Going Wireless? Why Not Go All the Way?

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Thanks to wireless technology, mobile powered workstations (MPWs) are opening up new frontiers of efficiency and productivity. These workstations with integrated power supplies can maneuver computers, printers, scales, barcode scanners, etc., to wherever they are needed. For some facilities, multiple MPWs can bring about a “system solution” — a whole new way of doing business. Capitalizing on the benefits of auto-ID technologies, they integrate the facility’s software with devices on the workstations to establish mobile on-demand label printing stations, mobile shipping/receiving stations, and so on. Here are three basic ways these workstations or “mobile desks” can help you take full advantage of wireless technology to improve your business.

Time and labor savings

By significantly reducing foot travel and paperwork, an MPW can have a very favorable impact on your bottom line [see tables]. In so many enterprises, countless hours are wasted as employees walk back and forth, chatting with co-workers en route, between sites where work is taking place (loading docks, storage racks, assembly lines, inspection/testing areas, etc.) and a deskbound computer and printer where they log information into a database, print labels/orders, etc. Often, these employees are merely keying in data they have previously written on paper at the work site — a classic redundancy of effort. Or worse, they just rely on their memory, which leads to mistakes. In contrast, an employee operating an MPW has continual, paperless, real-time access to information via warehouse management systems (WMS), enterprise resource planning (ERP), or automated data collection (ADC) software *from anywhere in the facility*, since the workstation’s computer is always at hand.

Sample ROI Calculations

On our company's website (www.newcastlesys.com [1]) we have an ROI calculator, where anyone who is considering adding one or more mobile powered workstations to his or her business can key in pertinent numbers and see the likely savings and payback time. An example appears in the tables below.

Enter # of minutes (per hour) spent walking to a static printer or computer desk (include misc. interruptions, such as chatting with co-workers)	6 minutes
Enter average labor rate (w/benefits) per hour	$20
Enter # of work hours per week	40
Enter # of mobile stations you want to implement throughout the facility	5
Average cost per Mobile Powered Workstation	$2,000

$$ saved per year (when walking is eliminated)	$20,800
Hours saved per year	1,040
# of months to pay back initial workstation purchase	5.77

Because an MPW can carry a computer and relatively heavy peripherals such as a high-volume label printer and can supply them all with adequate on-board power, it is far more useful than a tiny portable/handheld thermal printer or scanner. This "on-demand" high-volume label printing/PC station (when compared to a portable printer), would enable the use of thermal transfer labels, large labels, a full computer screen to toggle between different software programs, and more. In essence, you have a fully functioning packaging/labeling/processing/inspection station that can be moved to wherever it is needed. Although a large facility might need more than one, a single MPW can often do the job of two or three stationary desks, which means fewer computers and peripherals will be needed overall. For example, a workstation can be used all morning at a receiving dock and then wheeled to the shipping department for the afternoon.

The opportunities to save time and labor through "on-the-spot" data entry, "on-the-fly" scanning, "on-demand" label printing, and other tasks are numerous and

impressive. As you can imagine, an MPW can be an asset in a multitude of applications, including the following:

A wireless mobile powered workstation configured for warehouse work, with a computer, barcode scanner, and label printer. The operator can access his/her employer's database and enter data directly, saving time and labor.

- Warehousing/Distribution: In this area, an MPW can increase the number of packages processed per day by facilitating order picking, put-away, packaging, labeling, shipping, receiving, cross-docking, etc. In a receiving department, for example, the MPW operator can quickly scan barcodes or read radio frequency identification (RFID) tags to indentify an incoming shipment and then inspect, re-label, and re-route it, all at the same workstation.
- Shipping accuracy improves when the operator can quickly scan outgoing

shipments to verify that the order is correct and scheduled for the proper shipping method. For break-bulk and mixed-unit orders, MPWs allow quick and easy pickings with on-site high-volume printing of labels, packing slips, delivery receipts, refund receipts, etc. The operator can track previously shipped parcels and keep track of multiple stock-keeping units (SKUs). He or she can even take and file digital photos to provide proof of the condition of a returned shipment and then credit the customer immediately. No power outlets at the far corners of your facility? Problem solved.

- Retail: Here an MPW is ideal for inventory management, shelf and product labeling, and "line-busting." Used as a mobile checkout or point of sale (POS) station where the operator can check prices, process credit cards, and print receipts and coupons, it also comes in handy at garden centers, sidewalk sales, concerts, carnivals, etc.

- Manufacturing: Labeling received components before stocking, labeling samples picked from assembly lines for quality control, etc.

- Airports/Bus Depots/Train Stations: Mobile printing of tickets, boarding passes, and receipts; processing checked baggage; etc.

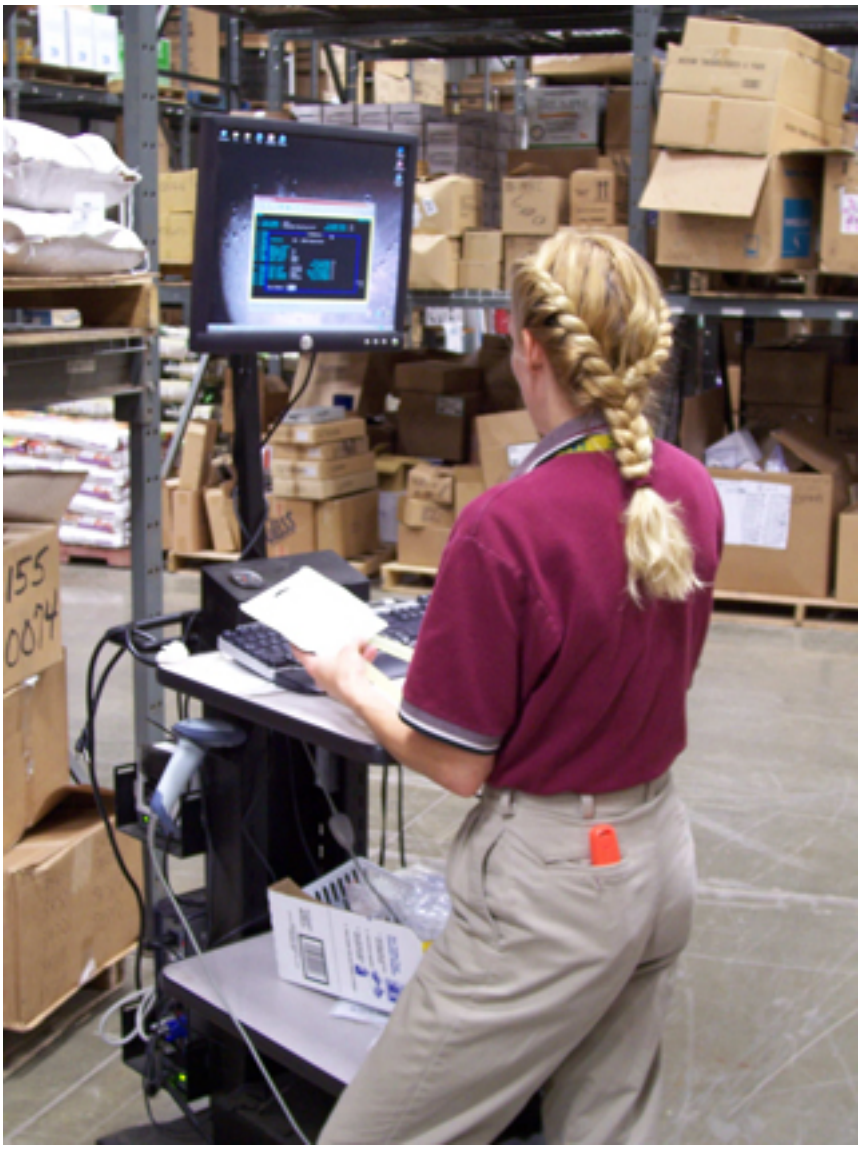
- Airport Security: Screening for trace explosives.

- Hotels: Printing forms, baggage tags, receipts, etc., during conventions and other busy times.

- Restaurants: Speeding up service through electronic tableside orders and payments.

Case in point: In Virginia, Care-A-Lot Pet Supply tested an MPW in their distribution center, scanning products in their receiving and shipping departments and printing labels for pallets and general organization. "It saved time," says Supervisor Brad Voorhes. "[We could] print out a label while standing in front of it instead of walking across the warehouse to a [stationary] desk, printing it out, and walking back." Management was so pleased with the improved efficiency that they purchased several MPWs for the center and more for the company's retail stores. Care-A-Lot

reports that since the workstations were introduced, productivity has increased by 40%.



One of several mobile powered workstations in use at a Care-A-Lot Pet Supply distribution center in Virginia. The company, which purchased more workstations for its retail stores, reports a productivity increase since they were introduced.

Improved Employee Morale

Mentally and physically, consciously and subconsciously, employees know when their precious time is being wasted. They feel better about their jobs (and their lives in general) when they instead know they are doing work that needs to be done, and doing it efficiently. The efficiency gains provided by an MPW, as outlined above, are not only for management ledger sheets but also for employees' direct, day-to-day experience — greater productivity benefits everyone.

Good MPWs provide specific ergonomic advantages. For starters, the MPW you choose should have adjustable shelves and large, stable work surfaces. Some MPWs allow the shelves to be easily raised and lowered, and some do not. A tall employee

should be able to quickly raise a shelf to the most convenient height, and a shorter worker on the next shift should be able to lower it just as quickly. Your workstation should have a compact footprint and should be easy to push, with large, easy-to-grip handles and top-quality swivel casters. Casters should provide years of smooth, quiet rolling and positioning, yet must be lockable for stability and safety at the work site. The size, weight, and capacity of the on-board power package (battery/inverter/charger) are also ergonomic considerations; some packages are bulkier and heavier than others. Because the workstation is wireless, there are no cords long enough to trip over, but for cables connecting the devices on the workstation to each other, the best-designed MPWs have cable-management components that keep cabling neat and tangle-free.

Case in point: Shipping accuracy was a major concern at the Magneti Marelli Powertrain USA plant in North Carolina. Management was determined to reduce the number of mislabeled outgoing pallets loaded with fuel-pump modules, electronic throttles, and other component systems bound for automakers, boat builders, and other customers. A typical shipment consisted of multiple pallets, each of which required at least two labels. The weak point in the shipping department turned out to be the 30-40 steps each inspector would have to take to the label printer. Sometimes, after an inspector had retraced his/her steps, labels in hand, the labels would end up on the wrong pallets. The number of errors was significantly reduced once the company purchased some MPWs. Now, every inspector can scan and print labels right beside the pallet that needs them. Thanks to swivel casters, the workstation can be easily maneuvered to the next pallet in seconds.

Improved Versatility

The more your workstation can do, the more your business can accomplish, in ways you might not yet envision. That’s why you’ll want your new MPW to be versatile. Check the weight capacity of individual shelves and of the unit overall. The MPW you buy should definitely be powerful enough to run various devices simultaneously — look for one that can hold and power four devices for at least eight hours and can be recharged in five to eight hours. It’s important that the MPW manufacturer offers multiple options for the workstation’s power package, and choosing the best one for your business can be difficult on your own. Some MPW manufacturers have technicians who will make sure your package is fully integrated with the devices you intend to run, and some even have software tools on their websites that help the customer choose the most appropriate power package by calculating the total wattage of the equipment to be supported.

Last but not least, your MPW should be modular — designed to accept many different accessories for your specific application. Accessories include additional

shelves and drawers, keyboard trays, laptop holders, flat-screen holders, and scanner holders. Like your business, your MPW will be what you make of it.

Case in point: Capitalizing on the versatility of MPWs, Hol-Mac Corporation uses 18 of them in different ways to improve efficiency, productivity, and accuracy at its Mississippi plants. Hol-Mac itself is a versatile contract manufacturer, custom-designing, fabricating, machining, finishing, and assembling parts for hydraulic cylinders, tanks, and related products. “We’ve eliminated a lot of footsteps,” says John Larrabee, Hol-Mac’s information technology manager. “We’re now able to bring our thin clients and other equipment directly to the job *anywhere* within our four facilities.” Machinists have MPWs next to their machining centers, where they use them to access their database of detailed part dimensions and to check inventory for the next job. For quality assurance, inspectors of large weldments have MPWs equipped with test devices as well as thin clients. In shipping and receiving, other Hol-Mac employees use MPWs that carry label printers.

Shop Around

Obviously, different needs require different MPW configurations, so shop around until you find the model that fits your facility. Some basic attributes, such as sturdiness and durability, trump all other characteristics. Because further technological advances will undoubtedly give us new gizmos that will once again require us to reorder our thinking as well as our equipment, versatility and ergonomics should also be at the forefront. Some careful research will lead you to a well-built yet reasonably priced model. You should expect to pay $1,500 to $3,000 for a good MPW, but when you consider the potential for productivity improvement, it should pay for itself many times over.

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