The Future of Inventory &
Supply Chain Management

“The Change In Thinking”
The Future of Inventory & Supply Chain Management

“The Change In Thinking”

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Who We Are?

- MCA Associates, a management consulting firm, since 1986
- Provide operational excellence thought-leadership to Wholesale-Distributors & Manufacturers
- “Lean Thinking” & Continuous Improvement solutions; business process re-engineering, supply chain management, sales revenue development, information systems, and organizational assessment & development
- Frequent article & whitepaper contributors; invited speaker to industry associations
Today’s Major Objectives

Transcend Ingrained Inventory & Supply Chain Practices

- Challenge your thinking
- Understand what other’s are doing
- Overcome the hesitation
- “Accelerate the time-line” towards the adoption of some new “DNA”
I. Where Are We Today?

II. The Change In Thinking – You & Your Suppliers

III. Moving Forward – The Future…Practices
The Future of Inventory & Supply Chain Management

Why The Change in Thinking?
I. Where Are We Today?
“The Total Cost of Ownership”
I. Where Are We Today?
“The Total Cost of Ownership”

- Certain rules we’ve accepted
- Acceptance of “incremental change”
- Certain assumptions built into fabric of our organizations
Where Are We Today?

3 (maybe 4) Basic Questions Still Exist

- How much to order from vendors?
- How much to keep “upstream” at CDC?
- How much to keep “downstream” at a branch?
- ? Improve supplier collaboration
II. The Change In Thinking...
The Change In Thinking…
Actual Customer Demand

Pull Inventory & Supply Chain Management
A Change In Thinking…

- Hold the right amount of inventory, at the right place in the supply chain; promote inventory flow while minimizing working capital

- Size and dynamically adjust stock positions by focusing on the “inventory drivers”

- Reduce emphasis on elusive goal of forecast accuracy; instead demand is driven almost entirely by actual customer demand – called the “buy signal”

- A “new collaboration” approach with manufacturers/suppliers - sharing “buy signals”
The Change in Thinking...

“"A Basic Lean Thinking Tenet"

“Only buy (if you are a distributor) or make (if you are a supplier) what is bought (pulled) by the customer - at the rate of their requirement"."
The Change In Thinking…
Here’s A Picture Worth 1,000 Words!
The Change In Thinking...

The Inventory Drivers

- Shortening actual replenishment lead times
- Reducing order sizes

= Increasing replenishment order cycles
= Minimizing safety stock needs

Outcome: “Actual demand” drives immediate replenishment needs
The Change In Thinking... *Push vs. Pull*

**Push System**

**Definition:**

Resources are provided to the consumer based on forecasts or schedules.

**Pull System**
The Push Model

Supplier

Distribution Center

Branch

Branch

Branch

Branch

Branch

Customers

Forecasts

Forecasts

Lead Time

Variability

Order Sizes

Cost Trade-Offs
The Push Model

Pitfalls/Consequences

- Out-of-sync – order vs. actual demand
- Excess inventory – redundant safety stock
- Stock-outs
- Replenishment constraints/strategies
The Effects of Demand Variance

- Optimistic forecasts
  - Overproduction (superb delivery performance, capacity problem & stock-outs disappear, inventory grows)

- Demand

- Capacity
  - Lags real demand at this point, stock-outs appear

- Realisation of over-capacity
  - Cutbacks & obsolescence, excess stock

- Excess stock reappears

- Over-reaction to downturn
  - Short of capacity (capacity problem & stock-outs reappear, excess stock disappears)

Time
The Change In Thinking…
“Out With The Push Model”

- Supplier
  - Distribution Center
    - Branch
      - Branch
        - Branch
          - Branch
            - Customers
              - Lead Time
              - Variability
              - Order Sizes
              - Cost Trade Offs

Forecast:
- 500/490
- 100/50
- 50/100
- 200/140
- 150/100
- 0/100
**The Different Outcomes**

**Push vs. Pull**

**Buy all we can**
- Production Approximation
- Anticipated Usage's
- Large Lots
- High Inventories
- Waste
- Management by Firefighting
- Poor Communication

**Buy what's needed**
- Production Precision
- Actual Consumption
- Small Lots
- Low Inventories
- Waste Reduction
- Management by Sight
- Better Communication

**Forecast, Large Order Quantities, High Inventories**

**Actual Consumption, Smaller Order Quantities, Lower Inventories**
The Change In Thinking

- Align demand planning, more, with actual usage...the customer’s "buy signal"!
III. Moving Forward – The Future...Practices
Moving Forward – The Future…Practices

Customer Pull

- Requirements
  - Fresh
  - Available
  - Brand
  - Price
  - Size

- On Time Delivery
- FIFO
- Rotate Stock
- Quality
- Cost

Demand

Supply

J.I.T

- Requirements
- Communications
- Specifications
- Expectations
- Timing

Capacity
Moving Forward – The Future…Practices

- Continuous Flow, Increased Velocity
- “A stretch towards perfection”…..
- “Sell one – order one/sell one - make one”
Moving Forward
Future...Practices

- Pull

Provider

Replaces Used Products

Consumer

Uses Products
Moving Forward – The Future...Practices

Replace Consumption

Point of Replenishment

Fuel Tank

1/4

1/2

3/4

E

F
Moving Forward – The Future...Practices
The Basic Pull Principles

- Aggregate inventory at distribution center
- Pull inventory to branches (customer buy signal)
- Replenish as frequently as possible - foster continuous flow – Reduce safety stock
- Develop/maintain “target inventory levels” (buffers)
- Develop new relationships with suppliers
Moving Forward – The Future…Practices

Target Inventory Levels (“TIL”)

- Amount of inventory you shoot for in the supply chain

- Demand x Lead-time + Safety Stock

- Manage the target inventory level

Target inventory - a measure and a priority signal
Moving Forward – The Future…Practices

“Zones” of target penetration

- **Green** – less than 33% “TIL” penetration
- **Yellow** – between 33% and 67% “TIL” penetration
- **Red** – Between 67% and 100% “TIL” penetration
Example: “TIL” for a product is 100 units and currently at the location we have 40 units.

- We expect 60 more units to be on the way from the source (DC or Supplier).
- The “TIL” penetration is at 60% \(\frac{(100 - 40)}{100}\).
- This item, therefore, would be in the “yellow zone.”
Moving Forward – The Future…Practices

Target Inventory Penetration

- Example: “TIL” for a product is 100 units and currently at the location we have 20 units
- We expect 80 more units to be on the way from the source (DC or Supplier)
- The “TIL” penetration is at 80% \((100 - 20) / 100\))
- This item, therefore, would be in the “red zone”
Moving Forward – The Future...Practices “TIP”
Moving Forward – The Future…Practices “TIP”

Danger zone, on the verge of not satisfying customer requirements
Moving Forward – The Future...Practices

“TIP”

Customer requirements being met, but high level of inventory
Moving Forward – The Future…Practices

Business Intelligence

“Changing The Way Work Is Done”

- By Company, Location, SKU, A-B-C Rank
  - Time in A Zone
  - Number of products in a zone
Moving Forward – The Future…Practices
The Effects on Suppliers/Relationships

- Suppliers Push

- “Mass Production Mindset” - another “disconnected optimization silo”

- Economy of scale vs. Economy of time
Moving Forward – The Future…Practices

The Effects on Supplier Relationships - What If?

- Distributors & supplier share consumption data?

- Alignment of Interests = Win-Win
Moving Forward – The Future…Practices
Visible & Collaborative

Pull Signal Monitoring — Supplier

Red, Yellow, Green Zones
Moving Forward – The Future…
Outcome

Pull

Continuous Flow/Velocity

End Customer
Where We Began
Moving Forward – The Future…Outcome

Customer Service Policy

Target Inventory Level

Replenishment Cycles

Pull Approach

Operations + Sourcing Capabilities

Isolate Variability (Forecast & Lead-time)

Lead Time

Variability

Lot Sizes

Cost Trade-Offs

Linkage to Pull (customer orders, replenishment triggers, inventory zones)
Moving Forward – The Future...Strategy

Push

Pull

Replenishment based on forecasts

Replenishment based on actual consumer demand

Inventory levels

Time

Order Lead Time

Production Lead Time

Transport Lead Time

Traditional Inventory levels

Pull Inventory Levels

Inventory levels
Moving Forward – The Future…Outcome

Customer Service Policy

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- Replenishment Cycles
- Pull Approach

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Cost Trade-Offs

Trade-Offs
What Can You Do Right Now?

High Hanging Fruit

Low Hanging Fruit
Look: at what others have done (outside your four walls)

Ask: what adds value to our supply chain – or only cost to what we do?

“Supply chain vs. supply chain”

What should you be doing now?
White Papers

- Receive a copy:
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Q & A
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Thank You!

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