9 KEYS TO FORTIFYING FULFILLMENT OPERATIONS

Strategies for Thriving in a Challenging Market
and an Uncertain Future

Honeywell
Intelligrated®

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INTRODUCTION

For companies in the distribution and fulfillment (D&F) sector, the onset of the coronavirus pandemic was an inflection point in the way they run their omnichannel retail fulfillment operations.

Consumer adoption of contact-less, online fulfillment options accelerated e-commerce growth to levels not previously expected for several years. As distribution center (DC) managers scrambled to manage the surge in order volumes, they also faced the prospect of implementing new workplace safety measures aimed at improving worker confidence and well-being. But many soon realized that they were unprepared to address emerging and unanticipated DC complexities. This white paper will examine nine operational strategies that retailers can adopt to improve their abilities to survive — and thrive — in this uncertain and demanding market.



MARKET TRENDS: RESHAPING THE SHIFTING D&F LANDSCAPE

Seemingly overnight, the coronavirus pandemic had reshaped the D&F landscape.



As DC managers implemented new workplace safety guidelines to instill both employee and consumer confidence, many consumers amped up their e-commerce purchasing across nearly every retail sector while embracing online grocery shopping for the first time. The need to fulfill higher volumes of online orders was further complicated by slowdowns in the supply chain due to illness or production shutdowns. This combination of demand spikes and workplace safety protocols created a perfect storm of D&F complexities for which most were unprepared to address.

Among the primary impacts of this rapidly changing environment include:

- COVID-19 accelerated the growth of e-commerce 4 to 6 years faster than anticipated.
- Investments in automation and robotics are expected to rise, especially as a replacement for non-value-add tasks and processes.

1. SUPPORT YOUR TECHNICIAN STAFF WHEN YOU CAN'T BRING IN OUTSIDE RESOURCES

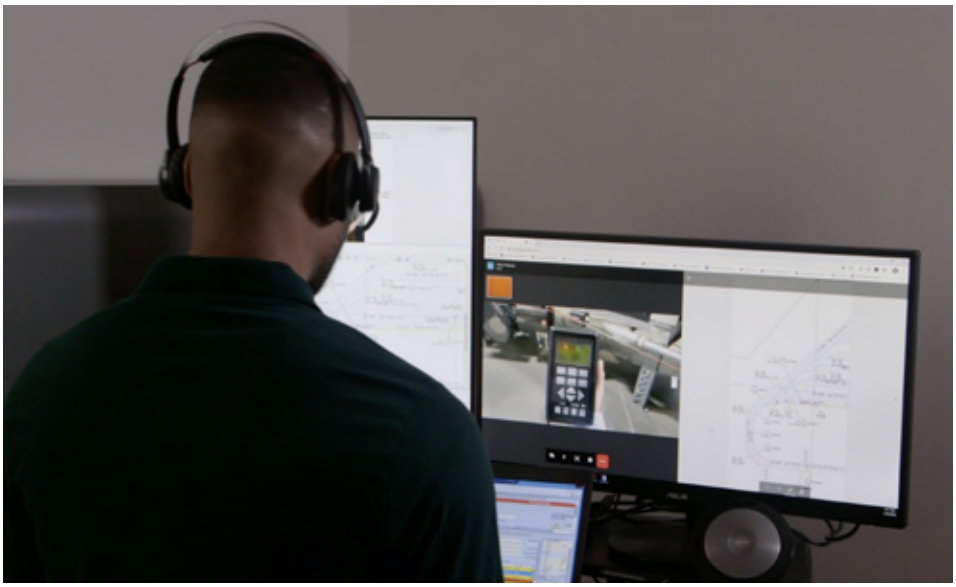
Building access constraints due to social distancing precautions have introduced unexpected barriers to maintenance and operations (M&O) crew efficiency.

And with persistently elevated throughput levels, the prospect of any material handling equipment (MHE) downtime now presents a much greater threat to overall DC performance. Since it's not always possible to bring in outside technicians to resolve issues, your teams need other ways to access and communicate with these trusted experts.

REMOTE VIDEO-ENABLEMENT



Remote video-enablement solutions enable real-time collaboration with experienced support experts who can provide step-by-step instructions to accelerate issue resolution. By utilizing mobile device apps designed for audio-visual (AV) communication, your teams can receive expertise when they need it most. For a fully immersive, hands-free experience, equip your team with augmented reality (AR) smart glasses to enable live sharing of technical documentation and AR overlays within your technician's field of vision.



2. KEEP YOUR STAFF PROPERLY TRAINED WITHOUT ACCESS TO IN-PERSON TRAINING

Just because in-person training may be temporarily on hold doesn't mean your M&O teams can afford to stop building their essential skill levels. The combination of distance learning and on-the-job training from remote support experts can augment traditional training programs and keep your teams prepared to address any issues that may come their way.

DISTANCE LEARNING AND ON-THE-JOB UPSKILLING

Distance-learning systems allow key M&O staff members to continue their essential training and access the information they need in order to excel at their jobs. These flexible programs can be tailored for various skill levels and allow courses to be completed at the preferred pace of management and/or individuals. While aforementioned remote video-enablement capabilities are critical to limiting unplanned downtime, they also serve as on-the-job upskilling opportunities — allowing your teams to learn from experts as they resolve issues in real time.



3. OPTIMIZE YOUR WORKFORCE FOR PEAK PRODUCTIVITY AND ENGAGEMENT

Attracting and retaining a qualified hourly workforce are often cited as the greatest operational challenges facing DC managers.



Today, with the increased competition for available DC labor, these resourcing issues have become even more acute. Simultaneously, many companies find themselves running in a perpetual state of peak productivity to meet demand, which typically requires overstaffing by as much as 20 percent to keep pace.

As you navigate this new reality, your labor considerations now include the needs to operate at continuous peak levels; keep employees engaged, safe and productive; and avoid productivity disruptions due to rolling illness outages.

LABOR MANAGEMENT SOFTWARE

Labor management software (LMS) platforms have a proven track record of driving labor productivity and labor cost optimization in D&F operations. LMS gives DC managers the tools to incentivize employee engagement, lower attrition rates, shorten fulfillment time frames, reduce direct labor spend, and access predictive planning models. In addition to these known benefits, LMS is as effective in expanding its role of addressing employee safety and well-being concerns.

An LMS can help DC managers to address these emerging safety challenges by leveraging three fundamental capabilities that have been traditionally focused on productivity: influencing employee behaviors, tracking results, and driving employee engagement. With a dual focus on productivity and safety, DC managers can meet sustained productivity levels by instilling confidence in their workforce and reinforcing (and rewarding) exceptional performances.

Not only can an LMS help DC managers to achieve maximum productivity from their resources, but it also allows them to make informed labor allocations based on order volume, available resources and customer service level agreement (SLA) priorities.

4. EMPOWER YOUR WORKFORCE WITH MOBILITY TOOLS THAT DRIVE PRODUCTIVITY AND SAFETY

As you adapt to a rapidly changing landscape and prepare for an uncertain future, integrating voice-directed technologies into your fulfillment strategies can not only enhance the safety and well-being of your workforce, but it can also increase employee productivity and accuracy.



In emerging omnichannel e-fulfillment models, voice-directed workflows can help retailers to establish a seamless experience for customers — whether they prefer direct-to-consumer delivery or click-and-collect fulfillment.

VOICE-ENABLED DEVICES AND ANALYTICS SOFTWARE



For decades, voice technology has been used in DC environments to boost productivity and accuracy while making fulfillment operations more efficient. Combined with analytics-driven software insights, this robust and highly adaptable technology can now serve the safety and productivity needs of today's diverse D&F operations. From small, mid-sized or large DCs to brick-and-mortar retail stores, proven voice technology can be leveraged to streamline process-intensive workflows, making it easier for workers to perform their essential duties more safely, productively and accurately — ultimately maximizing profits in a competitive market.

Combined with analytics software, voice technology provides advanced data collection, automated documentation and workplace insights that allow DC managers to optimize workforce productivity while ensuring compliance with new safety protocols, such as:

- Promoting proper cleaning instructions
- Making social distancing recommendations
- Tracking device check-out/check-in procedures

5. REDUCE RELIANCE ON MANUAL LABOR

As consumers embrace online fulfillment in much greater numbers than anticipated, companies across the retail spectrum face prolonged spikes in e-commerce order volumes and the added pressure to shorten fulfillment windows.



These unprecedented (and unexpected) demands exposed weaknesses in DC and retail store fulfillment capabilities, raising new concerns about meeting ever-increasing SLAs. If you're like many companies feeling these pressures, labor is often the core of the issues. Retailers are looking to robotics investments to help reduce their reliance on manual labor and increase operational efficiencies.

ROBOTICS INTEGRATION



In today's tight labor market, it is becoming more difficult to fill undesirable and potentially unsafe warehouse jobs, such as repetitive picking, packing and palletizing tasks. It is also becoming more evident that DC throughput and productivity expectations are fast outpacing the limitations of manual labor. To meet today's order volume requirements and the inevitable increases in future demands, retailers will need to begin augmenting their labor force with robotics technologies and automated workflows.

Not only are advanced robotics technologies becoming more accessible, but they also have the flexibility to be integrated into a variety of DC processes to drive both productivity and safety — while reducing the reliance on manual labor. From palletizing/depalletizing and articulated arm picking to autonomous mobile robots (AMRs) and automated guided vehicles (AGVs), robotics solutions are available to augment and automate a wide variety of traditionally manual workflows.

6. SHORTEN THE DISTANCE BETWEEN FULFILLMENT CENTERS AND YOUR CUSTOMERS

Omnichannel retailers and brick-and-mortar leaders alike are seeking any means possible to improve delivery time frames and shorten the distance between fulfillment centers and their customers.



Whether it is for next- and/or same-day delivery or the ability to meet increased demand for click-and-collect retail store fulfillment, companies are investing in higher-density, smaller-footprint automation options to improve delivery logistics. Relentless e-commerce pressures — combined with escalating labor challenges, the scarcity of real estate and the need to digitize supply chain logistics — have prompted retailers across various sectors to deploy stand-alone or add-on solutions to their current fulfillment challenges.

MICRO-FULFILLMENT CENTER (MFC) STRATEGIES

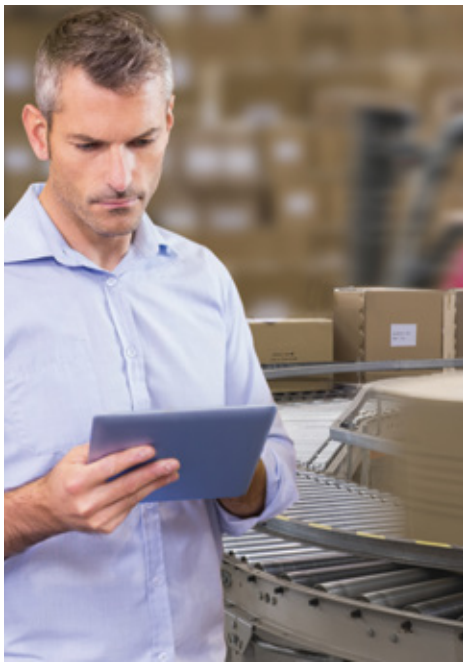


Micro-fulfillment center strategies are rapidly emerging to help retailers shorten the distance between traditional fulfillment centers and their customers and respond to the proliferation of SKUs needed for their online offerings. These highly automated, higher-density, small-footprint MFCs can be deployed to augment traditional DC operations, utilized in stand-alone facilities, used within dark stores or warehouses, or leveraged in existing retail stores to address in-store, e-fulfillment models.

MFC strategies allow retailers to establish hub-and-spoke fulfillment networks — utilizing existing DCs as centralized hubs and implementing highly automated MFCs as spokes located in urban facilities and retail stores. Combining robust automation equipment, robotics and advanced warehouse execution software (WES), MFCs are ideally suited to capitalize on the unique challenges confronting today's retail sector.

7. STREAMLINE WAREHOUSE AUTOMATION WITH A ROBUST, UNIFIED SOFTWARE PLATFORM

Throughout the evolution of warehouse automation equipment, supporting software has been designed to serve very limited functions.



Unfortunately, over time this approach has only added to DC operational complexities. In fact, the presence of multiple software vendors for various automation systems and robotics platforms can result in disconnected islands of automation and a continual cycle of obsolescence and upgrade challenges. But automation is essential to ongoing D&F survival. Therefore, as companies introduce more automation in order to keep pace with demand, the integration of advanced warehouse automation software will play an increasingly important role in your operational success.

INTELLIGENT WAREHOUSE EXECUTION

As traditional, multi-vendor software infrastructures make full DC fulfillment system orchestration next to impossible, retailers and DC operators will need to rethink their software strategies and deploy smart warehouse automation software platforms capable of:

- Unifying disparate automation systems
- Orchestrating all automation systems for full warehouse execution
- Simplifying software support and upgrade management

Modern warehouse automation software provides a single, unified platform for enabling real-time advanced automation in complex DC environments. This consolidated approach gives DC managers the tools to:

- Leverage operational data for workflow optimization and business insights
- Apply machine learning (ML) for intelligent decision-making
- Align order release and processing with customer SLAs and priorities
- Maximize automated storage and retrieval system (AS/RS) storage and inventory availability
- Ensure labor productivity and utilization
- Orchestrate advanced AS/RS and robotics into DC workflows

8. LIMIT DOWNTIME WITH A PREDICTIVE MAINTENANCE MODEL

The current scenario of running DC operations at near-peak productivity levels has placed continuous, additional strains on MHE systems at a time when fewer maintenance personnel are available to keep these systems operational.



Not only are the costs of downtime much higher under these circumstances, but they also begin accruing within minutes, rather than hours — making the recovery process that much more difficult. In addition, most companies operate their DCs without any baseline data about the current condition of their essential MHE, such as critical sortation systems. To mitigate the risks and costs of unplanned downtime, retailers need to take a predictive approach to lifecycle management and maintenance programs.

DATA-DRIVEN INSIGHTS INTO ASSET PERFORMANCE

DCs equipped with connected, internet of things (IoT) infrastructures can leverage the power of operational data to drive DC performance and transition to predictive maintenance programs. By continuously gathering and analyzing data on a sortation system — such as motor temperature, vibration and electrical current draw — a connected infrastructure can detect potential system failures before they occur, and even automate preemptive workflows for work order creation and issue resolution.

The benefits of such a connected, data-driven approach include:

- Remotely accelerate issue resolution
- Upskill or train the technician in the process
- Reduce the number of labor hours to maintain systems
- Limit the frequency and duration of unplanned downtime
- Provide the ability to schedule/plan downtime during off-peak periods
- Lower the amount of spare parts needed on-site

9. SIMULATE TO VALIDATE PRIOR TO IMPLEMENTING NEW PROCESSES AND SOLUTIONS

Historically, organizations seeking to leverage the predictive powers of simulation and emulation technologies have been restricted to either working with outside consultants or opting for solutions that were only available for demos of prospective system designs.



These powerful capabilities are now available to D&F centers by utilizing products like eSim, a unique offering within Momentum WES. This allows D&F operators to run countless scenarios on their own.

eSim creates a digital replica of existing automated MHE and software. By combining the benefits of both simulation and emulation, it enables operations to achieve higher productivity goals and decrease installation costs while meeting the challenges of the future.

ANSWERING THE WHAT-IFS

With eSim, an operation can derive higher efficiencies with the abilities to compare and evaluate multiple "what-if" scenarios, such as:

- The impact of peak season equipment capacity and staffing needs
- The effect of changes in demand patterns and product mixes on warehouse storage capacity and throughput
- The ability of an operation to handle extra capacity through pressure testing of systems against a variety of volumes
- The impact of different staffing levels per workflow, shift or process
- The effect of various disruptions and breakdowns, and their likelihood of occurring within a given time frame
- Implementing various types of equipment into an existing system to validate potential investment
- The result of a change in conveyor or sorter routing to overall product flow

In addition to delivering 2 to 3% less overstaffing and a 3 to 5% reduction in unplanned downtime — at a minimum — eSim allows the details of a new DC design to be tested in a virtual environment.

As an added benefit, eSim can also be used to create interactive, virtual reality (VR)-based training tools that enhance employee performance. New and existing associates can be trained on picking, sorting, goods-to-person (GTP) activities, quality control (QC), and other processes and technologies. With eSim, overall training efficiency can be increased by 10%.

LAY THE FOUNDATION FOR A MORE CERTAIN FUTURE

Laying a foundation for future success will require retailers to utilize all available tools, technologies and fulfillment strategies to help protect the safety and well-being of their workforce and maintain peak productivity levels.

As omnichannel retailers face this unpredictable marketplace, many are looking for a material handling technology and lifecycle management partner that can help them to fortify their fulfillment operations and begin to implement some of the best practices discussed herein.

Honeywell Intelligrated is that partner.

As a full-service technology provider with deep domain expertise and interdisciplinary solutions, Honeywell Intelligrated is uniquely equipped to help retailers address today's challenges and build a foundation for future success. We're ready to help you create a workplace where your employees can thrive, your operations can meet ever-increasing productivity targets, and you can move forward with the confidence of knowing that your operations can adapt to whatever the future may bring.



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WHAT
WE
MAKE IT

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