



HighJump™

Having a Say in the Future of Supply Chain

HighJump™ Voice

The director of warehouse operations walks into a board meeting to present on the year's performance. He pulls up the numbers and starts, but in the back of his mind he's thinking about the real story: the disappearing workforce; the swelling order volumes from eCommerce, same-day shipping, and all the patchwork his team applied to workflows, processes, and systems throughout the year to keep boxes moving. He's proud of the team's work, and the KPIs look good. The director is good at his job – maybe too good.

The board seems pleased. Then, they “ask” for ten-percent improved profitability over the next four quarters (again). The director puts on his poker face and nods. It's the third year in a row the board asked for this level of optimization, and he's thinking that there's only so much he can squeeze out of the warehouse with the

current resources and market conditions. Realizing that customers care about rapid fulfillment now more than ever, the business wants to beat competitors to the punch. Perceptions of the warehouse being a massive company closet ended years ago, but the director seemed to draw the short straw for resources.

Taking the executives' challenge as a springboard, the director flips to the next slide. It's an image of a warehouse picker speaking into a headset while pulling inventory from a rack. He explains that maximizing warehouse profitability can't be done unless the workforce has the right tools for the job. He goes on to explain how voice technology opens new doors to operational savings, cost efficiency, and an empowered warehouse workforce. He shows them how voice is uniquely poised as a bridge – a bridge between the workforce



and the WMS and also to new supply chain technologies the business will invest in as it shifts into the supply chain of the future.

What is Voice-Directed Warehousing?

When it comes to moving inventory, speed, and accuracy remain the top factors of a thriving warehouse. Voice-Directed Work (VDW) offers hands-free and eyes-free operations for faster task completion with less opportunity for error. Typical applications include picking, replenishing, put-away, and cycle counting. However, businesses are finding additional use cases (we'll touch on a few later). In typical voice applications, you can expect improved:

- *Productivity:* By removing screens or paper-based work orders, voice-enhanced operations see on average **10-30% increased productivity**. There are no distractions. Instructions for new tasks come over the headset as the current task is completed, keeping operators and operations moving.
- *Accuracy:* As "hands-free, eyes-free" work, we've seen VDW **reduce mis-picks by as much as 50%**. VDW comes through as audible instructions over a headset, and every step in the process is validated by verbal feedback. This keeps operators' eyes locked on tasks. As an additional layer of traceability, VDW easily combines with barcode scanning if the process requires.
- *Efficiency:* More efficient training and onboarding contributes to increased productivity. By providing





simple, step-by-step instructions over the headset, new operators become productive more rapidly and **lengthy training can be reduced to less than an hour.**

Some people compare VDW to voice assistants found at Best Buy. Siri, Google Assistant, and Alexa may be handy in our personal lives, but they would probably get pink slips the first day on the job at a warehouse. It's okay (if only slightly irritating) to repeat ourselves when asking these virtual assistants about the weather. In the warehouse, this just wouldn't work. Every millisecond adds to productivity savings. Further, VDW is built to rapidly perform all speech recognition on a battery-powered mobile device. It also eliminates miscommunication by learning the unique "fingerprints" of an operator's speech. This results in a seamless exchange of information between voice systems and the operator. It's also important to mention that most voice technology providers recognize dozens of languages, helping businesses tap into new talent pools and expand into new regions more easily.

Voice does more than give orders. In a typical workflow, the voice system issues instructions to operators through the headset during traversal, picking, inventory status updates, and other processes. Operators provide updates to the system of record in real-time as work progresses. This improves inventory traceability in the warehouse and

produces a vital layer of performance data measuring that uncovers training and worker-optimization opportunities.

Why Voice for Today?

Customers expect package delivery in smaller time-frames than ever before. Driven by the growth of eCommerce and changing retailer requirements, order profiles have shifted from bulk pallets to small-batch, higher-volume orders. The talent pool continues to dry up, pushing supply chain managers toward technology to fill the productivity gap. The collision of these trends creates circumstances calling for tools that help businesses move boxes faster and more accurately with fewer boots on the ground.





VDW is proven as a warehouse solution over the past two decades that can show ROI in less than 12 months. It's also highly flexible, allowing supply chain operations to rapidly adapt to the inevitable changes their customers will demand. The same technology advancements that evolved brick cell phones into today's smartphones similarly affect voice technology. Better batteries, smaller and faster chips, pitch-perfect microphones, and other whiz-bang technologies over the years pushed VDW to new levels of operational efficiency.

6 Voice Advancements for Tomorrow

While VDW is up to today's challenges, it's critical to look beyond. Why play catchup when the market gets shaken up by the next disruptive change? We're already seeing how voice technology can be applied to new work applications and expand the potential of robotics, big data, and other technologies that push the boundaries of supply chain as we know it.

Voice-Direct vs. Voice-Assist

In a typical warehouse voice application, the executive orders from the WMS (or other systems, depending on the business) are communicated to the operator via simple, step-by-step instructions. The operator executes the instructions and the voice system updates the WMS at key milestones. This is known as voice-directed workflows. It's simple, fast, effective, and ideally suited for repetitive tasks. However, voice technology can be just as effective in use cases requiring thinking on-the-fly.

"Voice-assisted" work allows the operator to control prioritization and the flow of information. For example, a user in a retail store doing overnight restocking can



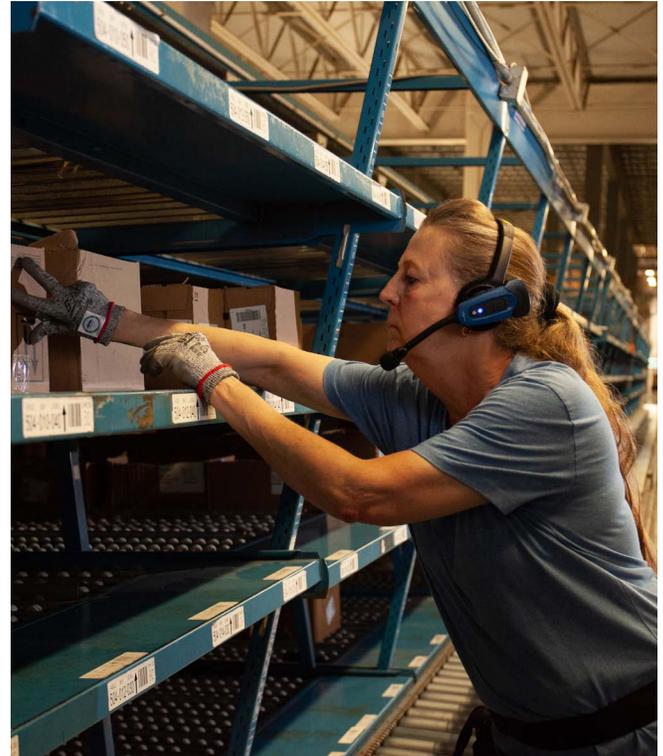
call to the inventory management system to check stock counts or pricing while stocking shelves and without accessing a terminal. We've also seen voice-assisted work help hospice nurses administer medication, maintain patient records, and perform facility upkeep. These use cases turn voice technology into virtual assistants offering convenience and improved productivity to those that need VDW support in less structured processes with multiple high priority tasks.

Voice Plays Nicely with Others

Productivity isn't just about moving boxes faster than the competition. Efficiency comes in many forms and totals up to greater profitability. As a multi-modal tool, voice integrates with other sensory-based systems to complement other technologies needed for complex projects.

For example, a warehouse operator troubleshooting malfunctioning machinery can use multi-modal technology that combines voice with a wearable heads-up display (HUD). Here, the HUD shows a schematic of the machinery in the peripheral of eyewear while the voice system offers step-by-step guidance to complete maintenance. This can quicken troubleshooting and limit errors while reducing costly and time-intensive support tickets.

In a second example, an operator can use voice plus HUD systems to speed



highly repetitive tasks such as inspecting returns. Here, the HUD displays checklists and images of the product while voice records the inspection process back to the WMS. Inventory goes back into circulation faster, and the thoroughness of these inspections can reduce the re-selling of damaged goods.

Voice at the Speed of Sound

Because voice technology feeds instructions to operators, workers need less training and can hit the warehouse floor sooner. Good voice technology can learn the unique characteristics of a user's voice, ensuring optimal performance for each and every worker. Going beyond voice recognition, the technology acts as a guide, helping

operators learn workflow processes, warehouse layout, and even how to use other technologies. By providing key information at opportune moments, this guiding voice helps operators become productive while learning on the job.

Seconds truly count in the warehouse. Fortunately, VDW is one of the simplest user interfaces to learn. Each worker is guided through the business process, so they can hit the warehouse floor and become productive immediately. For businesses needing rapid productivity out of temporary labor without sacrificing quality, VDW is the ideal solution.

Robotics, Automation, and Voice

Labor issues may drive some businesses toward robotics and automation, but the warehouse will always need good ol' fashioned humans. When we think about picking and other voice-directed work, we typically picture person-to-goods operations. However, as an intermediary between the WMS and operators, voice allows workers to tap into robotics or automation on the floor to create a goods-to-person dynamic. For some operations, goods-to-person can improve productivity, increase capacity, and create safer conditions for workers who can still benefit from a "hands-free, eyes-free" voice interface.

We're also seeing mixed models where automated vehicles or materials handling

equipment (MHE) assigned to a voice-directed operator assist with delivery, retrieval, or material placement on high-bay racks. The voice system issues instructions to the robots to reduce handling and optimize travel time of workers and inventory.

Giving Androids a Voice

Google's Android operating system has become the new standard for rugged, multi-function warehouse computers. The good news is that VDW is fully compatible with Android and can take advantage of its very familiar user interface and enterprise management capabilities to simplify training and support even more. Younger recruits, who are invariably smartphone wizards, can be on-boarded rapidly.

VDW's huge user base has gained impressive returns on investment with a pure voice interface. However, a screen can be advantageous when dealing with complex passwords, troubleshooting or communicating rich information like a product image. Tools included with these devices, such as cameras, can support newer VDW applications like inspection. It's important to work with a voice specialist to ensure you get the best benefits of both worlds.

Big Data for Big Leaps in Work Productivity

We covered why warehouses need to perform at cheetah speeds with sloth-



like meticulousness. So, if inventory and logistics information from the WMS is considered vital, why wouldn't deeper knowledge of worker activity be just as important to optimization and transparency? By analyzing the low-level data available from a VDW system, highly valuable operational insights can be gained to enable better management and identify further opportunities for optimization.

The latest mobile devices used for VDW have accelerometers, gyroscopes, and Internet of Things (IoT) capabilities that create deep levels of granular, real-time data collection. This could include data about real-time location, physical movements, routes chosen, time to complete tasks, aisle traffic and more. In short, managers gain transparency at the point of warehouse activity from the control room. The dashboards and KPIs driven by voice shine a light on process

improvements that were operational blind spots.

Closing Note

On the director's last slide, he recaps the challenges and business case. He shares why the warehouse is more than a big closet for SKUs. It's the connecting point between the business and customers, and he knows that's an ever-changing landscape. The board listens to how voice technology offers solutions to efficiency, a decreasing workforce and rising customer expectations. That the thirty-plus years voice has been in the market proves its viability. And as the bridge between laborers and warehouse systems, voice can help transition the company into newfound profitability and navigate new challenges as they arise.

Today's consumer has ever-higher expectations for purchasing convenience, delivery speed, choice and adaptability. More options for consumers spell greater complexity for the supply chain. It's no longer enough to fulfill demand – you must anticipate it, predict it and make smarter, faster decisions.

In a high volume, complex logistics environment, the shift to an on-demand model can be challenging – but failing to adapt poses even greater risks. You need a technology partner with a proven track record of delivering efficiency and a lower cost of ownership today, plus the flexibility and innovation to help you realize your strategic roadmap tomorrow and beyond.

At HighJump, we're integrating our proven solutions for the warehouse, transportation and logistics ecosystem with emerging technologies – from around our company and around the world – to build the supply chain of the future. Leveraging advanced cloud technology, we can help you ride the wave of data to achieve greater efficiency, uncover actionable insights, and stay ahead of the curve.



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