AUTOMATION DRIVES THE NEXT GENERATION OF 3PL FULFILLMENT.

How Third-party Logistics Providers Are Leveraging Automation to Fulfill Challenging Distribution and Fulfillment Contracts

Honeywell Intelligrated

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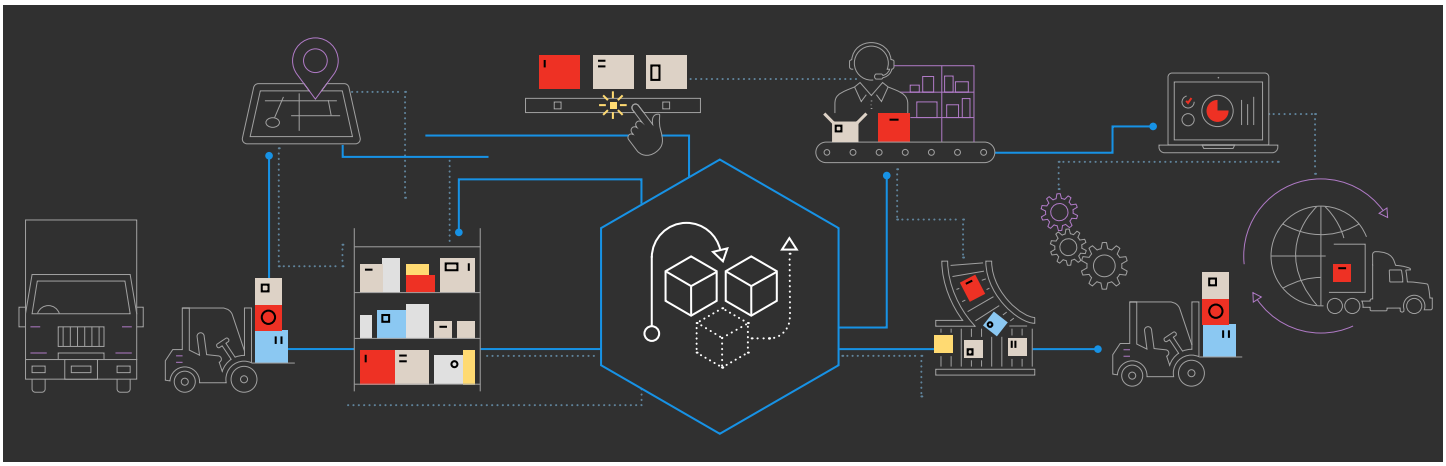
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AUTOMATION DRIVES THE NEXT GENERATION OF 3PL FULFILLMENT

How third-party logistics providers are leveraging automation to fulfill challenging distribution and fulfillment contracts

The unrelenting growth of e-commerce is fundamentally changing the third-party logistics (3PL) industry. To stay competitive and meet increasing consumer expectations for on-time and accurate deliveries, many retailers are tapping 3PL providers to augment their order fulfillment capabilities. While the omnichannel fulfillment sector is the fastest-growing segment of the 3PL industry, these providers inherit many of the same market challenges faced by their retail customers. Succeeding in this competitive market space will require an accelerated transition to automation and digital technologies. This paper will explore the 3PL landscape in the distribution and fulfillment sector and discuss the range of automation technologies available to help address mounting market challenges and demanding contract SLAs.



SHOULDERING THE BURDENS OF COMPETING WITH PURE-PLAY E-RETAIL

1

> **The 3PL industry has expanded at an unprecedented rate in recent years, experiencing a 21.6 percent revenue increase between 2016 and 2018.[2]**

Much of this growth can be attributed to the omnichannel fulfillment sector, where more retailers are outsourcing mission-critical components of their distribution and fulfillment operations to 3PL partners. 3PL leaders in this sector are offering a full spectrum of e-retail supply chain capabilities, including:

- Order management and fulfillment (picking/packing/shipping)
- Reverse logistics (returns)
- Product packaging, assembly and kitting
- Information technology (IT) services

3PLs allow companies to shoulder the burden of operating in a hyper-competitive retail climate. Booming e-commerce retail growth is only making the impacts of labor shortages more acute. In the warehouse and fulfillment sector, this growth is outpacing the U.S. labor pool by a ratio of 6:1.

SLA terms and consumer expectations are increasing proportionately with the growing demands of e-commerce. Sometimes referred to as the "Amazon effect," the table stakes of joining the e-commerce game require faster (even same-day) delivery and low shipping costs to preserve shopping cart sales. Delivering on these expectations is even more difficult for retailers that aren't pure-play e-commerce players, and more of them are relying on 3PLs to fill in their competency gaps.

2. Statista 2018

Because entering the e-commerce arena is a major operational commitment, many retailers are seeking longer-term contracts from their 3PL partners and holding them to higher standards, specific service level agreements (SLAs) and key performance indicator (KPI) metrics such as:

- Achieving higher order volumes and throughput
- Ensuring on-time deliveries
- Maintaining 99.8 percent order accuracy

Rather than incurring the capital expenditures from expanding on existing facilities or establishing all-new distribution center operations, retailers are partnering with 3PL providers to assume these responsibilities and related costs. Forecasters anticipate the development of 225 million square feet of new warehouse space in 2019, and 3PLs will comprise a significant portion of this investment. At the same time, warehouse rental rates are also on the rise as the amount of available space continues to shrink.

The net result of all these factors is a fiercely competitive 3PL market. Those 3PLs leading the distribution and fulfillment space are moving away from traditional transactional relationships to long-term partnerships that suit retailers' diverse e-commerce objectives.

3PL TRENDS IN DISTRIBUTION AND FULFILLMENT

- The U.S. 3PL industry experienced **21.6 percent gross revenue increase** from 2016–2018.[2]



- *Implications:* More companies are turning to 3PLs to offset e-commerce fulfillment challenges and meet service level agreements (SLAs).
- **Almost half (46 percent)** of U.S. employers can't find the skilled workers they need.



- *Implications:* E-commerce retailers are looking to 3PLs to manage one or more aspect of their fulfillment operations.
- Developers expect to build about **225 million square feet of new warehouse space** in 2019, more than double the 10-year average of 120 million square feet.



- *Implications:* Expect increasing competition for available warehouse space. To avoid capital expenditure (CapEx) investments, 3PLs are also hoping to maximize the capabilities of existing warehouse space via the deployment of new automation technologies.
- Availability of warehouse space hit a historic low of **7.3 percent** in the first quarter of 2018.



- *Implications:* Rental rates rose 5.9 percent, forcing 3PLs to further evaluate ways to fully utilize existing facilities.
- Startup activity in logistics technology reached the **highest levels in recent history.**



- *Implications:* 3PLs leaders are investing in new automation fulfillment technologies to offset the labor challenges, retrofit existing facilities, and help companies meet fulfillment SLAs.

THE 3PL AUTOMATION EVOLUTION

2

To attract and secure these long-term retail contracts, 3PLs must quickly adapt and become more automated. This transition represents a significant paradigm shift for an industry that has traditionally relied on mostly manual labor.

The days of matching contract requirements with labor alone are no longer cost-effective or even physically viable. Just as 3PLs are not immune to the current labor challenges, meeting current and future e-commerce fulfillment requirements will push the limits of human capabilities.



The combination of these factors is driving the move toward increasing degrees of automation in 3PL distribution and fulfillment operations. But shrewd 3PL operators are only willing to invest in automation if it can assure that SLAs and KPIs will be met. And while the presence of automation helps to secure longer contracts, new investments must also be weighed against 3PL profitability goals. Those that are successful can then leverage their automation capabilities as a true differentiator among 3PL competitors.

Many 3PLs are unsure of where to start with automation or what degree of sophistication is needed. They know that they would like to implement the same tools and automation systems used in a modern, fully functioning e-commerce DC. And ideally, they would like the ability to enable visibility to SLA status for their retail partners.

Industry experts believe that 3PLs must begin to make the transition to automation or risk the possibility of obsolescence in the coming decade. Retailers are seeking partners that have the expertise in the latest automation equipment, systems and technological infrastructure needed to meet their requirements.

For 3PLs hoping to capitalize on this growing market opportunity, making the transition to increasing degrees of automation promises greater efficiencies, a much-improved set of capabilities and a competitive advantage. Fortunately, new tax laws will help 3PLs offset investments in automation equipment, allowing businesses to accelerate the write-off of new equipment and building costs for the next five years.

MAKE THE TRANSITION TO AUTOMATION

3

What follows are the leading automation technologies available to help 3PLs meet the terms of their e-commerce retail contracts and succeed in the distribution and fulfillment space.

From entry-level systems to more advanced degrees of sophistication, these distribution and fulfillment technologies can be combined to help 3PLs align their automation investments with terms of their contract agreements.



VOICE-DIRECTED PICKING

Voice-picking solutions are an ideal choice for those 3PLs starting the transition to automation. Voice enables hands-free, eyes-up picking workflows for productivity increases up to 35 percent and 99.9 percent accuracy rates. Voice-directed picking also accelerates training and new employee onboarding while improving overall workplace safety.



PICK- AND PUT-TO-LIGHTS

Used in both picking and putting applications, lights-picking technologies combine robust pick-face hardware and intuitive end-user software to help 3PLs adapt to e-commerce fulfillment requirements for each and open-case picking. Today's solutions are able to achieve productivity rates from 300 to 800 lines per hour.

Flexible pick- and put-to-light systems can be retrofitted into existing 3PL operations with relative ease, and require minimal order filler training to achieve improved efficiencies in high-velocity, high-SKU, high-density fulfillment environments.



PUT WALL ORDER CONSOLIDATION

There's a reason put walls have become indispensable in pure-play e-retail operations: their ability to consolidate orders from various upstream picking processes for fast, accurate order fulfillment. In the face of never-ending SKU proliferation and varying order profiles, put walls add much-needed scalability to 3PL fulfillment processes.

Put walls are cabinet-like structures divided into a series of compartments (aka cubbies). On one side, an operator follows light-directed instructions to place picked items into individual cubbies that comprise a series of customer orders. Once each order is filled, an operator on the other side of the wall is then instructed to pack out the order or place a bin on a take-away conveyor.

The latest put wall technology allows users to configure the size of put wall cubbies and associated light instructions to better adapt to changing order and product profiles.

MOBILE PICK WALLS

Mobile pick walls add picking flexibility and go-anywhere mobility to order fulfillment operations. Ideal for addressing low-velocity items and managing distant break-pack picking areas, these solutions utilize advanced pick-to-light components to improve accuracy and achieve pick rates exceeding 300 lines per hour.



LABOR MANAGEMENT SOFTWARE (LMS)

Maximize employee performance and effectively staff for every fulfillment scenario with incentive-based tracking, coaching and analytics. LMS delivers the on-demand intelligence to measure, manage and plan DC labor allocations to increase productivity, efficiency and overall facility performance. Executive dashboards give operators access to insightful reporting and performance analytics to drive continuous productivity improvements and labor cost reductions.



ROBOTICS

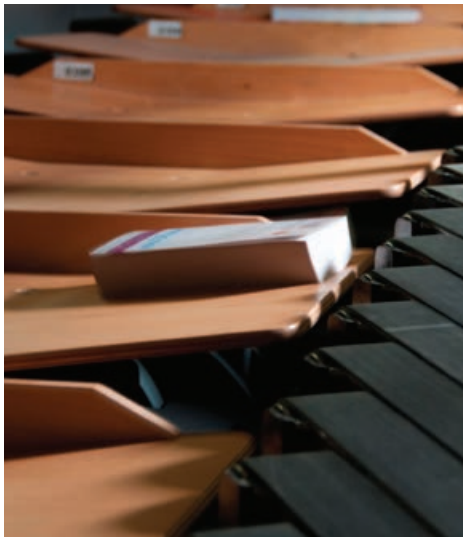
Advancements in robotic technologies are making their way into dynamic order fulfillment environments, where they're playing an ever-expanding role in automating complex tasks. From unloading shipping containers and picking packets to robotic singulation, palletizing and depalletizing, these high-performance solutions deliver optimum productivity and accuracy rates. And by leveraging the power of the Industrial Internet of Things (IIoT), artificial intelligence (AI) and machine-learning technologies, today's robotic solutions continually improve and adapt to changing conditions.



Automated guided vehicles (AGVs) and autonomous mobile robots (AMRs) are two mobile robotics solutions that have improved significantly and experienced wider adoption in recent years. AGVs reduce the labor requirements related to storage, retrieval and other associated picking-related tasks. AMRs automate goods-to-operator picking, particularly in remote areas of a facility. Both offer measurable efficiency improvements and reduced labor costs.

HIGH-SPEED CONVEYANCE AND SORTATION

A combination of high-speed conveyance and sortation equipment is necessary to achieve the throughput rates required by today's most demanding omnichannel retailers — sorting up to 25,000 items per hour, fulfilling up to 150,000 orders per day. While there are myriad sortation conveyor solutions available for specific throughput requirements, state-of-the-art, tilt-tray sortation systems are ideal for applications with a diverse range of product shapes and sizes, such as those used in modern e-commerce 3PL operations.



Zero-pressure accumulation conveyors ensure that product remains unharmed while preventing jams that can throttle throughput rates. High-speed transportation conveyors are often integrated in multi-zone picking strategies to efficiently route product from disparate pick zones in a DC to available put walls for effective order consolidation.

WAREHOUSE EXECUTION SYSTEMS (WES)

With the proliferation of automation systems to perform specific tasks throughout a DC, 3PL operators need new tools that not only provide visibility into these systems, but also integrate their disparate workflows into cohesive, efficient operations. Modern warehouse execution systems are designed to connect islands of automation to usher in the next generation of automated DC efficiencies. In doing so, a modern WES enables dynamic, real-time decision making for smart order prioritization and order release execution.



CONNECTED DISTRIBUTION CENTER TECHNOLOGIES

Advancements in IIoT have given rise to connected technologies which are currently available to help 3PL DC operators increase operational reliability, meet daily throughput targets, and maximize man and machine productivity. By connecting machine-level sensors, workers, material handling equipment (MHE), robotics and automated systems to cloud storage and powerful data analytics, these connected solutions deliver deep operational insights for real-time decision making and predictive maintenance programs. Look for more 3PLs to leverage these connected technologies to help them achieve their throughput and uptime targets.



PARTNER WITH AN EXPERT FOR SCALABLE AUTOMATION SOLUTIONS

A growing number of 3PL operators in the distribution and fulfillment sector are making the transition from manual to automated processes.

As omnichannel retailers seek longer-term contracts to help cement their position as reliable e-commerce providers, 3PLs will be forced to implement ever-increasing degrees of automation to fulfill the terms of these contracts.

Whether you're seeking to introduce automation into an existing operation or expanding into a new facility with more sophisticated workflows, this paper demonstrates the array of options available now to help 3PLs deliver maximum value for their retail customers and achieve true competitive differentiation. No matter how far along you are in your journey, it's critically important to partner with an expert in automation hardware and software.

As a leading provider in automation solutions for distribution and fulfillment applications, Honeywell Intelligrated has decades of experience helping 3PLs achieve maximum productivity and efficiency. We can help you address today's requirements while setting you up with a flexible technology infrastructure that can scale to meet the demands of tomorrow.

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