The Power of Mobile Printing in the Warehouse and Beyond •••

In today's precarious economic environment, global enterprises are experiencing a dual pinch: one, difficult times have cut operating budgets significantly, and rehiring to support growth after the contraction remains difficult; secondly, as investments in new equipment and systems have been delayed or denied, the optimization of warehouse and supply chain processes has become a critical factor in balancing costs, labor, and assets. What's more, this optimization must occur while maximizing productivity and improving responsiveness to customer demands.

With the growing emphasis on cost cutting, companies need to find new and better ways to enhance efficiencies and ensure accuracy across their supply chains and distribution networks. One strategy that is still effective in helping achieve this goal is the implementation of greater mobility into warehousing and distribution functions through devices such as mobile printers.

According to a recent study, mobile devices and software commonly improve workforce production by 20 percent or more. This translates into lower labor costs, lower operating costs, and faster payback on investment.1 Such gains are not hard to envision. By minimizing the time needed to print labels and apply them to materials, work in process, finished goods, pallets, boxes, and so forth, mobile printers help drive down labor costs while improving performance on the warehouse and DC floors.

Similarly, companies bound by centralized printing and labeling solutions risk diminished productivity and increase the likelihood of errors because workers have to leave their positions to travel to and from the centralized printing station to retrieve bar code labels. While the integration of these centralized stations with enterprise applications has proven effective in driving up efficiencies and driving down costs, they have in many cases reached their potential. To further streamline the operation of processes and extend the value of software and computer assets within the warehouse, mobile printing solutions can empower the worker, right where he or she is at that moment, whenever he or she demands this functionality.

CONTENT •••

Mobile Printers in the Warehouse
- Redefine Receiving
- Capitalize on Cross-Docking
- Make Putaways Painless
- Picking Possibilities
- Excellence in Packing and Shipping
- Beyond the Ordinary

Why Datamax-O'Neil?

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right by our customers.

The Case for Mobile Printers in the Warehouse ▪ ▪ ▪

Greater efficiency and reducing the cost of errors are the two principal drivers of mobile printing in warehouse operations.

Imagine a shipping dock. In larger companies, a shipping bay could have anywhere from four to 400 doors (the latter being a FedEx, UPS, or similar scale operation). Smaller and mid-sized manufacturers have shipping docks with four to eight bays, either inbound or outbound. Usually one printer serves four bays; eight bays may call for two printers. When pallets are unloaded from a truck that is delivering goods to be stored in a receiving warehouse, a forklift is used to get the goods from the truck. Sometimes an entire pallet goes in, but in many cases the pallet has to be broken down. In either case, the destination for goods has to be identified and catalogued, and a label has to be put on each piece, so that it can be identified in the system (i.e., these are wheel bearings, those are something else).

The items have to be assigned to a location in the warehouse. All this information has to be clear so that the manufacturing process can move forward. If every time a worker goes to a pallet, they have to go to a printer that is at the end of their loading dock, operator time is going to be wasted. The operator has to go back and forth, pick up the label, put the label on, and then take the item back to the warehouse. On the other hand, in this environment, if the operator is wearing the printer or the printer is attached to a forklift, then the operator can print labels as soon as items have been identified on the pallet—as soon as the pallet is touched. The operator spends less time going back and forth to the stationary printer, and efficiency is increased.

This point—when the operator first touches the pallet—provides the perfect opportunity to reduce errors. Any one of a million things can happen on a loading dock. When stock is pulled off the truck and somebody goes to the printer to pick up a label, he or she may run into a buddy and chat about Monday Night Football or what happened at a child's birthday party over the weekend; or, a call may come in to do something else that's work related. Any of these distractions can lead to labeling errors. If this occurs, items may go to the wrong place in the warehouse, or—worse—outbound items may get shipped to the wrong destination. Mobile printing greatly reduces the likelihood of such errors and their associated costs, which can drive costs upwards by 15%[2]

Put simply, warehouse operations are intrinsically labor-intensive, which often leads to errors and inefficiencies. By empowering printing at the point-of-use, mobile printers speed time to completion and improve compliance, as print and label execution becomes a more natural part of the employee's workflow. This change can significantly improve most typical warehouse processes.

❶ Redefine Receiving

Instead of workers moving to printers at the end of the dock or from the dock to the IT office to pick up labels of advance ship notices that are printed and stored upon receipt, they can print at the point of receiving from belt- or forklift-mounted label printers. In this way, bar codes or RFID labels can be affixed immediately upon unloading, ensuring that incoming items are prepared accurately for the warehouse's automated processing systems. This eliminates the time required for round trips between the dock and office, and minimizes the chance that a worker could apply a wrong label. Labeling items in this manner also ensures that 100 percent of incoming items are bar-coded, so that warehouse applications can be fully leveraged.

❷ Capitalize on Cross-Docking

By minimizing steps for personnel, mobile printing optimizes cross-docking procedures used at a trans-shipment point to save time and labor in moving goods from an inbound vehicle to an outbound vehicle. Staff equipped with mobile devices can receive inbound shipments, log them into the warehouse management or inventory control systems with a mobile computer or handheld device, and then use a mobile printer to create labels with the appropriate cross-docking information. Doing this at the point of use speeds the process while improving accuracy.

❸ Make Putaway Painless

Inherent delays in the fixed-printer model—routing to and from the printer, time spent at the printer per se—have had a negative effect on putaway. Using mobile printers within integrated environments that include mobile printers, wireless networks, and shared databases can attain significant efficiency gains over an architecture that utilizes stationary devices located near, but not at the point where the work actually happens. Specifically, an integrated system empowers personnel to initiate label requests by entering data into a handheld computer that transmits the data to the company's ERP system over a wireless LAN. After the ERP system receives the transmission and updates inventory, information required to create the appropriate label or labels is sent back to the handheld for mobile printing.

④ Picking Possibilities

Since picking is essentially the opposite of putaway, mobile printers can provide this function with similar time and cost savings. By enabling operators to pick multiple orders simultaneously and within a very small footprint, mobile printers drive down empty transit time and drive up productivity. The printers are used to create barcode or RFID labels for each individual item; these are subsequently scanned to speed the sorting of items for shipment.

⑤ Excellence in Packing and Shipping

When a manufacturing process is finished, personnel can use the mobile printer to create a label for the finished goods; or, warehouses and distribution centers can use mobile printers to manage ship-to-order requirements. Workers can use labels and scanning to verify the pick/pack of all items necessary to complete an order, eliminating the need to identify and label final assemblies.

The processing of ship-to-order requests can be improved by labeling items with an order code to associate them with a specific customer during picking or packing. When the order finishes, a mobile printer creates the shipping label, ensuring accuracy in packing and shipping.

Beyond the Ordinary

In addition to the classic warehouse procedures (receiving, QA, putaway, picking, packing, and shipping), mobile printers are proving effective in driving efficiencies in other labeling applications, including:

- Asset Tracking
- Compliance Labeling
- Inventory Control
- Real-Time Tracking Status and Spare Parts

- Spare Parts Inventory
- Asset Utilization
- Customer Compliance
- Overage, Shortage, or Damage

Mobile printers are also showing value in other environments. For example, on the manufacturing shop floor, mobile printers are being used more in actual production areas—around production lines, workstations, machines, and equipment—where point-of-work printing access can drive up efficiencies by eliminating wasteful travel and social dwelling time. Leading applications include product labeling, compliance and other shipment labeling, receiving, invoice printing, WIP tracking, order form printing, and bill of material (BOM) printing.

In logistics, route workers are using mobile printers to provide customers with pickup receipts and create barcode or RFID labels for packages they collect. Creating and applying labels this way takes seconds, saving hours of processing labor.

On the retail floor, mobile printing units are being used in the front-end store areas where products are advertised, marketed, and sold. This use includes outdoor selling environments such as lawn and garden displays or lumberyards. Primary applications include price marking, POS/receipt printing, shelf labeling, and signage/promotional printing, but portable printers can be used to improve efficiency and reduce errors in backroom storage and distribution applications as well.

Why Datamax-O'Neil?

The value of doing portable label printing in a warehouse or manufacturing environment is well established in markets where labor cost is high. Those who are doing mobile printing understand its benefits. For those who have come to this realization or have made a decision to move to portable printing, why does Datamax-O'Neil make sense as a supplier?

Two Compelling Reasons ■ ■ ■

Number one is ruggedness. In mature markets, which generally are markets with higher labor costs, many installations have already been done. When it comes to portable devices, whether it is a printer, hand-held terminal, smartphone, or laptop, those who have used these devices know the cost of supporting a non-ruggedized solution is significant. They know that the total cost of ownership does not pay off when you have to buy extended warranties or have a large hot swap pool to replace units that keep going down so operators can keep working, either on the manufacturing floor or in the field. Datamax-O'Neil mobile printing solutions eliminate these problems because they are ultra-rugged by design, providing a truly durable solution that doesn't need frequent maintenance or replacing.

Number two is easy integration. Datamax-O'Neil printers are designed to reduce your fixed cost of installation, even when the printer comes with a full complement of accessories (e.g., fork-truck mounts, power supplies for in-vehicle applications, multiple battery chargers).

Accessories also include language emulators; Datamax-O'Neil has control language emulation that covers ZPL, CPTL, and IPL, as well as Datamax-O'Neil's own DPL. No other mobile printer manufacturer has greater language emulation capability than Datamax-O'Neil. Many Datamax-O'Neil printers can automatically interrogate the data stream and apply one of many control languages that is native to the device. The rugged and portable RL4™ 'speaks' six different control languages!

Easy integration also means integrating well with Warehouse Management Systems (WMS). SAP has a WMS module specifically designed to improve warehousing environments, as do Oracle, Manhattan Associates and many other WMS solution providers. These companies make software specifically designed to allow manufacturers to better organize the flow of products across their shop floors and through their warehouses. Datamax-O'Neil's proven compatibility with these WMS is another important differentiator.

Datamax-O'Neil mobile printing solutions provide unsurpassed durability and ease of installation and ease of use to satisfy the needs of your extended enterprise. Specific solutions for your warehousing, distribution center, retail, or route accounting applications keep your business efficient and error free. We are reliable partners for customized solutions that ease integration and reduce risk.

Datamax-O'Neil has one of the industry's best and broadest lines of mobile printers. Our mobile portfolio includes ultra-rugged receipt printers, forklift printers, thermal receipt printers, thermal label printers, and multi-part dot matrix printers. Our new RL4™ is the industry's most rugged 4-inch label printer, and is ideal for wearing on a belt or mounting to a forklift. It delivers what you want: labels where you are, when you want them!

NOTES
1. "Rationalizing Maintenance without Compromising Capability," ARC Insights, Arc Advisory Group, July 22, 2010.
2. "InfoTrends/CAP Ventures Studies Document Costs for Major Organizations Worldwide," InfoTrends/CAP Ventures, September 28, 2005.

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