleshoot problems such as electronic data information (EDI) and automatic shipping notices (ASNs) that are out of sync with production or assembly operations.

### **Manual processes sabotage accurate inventory**

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Even though turnover is high and institutional knowledge is low, new pallet labelers learn shortcuts, such as preprinting labels, to save time and meet aggressive shipping schedules. Not surprisingly, this workaround invariably produces "extra" labels that are never applied to pallets.

Pallet labelers are supposed to correct these problems by completing end-of-shift audits, cycle counts, or reverse-out processes, but they may not have the know-how to take on these additional tasks. Because of the perceived low value and often temporary nature of this work, it is not unusual for operators to discard leftover labels as they are clocking out.

These labeling errors have real business consequences, including shipping delays, higher transaction costs, and a need for more cycle counts and physical inventories. Improving data accuracy can help to address these issues. In fact, one study suggests that a 1% increase in inventory accuracy<sup>2</sup> (from 98 to 99%) leads to more supplier and sales orders delivered on time and improves dock-to-stock cycle times.

### **Basic automation falls short**

To improve the performance of manual labeling, companies may create basic automated labeling systems. These solutions are generally assembled by in-house personnel or third-party integrators using components from multiple suppliers. If the system includes controls logic, it is written by an in-house or contract programmer.

As one-off solutions, basic automation systems present a few issues. For example, they are not routinely tested or ruggedized for commercial environments. While some systems include straight-line logic, they are not adept at accommodating disruptions, such as a operators misfiring eyes and scanners causing tracking and queue errors. In general, these omissions make basic automation less robust and more prone to failures and unplanned labor to resolve.

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Problems with basic automation can push companies into leaning on backup manual processes, but manual data entry can introduce even more errors into the system, slowing activities such as cycle-counting and making physical inventories even more challenging.

<sup>1</sup> <https://logisticsviewpoints.com/2017/10/30/best-tactics-retaining-warehouse-workers/>

<sup>2</sup> <https://www.industryweek.com/supply-chain/inventory-management/article/21957412/inventory-accuracy-improves-performance-on-logistics-metrics>

Basic automation solutions struggle to support business objectives because they are not designed to interoperate within a larger ecosystem of business tools and applications. Data accuracy is a persistent issue.

### **Pallet Labeling Intelligence transforms existing processes**

For years, companies assumed they were stuck with manual labeling or unreliable systems for end-of-line and intralogistics activities. Emerging automated pallet labeling was still very custom expensive and required installation engagements that could take months with long ROIs.

This situation changed as automation technologies and software technology continued to evolve. The result is a new type of pallet labeling solution with on-board intelligence for error checking, reporting, and troubleshooting called Pallet Labelling Intelligence. Pallet Labelling Intelligence technology was developed by Apis Wise with 25 years specializing in automated supply chain solutions.

Unlike homegrown solutions, Pallet Labelling Intelligence is a cohesive system with configurable tools for interfacing with numerous cloud and legacy based business systems. The result is a plug-and-play white-labeling system that re-duces typical install times to less than three months. Moreover, Pallet Label-ling Intelligence uses onboard logic to self-monitor for exceptions that require operator intervention. In highly automated processes, such as ASRS warehouse systems, the system increases throughput by buffering data to allow labeling to continue even when back-end systems are unavailable. Local data storage is critical to ensuring that the right labels are applied to the right pallets at the right time.

Accurate labels allow downstream companies, such as freight carriers and ma-nufacturers, to reuse information for their own labeling requirements and make it easier to track, segregate, and hold individual pallets if needed without having to resort to time-consuming manual searches.

### **BP Castrol solves complex labeling challenge**

During the roll-out of SAP in Europe Castrol used label software printing out of SAP using customer PLC controls logic. Pallet labeling errors impacted the go live to the point it had to be rolled back. As Castrol was looking to deploy SAP in North America they knew they needed a better solution and they engaged Apis Wise



to ensure greater than 95% labeling accuracy while recovering its project costs within one year. Castol also needed robust, reliable scanning technology to support to 24 product lines in three highly automated facilities.

To achieve these goals, the Apis Wise project team used the solution's built-in interface tools to mirror material masters and process order data directly from SAP to continue labeling pallets even when there were delays and outages in their ERP.

For additional flexibility, they also configured their solution for manual labeling with verification, semiautomatic labeling, and fully automatic labeling. In manual mode, the system maintains inventory accuracy by requiring labelers to confirm that they printed and applied the labels. Semiautomatic mode operates similarly: detailed workflows accommodate exceptions and allow the system to be reset or manually operated if necessary.

The new pallet labeling system, however, is fully automatic and generally operates without operator interventions. A laser barcode reader scans pallets to accurately identify them to inventory as they enter the station. Information captured by this step is used to print and apply labels that are then scanned by a separate imager to verify accuracy. As data is buffered and then communicated, it refreshes the plant's inventory records.

The system also provides powerful manufacturing, packaging, and production data for analytics, historical analysis, and troubleshooting complex problems. Plant management uses this information to maintain a high level of availability even while operating 24/7/365. Since taking the system live four-and-a-half years ago, the customer reports the system has consistently delivered greater than 95% accuracy on labeling and inventory data.

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### **Bellisio Foods prepares for automated warehousing while supporting quality initiatives**

Bellisio Foods was completing a new \$25 million automated distribution warehouse. Accurate, automated pallet labeling and data accuracy was also a critical requirement. Plans called for the facility to rely heavily on robots to aggregate products and unitize pallets prior to shipment.



But the company needed efficient workflows for the warehouse to function properly. To optimize pallet labeling, it wanted a pallet scanner for the wrapper infeed that could capture data quickly with at least 97% accuracy. For labels to facilitate track-and-trace in the warehouse and after shipment, the system also had to handle more data, including details such as order numbers, date codes, line sources, and time stamps.

Tests confirmed that the Pallet Labeling Intelligence system could print, apply, and scan the needed labels. The system's integration tools also added value by making it easy to integrate with back-end systems. More data and greater accuracy provide more visibility and allow the company to enforce micro-holds, food-safety inspections, and supply chain requirements without burdensome stock search efforts and high costs.

### **Pallet Labeling Intelligence advantages**

Labeling errors can slow sales, affect order processing, and impact the bottom line. The Apis Wise Pallet Labeling Intelligence system addresses these issues by giving process owners a turnkey system for optimizing end-of-line activities such as pallet labeling.



This technology provides seamless traceability, built-in fallbacks, and ongoing service with little-to-no downtime. It improves real-time inventory and allows potential accuracy greater than 99% and minimizes the need for human interfacing and manual interventions. Its onboard intelligence automates time stamping for product traceability.

The Apis Wise Pallet Labeling Intelligence system seamlessly connects to all printer brands and other line equipment, and implementation times are usually less than three months, with return on investment in less than one year. Unlike basic automation, Pallet Labeling Intelligence enables machines and large business systems to speak the same language and work together.

#### **About Apis Wise**

Apis Wise connects your current output with stronger outcomes all across your supply chain through industry-leading Pallet Labeling, Track & Trace, Centralized Printing & Coding, and Inventory Control solutions. Make light work of the greatest risks to your business through Apis Wise Automated Intelligence.

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