

FORTNA

Thought Leadership Series

Optimize Warehouse Operations with Software-Driven Automation



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To remain competitive and profitable, warehouses are being pushed to deliver more than ever. Businesses must meet rising customer demands while overcoming challenges like labor shortages and fluctuating inventory levels. Automation offers a clear path forward, but implementing the right strategy can be complex. With over 300¹ automation solutions available, finding the right mix for your operations can be overwhelming. The key is to leverage flexible software that adapts to your changing needs.

How can a software solution boost your operational output and drive business outcomes?

In this FORTNA Insight, we will discuss the three pillars of software-driven automation to prioritize in your facility:

- Inventory positioning
- Work orchestration
- Resource balancing

¹ LogisticsIQ

The three pillars of software-enabled automation

By focusing on these areas, warehouses can significantly boost throughput, improve labor efficiency and maintain visibility, no matter what the day brings.

Inventory positioning

Inventory positioning, often called slotting, involves strategically placing products to maximize efficiency and productivity within a warehouse. This reduces travel time for workers and ensures high-demand items are easily accessible.

As you see in a grocery store, high-margin and popular items are placed at eye level and on end caps to encourage quick sales. Similarly, in a warehouse, inventory positioning places high-demand items near each other, reducing the time and effort required for picking.

The FORTNA OptiSlot DC™ software solution takes this concept further by continuously optimizing item placement based on real-time data. This can lead to a 13% increase in picking productivity and a 20% reduction in replenishment frequency.

Key benefits of a software solution that prioritizes inventory positioning include:

- **Increased efficiency:** By placing high-demand items in easily accessible locations, pickers can retrieve items faster, reducing overall order fulfillment time.
- **Improved throughput:** Optimizing product placement can lead to a smoother flow of goods through the warehouse, increasing the number of orders processed per hour.
- **Reduced labor costs:** Slotting efficiency reduces the need for excessive movement, which can lower labor costs and improve worker productivity.

Dynamic slotting is especially useful in today's fast-paced warehouses. Instead of relying on static inventory placement, software can continually adjust locations based on demand, improving efficiency during peak times.

Work orchestration

Work orchestration ensures tasks are prioritized and assigned to the right resource at the right time – whether that's a human worker or an automated system. Software-driven orchestration considers factors like task urgency, worker proximity and available capacity to optimize assignments.

Intelligent task allocation and timing ensure that the most appropriate task is assigned to the optimal person at the optimal time. For example, if two workers are available to pick an item, the system considers their current tasks, proximity to tasks yet to be assigned, and picking speed before assigning the task.



Effective work orchestration also accounts for order demands and deadlines. For instance, if a task needs to be completed by 5 PM and typically takes 25 minutes, the system will allocate it with enough buffer time to account for any delays. This intelligent scheduling ensures that orders are processed efficiently, even as priorities shift.

A software solution that prioritizes work orchestration offers several benefits:

- **Optimized task assignment:** Ensures that tasks are assigned to the right resource at the right time, improving overall efficiency.
- **Better resource utilization:** Balances workloads among workers and automated systems, reducing bottlenecks and shipping delays, ensuring smoother operations.
- **Enhanced flexibility:** Adapts to changing order demands and operational conditions in real-time by balancing service level commitments against efficient work completion, ensuring optimal performance.



Resource balancing

Resource balancing ensures both human and automated resources are deployed where they're needed most. Think of it like adjusting a shift schedule dynamically, reallocating resources to the areas with the highest demand. Recalling our grocery store analogy, if checkout lines are backing up, a worker restocking shelves might be redirected to assist at the register until the need dies down.

For example, when order volumes spike, workers could be temporarily reassigned from other tasks to operate automated systems, increasing throughput in critical areas. Modern software eliminates guesswork by analyzing operational data to ensure resources are always optimally assigned.

Some realized benefits of resource balancing include:

- **Increased throughput:** Ensures that resources consistently work on the highest-priority tasks, maximizing output.
- **Reduced downtime:** By dynamically reallocating resources, downtime is minimized, and productivity is maintained even during peak periods.
- **Improved labor efficiency:** Workloads are balanced to prevent overburdening workers and ensure that automated systems are used to their full potential.
- **Reduced bottlenecks:** Ensures the flow of work continues seamlessly, reducing inefficiency, delays and increasing productivity.

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FORTNA CAN HELP

Software-driven automation represents a transformative approach to warehouse management. By focusing on inventory positioning, work orchestration and resource balancing, businesses can achieve significant gains in efficiency and productivity. FORTNA can serve as your software automation and integration partner as you build a modern, software-driven warehouse, setting new standards for operational excellence.

Contact us today at www.FORTNA.com