

From inventory tracking solutions to mobile robots, today's warehouse technology and automation systems provide more potential for efficiency improvements than ever.

Three supply chain leaders offer their perspectives on the materials handling challenges and opportunities affecting your business processes.

MATERIALS HANDLING

THOUGHT

LEADERS

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Tracking Rugged Tablets

Q: It seems that tablet computers are growing in popularity. Is this true in our field, where conditions can be difficult?

A: Although the tablet has been available for years, it is receiving renewed attention for its combination of an easy-to-read display and keypad-free data entry and retrieval. Tablets offer several advantages over notebook computers and handheld devices. A standing worker can easily operate a tablet while holding it in one hand. Tablets are compact and take up less space. And they offer the display size that works best for mobile employees.



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Q: Rugged tablets cost more than what consumers buy. Is this additional expense worth it?

A: You just can't take a regular tablet or even one labeled "ruggedized" and expect it to work in adverse environments where vibration, heat, cold, moisture, and other factors come into play. Selecting a computer that performs in rugged environments is cost-effective compared to trying to use off-the-shelf, non-rugged consumer hardware. One freight hauling company saw the failure rate of onboard computers reduced from 70 percent to three or four percent when they purchased rugged tablets. This means less out-of-service time and, of course,

fewer replacement purchases. The most durable rugged tablets are designed, manufactured and qualified to pass MIL-STD-810F or -810G. These federal standards specify testing procedures that are designed to determine how equipment holds up under a variety of conditions, including temperature, impact, vibration, and humidity that the equipment may encounter while being used, transported, and stored.

Q: Should comparisons between computers be made solely on ruggedness?

A: No, there are other factors that must be considered. Chief among these is advanced communications. Today's mobile worker needs an array of communications tools, including access to broadband Internet, Wi-Fi service for local area networks including hot spots, Bluetooth connections for wireless connections to peripherals, and global positioning to aid in going from location to location. Other factors to consider include screen size and readability, especially in bright sun. A well-designed docking system allows the computer to be quickly and easily un-docked and placed in another vehicle. One additional consideration is automatic antenna switching. When a mobile tablet is brought into a vehicle, its communications functional-

ity is likely to be compromised by the vehicle's metal construction and even by tinted glass. Manually switching between the antennas within the tablet and external ones on the roof can cause transmission delays or interruptions. Automatic switching eliminates the threat of data loss or disruption.

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Warehouse Automation Management Goes Mobile

Q: Consumer devices, such as smartphones, are becoming more common in warehousing applications. How is the personal wireless space affecting the industrial/commercial wireless space?

A: The form, function, and ease of use industry decision-makers experience when using their personal mobile devices is affecting their expectations of enterprise devices. It is driving demand for smaller and lighter rugged and semi-rugged devices, as well as the desire to use personal consumer devices for enterprise applications. Decision-makers must carefully consider the implica-



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tions of using consumer devices, as they typically aren't built to withstand use in challenging environments, leading to higher failure rates and increased downtime.

Q: What types of enterprises are using consumer-grade devices to manage their automation?

A: This shift is occurring in more consumer-facing applications, including retail in-store and healthcare point-of-care. In supply chain applications, a premium is still placed on device security and ruggedness, a factor that is continuing to drive the need for industrial-class mobile devices for workers on the floor or in trucks.

Q: What about other workers in supply chain lines of business?

A: The combination of mobility and PC functionality that a warehouse or fleet supervisor can get from a semi-rugged hand-held or tablet form factor can replace an office PC and allow that supervisor to perform tasks and handle exceptions more efficiently.

There is also greater mobility in other functions, such as quality control, maintenance, and receiving—areas where the worker may previously have had a fixed PC workstation or a laptop. These workers want the whole office at hand, without having to carry a laptop around. Enterprise leaders need to determine whether a rugged or semi-rugged device would deliver a lower total cost of ownership for these applications, or if a consumer-grade device would do.

Q: Will enterprises begin deploying a mix of rugged devices for some workers and consumer devices for others? And does that present a challenge for IT?

A: There's definitely more diversity in deployed devices. The objective for businesses is to optimize each worker's productivity at each node along a workflow, by providing the right data capture device for that specific task.

Managing these devices presents a significant challenge for IT. One solution is device management software that is both manufacturer- and operating system-agnostic, allowing Microsoft Windows, Google Android, and Apple iOS devices from any manufacturer to be managed on a single dashboard.

Q: Are some enterprises resistant to this type of "Big Data" deployment?

A: Not really, simply because the technology is so customizable that it's hard to feel force-fed. The supply chains that don't have real-time visibility from the point of sale all the way back to the point of manufacture will have difficulty meeting consumer demand. The advice I'd give a business struggling with too many data-capture options is to find a partner who can help optimize each step in their workflow in a way that is scalable and future-proof, and enable them to manage their entire system from a single remote location.

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Making a Business Case for Lean MHE

Q: What are the biggest cost drivers in a distribution center?

A: Distribution centers are driven by four primary costs. Labor is usually the largest cost, which is why companies focus on it so much. Second is the building itself. Third are the IT systems necessary to support the operation. Finally, there's materials handling equipment (MHE).

Companies typically don't focus on MHE but they should, because it is a cost driver. Consider, for example, the considerable cost differential between having a dense storage strategy—with very narrow aisles and automatic guided vehicles—and an operation that requires flex space and wider aisles for lift trucks to maneuver. Another example: using a 5,000-pound forklift when all you need is a 2,500-pound model. It's important to match equipment to specs and priorities to eliminate excess costs.

Costs are also bundled by decisions to buy or lease; or whether to perform preventive maintenance internally, through an original equipment manufacturer, or outsource that responsibility entirely. While many companies automatically focus attention on removing labor costs, opportunities to reduce costs and create efficiencies can be found by taking a lean approach to materials handling.

Q: How has a lean approach to materials handling equipment and processes evolved?

A: Lean has traditionally had a great impact on manufacturing operations. But interest is growing in applying lean principles across the supply chain, where the total cost of moving goods to market goes well beyond production. You can take steps out of the process, increase density, reduce inventory, enhance quality, expedite movement, and reduce total costs in many areas between the manufacturer and consumer. MHE is one example.

Many companies are already on a lean manufacturing path. But once they see that those same concepts apply

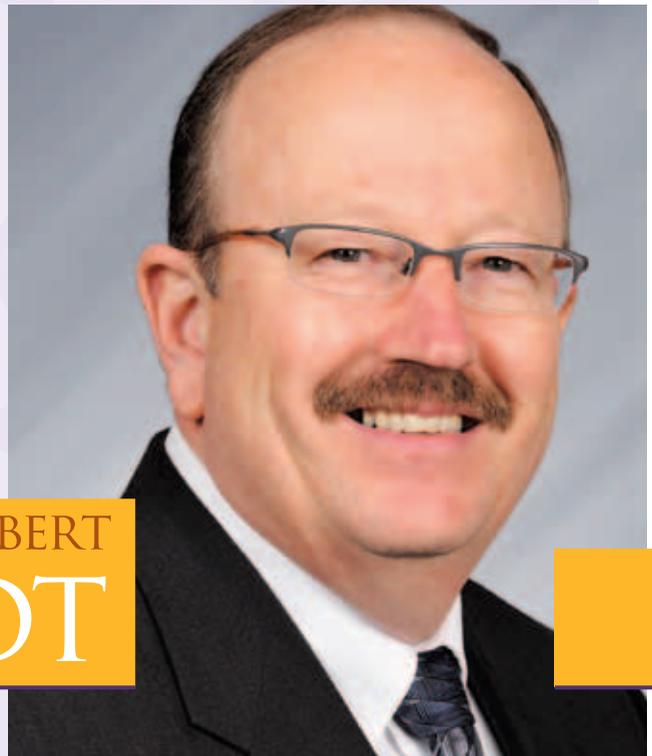
to different functions and activities—and they identify improvements that can be made—everyone becomes interested, because it's a competitive differentiator. Lean can take warehouses to new levels of efficiency.

Q: How can companies apply lean to make MHE and processes more efficient?

A: Lean can work in a few different ways. For one, it defines expectations. If a facility doesn't set goals, employees will come up with their own—and they might not be optimal. Visual management helps demonstrate expectations, display performance, and incentivize improvement. When problems arise, they can be immediately addressed and rectified.

There are also more practical lean returns. Companies can look at how they slot a building so fast movers are closer to the ground and to the front; or use a U-shaped cell layout to take unnecessary travel time out of the operation. On the labor side, voice-directed picking and automation free up hands and time. These, and countless other examples, are good reasons for companies to evaluate implementing lean MHE.

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