Innovations in Manufacturing Supply Chain

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New Customer Expectations

- Visibility
- Responsiveness
- Customizations
- Selection
- Value Added Services
- Socialize
Manufacturer & Wholesale Distribution Challenges

- Supply Chain Complexity
- Volatile Energy Costs
- Growing Demand Volatility
- Commodity Volatility
- Geo-Political Uncertainty
- Increased Supply Chain Risk
- Escalating Expectations
- Accelerated Innovation
- Personalize Everything
### Required Transformations in Manufacturing & Distribution

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to market strategies to customers “In-Mass”</td>
<td>Customer centric strategies supported by tailored product offerings and programs</td>
</tr>
<tr>
<td>A “one size fits all” supply chain model</td>
<td>Multiple supply chain models to profitably service diverse business segments</td>
</tr>
<tr>
<td>Independent departmental plans that leverage regional networks only</td>
<td>Integrated plans optimized across a global network</td>
</tr>
<tr>
<td>Periodic planning processes that are disconnected from daily execution</td>
<td>Agile business processes that connect planning to execution</td>
</tr>
</tbody>
</table>
Key Success Factors

- Embrace Customer Centricity
- Differentiate Service Through Segmented Supply Chains
- Design for Business Agility
- Drive End-to-End Synchronization
- Leverage Advanced Optimization
Manufacturing Organizations are Silo’ed andDisconnected from their Retailers

Cross functional team data not formally integrated into corporate supply chain planning

Corporate planners still rely on shipment/order history as primary input to demand plan

POS is shared but is insufficient in isolation to drive a shift to a Demand Driven Supply Chain
JDA’s Shelf-Connected Solution is Driving Significant Benefit

Manufacturing
Supply Chain

S&OP

Retail
Supply Chain

Network, Sourcing and Inventory Optimization

Order Promising & Transportation

Store Driven Plans & VMI Orders

Local Assortments

JDA Supply Chain Enterprise Foundation

JDA DSR Enterprise Foundation

Procurement Orders

Production Orders

Shipments

Customer Orders

DC Withdrawals

PQ Sales

Assortments

Raw Material Planning

Production Planning & Scheduling

Replenishment Planning

Demand Planning

Collaborative Planning

JDA DSR Enterprise Foundation

Collaborative Planning

Promotional Planning

Store Forecasting

Planogram Management

Assortment Management

Predictive Shelf Analytics

Network, Sourcing and Inventory Optimization

Order Promising & Transportation

Shipments

Customer Orders

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Store Forecasting

Planogram Management

Assortment Management

Predictive Shelf Analytics

Supplier

Factory

Manufacturer DC

Retail DC

Store

Point of Sale

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Managing to the Granularity of the Shelf

- Scalability & Intelligent automation
- Varying forecasting models with empirical adjustments
- Exception management at aggregate levels
- Flexible hierarchy and attribute group aggregations and disaggregations for demand synchronization
- Single demand repository for all analytics and planning
Developing Demand Driven Local Assortments

- Demand Forecast

Cluster Assortment Recommendations

Planogram Assortment & Space Recommendations

Planograms Updated

Shelf Quantities by Store to Fulfillment

- Forecasts by product/store
- Store clusters based on consumer preference for product
- Demand driven assortment recommendations by cluster
- Planogram ranges optimized to future demand
- Shelf quantities by time-period/product/store available for fulfillment planning
Accurate, Time-Phased, Multi-Echelon Replenishment Plans Driven from the Shelf

The Drivers of an Accurate Shelf-Driven Plan

- Store order forecasts (demand)
- Direct shipment forecasts (web, catalogue)
- DC inventories
- Receipt schedules
- Replenishment strategies
- DC capacity constraints
- Transportation constraints
- Flow strategies
- POS
- Store forecasts
- Store inventories
- Shelf requirements
- Promotional lifts
- Promotional shelf requirements
- Delivery schedules to the store
- Replenishment strategies

Eliminates the Bullwhip Effect

Provides The Foundation for:

- Cross-enterprise cost efficiencies and cycle time reductions
- Significant reductions of total network inventories
- Effective joint top line growth and market share gains
- The move toward joint supply chain P&L’s
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Key direction
One Physical Supply Chain with Multiple Virtual Supply Chains tied to different ways of servicing the Customer

If we can match the need of a differentiated customer in supply chain to a given product at a given time, tremendous value can be realized.
Differentiated Supply Chain

Example: Industrial Customer

*Makes complex, configurable products sold through a dealer channel*

**Strategies**

- **MTS**, 3-4 pre-configured packages
- **MTO**, 20 pre-configured packages with limited changes
- **MTO**, ala-carte configuration
- **ETO**, ala-carte configuration with engineering changes

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**Customer Value Proposition**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Lead Time (LT)</th>
<th>Price (P)</th>
<th>Options (O)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTS, 3-4 pre-configured packages</td>
<td>2 weeks</td>
<td>$</td>
<td>★</td>
</tr>
<tr>
<td>MTO, 20 pre-configured packages</td>
<td>10 weeks</td>
<td>$$</td>
<td>★★</td>
</tr>
<tr>
<td>MTO, ala-carte configuration</td>
<td>16 weeks</td>
<td>$$</td>
<td>★★★</td>
</tr>
<tr>
<td>ETO, ala-carte configuration</td>
<td>As quoted</td>
<td>$$$$</td>
<td>★★★★</td>
</tr>
</tbody>
</table>
Design Appropriate Fulfillment Strategies

- One size fit all inventory policy

- Different products/SKUs require segmented approach to inventory policy

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### Safety Stock Weeks

<table>
<thead>
<tr>
<th>Demand Volatility</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>115</td>
<td>90</td>
<td>57</td>
<td>262</td>
</tr>
<tr>
<td>Medium</td>
<td>24</td>
<td>61</td>
<td>191</td>
<td>276</td>
</tr>
<tr>
<td>High</td>
<td>62</td>
<td>38</td>
<td>330</td>
<td>430</td>
</tr>
<tr>
<td>Grand Total</td>
<td>201</td>
<td>189</td>
<td>578</td>
<td>968</td>
</tr>
</tbody>
</table>

- **Built To Stock / Forecast**
- **Margin based Risk / Reward Analysis**

- **Pull – Replenish to DC**
Path to “Optimize” Inventory

Original Inventory Service Level Graph

As-Is Inv Lvl

To-Be Inv Lvl

Current Svc Lvl

Future Svc Lvl

Inventory Level

Service Level

Achieved via PDCA

Improvements achieved via segmentation strategy

Improvements achieved via supply chain strategy (e.g. postponement)

Improvements achieved via algorithmic calculations

To
Be
Inv Lvl

Achieved via PDCA

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Business benefits tied to segmented SCM

**Business Objectives**

- Meet contractual obligations
  - Lead Time & Forecast for Direct customers

- Offer differentiated lead time
  - Different lead times for segments

- Provide stability in commits
  - Segment based commits

- Manage Fin targets: Inventory
  - Commit to the Right Inventory for different segments

- Synchronize operations
  - Less expedites & escalation

- Scalability & Efficiency
  - Planner productivity/efficiency w/ Growth System scalability

**Key Benefits**

- Improved customer service by considering segment objectives

- Improved delivery performance to customer request dates by appropriate response buffer for different segments

- Lower obsolete/unused inventory by generating granular forecast; enabling postponement strategy

- Better contingency planning on capacity and inventory by What-if scenario analysis at the level of different segments
Key Success Factors

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- Differentiate Service Through Segmented Supply Chains
- Drive End-to-End Synchronization
- Design for Business Agility
- Leverage Advanced Optimization
Planning to Execution

1. Plan what you want to sell
   - 1. Long Range Demand Plan
   - 2. SC Network
   - 3. Micro-Segments
   - 4. Long Range Demand Plan
   - 5. Forecast

2. Build to support the plan
   - 6. SKU level Inventory Targets
   - 7. Forecast
   - 8. Unconstrained Planned Arrivals
   - 9. Work In Progress Plans

3. Promise what you can build and deliver
   - 10. Constrained Planned Arrivals
   - 11. Production Orders
   - 12. Available-to-Promise Allocation

4. Deliver on promises and achieve the plan
   - 13. Allocated Available-to-Promise
   - 14. Demand Review
   - 15. Supply Review
   - 16. Supply Review
   - 17. Order Promises
   - 18. Orders
   - 19. Recommended Shipments
   - 20. Factory Schedule

Key Milestones:
- Executive S&OP
- Operational S&OP
- Distribution Requirements Planning
- Deployment Planning
- Master Production Planning
- Factory Planning & Scheduling

Timeframes:
- Years
- Quarters
- Months
- Weeks
- Days
- Shifts
- Hours

Roles:
- Demand, Demand Class, Collaborate, Supply Chain Strategist
- Long Range Demand Planning
- Strategic Network Design
- Portfolio Segmentation
- Strategic Inventory Planning
- Tactical Inventory Planning
- Portfolio Segmentation
- Operational S&OP
- Master Planning, PSO, Supply Chain Planner, SA
- Factory Planner, Sequencing, Order Sequencing & Slotting
- Order Promiser

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Already over 30 solutions on the platform

- JDA Business Analysis
- JDA Fulfillment
- JDA CIS
- JDA Master Planning
- JDA Collaborate
- JDA Executive S&OP Workbench
- JDA Factory Planner
- JDA Demand Decomposition
- JDA Transportation Suite
- JDA Order Optimization
- JDA Production & Sourcing Optimization
- JDA Promotions Management
- JDA Demand
- JDA Inventory Optimization
- JDA Collaborative Shelf Planning & Analytics
- JDA Dynamic Allocation
- JDA Monitor
- JDA Markdown Optimization
- JDA Promotions Optimization
- JDA Market Manager
- JDA Manufacturing ABPP
- JDA Reporting
- JDA Strategic Pricing
- JDA Supply Chain Planner
- JDA Travel Price Optimization

1. Unified Platform
2. New User Experience
3. Embedded Analytics
4. Real-Time Collaboration
5. Superior Scalability
6. Innate Flexibility
7. JDA Cloud Deployment
8. Gallery Eight
Building an Agile Supply Chain

• **Connected**
  • Break down inter-department / inter-BU barriers
  • Connected – planning to execution

• **Forward Visibility**
  • Anticipating exceptions in the supply chain
  • Scenario planning
  • Managing risks

• **Reacting to Exceptions / Events**
  • Optimization engines supporting different model needs
  • Supply chain risk analysis
Planning + Optimization + Analytics

One Platform

30+ Solutions

In the Cloud
Innovations in Manufacturing Supply Chain

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