

# Multi-Channel Retail Order Fulfillment Solutions

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Presented by:

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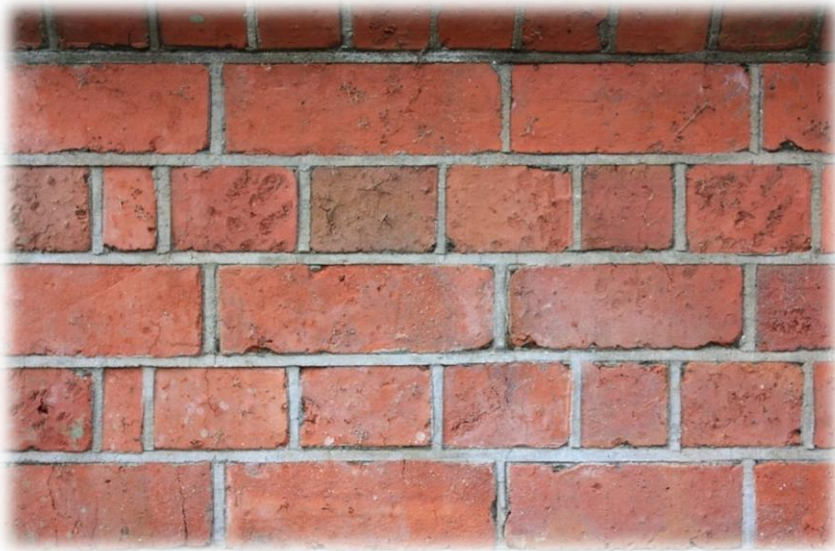
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# Multi-Channel Order Fulfillment Strategy



The first section of this presentation will discuss strategic considerations for setting up your fulfillment network. The second section will address material handling solutions within order fulfillment centers.

# Logistics Network Strategy: Session Goals

- Define and outline the pros and cons of network strategies used by multi-channel order fulfillment retailers
  - Multi-channel here includes retailers with both a brick and mortar and direct to consumer network.
- Address a few current key supply chain topics
- Discuss the following related topics:
  - Inventory Management and Control Implications
  - Order Cycle Implications
  - Customer Service Implications
  - Third Party Logistics Provider (3PL) options
  - Returns considerations

# Sample of Multi-Channel Retailers



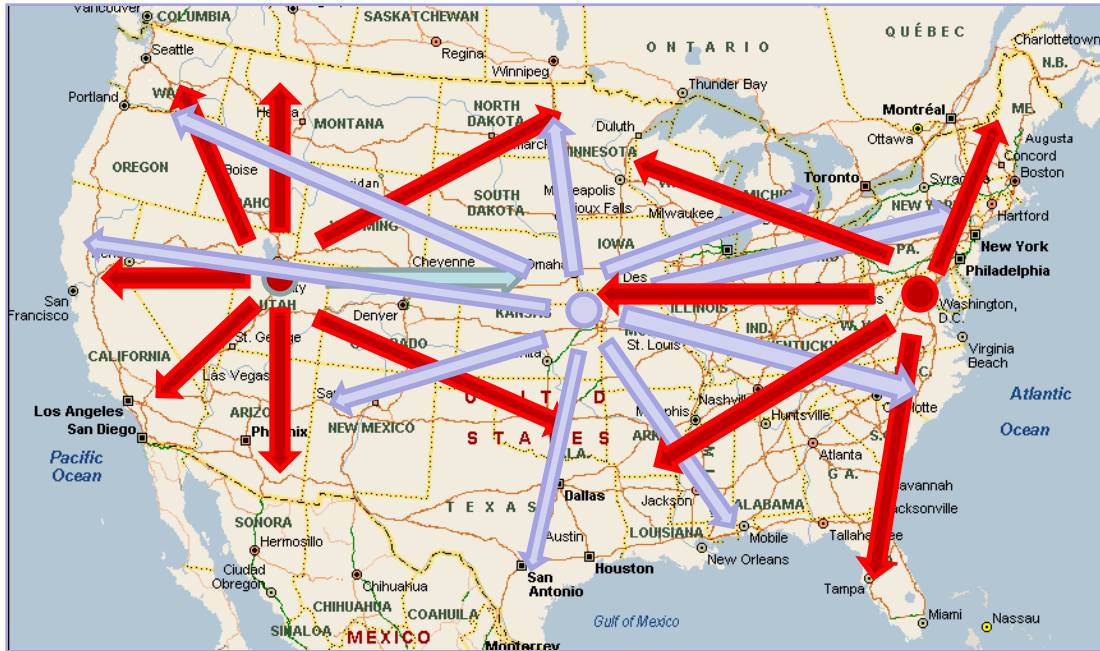
Content during this session is based in part on direct experience with these companies, across their entire supply chain, both store replenishment and direct to consumer operations.

# Logistics Network Strategy Configurations

Basic network types for retailers to fulfill store replenishment and direct to consumer (**D2C**) orders:


<b>1</b>	<b><i>Dedicated DCs</i></b>	Order fulfillment channels serviced from separate facilities
<b>2</b>	<b><i>Combination DCs</i></b>	Order fulfillment channels serviced from the same facility
<b>3</b>	<b><i>Store Distributed</i></b>	Some D2C orders can be fulfilled directly from the stores
<b>4</b>	<b><i>Hybrid Network</i></b>	Combination of above strategies because of capacity, geography, customer segmentation, or SKU segmentation
<b>5</b>	<b><i>Hybrid Stores</i></b>	Incremental layer of distribution added by utilizing stores or vendors as regional stocking points or order fulfillment centers

# Dedicated Distribution Center(s)



- Each fulfillment channel is in a separate logistics network
- Each logistics network can have a different number of DCs (typically a smaller number of eCom DCs than store replenishment DCs)
- Delivery areas will overlap between networks

 eCom order fulfillment

 Store or Wholesale order fulfillment

# Typical Characteristics of Dedicated Facility Networks

## PROS

- Less operational complexity in each DC
- Consolidation of eCom orders can leverage a technology investment to reduce order cycle times and labor costs
- Facilitates use of the optimal WMS by channel
- If each DC is sized properly, the cost to serve can be lower than in a common DC

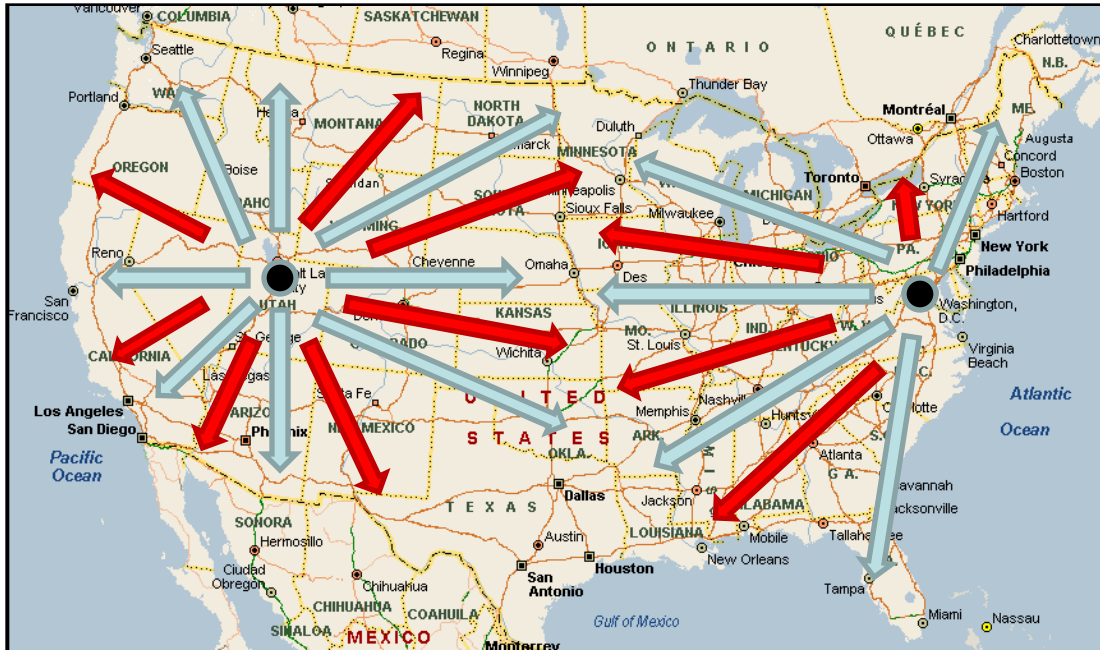
## CONS

- Increased overall headcount
- Incremental overall inventory levels due to duplicated safety stocks
- Higher overall fixed asset costs
- Less storage flexibility for seasonal peaks
- Increased risk of redeployment and double handling between networks

## Key Notes

- Need excellent inventory deployment and allocation plan
- Split shipping could increase compared to one combined building.
- Usually implemented when store fulfillment DCs are at capacity, picking methods are vastly different across channels, or ecommerce volume exceeds shared building capacity.

# Combination Distribution Center(s)



- Each facility in the network can fulfill an order in any channel
- This can be a single facility or multiple facilities (directly related to store count and store density)
- Delivery areas that overlap between channels will be minor to non-existent

→ eCom order fulfillment

→ Store or Wholesale order fulfillment



# Typical Characteristics of Combination Facility Networks

## PROS

- Opportunity of inventory consolidation if SKU base is similar across channels
- Maximum labor flexibility
- Best leverage of fixed cost assets
- If managed properly, should reduce the number of split shipments
- More storage flexibility for peak seasonal times

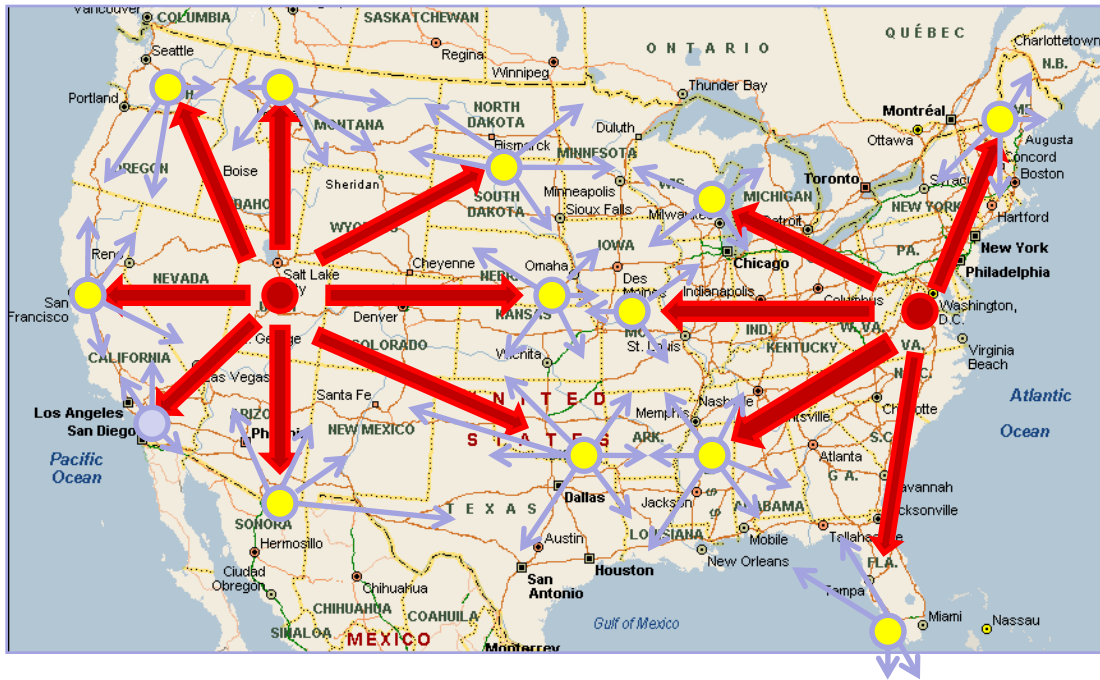
## CONS

- Increased operational complexity
- Increased risk to business continuity with only one combination building. (*Risk decreases as buildings are added*).
- Can reduce the volume to the point where MHE technology does not have sufficient ROI in some locations

## Key Notes

- Will force system alignment across channels that is not necessarily optimal for each individually
- Usually reduces the order cycle time to eCom customers vs. dedicated networks by having more stocking locations
- Need to define an inventory allocation strategy within the DC -- *Not an easy task*

# Store Distributed Networks



 eCom order fulfillment

 Store Locations

 Store or Wholesale order fulfillment

- This network type allows for some orders to be fulfilled from stores or for store pick-up
- The servicing store is selected based on inventory availability and proximity to the customer (*hopefully!*)
- Service areas overlap extensively based on where inventory is available

# Typical Characteristics of Store Distributed Networks

## PROS

- Extensive store locations will provide unparalleled delivery time benefit
- Inventory level neutral, assuming stores are replenished with intent to sell from the store
- Excess store labor can be better utilized, and may be less expensive than DC labor
- Option for offering large form factor SKUs through ecommerce channel

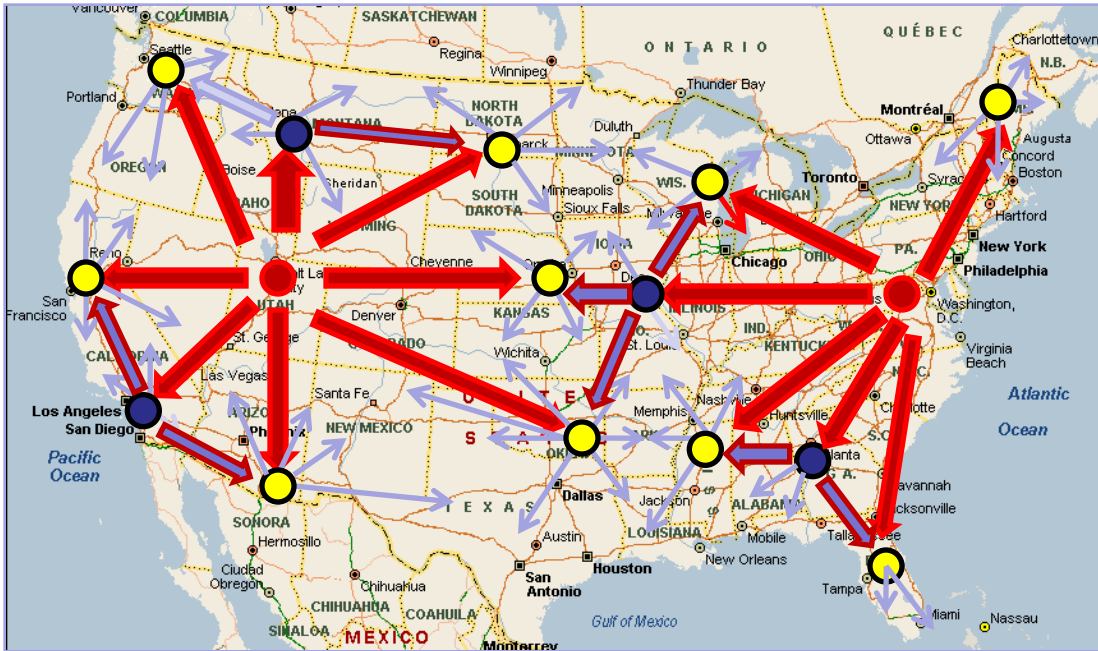
## CONS

- Inventory management systems must be robust and accurate
- Usually a higher total landed cost to customer than DC distribution only
- Predictably worse customer experience on shipments from a store rather than from DC
  - Increased damage
  - Poor pack out
  - Picking accuracy

## Key Notes

- Usually implemented by established brick and mortar stores growing into the eCom market
- Used in situations where the eCom orders are relatively small and low volume
- Varied store cut-off times can make service level communication a challenge vs. DC fulfillment

# Hybrid Store Networks



- Super stores have a larger back stock capacity to re-supply smaller stores in their region
- Generally, slower moving SKUs (the tail) are kept at the super store then deployed as needed
- All stores still get direct DC replenishment for faster movers

 eCom or Wholesale order fulfillment

 Store order fulfillment

 Redeployment Transfer

 Super Store Locations

 Store Locations

# Typical Characteristics of Hybrid Store Networks

## PROS

- Reduction of inventory investment by consolidating tail SKUs into regional locations
- Hybrid stores provide reduced delivery times vs. DC replenishment by being regionally located
- High virtual fill rates for a wide array of SKUs

## CONS

- Using retail space for storage is an expensive proposition (must be high margin product)
- Higher transportation costs due to increased transfer needs
- Inventory management and positioning is a complex process and requires robust systems

## Key Notes

- Usually implemented in high SKU environments with a long tail, for example auto parts.
- Only possible with higher density store footprints

# Typical Characteristics of *Single* Facility Fulfillment Networks

## PROS

- Greatest concentration of volume to leverage technology investment in MHE
- Unified shipments
- Lower overall inventory levels thru consolidated safety stocks
- Best fixed cost allocation
- Out of stock condition is easier to manage

## CONS

- Longer average delivery times to customer
- Business continuity risk is high (single point of failure)
- Size may eventually become unmanageable
- Staffing issues at peak times for very seasonal businesses

## Key Notes

- Reduction of delivery times rather than cost reduction usually the key driver to an increase in the number of DCs in the network
- Much more common in the eCom channel than any other

# Typical Characteristics of *Multiple* Fulfillment Facilities

## PROS

- Shorter lead time to customer
- Passive business continuity support
- Can balance operational volume at peak time (may increase freight costs)
- Allows for differentiation by location for a subset of SKUs or channels that meet regional needs

## CONS

- Inventory management is difficult
  - Increases overall inventory
  - Split shipment dilemma
  - Redeployment issues
- Incremental fixed costs
- Economies of scale get tougher to reach for smaller volume locations (cost per unit can go up)

## Key Notes

- Number of DCs in the network is generally related to the number of stores and density of stores
- High SKU counts and complexity rarely drive increased number of DCs
- Different 3PL providers can be utilized across the network to reduce risk and provide comparable costs and metrics

# DIY or 3PL?

**Should you outsource to a Third Party Logistics Provider (3PL)?**



**Do it yourself?**

**Or,...**



**Hire professional  
with the right  
tools?**





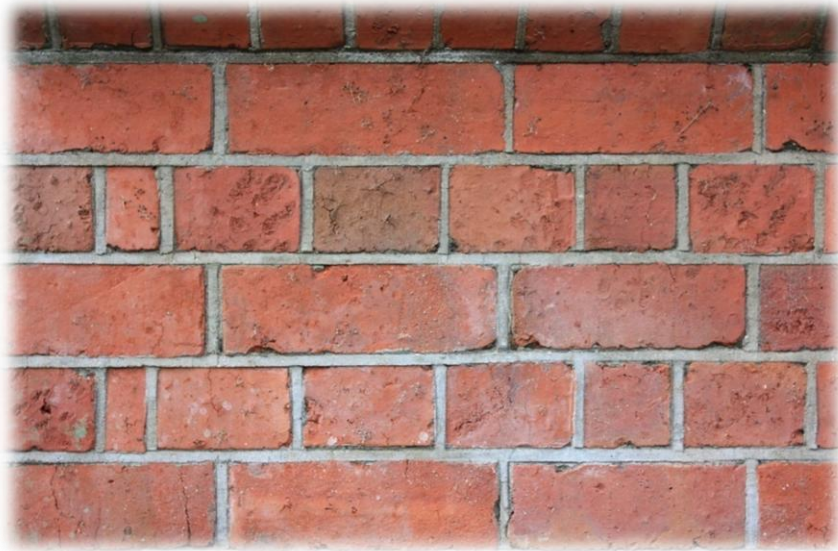
# What if the carton comes back?



## Returns processing:

- Which facility, or facilities, will process returns?
- Who pays return freight?
- Can online purchases be returned to the store?
- Can returns center labor be leveraged during peak holiday shipping season?

# Multi-Channel Order Fulfillment Strategy



The following section will address material handling solutions within order fulfillment centers.

# Specific Multi-Channel Challenges

- Greater emphasis on Perfect Order Performance
- More value added services
- More Returns require efficient reverse logistics
- Quality challenges – e com requires 100% accuracy
- Outbound process for shipping



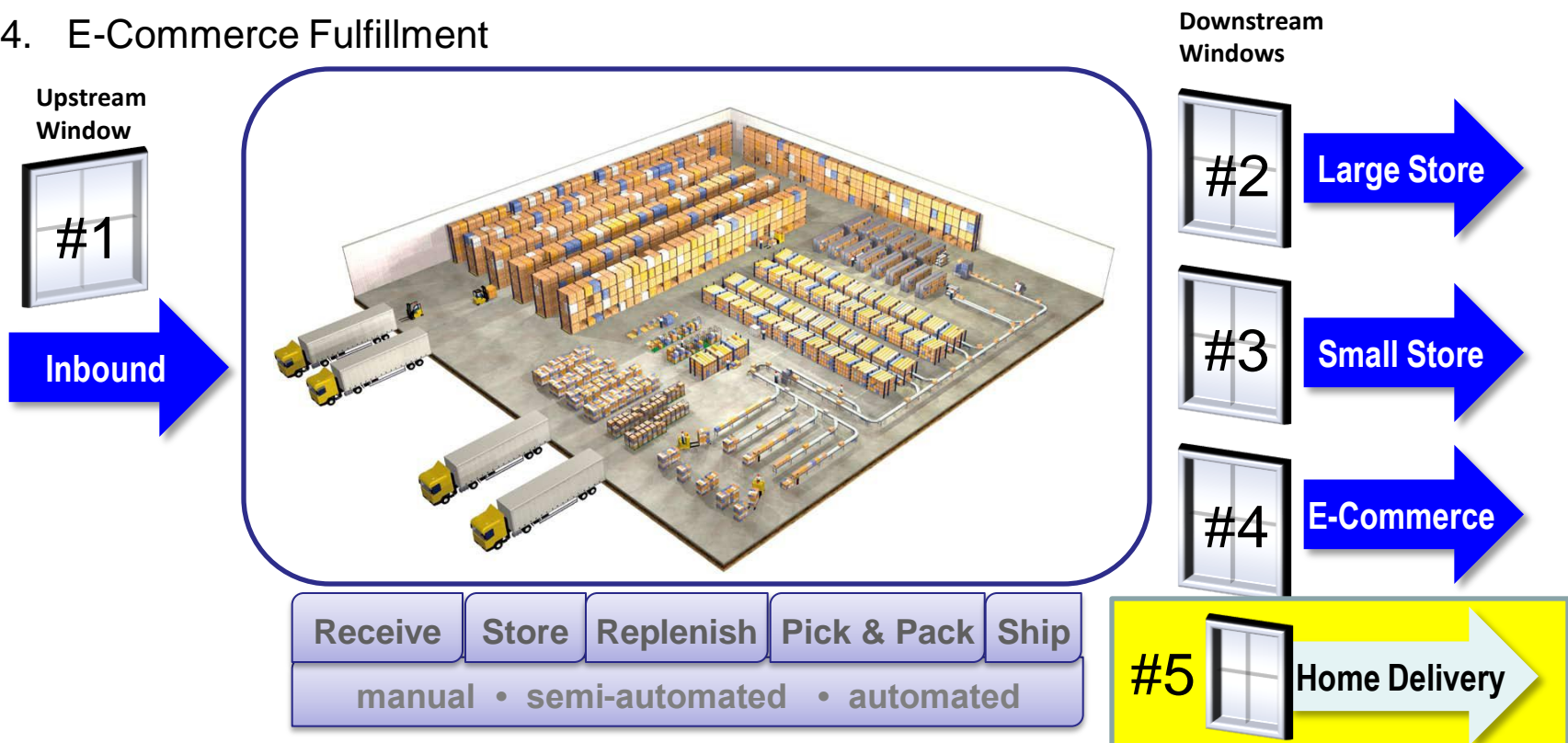
# Distribution Center Model

- Receiving to shipping, within the four walls
- Consider the upstream and downstream impact on your supply chain (two windows)



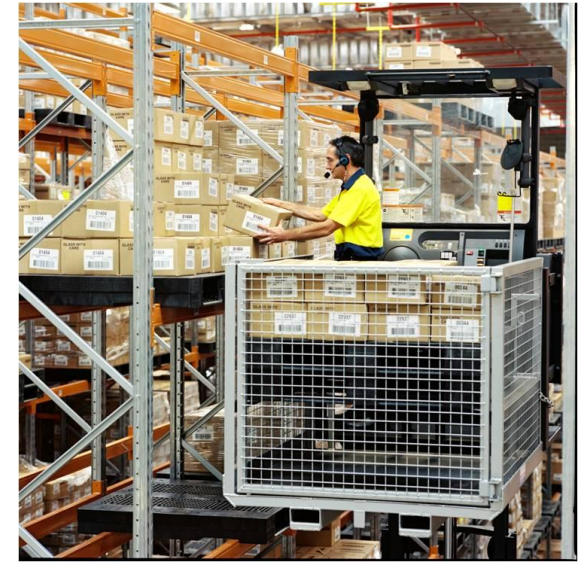
# A look at the Multi Channel DC...

- Multi Channel Distribution... **adds more windows!**
- What are the windows?
  1. Upstream Supply Chain
  2. Large Store Format Fulfillment
  3. Small Store Format Fulfillment
  4. E-Commerce Fulfillment



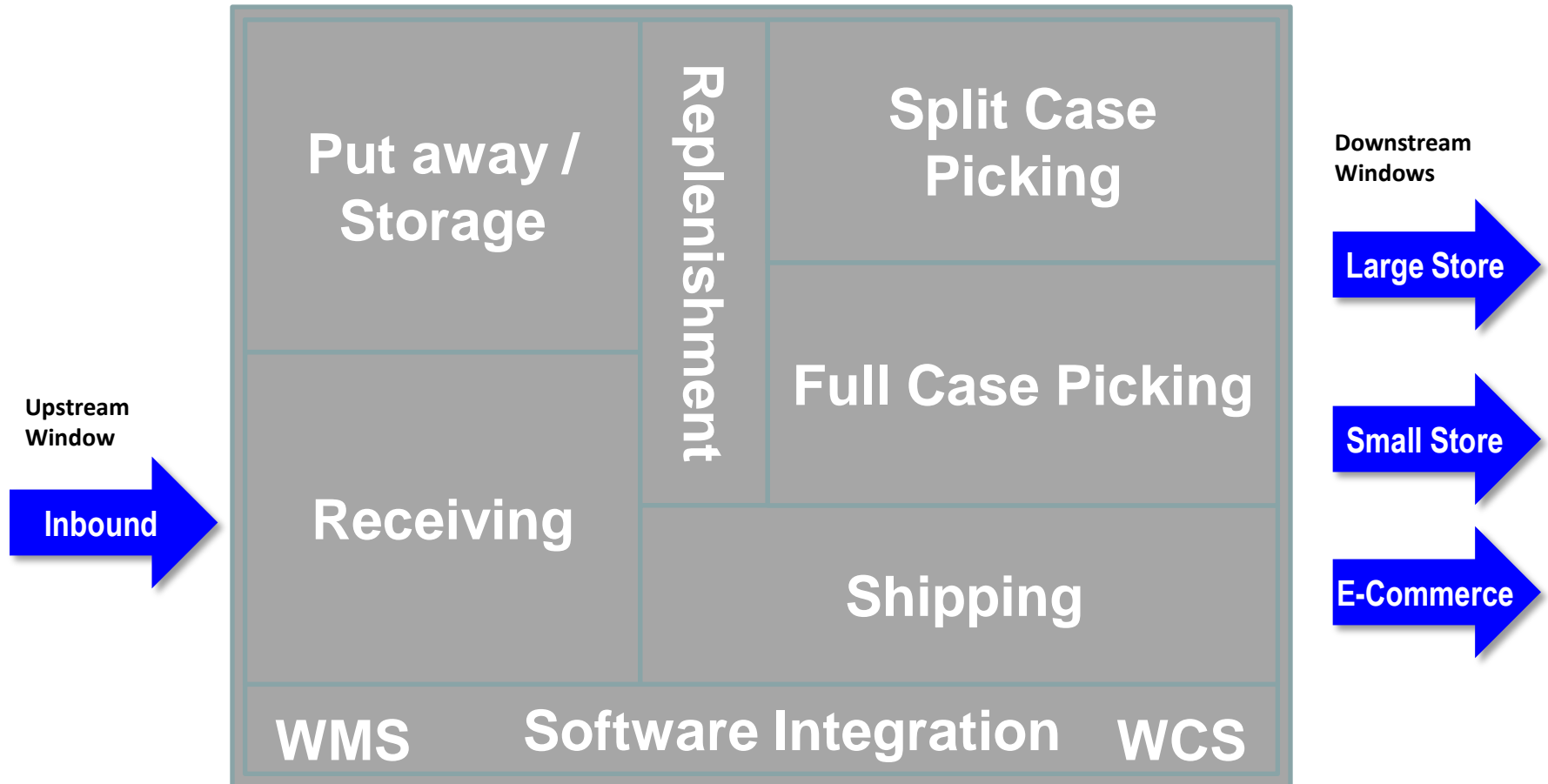
# How do we Bring Flexible, Scalable, Modular Solutions to Your Operation?

- How do we:
  - Manage split case, each picking combined with full case picking?
  - Plan for increasing split case volumes?
  - Design systems to deal with new average vs peak ratios associated with e-Commerce?
  - Enable a transition from a Batch or Wave based operation to a dynamic on-demand order fulfillment operation?
  - Get a more effective use of our inventories?

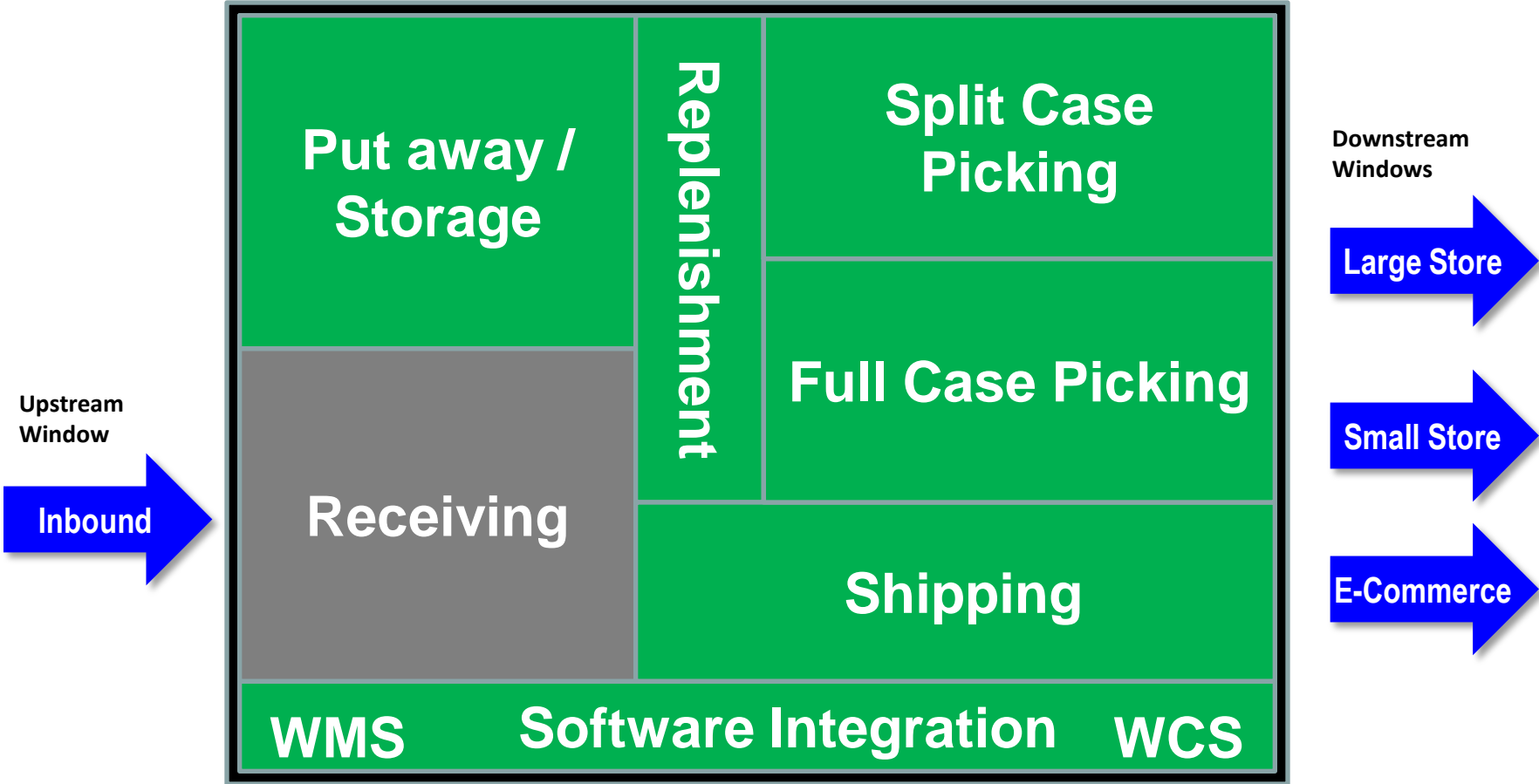


# Functional Areas of the DC

- Lets first look at the functional areas of the warehouse:

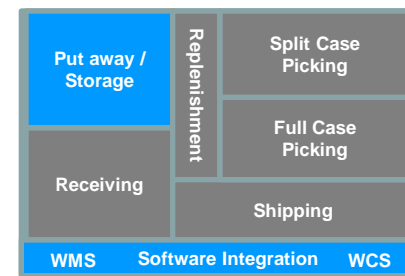


# What Areas are the Focus for Multichannel Distribution?





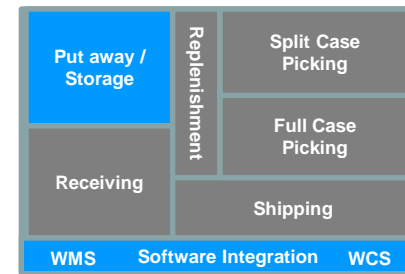
# Put Away and Storage Solutions



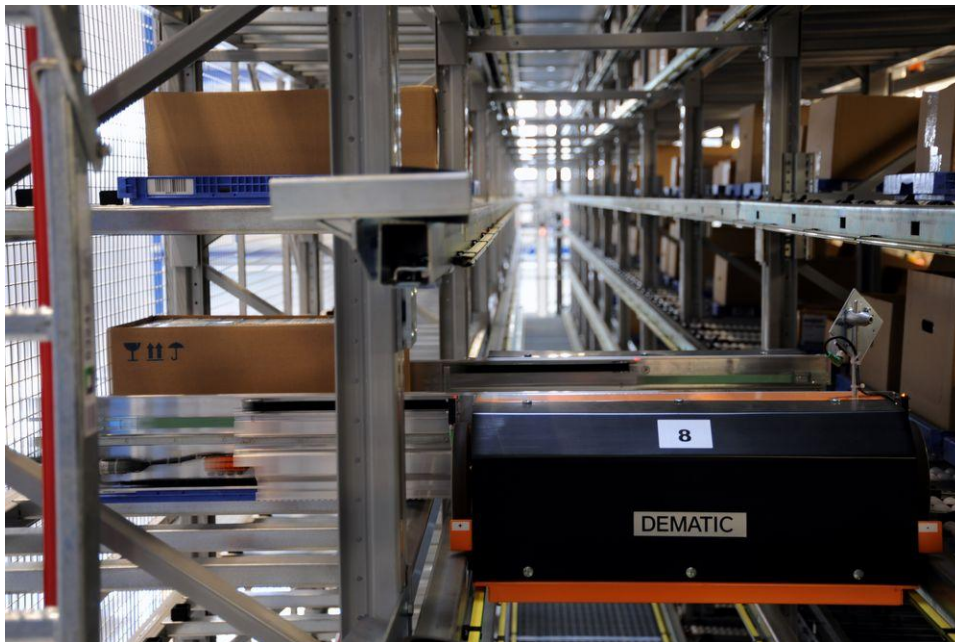
- Can we automate reserve storage?



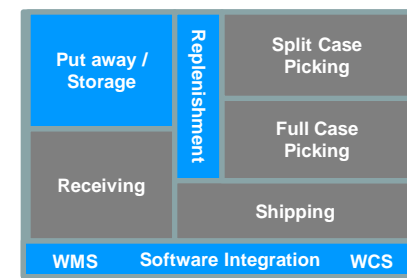
# Put Away and Storage Solutions



- Can we automate online storage at the case level?



# Replenishment Solutions



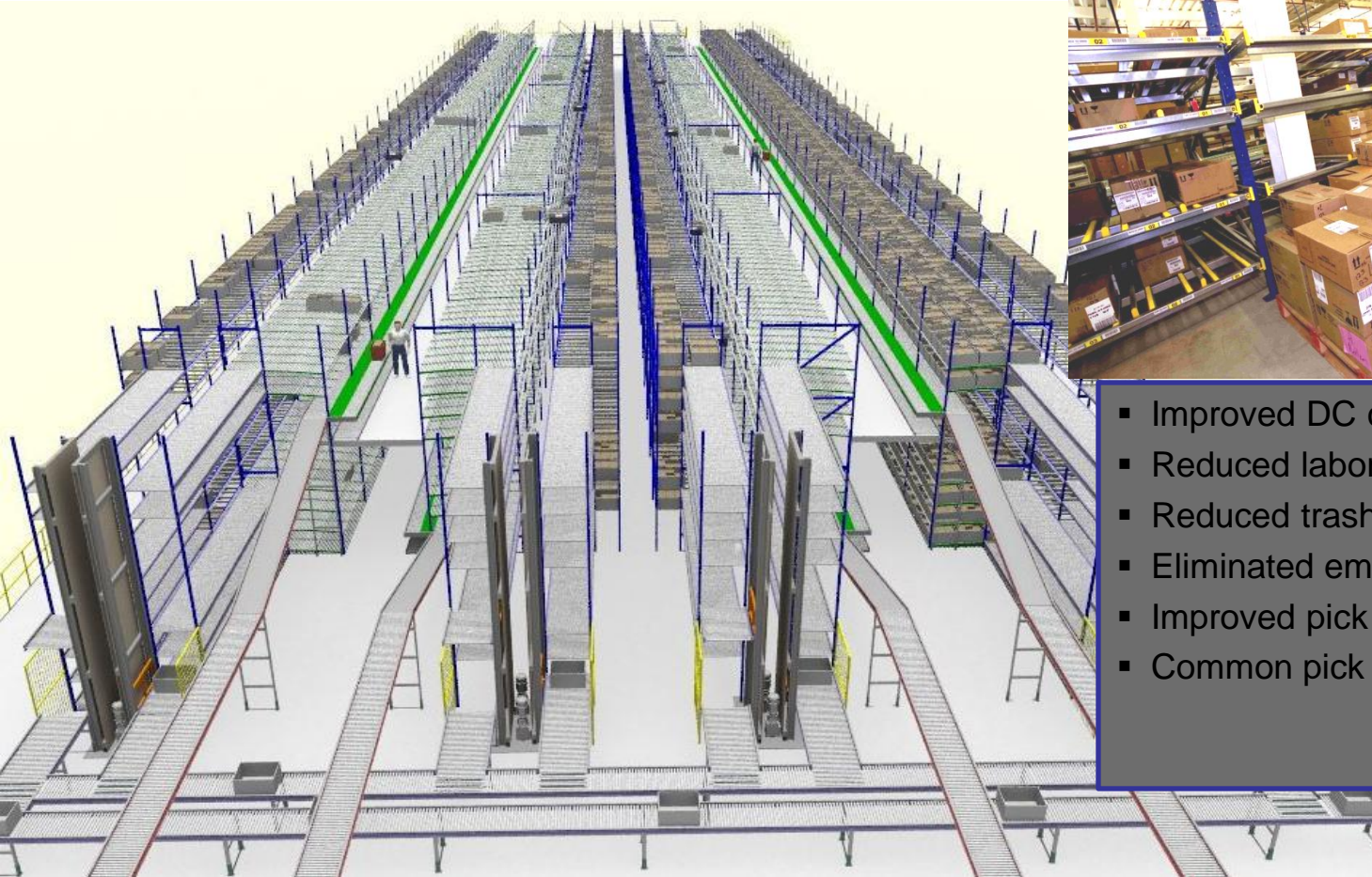
- Modular approach to de-trash / decanting stations
- Cases converted to totes for split case buffering and picking



# Replenishment Solutions

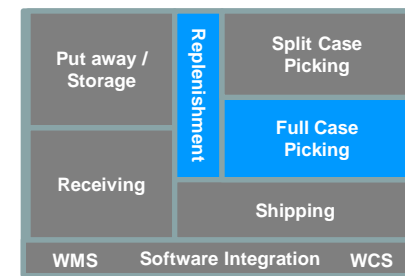
Put away / Storage	Replenishment	Split Case Picking
Receiving		Full Case Picking
		Shipping
WMS	Software Integration	WCS

- Automated Replenishment to Conventional Split Case Module

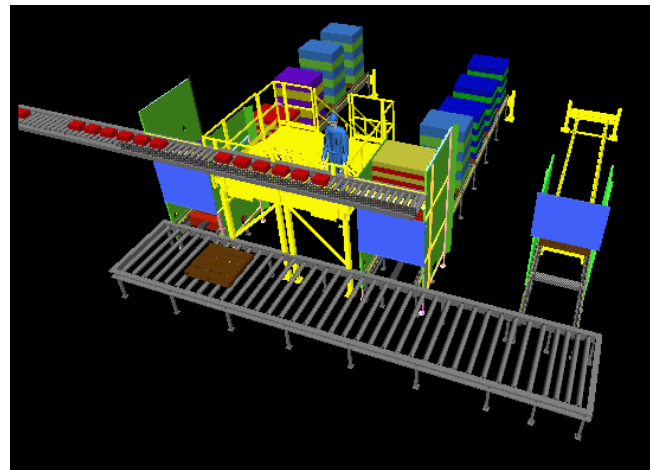


- Improved DC cube utilization
- Reduced labor
- Reduced trash conveyor
- Eliminated empty tote monorail
- Improved pick density
- Common pick size

# Full Case Picking Solutions



- Depalletizing solutions
- Case buffer replenishment or direct to shipping (X-Docking)



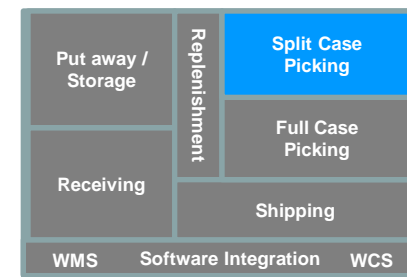
# Full Case Picking Solutions

- Goods to Person Picking (GTP) from Pallets

Put away / Storage	Replenishment	Split Case Picking
Receiving		Full Case Picking
		Shipping
WMS	Software Integration	WCS



# Split Case / Eaches Picking Solutions



- Flexible, scalable e-Commerce fulfillment
- Lower degree of automation



# Split Case / Eaches Picking Solutions

## Dynamic Storage with Put Solutions

- Flexible, scalable e-Commerce fulfillment
- Higher degree of automation

SKU totes routed to 1 to 1 order put station.  
Tote takeaway w/ sequencing conveyor. Sorted to put stations and on to shipping

SKU totes routed to 1 to many order put stations.  
Tote takeaway - sorted to pack station and on to shipping

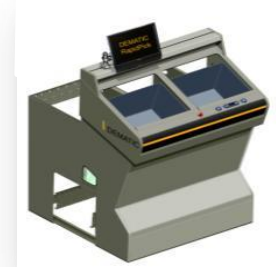
SKU totes to low tech conveyor takeaway & sorted to low tech manual (1 to many) put stations.  
Pulled across to pack stations and conveyed to shipping

### Fulfillment Approach

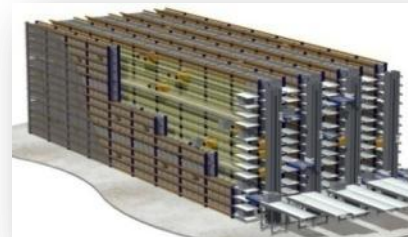
Automated Buffer/sequencer



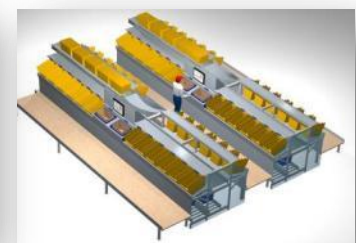
1 to 1 = 1,000/hr



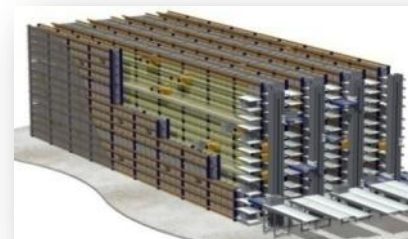
Automated Buffer



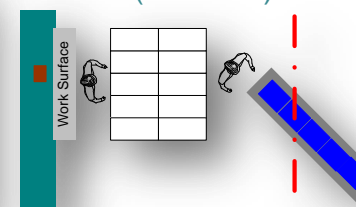
1 to many = 700/hr



Automated Buffer

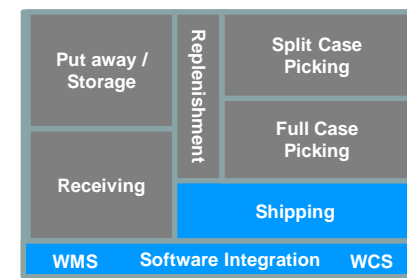


1 to many = 400 - 600/hr (Put Wall)

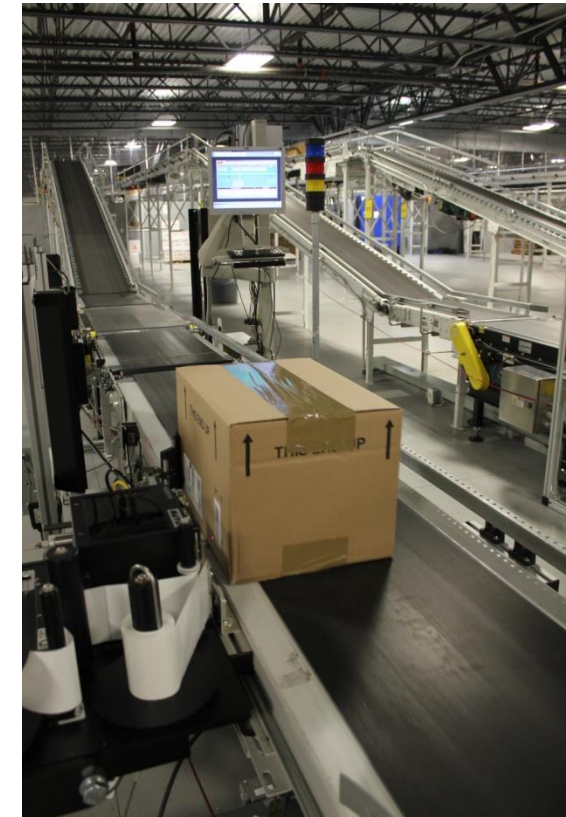




# Shipping Solutions



- Pack out & close for e-Commerce shipping
- Label Print & Apply (LPA) for e-Commerce labeling



# How do we accomplish the following?

How do we bring a Flexible, Scalable, and Modular solution into your distribution and warehousing operation?

- ✓ Flexible designs to scale to your operational needs
- ✓ Scalable designs to accommodate your growth
- ✓ Modular designs, building blocks to meet your requirements



# How do we accomplish the following?

How do we:

Manage split case or eaches picking combined with full case picking?

Plan for increasing split case volumes?

- ✓ **Decrease labor requirements with semi or highly automated solutions**



# How do we accomplish the following?

Design systems to deal with the “new” average vs peak ratios associated with e-Commerce fulfillment?

- ✓ Put inventory for stores and e-Commerce in one buffer and change the style of picking on the outbound to match your needs
- ✓ Flex with a combination of automation and labor



# How do we accomplish the following?

Enable a transition from a Batch or Wave based operation to a dynamic on-demand order fulfillment operation?

- ✓ **Implement automated replenishment and split case picking solutions for JIT order fulfillment**

Get a more effective use of our inventories?

- ✓ **Inventory for full case and split case can reside in a shared space**



# Multi-Channel Operational Challenges

- How to transition from conventional batch operation to thousands of small orders!
- Large increase in split case/eaches
- Additional peak season challenges
  - Difficult to manage peak to average labor & inventory
- Weekly operational challenges
  - Monday startup – weekend orders pooled up
- Order processing time
  - shortened to insure promised delivery
  - extend order cut off time



# Multi-Channel Operational Challenges

- Greater emphasis on Perfect Order Performance
  - accuracy
- More Value Added Services (VAS)
  - VAS decreases throughput, adds time
- More returns require efficient reverse logistics,
  - EZ returns process required
- Quality challenges
  - e-Com requires 100% accuracy
  - Added check weighers
  - Dunnage
- Outbound process of shipping
  - Increased small parcel shipping
  - transportation charges associated with home delivery



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