NEWCASTLE SYSTEMS

Powered Process Improvement

ELIMINATE COSTLY "WASTE" IN THE WAREHOUSE WITH MOBILE POWER

Identifying waste in a facility is the first step to eliminating it. Some examples include unnecessary walking, pre-printing too many labels, bottlenecks and over processing of goods. While people and buildings are pretty well fixed, there are ways to better utilize the existing infrastructure and improve processes that will positively impact the bottom line.

In this white paper, we share methods of identifying waste and how it can be eliminated through the use of mobile powered workstations.

WHITE PAPER

A LOOK INTO TODAY'S WAREHOUSE

195,455 sq/ft
Median DC

249
Employees

11,840
SKU's

8.6
Turns

$317,000
Median Investment in Equipment and Technology

60%
Facilities Still Conventional in:

- Receiving
- Picking
- Replenishment and Storage

*Data from Peerless Media webcast,
'2014 Warehouse/DC Operations Survey Results'

WHO WILL BEST HANDLE FUTURE GROWTH?

Warehouse professionals have a challenging job. They are tasked with carrying more inventory, increasing turns, receipts, picks, and shipments all without significant investment.

Ninety percent of warehouse professionals have a metric to track success or failure – and they are being held accountable. The other ten percent don't measure results, which basically means that they need to get it done regardless of support and investment.

The metrics on page two, based on the 2014 DC Operations Survey, generally represent large spaces with a lot of people and part numbers to be managed. The median investment in equipment and technology is $317,000 and 60% of facilities are still conventional in receiving, picking, replenishment, and storage (non-mechanized) which probably means that automation won't appear in the picture any time soon.

Those who can improve their processes, empower employees and use existing infrastructure to handle their demands will be able to handle future growth. While the people and buildings are pretty well fixed, processes are fluid.

We suggest looking at basic Lean principles and eliminating waste within a facility to remove costly bottlenecks with mobile power.

HOW TO IDENTIFY WASTE IN A FACILITY

Lean Six Sigma Wastes

Lean manufacturing or lean production, often simply "lean", is a systemic method for the elimination of waste ("Muda") within a process. The types of waste shown to the right are wastes that customers don't want to pay for because it adds no value to the product or service. Becoming less wasteful than competitors, with sales being equal, means becoming more profitable.

"While the people and buildings are pretty well fixed, processes are fluid."

Identifying Waste in Processes

In most facilities, waste can be seen happening on a daily basis. Examples include wasted motion, waiting, overproduction, defects and transportation which happens on the docks, in the picking lanes and on factory floors all because workers have limited mobility. They are basically tethered in a non-tethered world in many cases. Forced to handle, move, touch and exert more than they need to.

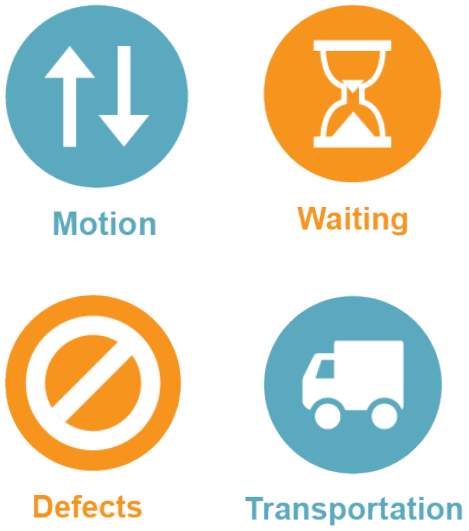
ELIMINATE WASTE WITH MOBILE POWER

Mobile Power Helps Eliminate These Costly Wastes

Mobile powered workstations work by essentially removing the typical three foot cord that workers are often attached to, and enabling them to freely move and work throughout any warehouse.

Eighty-five percent of warehouses have some type of WMS (warehouse management system) already in place. That, a wireless facility, and a little help from mobile power, is all that is needed.

Mobile power makes existing hardware like PCs, laptops, thin clients, printers, scanners, scales and other devices mobile .



Make Existing Hardware Mobile

ERGONOMIC WORKSTATIONS WITH INTEGRATED POWER

Batteries are Given Wheels, and Ergonomic Workstations are Created

Employees have everything they need to get their jobs done – right at their fingertips. As employees move to different areas throughout the warehouse, building, or office, they can bring their own assigned stand-up workstations with them. In addition, they have instant access to real time data and sensitive information. This eliminates all the additional time previously spent asking someone else to look something up on a computer or waiting until a colleague is done using the one stationary computer before they can complete their project.

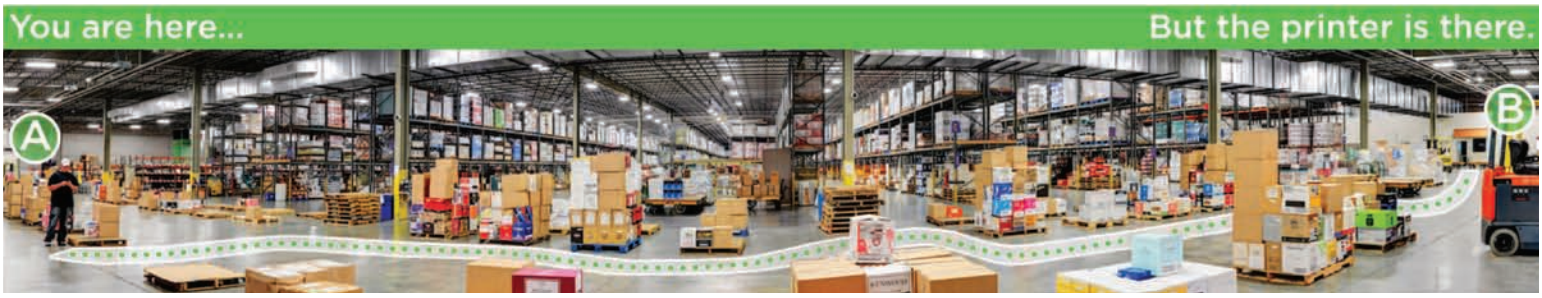
A selection of available options includes:

- Cart with integrated power
- Picking station with on-board power
- Stand-alone power packs for existing non-powered carts already in a facility

Mid-size Powered Cart

Stand-alone Power Pack

Powered Picking Station



HOW MUCH DO THESE FOOTSTEPS REALLY COST?

In order for employees to perform their jobs well and to be as productive as possible, they have to be equipped with the best tools. While they may be a team of exceptional workers with a great work ethic and a commitment to excellence, if they don't have the proper equipment to do their jobs as efficiently, correctly, and easily as possible, they'll never be able to achieve the same level of productivity as they would if they were equipped with the right state-of-the-art gear.

Creating wireless mobile workstations which can be both effortlessly wheeled across warehouse floors and easily maneuvered through snug aisle spaces instantly increases the amount of work a warehouse team can get done during any given shift. Instead of continuing to have distribution personnel unintentionally wasting minutes (that quickly add up to hours) by frequently ambling back and forth to a stationary scale, printer, and computer in some corner of the space, they can instead have mobile powered workstations conveniently within arm's reach.

Simple Cost Calculation

It's easy to underestimate how much time is spent walking back and forth to fixed printers, computers, scales and other equipment. But it's a costly practice. Just 10 minutes of walking per hour can cost thousands of dollars over the course of a year.

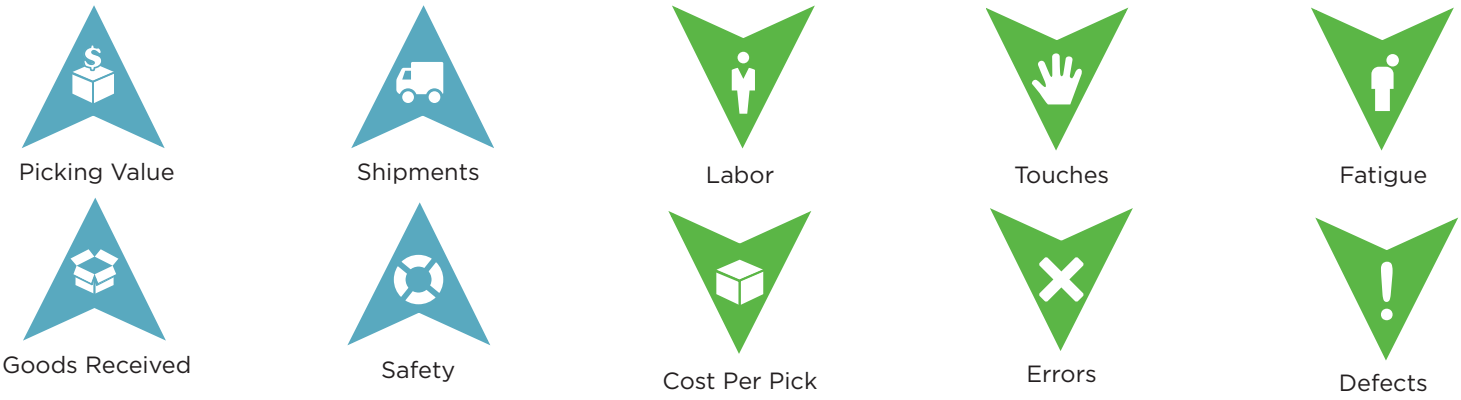
Number of minutes (per hour) spent walking to a static printer or computer desk:	10 minutes	10 minutes
Average labor rate (w/benefits) per hour:	$22	$22
Number of work hours per week:	40	40
Number of operators:	1	5
▼ ANNUAL COST ▼		
Cost per year of unnecessary walking:	**$7627**	**$38,133**
Hours wasted per year:	**347**	**1,733**

WHAT MOBILE POWER CAN HELP ACHIEVE

Depending on layout and the number of dock doors, operators can spend upwards of 10-30 minutes per hour walking to and from a fixed station to enter data and print labels.

Simply reducing that motion can save one million dollars per year in labor for a company with 20 sites.

It can increase receipts by 60%, eliminate overtime and the need for temporary workers. It can also eliminate a majority of errors by simply having all of the tools needed at the point of use.



Mobile Power Improves Efficiency

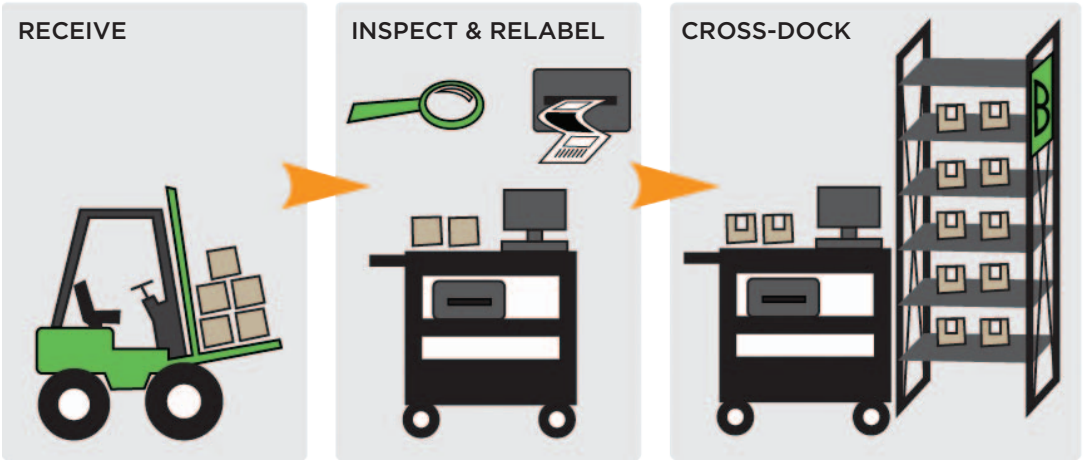
Mobile power helps on the inbound, picking and outbound sides of distribution. It adds a whole new dimension and space to people, and increases efficiencies like:

● More goods received ● Increased safety ● Less cost per pick ● Fewer touches ● Less fatigue ● Fewer errors and fewer defects.

Mobile Power Improves Dock to Stock Metrics

On the inbound and cross-docking side, there are instant results with the typical processes of receiving, inspection, labeling and put-away. Statistics tell us those deliveries are only going to increase with e-commerce and other factors. How will this increase in receipts with the same amount of people be handled?

Dock to stock is a commonly evaluated metric - getting things off the dock and into a location for availability quickly is a challenge that can be greatly improved by mobile power.



Mobile Power Improves Dock to Stock Metrics

CASE IN POINT

A Leading Off-Price Retailer Saves BIG with Mobile Powered Carts

A leading off-price retailer wanted to streamline processes within their receiving department. Specifically, they wanted to optimize cross-docking and labeling of product prior to put-away.

The company had conducted a time study and determined that receiving associates were wasting 12.9 minutes per hour walking back and forth to stationary label printers.

Once a workstation with mobile power was deployed, a further time study was conducted and revealed the following results:

Increased productivity with cart deployment:

Cases received per hour without workstation	**16.6**
Cases received per hour with workstation	**27.1**
Increase in receiving volume	**63%**

63% Increase in receiving volume

Reduction in overtime due to increase in productivity	**75%**

75% Reduction in overtime

Dollars saved with cart deployment:

Per day (2 shifts @ $11.50/hr, 270 days/yr)	**$37.09**
Per year (2 shifts @ $11.50/hr, 270 days/yr)	**$10,013.63**

$5,000 Reduction in labor costs per operator

WORK STUDIES CAN BE QUITE REVEALING

Customers are willing to pay for tasks that are necessary or value-added. They do not want to pay for tasks that are waste. The following work study example shows the amount of time involved in motion, waiting and extra-processing wastes.

RECEIVING WORK STUDY

STEP	TASK	TIME (seconds)	VALUE
1	Lift Gate/Pull Paperwork	20	=
2	Walk to PC/Waiting	150	⊘
3	Scan Barcode	5	+
4	Lookup PO Info	10	=
5	Print PO	10	⊘
6	Walk Back to Load	120	⊘
7	Inspect QC/Verify Items & Qty	360	+

\+ Value Added Tasks

= Necessary Tasks

⊘ Wasted Tasks = 11 minutes

Scenario 1

STEP	TASK	TIME (seconds)	VALUE
8	Walk Back to PC/Waiting	150	⊘
9	Print Labels	60	+
10	Walk Back to Load	120	⊘
11	Apply Labels for Putaway	120	+
12	Find Material Handler for Putaway	120	⊘

TOTAL TIME: 20.75 Minutes

TIME
Total 20.75 min
Waste 11 min
53%

Scenario 2 - Waste Eliminated

STEP	TASK	TIME (seconds)	VALUE
1	Lift Gate/Pull Paperwork	20	=
2	Scan Barcode	5	+
3	Lookup PO Info	10	=
4	Inspect QC/Verify Items & Qty	360	+
5	Print Labels	60	+
6	Apply Labels for Putaway	120	+
7	Alert Material Handler via Walkie/Visual Cue to Pick Up Load for Putaway	20	+

TIME: Total 9.91 min vs. 20.75 min — 52%

AREAS WHERE MOBILE POWER CAN HELP

Study Your Receivers' Motion

Most long term employees typically do a fine job, but like most people, they don't want their time wasted. Having them repeatedly walking to fixed stations is wasteful, and again, adds no value to the process. Customers won't pay for this willingly. When they are walking away from the load it is pure waste. Studying a receivers' motion with a watch is easy and will be telling. Removing motion, waiting, and transportation can have a powerful impact on the bottom line and reduces improperly labeled product and inaccurate inventories.

RECEIVING

Mobile power can help:

- Remove motion, waiting and transportation waste
- Reduce labor by as much as $10K
- Increase receipts by as much as 60%
- Reduce improperly labeled products
- Reduce inaccurate inventories

Transport Power to the Picking Aisles

In the picking aisles, power gives the operators the ability to label at the point of use, enter data to a full-sized, easy to see screen and weigh items. Items can also be packed at the station. As a result, picked items can be brought directly to shipping for delivery, meaning less touches, properly labeled products, accurate inventories and more even flow. Unlabeled items don't pile up in shipping and a cart can be rolled right to shipping with products ready to go.

Consider packing and labeling at the site of the pick, which leads to fewer touches, fewer errors and increased throughput.

Paying attention to bottlenecks that occur after items are picked and determining if they can be removed will add more value upstream and reduce the cost per pick. Giving pickers easy to see screens and ergonomic stations results in less injury and fatigue and more productivity.

Mobile power can help:

- Label at point of use
- Enter data into a full-sized screen
- Pack & label at site of pick:
  - -less touches
  - -less errors
  - -increased throughput
- Reduce cost per pick

PICKING

Process Paperwork on the Dock

In shipping, labeling and paperwork that is needed can be done at the point of use - a pallet of goods with hundreds of individual orders can be processed at the pallet, no matter where it is. Motion, over processing, waiting and defects can be removed. Customers will get what they want when they want it with properly matched paperwork.

Moving labeling and document printing to the dock will increase shipping accuracy and volume.

Studying processes with and without motion can help to calculate the cost. Does outbound paperwork cause a bottleneck in shipping and are there customer complaints about mislabeled items?

SHIPPING

Mobile power can help:

- Process goods directly at the pallet
- Remove motion, waiting and defect waste
- Keep printing and labeling at the dock
- Increase shipment accuracy and volume

Other Tasks to Consider

Think about where there is waste - it exists everywhere. Here are some questions to think about to help identify potential waste:

- Are there defective bar code labels/paperwork?
- Do operators over produce labels in advance?
- Are handlers waiting to pick up a load for put away?

- Do people feel like their time is being wasted - are they overly fatigued?
- Are operators overly transporting pallets before put away?

- Are operators walking excessively to fixed stations and other tools?
- Can flow be improved by adding extra value to the picking function?

Recommended Action Plan

Focus on a few areas like motion, transportation and over processing and engage teammates with a Kaizen or continuous improvement event to eliminate the waste. Get dirty, move things or clean the place. Add visual signage. Ask employees for insight and ensure they know what to accomplish.

Success with low cost improvements can turn a facility from a cost center into a profit center. **Saving $1 in the distribution center means earning more money on the same sales and margin, in turn adding more money to the bottom line.**

THE POWER TO MOVE YOUR WORKPLACE

ABOUT NEWCASTLE SYSTEMS

Newcastle Systems is committed to providing innovative solutions that help make Auto-ID Technology and other hardware truly mobile and information more readily available across an entire enterprise.

Loss of productivity and inefficiencies such as wasted steps to the printer, inaccurate inventory counts, improper labeling, time delays, manual processing and incorrect shipments are just some of the challenges that are alleviated with a mobile powered workstation.

73 Ward Hill Ave. • Haverhill, MA • 01835 • USA • 781.935.3450 • www.newcastlesys.com

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