Lean Distribution

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✓ Brief Company Overview
✓ What is Lean?
✓ Lean in the Extended Supply Chain
✓ Benefits of Lean Distribution
✓ Can Lean Help Me?
✓ Lean Distribution – Operations to Consider
✓ Getting Started
✓ Q&A
AL Systems provides clients with Warehouse Control and Order Fulfillment solutions that optimize the flow of merchandise through their distribution centers.

- MISP Company
- Over 30 years of long-standing client relationships
- Strong team of Distribution professionals - Systems Analysts, Engineers, Software Developers, Project Managers & Customer Support
- Design-Build Model - Operations Assessment, Design, ROI Analysis, Build and Implement, & Support
- Best of Breed - Lights, Voice, RF, MHE…
- Functionally rich, configurable, personalized
- Single connection to WMS, ERP and/or enterprise systems
- Productivity Management, Reporting & Resource Balancing
What is Lean Supply Chain

- The relentless pursuit of eliminating waste across an extended supply chain

- Waste? Any activity that adds no value from the customer’s perspective or for which the customer would not willingly pay for as part of the product or service purchased

- Waste can result in:
  - Too much time to perform an activity or process
  - Too much inventory spread across the supply chain
  - Costs that are too high compared to competition

- Supply Chain Activities:
  - Value adding – transforms material into what customer willing to pay for.
  - Non-value adding – adds no value but necessary to move materials closer to customer
  - Pure Waste – adds no value & not necessary to move materials closer to customer
What is Lean Supply Chain

- Keep it flowing:
  - Material
  - Information
  - Payment
  - People
  - Ownership
  - Equipment

- Pull, Don’t Push
  - No upstream activity occurs unless requested by downstream activity
  - Action taken in direct response to request rather than in anticipation of need or request that may never occur

- Strive for Excellence & Perfection – Any deviation from desired target or state carries associated waste

- Optimize – make it as perfect, effective and functional as possible
What is Lean Supply Chain

- Establish the standard - Avoids wasteful duplication of efforts and Promotes best practices
  - Parts
  - Processes
  - Practices
  - Documents
  - Contracts
  - Measurements
  - Policies
  - Procedures

- Simplify
  - Supply chain network
  - Product design
  - Processes
  - Information Systems

- Lean is a business philosophy rather than a set of tools
The Extended Supply Chain

Material, Information and Money

Suppliers → Inbound Transportation → Manufacturing & Distribution → Outbound Transportation → Distribution → Customers
A Lean Distribution initiative is constructed on five foundational areas:
- Business analysis and profiling
- Process analysis, modeling & redesign
- Automation & Material Handling design
- People - Engineered labor standards & performance measurement
- Business Case development

The benefits of Lean Distribution are:
- A 10 to 50 percent improvement in productivity & throughput
- Smoother and more accelerated material, information and payment flows
- Reduced inventory costs
- Reduced labor costs
- Reduced transportation costs
- Ability to increase sales without adding people or space
- Increased customer satisfaction
- Happier & more productive associates & improved retention
- Greater asset utilization and avoidance of major capital outlays for new facilities and machinery
Can Lean Help Me?

✓ Your current processes are inefficient and it takes too long to get a product out the door

✓ Your conveyor system or warehouse floor has cartons everywhere, but going nowhere fast

✓ You’re creating back orders even though the product is in stock

✓ You’re shipping the wrong products, the wrong quantities or to the wrong location

✓ Your order lead times are not fast enough for your customers.

✓ Your order profile is changing; More orders, Smaller orders, Fewer lines per order

✓ Your shipping customized orders (Value Added Services, customer specific paperwork, Labeling, Cartonization)
Can Lean Help Me?

- High level of order variability
- Current operation requires too many “work-arounds”
- Unable to measure & track individual and overall productivity
- You’re growing fast and can’t handle the volume, without adding more people and more space
- Information flow is not automatic. A lot of time “keying in” transactions and activities
- Employees travel long distances between actions
- Too many SKU touches are required
- Lack of visibility of Purchase Orders, Inventory, Customer Orders
- Need for a lot of decision points
Operations to Consider
The activities related to holding material and the processes of counting and tracking the material as it moves through the warehouse.

- Develop the right inventory strategy
  - Just in time
  - FIFO
  - Kanban
  - Replenishment Frequency
  - Safety stock
  - Minimum order quantities

- Automated integration between System of Record and task execution systems, providing activity based inventory updates

- Granular, Up to the minute visibility of inventory & location

- Cycle Counting
  - Can be integrated with task execution
The process of receiving & inspecting inbound materials.

- Advanced Ship Notices & Supplier Communication
- Dock Management
- Product Marking & Labeling
- Receiving Sortation
- Inspection and quarantine
- Cross Docking
- Metrics
  - Dock to Stock Time
  - Receiving Errors
  - Dock Utilization
  - Supplier Shipping Errors
The processes that support the movement of material from receiving area to the point of use or storage location.

- **Material Handling**
  - Pallet Jacks
  - Lift Trucks
  - Conveyor

- **Putaway Staging & Process**
  - All products on PO
  - By Part Number
  - By Putaway Zone
  - Direct from Receiving to final location

- **Product Identification at location**

- **Metrics**
  - Putaway errors
  - Staging area utilization
  - Equipment utilization
  - Warehouse Damage
The strategic placement of products within a warehouse facility with the objective to maximize the efficient use of a warehouse’s available cube space, improve storage and picking processes, & reduce warehouse handling costs by optimizing product location.

- Focus on storage size and location
- Slotting Strategies
  - Activity or Product Velocity
  - Seasonal Usage
  - Storage or Pick Types
  - Special Characteristics or Requirements
  - Product Similarity
  - Customer Base
  - Truck Loading or Retail Layout
- Product Profiles
  - Cube & Weight
  - Velocity
  - Seasonality
  - Handling units
- Re-Slotting – Benefit vs. Cost
Order Picking

The process of locating & pulling product from inventory to fill a customer order.

- Why focus on Order Picking?
  - Order Picking costs (including errors) can make up as much as 50% of distribution costs
  - The goal is to minimize travel & maximize number of reaches per unit of travel
  - Eliminate activities that cause pick errors

- Assess Order Profiles
  - Order Mix
  - Order Size
  - Order Lines
  - Handling Units

- Pick Methods
  - Single Order Picking
  - Multi-Order Batch Picking
  - Order Consolidation
  - Wave
  - Zone
  - Bucket Brigade
Order Picking

- Pick Line Layouts
  - Straight Line
  - Branch & Pick Zone
  - Serpentine

- Pick Path Optimization
  - Optimize reaches per unit of travel
  - Reduce travel and touches as much as possible

- Equipment
  - RF Picking
  - Pick to Light
  - Pick to Voice
  - Automatic Storage & Retrieval & Carousels

- Measure
  - Units, Lines, Orders Per Hour with Accuracy
  - Daily activity by major task
  - Individual performance & accuracy
  - Display performance metrics on warehouse floor
  - Include employees in continuous improvement programs
  - Gather feedback from associates
The process of packing and labeling shipping containers to fill a customer order.

- Pick to shipping carton vs. batch pick to sort
- Order Accuracy
  - Scan pack
  - Order auditing
  - Track errors and who is making them
- Package to avoid damages and returns
- Manifesting to carriers
- Shipping Labeling
  - Preprinted hybrid packing slip/label
  - Manual LPN scan, weight capture and label application
  - Automated LPN scan, weight capture and label print and Apply
  - Label verification
  - Rejects
The processes that support the transport of products.

- Determine transportation mode with goal of balancing transportation costs with service levels
- Consolidation
  - Consolidating orders to carrier
  - Consolidating orders to locations
  - Consolidating orders to ship to addresses
- Use of Sortation equipment in shipping
- Integration with carriers for
  - Manifesting
  - Shipment tracking
  - Proof of delivery
  - In Transit updates
- Truck Loading sequence
✓ Benchmark current performance so you can understand where you are and measure progress

✓ Take a good look at your current operation and create profiles of your
  ▪ SKUs
  ▪ Purchase Orders
  ▪ Customer Orders
  ▪ Inventory

✓ Identify any known or potential future events that will impact your operation in the future

✓ Establish goals, objectives, and policies

✓ Evaluate your current processes. Re-engineer where appropriate to remove any steps that do not add value.

✓ Define & Design the automation that will support the re-engineered processes
Find the technology and automation that can support your processes and people.

Focus on integration.

Define required headcounts and skill sets for new operation.

Define the SOPs, Methods, and Labor Standards for the new operations.

Build the business case to determine the return on investment:
- Reduced labor & operating costs
- Better utilization of underutilized resources
- Increased customer satisfaction, resulting in reduced chargebacks, and increase in orders
- Reduced operating costs (printing, utilities, security, inventory, charge backs, returns)
- Increased sales without increasing staff or space
- Increase products lines and SKUs
- Increased associate satisfaction and retention
- Easier acquisition integration

Implement, Measure and Improve!
1. Do I need to focus on Lean Philosophy across the entire supply chain at once?

The key is to evaluate your processes and remove non-value added steps. You may be able to remove some steps just by process changes, while others may require automation. Even when automating, it is important to understand Benefit vs. Cost of the technologies available.

That said, once you have defined the appropriate framework, you can either chose to implement it across the board at once or in different functional departments. If budget is tight, you want to identify low hanging fruit or areas where you will get the best ROI and use the savings to pay for projects in other areas.

2. How do I check if my 3PL is Lean?

Visit their facility and observe their operation. Have a conversation with them to understand their processes, what measures they have taken to reduce non-value added steps, how are they equipped to handle growth, have they optimized their processes and workflow before implementing technology - adding technology to bad processes does not mean they are Lean.

Particularly observe how they handle volume during peak days - do they simply throw more workers at the tasks? are there multiple touches to product and redundant steps in the processes? are they using paper for order fulfillment tasks vs. paperless?
3. Aren’t Lean, Six Sigma, and Just-in-Time (JIT) the same?

The goal of Lean is to reduce waste and non-value added steps, while Six Sigma seeks to improve quality by identifying and removing the causes of errors and minimizing variability in processes. Since quality issues lead to waste, Six Sigma is a contributor to Lean.

JIT strives to reduce inventory and associated carrying costs. However, JIT can lead to waste if a company pushes their inventory on their suppliers causing them to have the same problem – pushing the inventory upstream doesn’t necessarily equate to reducing waste. You want to implement Lean across the extended supply chain to reduce waste and maximize efficiencies.

4. How important is the people factor in Lean?

People can be the most important component. You can implement the leanest processes and best practices supported by great automation, but you still need people to make things go. If you do not have people with the right skill set, it will not be 100% successful.

It is critical that people understand what’s expected of them, they’re well trained and given the right tools to do the job efficiently - set goals and measure and reward people for obtaining those goals.

It is also critical to involve the people as you’re going through the process of designing a Lean operation. People tend to perform much better when they feel they have an input into what they’re doing.
5. What is Bucket Brigade Picking?

In Bucket Brigade Picking, workers on a pick line are sequenced from left to right according to their picking productivity. The idea is that the slower workers begin an order while the faster workers are pulling the work through, requiring the slower workers to keep up with the pace of the faster workers. We see about 20-30% increase in productivity from using this methodology alone.

6. How does Lean support a Pull vs. a Push supply chain?

The goal of Pull, or any supply chain, is to react to variability in customer demand and maintain desired customer service levels. Many companies try to do that by increasing inventory and keeping safety stock which isn’t the way to go.

Lean allows you to reduce order cycle time and the time it takes product to flow through the supply chain by removing waste from manufacturing and distribution. Think about it as a funnel where everything is flowing through efficiently, from your suppliers to manufacturing to distribution to customers. We’ve seen companies that have reduced order cycle time from one week to less than two days after removing wasteful steps and bottlenecks.

An example would be Direct to Consumer companies handling large volumes where they have to ship orders received by 4pm the same day - unless their processes are optimized it would be difficult to do this efficiently.
Want to know how to maximize efficiencies in your distribution center?

AL Systems can help with an onsite review and objective analysis of your distribution center, including:

- Analysis of processes and workflow from door to door
- Analysis of existing technologies and material handling systems
- Interviews with key personnel
- Data gathering for SKU, Inventory and Order profiling
- Key performance benchmarking
- Gap analysis

The deliverable is a customized scorecard on your current operations along with actionable recommendations for improvement, including:

- Summary of the current state data collected
- Recommended modifications/changes to distribution center processes and workflow
- Recommended technologies to support new processes and workflow
- Detailed ROI analysis of implementing the recommendations

Register below for a free, no-obligation Operations Assessment
http://www.alsystems.com/distribution-center-operations-assessment
Other Resources

Upcoming Events:
http://www.alsystems.com/events

AL Systems Youtube Channel:
http://www.youtube.com/alsystems

White Papers:
http://www.alsystems.com/white-papers

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