

FROM SCANNING TO INTELLIGENCE

Real-World Applications of Vision Intelligence in Supply Chains

EXECUTIVE SUMMARY

Supply chains today are more complex than ever. Companies face global sourcing, omnichannel fulfillment, and labor challenges that place high demands on operational accuracy and speed. Traditional barcode scanning methods, often struggle under conditions such as low lighting, damaged labels, and high-volume workflows. Vision intelligence technologies are now providing the solutions needed to overcome these limitations.

By embedding intelligent algorithms into barcode scanning workflows, platforms like Honeywell's SwiftDecoder™ enable organizations to move from reactive scanning to proactive, insight-driven operations. This shift not only improves accuracy and efficiency but also prepares supply chains for future growth and technological advancement.

This white paper examines the advancements in data capture technologies, focusing on Honeywell's SwiftDecoder™ software. Drawing on published case studies, we highlight how SwiftDecoder enhances operational efficiency, accuracy, and scalability, enabling modern supply chains to meet the demands of speed, visibility, and reliability.



THE SHIFT FROM BARCODES TO VISION INTELLIGENCE

Barcodes have long been the backbone of supply chain visibility. Yet as operational complexity increases, traditional scanning methods reveal their limitations. Poor print quality, inconsistent labeling, and environmental factors can cause scanning delays or errors, impacting inventory accuracy and overall operational performance.

Vision intelligence technologies address these challenges by combining advanced image processing, pattern recognition, and predictive algorithms. Scanners powered by AI and vision intelligence can read difficult barcodes, verify item placement, detect anomalies, and even provide predictive insights to prevent disruptions before they occur. This transformation moves data capture from a simple recording function to an active enabler of operational intelligence.

CASE STUDY 1: HEALTHCARE WORKFLOW OPTIMIZATION

In healthcare environments, accurate and rapid data capture is essential for patient safety and operational efficiency. SwiftDecoder's advanced vision intelligence capabilities enable barcode scanning in challenging conditions such as low lighting, wrinkled labels, and poorly printed codes.

By deploying SwiftDecoder, healthcare organizations have increased workflow speed, reduced errors, and improve the timeliness of medication and supply delivery. The software ensures that

data is captured accurately the first time, minimizing manual verification and allowing healthcare staff to focus on higher-value tasks.

CASE STUDY 2: INTEGRATION WITH CORVUS ROBOTICS FOR INVENTORY MANAGEMENT

Corvus Robotics integrated Honeywell SwiftDecoder into autonomous inventory drones, enabling rapid, high-accuracy inventory tracking at both case and pallet levels. This integration allows warehouses and distribution centers to manage inventory in real time, reducing the need for manual labor while increasing precision and visibility.

By combining SwiftDecoder's decoding with Corvus Robotics' autonomous systems, organizations gain a scalable, automated solution for large-scale inventory operations. The real-time feedback from vision intelligence ensures that errors are caught immediately, supporting smoother and more reliable supply chain operations.

CASE STUDY 3: KOAMTAC'S BARCODE SCANNING SOLUTIONS

KOAMTAC, a leading manufacturer of Bluetooth® companion barcode scanners, integrated SwiftDecoder into their KDC scanner SDK. This implementation allows KOAMTAC devices to read challenging barcodes, including damaged or low-quality codes, using SwiftDecoder's advanced decoding engine.



The software can function independently or alongside KOAMTAC hardware, providing flexibility and scalability for businesses seeking efficient, accurate barcode scanning solutions. By leveraging vision capabilities, organizations can ensure reliable data capture across multiple environments without requiring extensive hardware modifications.

CASE STUDY 4: STEREO LABS COLLABORATION FOR WAREHOUSE MANAGEMENT

Honeywell partnered with Stereolabs to develop a system that automates the measurement of box size, volume, and weight prior to registration in a warehouse management system. The collaboration combines SwiftDecoder's decoding capabilities with Stereolabs' ZED X series cameras, allowing for accurate and efficient automated data capture.

This integration exemplifies the application of vision intelligence software in warehouses, improving both throughput and accuracy while reducing reliance on manual measurements. The combination

of software intelligence and advanced imaging hardware demonstrates how modern supply chains can optimize workflows and eliminate bottlenecks.

BENEFITS OF SWIFTDECODER IN SUPPLY CHAIN OPERATIONS

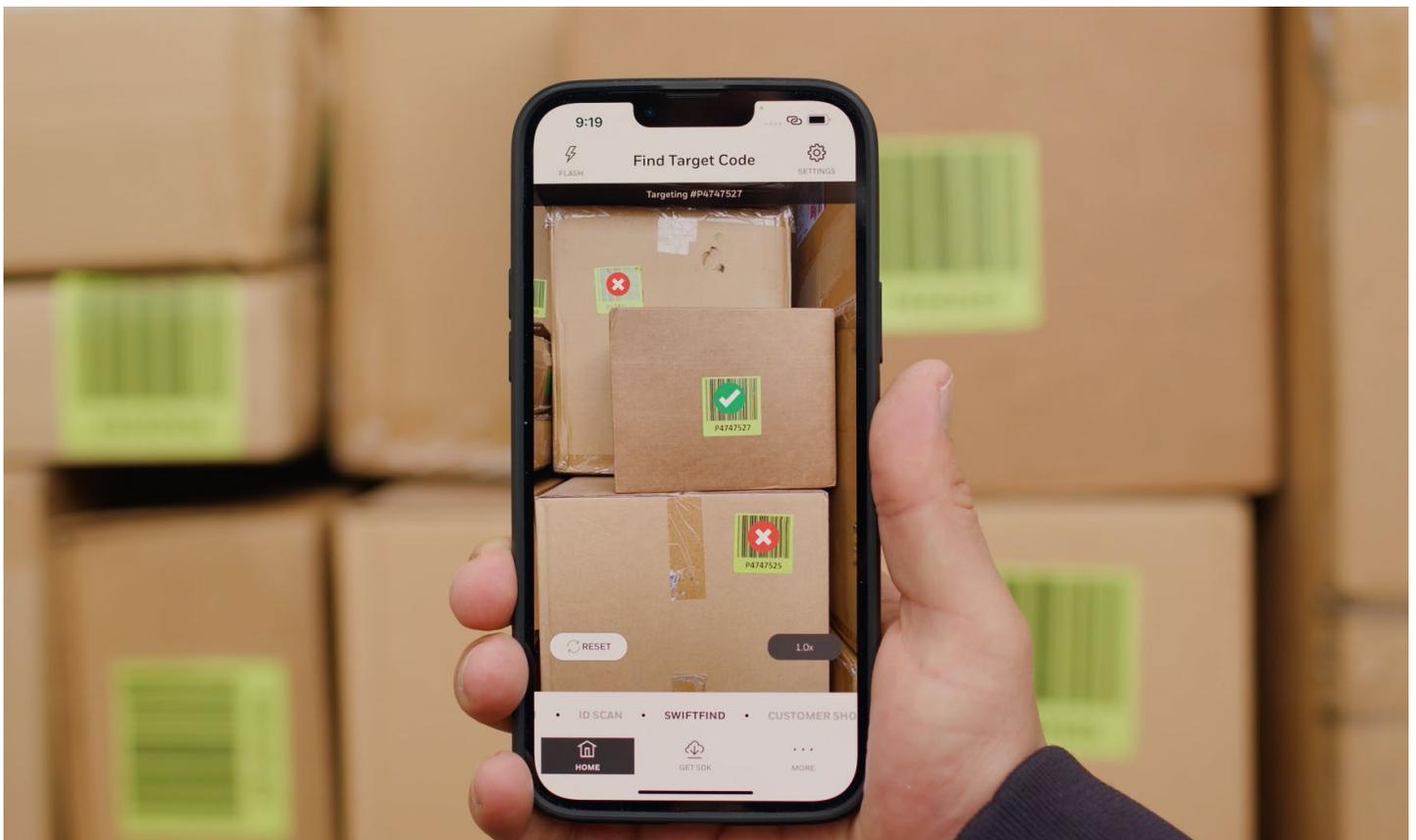
SwiftDecoder delivers significant improvements in accuracy for supply chain operations. Its advanced decoding algorithms enable reliable reading of barcodes even under challenging conditions, such as low lighting, damaged labels, or distorted codes. This enhanced accuracy reduces errors in data capture, helping organizations maintain precise inventory records and improving overall operational reliability.

In addition to accuracy, SwiftDecoder increases operational efficiency. By processing scans rapidly and effectively, the software minimizes the time employees spend capturing data, accelerating workflows throughout warehouses, distribution centers, and retail environments. This speed translates into higher throughput

and improved service levels, allowing companies to meet rising consumer expectations for speed and reliability.

Scalability is another key benefit of SwiftDecoder. The software is compatible with a wide variety of devices and systems, from handheld scanners to mobile and wearable platforms. This flexibility allows organizations to implement SwiftDecoder across multiple sites, workflows, and operational contexts without requiring extensive changes to existing infrastructure, making it a future-proof solution for evolving supply chain needs.

Finally, SwiftDecoder contributes to cost reduction. By minimizing errors and reducing the need for manual verification or rescans, the software lowers labor costs and mitigates losses associated with mismanaged inventory. These savings, combined with increased efficiency and accuracy, provide a strong return on investment, reinforcing the value of intelligent, AI- and vision-enabled data capture in modern supply chains.



CONCLUSION

The integration of vision intelligence into supply chain data capture is redefining operational efficiency, accuracy, and scalability. Honeywell's SwiftDecoder software exemplifies this transformation, enabling organizations to overcome traditional scanning limitations while gaining predictive insights and real-time operational intelligence.

As supply chains continue to evolve, adopting advanced data capture solutions like SwiftDecoder is essential for maintaining competitiveness, reducing errors, and enabling agile, intelligence-driven operations. Companies that embrace these technologies will be well-positioned to meet the challenges of a complex, global, and increasingly fast-moving supply chain landscape.



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