Improve Efficiency and Minimize Costs in the Modern Warehouse

Presented by:

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Product Manager - Identification Solutions & Supply Chain Architecture
The Continuous Improvement Process

- Audit and Measure Operations
- Compare and Consider Change
- Execute and Manage the Change

*Rinse and Repeat*
The Continuous Improvement Process

Making changes in too many areas at once can lead to confusion, and instead of increased productivity, can actually have the opposite effect.
Industrial Re-Evolution

1.0
Water and steam
Mechanized production

2.0
Electric power
Mass production

3.0
Electronics and information technology
Automated production

4.0
Automation and data exchange
Digitalization

INDUSTRY
v.4.0
Warehouse as Profit Center

Value Add Activities

The Progression of Economic Value

Differentiated

Competitive Position

Undifferentiated

Make goods

Extract commodities

Market

Pricing

Premium

Stage experiences

Deliver services
Two Questions to Ask Yourself

• How well are we really doing?

• In this era of rapid change, how can you advance your operation?
How Well Are You Really Doing?

• Warehouse Cost Per Order
  o Good productivity = $4/order (1)
  o Highly efficient operations = $2.25/order (1)

• Order Processing Turnaround Times (pick, pack & ship)
  o 24-hours or less
  o However, many operations are processing over 50% same day

(1) This includes direct and indirect labor, occupancy costs and packaging
How Well Are You Really Doing?

- **Functional Area Productivity Small Product Warehouse**
  - Picking avg 275 to 800 units/man-hour

- **Functional Area Productivity Conventional Warehouse**
  - Picking avg 115 units/man-hour
  - Packing avg 36 boxed/man-hour

- **Functional Area Productivity Highly Automated Conventional Warehouse**
  - Picking avg 150 to 175 units/man-hour
  - Packing avg 75 to 90 boxed/man-hour
How Well Are You Really Doing?

• Orders/Square Foot
  o Average 6.5

• Net Sales/ Square Foot
  o $750 on avg, and varies by product size and value.
  o 10-years ago = $1,000 on avg, even though most avg order sizes have increased.

• Orders/FTE
  o 15 to 17
So What Do I Do?

At the epicenter of optimizing your supply chain is the customer. The customer is the **primary focus** – it’s not that the customer is *always right*; it’s that the **customer is everything**.

“*Just throw technology at the issue!*”

*(Hint: This does not usually go well...)*

We've seen highly automated facilities that don't yield low cost per order when the systems investment wasn't well planned or when product type varied widely.
At the epicenter of optimizing your supply chain is the customer. The customer is the primary focus – it’s not that the customer is always right; it’s that the customer is everything.

“Just throw technology at the issue!”

‘First rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency.’

-Bill Gates
At the epicenter of optimizing your supply chain is the customer. The customer is the **primary focus** – it’s not that the customer is *always right*; it’s that the **customer is everything**.

The key to success is focusing on **people**, **process** and **technology**, not one, but all three and how the three integrate and **work together** to provide superior collaboration, business process, and decision making results for an organization.
People

WHAT'S WITH THE NEW CARPET?

CORPORATE WANTED TO MAKE SURE WE'RE ALL ON THE SAME PAGE THIS YEAR

Blog. Syntegrity Group
People

Communicate effectively – and often

• Share the organization’s goals
  • and the processes created to achieve them
• When managers fail to create an environment of open and clear communications:
  o Productivity suffers
  o Higher turnover
  o Wasted resources
People

You can’t improve something you haven’t measured.

- Does your operation capture and manage KPIs?
- Do you know your critical productivity and costs?
- What is your target? How are individuals tracking against the target?
- How can we assess and put into place cost reduction measures if we don’t know our baseline?
- What do various types of errors cost?
- What do returns cost?
People

*Once these metrics are established:*

- Maintain and use standards in all functional areas
  - This will assist with staffing levels
- This will assist identify systemic bottlenecks, such as:
  - Aisle congestion
  - Other workflow problems
- Create regular feedback by individual and department for performance
- Leverage incentive pay
- The employee will respond and give you higher productivity
Process

Is it more important to follow our documented process or to meet the deadline?

I only ask because our deadline is arbitrary and our documented process was pulled out of someone’s lower torso.

Where’s your artificial sense of urgency?

Team-work killed it.

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Process

*Implement lean warehouse operation practices and focus on waste*

- Reduction in material handling time in order picking, putaway, palletizing & shipping
- Reliability of information to coordinate rest of supply chain
- Decrease in truck and containers loading and unloading times
- Saving in time spent checking and looking for inventory
- Increased flexibility to adapt to changing market conditions and customer requests
Process

Handle tasks efficiently and avoid procrastination

• When a large order is delivered do not say...
  "Eh. Let’s just take care of this later."

• Breakdown boxes, shove them in recycling bin

• Stock products correctly

• Use a WMS Mobile Device to record, direct, and validate the process

Be Efficient, Accurate, and Connected!
Process

*Utilize cross-docking whenever possible*

- Each time a product is touched is costing you money
- Zero warehousing interval
- One of the key inclusions an organization can make
Process

*Implement an efficient returns process*

- Returns impact
  - Physical inventory
  - Electronic inventory
  - Accounting
- Vendor chargebacks
- This process is hard to automate with an ERP, so implement a WMS
Process

Understand the warning signals.

• Identify you have too much or wrong inventory
  o Amount of dust settled on the product in the bin location
  o If there’s a half-inch of dust the product is obsolete
• Significant discrepancies between book and physical inventory
• Staff is having trouble locating inventory in a timely manner
Process

Re-slot your pick positions as often as necessary

- Travel is the number 1 waste in picking an order
- Good re-slotting strategy reduce travel time and thus reducing labor
- Always weigh the time and cost of a greenfield re-slot
- Slotting the warehouse once and leaving it for years is a typical recipe for wasted time and money
- Busy operations re-slot fast moving, high-profit products every day
Process

Running out of space: go up and not out

• Limited space on production floor so take advantage of floor to ceiling
• Pallet racking leads to
  o Safer working conditions
  o Increased warehouse efficiency
• Compress shelf levels
• Narrow the aisles – use wire guided MH equipment
• Automated Storage and Retrieval Systems (ASRS)
Technology

*Future warehouses won’t be ‘The Jetsons’ with dock doors, but change is here and more is coming!*
Technology – Today

Use Advanced Shipping Notifications (ASN’s)

• This may seem like a “no-brainer” but many have not implemented ASN’s

• Relying on merely a “schedule” can result in inefficiency throughout the warehouse
  - Improper staffing at dock
  - Ripple effect throughout the warehouse

• By using an ASN
  - Labor can be planned
  - Order fulfillment and transporation activities can be adjusted to ensure proper services times are met
  - Transport modes are optimized to keep costs down
Technology – Today

Connect to the Global Supply Chain

- GS1.org – Global Standards One (UCC + EAN)
- AIAG.org – Automotive Industry Action Group
- HIBCC.org - Health Industry Business Communications Council (UDI’s)
- UNSCEGHS - United Nations’ Sub-Committee on the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Use global standards that support best practices
Technology – Today

**Sequence orders and organize workflows with WMS**

- ERP’s are developed for financial purposes and not warehouse operations
- Sequencing your orders saves tremendous time on the warehouse floor
  - By pick path
  - Batching single line
  - Same-zone
- WMS should be able to organize workflows to optimize performance
  - Cycle count while picking
  - Shotgun approach to picking
  - Zone picking
  - Re-slotting
Technology – Today

*Voice increases productivity and accuracy*
Technology

Augmented Reality in the Warehouse – It’s here!
Using Autonomous Storage and Retrieval Technology...
Technology

... So employees can focus on value-add activities instead of stock storage and retrieval
Technology – Tomorrow & Beyond

Autonomous Autos and Trucks...
Technology – Tomorrow & Beyond

... So drivers can focus on Last Mile instead of Long Haul
Technology – Tomorrow & Beyond

We’re going to hook Siri up to Watson so...
Technology – Tomorrow & Beyond

... So customer service can focus on Solutions instead of Information
Technology – Tomorrow & Beyond

Autonomous Drones...
Technology – Today

WAIT... Drones are here today!

- Wal-Mart is testing drones for inventory
  - Checks storage positions and reports potential issues
  - Reduces out-of-stock issues
  - Cycle counts
**Technology – Today**

**WAIT... Drones are here today!**

- Yard management

AIR
RFID, GPS, Optical tracking system
Technology – Today

**WAIT... Drones are here today!**

- Amazon drone delivery

*These aren’t tech gurus playing with toys – they are serious players who want to reduce costs and increase performance!*
Technology – Tomorrow & Beyond

**Autonomous & Agile Storage and Retrieval**

- **Putaway**
  - Transport directly from receiving dock
  - Place carton directly in storage location
- **Order Picking**
  - For high-bay inventory for each or full case picks
  - Useful for slow moving inventory
  - Increase safety while reducing order pick times
Most of these are not yet available, excepting experimental models.

While you can’t purchase a fleet of counting drones, you can add:

- Smart automation
- Revised processes
- And keep up-to-date on what’s possible.

What can I do today?
So What Do I Do?

Crawl – Walk - Run

INDUSTRY v.4.0

Then Fly
So What Do I Do?

Add Value, Create the Customer Experience

The Progression of Economic Value

- Differentiated
- Competitive Position
- Undifferentiated

- Market
- Premium
- Pricing
- Stage experiences
- Deliver services
- Make goods
- Extract commodities

Warehouse as Profit Center

Make Your Business Futureproof.

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ATLANTA | APRIL 9-12
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THE INDUSTRY THAT MAKES SUPPLY CHAINS WORK®
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