

# Supply Chain Management Overview

February 2018

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# Agenda

- Introduction
- Supply Chain is Transformative
- End-to-end Supply Chain
- Supply Chain Elements
- Keys to Success
- Optimization Initiatives
- Steps to Transform your Supply Chain
- Competitive Advantage of High-performing Supply Chains

# Supply Chain Management – Now

- ❑ **Supply Chain Management is a dynamic field, rapidly changing and incorporating cutting edge technology to deliver outstanding Customer Service and Cost benefits to its principals.**
  - Varying levels of automation is employed from physical manual processes to Robotics and Drones
- ❑ **Historically, changes and advances are based on business requirements and Supply Chain functions are performed by departments:**
  - within companies,
  - or outsourced to Companies specializing in providing Supply Chain services



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# Supply Chain is Transformative

## Touches all aspects of business:

Because of this, its impact and contribution to overall enterprise performance is well documented

### Strategy

Corporate strategy dictates the structure and features of the Supply Chain operation

### Product Development

Involved in every step of product development and delivery, whether it is a service or physical item

### Manufacturing

Coordination of raw materials, suppliers, factory and production scheduling, quality management, transportation and positioning of equipment and inventory

### Sales / Marketing

S&OP, Demand-Supply balancing, forecasting, demand planning

### Operations

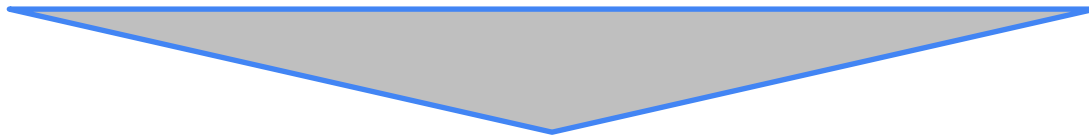
Inbound logistics, Warehousing & DC operations, inventory management, forward logistics, reverse logistics

### Enterprise

In large corporations, there is a large internal customer base that depends on the Supply Chain for institutional supplies and services

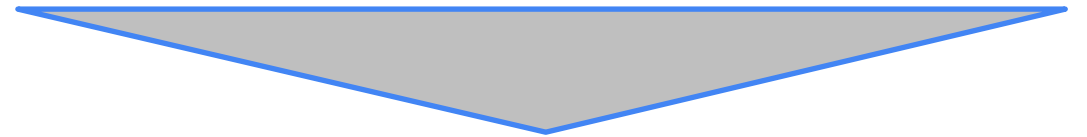
# Supply Chain Establishes New Revenue Streams

## Companion product ecosystems drive sales



In today's consumer environment, companion products enhance the value of the Supply Chain with increased revenue opportunities. Companies like Apple (Beats) and Samsung (Harman-JBL), are examples.

## Reverse Logistics & Sustainability elements supports progressive advances



In the last decade or so, Reverse Logistics, Sustainability, after-market and secondary market operations have become increasingly important for the obvious reasons: cost, environment, etc.

# Supply Chain provides both quantitative and qualitative value drivers

## Quantitative (\$)

- ❑ **Fixed costs** - Several fixed cost items are standard in the typical supply chain.
  - Working capital (e.g. WIP, finished goods)- Inventory on hand.
  - Inventory turns (velocity/efficiency) – Lean 6sig / JIT- Supply Chain velocity, centralized vs distributed.
- ❑ **Transactional costs** – includes costs incurred throughout the lifecycle of the product.
  - Transportation costs- Transportation Costs can be significant based on product type and distribution network, along with desired service levels. Inbound, outbound and reverse are all relevant.
  - Processing costs (pick/pack/ship)- DC related costs vary widely based on suite of services as well as DC capabilities (automation, scale, technology, etc.)

## Qualitative

- ❑ **Customer service** – The majority of Supply Chains today are demand driven, making responsiveness, visibility, and efficiency key metrics.
- ❑ **Business flexibility** – Customer requirements drive Supply Chain structure and processes. In today's dynamic and rapidly changing market conditions, supply chain flexibility is key.

The tangible benefits of an efficient Supply Chain is largely based on its ability to provide product/service when and where it is needed and at the lowest overall cost (TCO model).

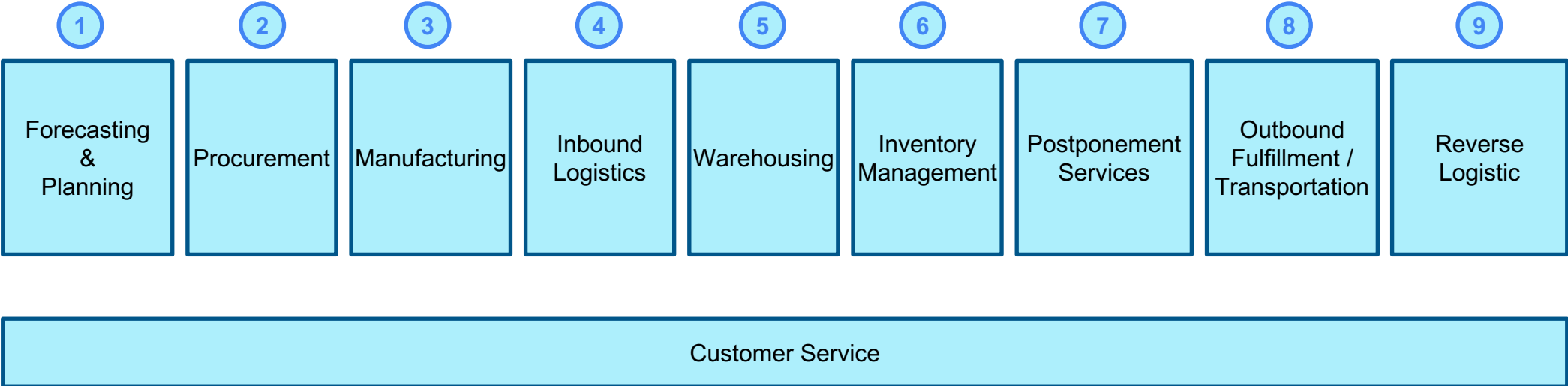
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# Linear End-To-End Supply Chain

**From Forecasting & Planning to Customer Service, Supply Chain impacts different areas of the business**



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# Supply Chain Elements

## Key elements for a successful Supply Chain

### Collaboration

Leverages resources even outside the company and provides benefits to partners

- Supplier Collaboration
- Supply Chain Optimization
- Customer Relationship Management
- S&OP
- Omni-Channel Marketing
- Store-in Store

### Systems

Provide speed, efficiency and facilitate process optimization

- ERP Systems
- Planning
- Procurement
- Scheduling
- Warehouse Management Systems (WMS)
- Transportation Management Systems (TMS)
- Retail Management Systems

### Innovation

Looking ahead and leveraging technology to maximize, savings, and performance

- Serialization
- Robotics
- GPS
- Drones
- Tracking .

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# Keys to Success

## Partnership Visibility Analysis

- Collaborative model
- Clearly defined RACI
- Clearly defined metrics
- Consensus forecasts & plans

## Innovation & Flexibility

- Present information and insights, not just data
- Build agility
- Think end-to-end
- Employ the right talent & recruit carefully

## Competitive Advantage Solutions

- Alignment with strategy
- Build sustainable results
- Change management
- Use appropriate technology
- Build partnerships

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## Optimization Initiatives

**Demand  
Optimization**

Baseline and improve forecasting

**Inventory  
Optimization**

Establish and institutionalize inventory policies & processes

**Supply Optimization**

Measure, manage and improve supplier performance

**Retail Optimization**

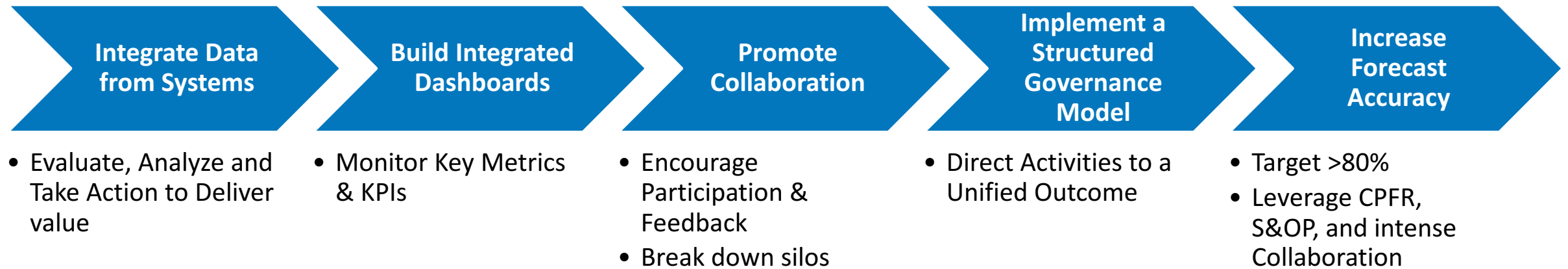
The right amount of inventory in the right place at the right time

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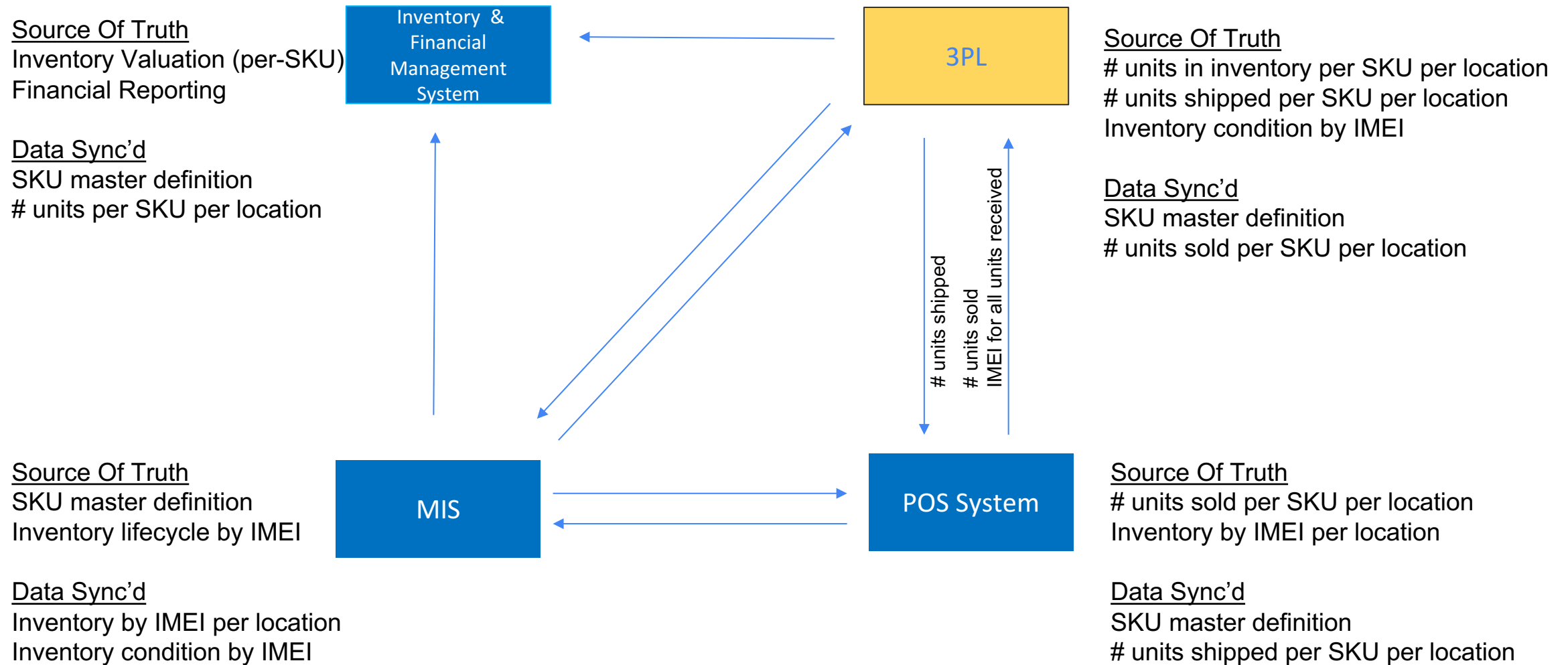
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# Steps to Transform your Supply Chain



# Transaction Visibility and Accurate Reporting are necessary- Data and System Reconciliation are required.



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## Competitive Advantage of High-performing Supply Chains

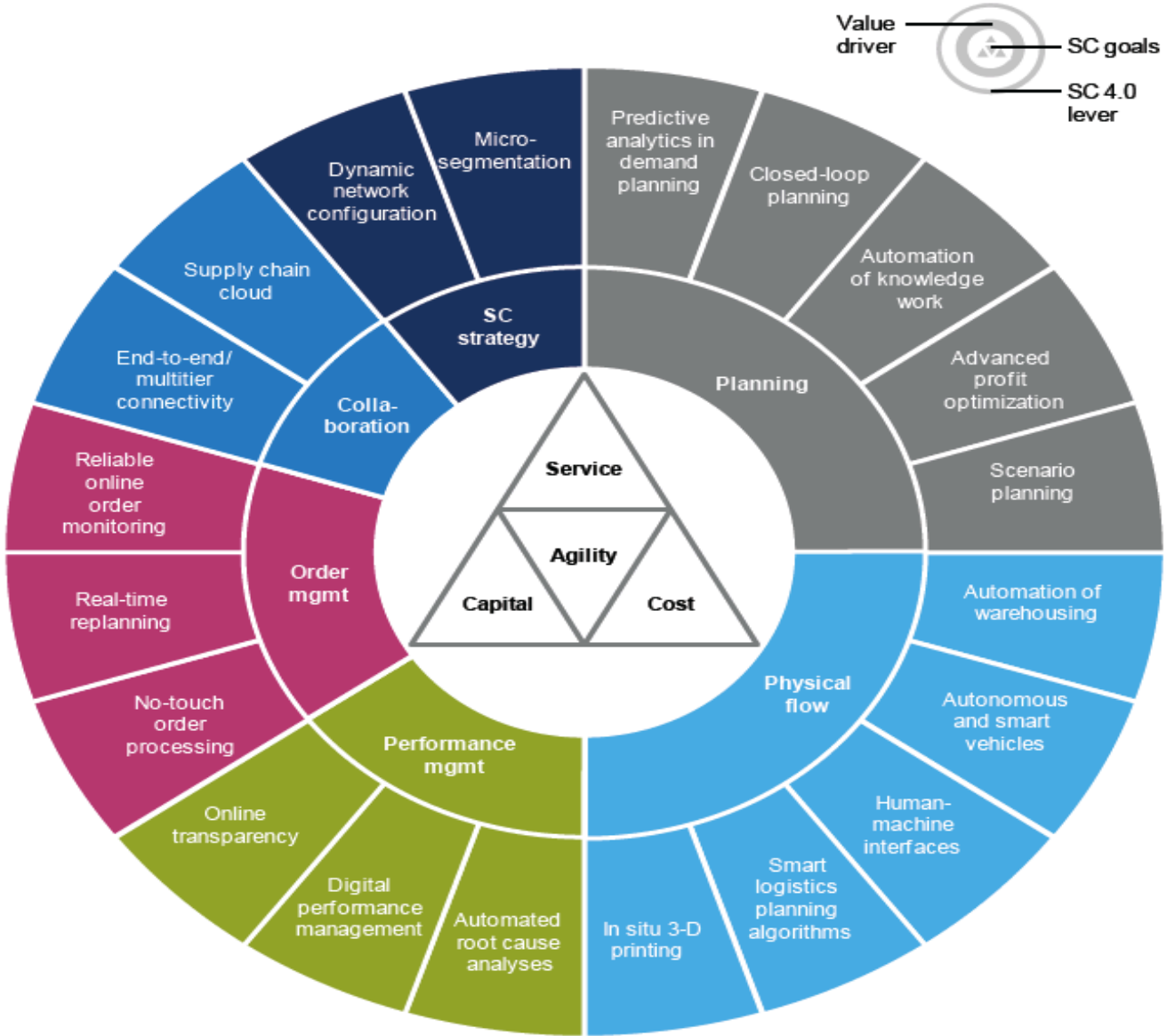
**Best-in-class supply chains enable enterprises to outperform their peers**

**High performing Supply chain provide a competitive advantage to the business by consistently delivering high-quality, low-cost, timely service to customers.**

# Appendix

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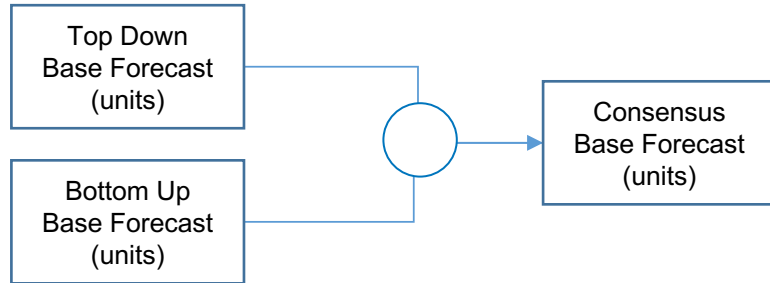
# A High-level view of Supply Chain structure



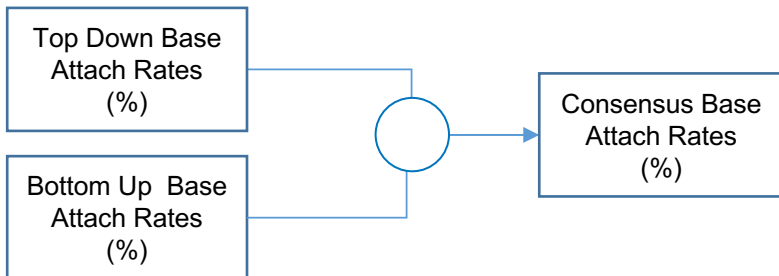
Source: McKinsey

# Consensus Forecast

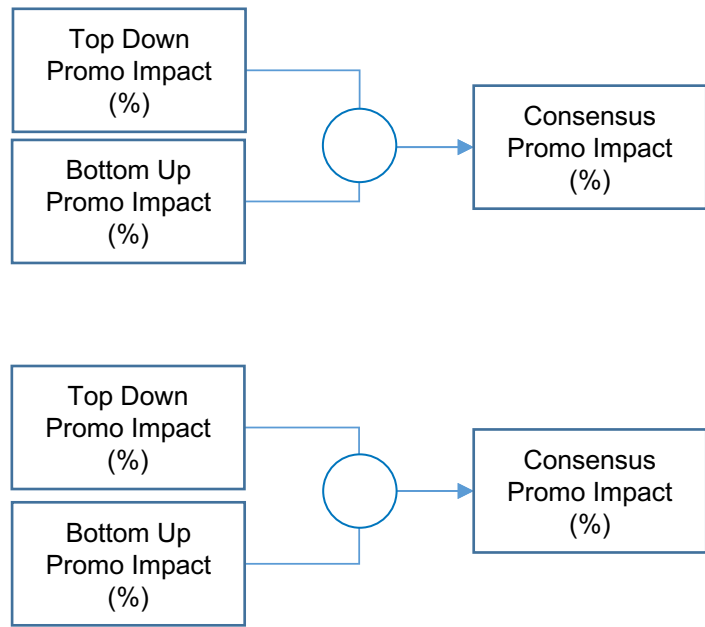
## Devices



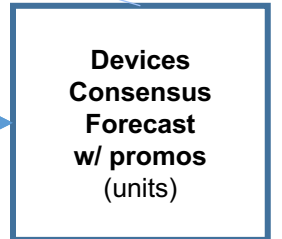
## Accessories



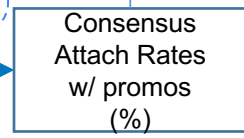
Ad-Hoc Promotions



$$\begin{matrix} \text{Base Forecast (units)} \\ \times \\ \text{Promo Impact (\%)} \end{matrix}$$



$$\begin{matrix} \text{Consensus Attach Rates (\%)} \\ \times \\ \text{Consensus Device Forecast (units)} \end{matrix}$$



# Centralization can improve service levels to maximize value.

## Centralizing the planning function with inputs from S&OP:

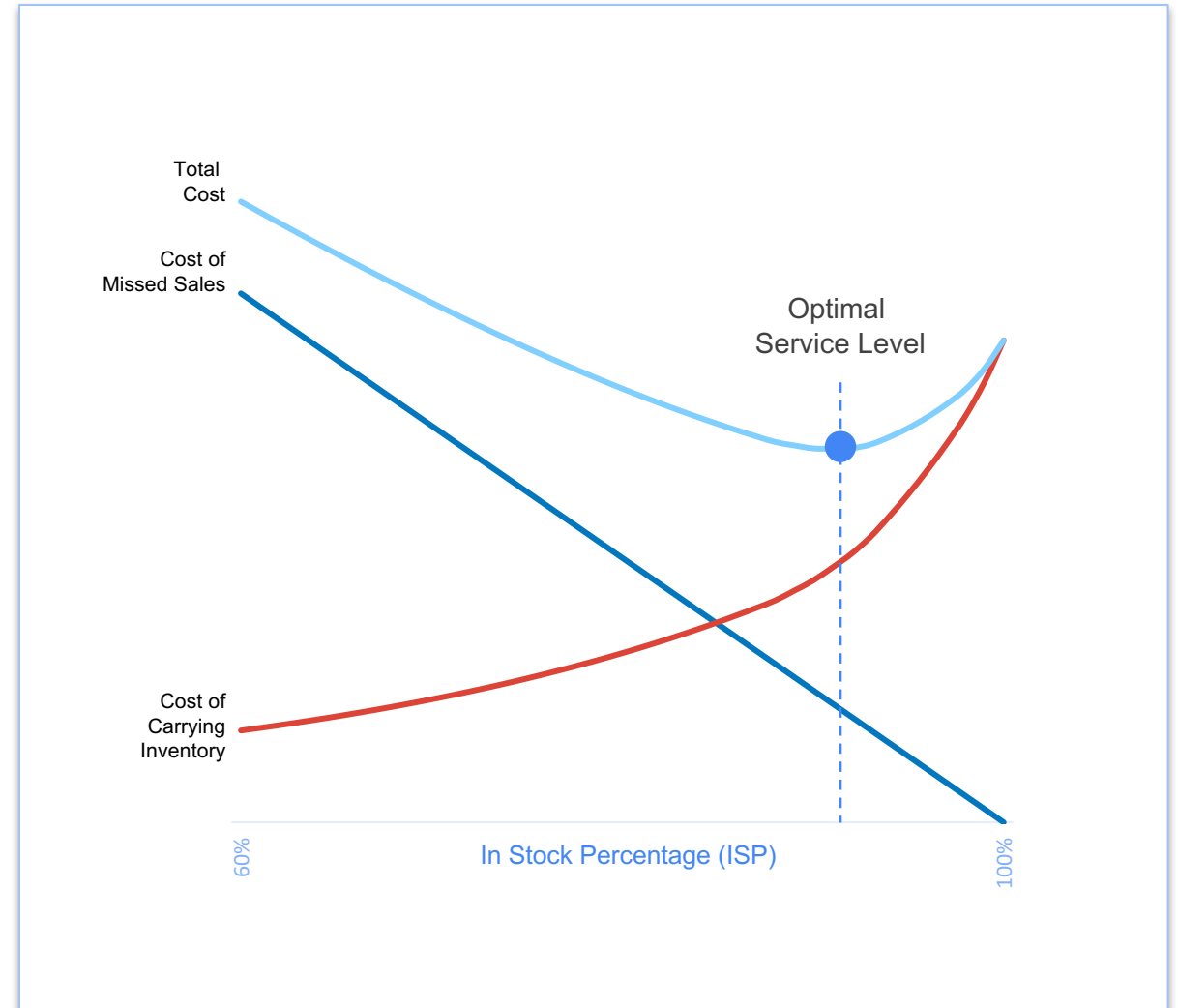
- Product Marketing
- Retail
- Finance
- Supply Chain

## Service level decisions are made based on the Total Cost of Ownership and Value to Company, considering:

- Cost of Missed Sales
  - Modesto Service Margin
  - Modesto Device Margin
  - Modesto Accessories Margin
  - Reduced Comcast Churn
- Cost to Serve
  - Cost of Capital
  - Excess & Obsolescence
  - Handling
  - Shrink (Leak, Loss)
  - Transportation costs

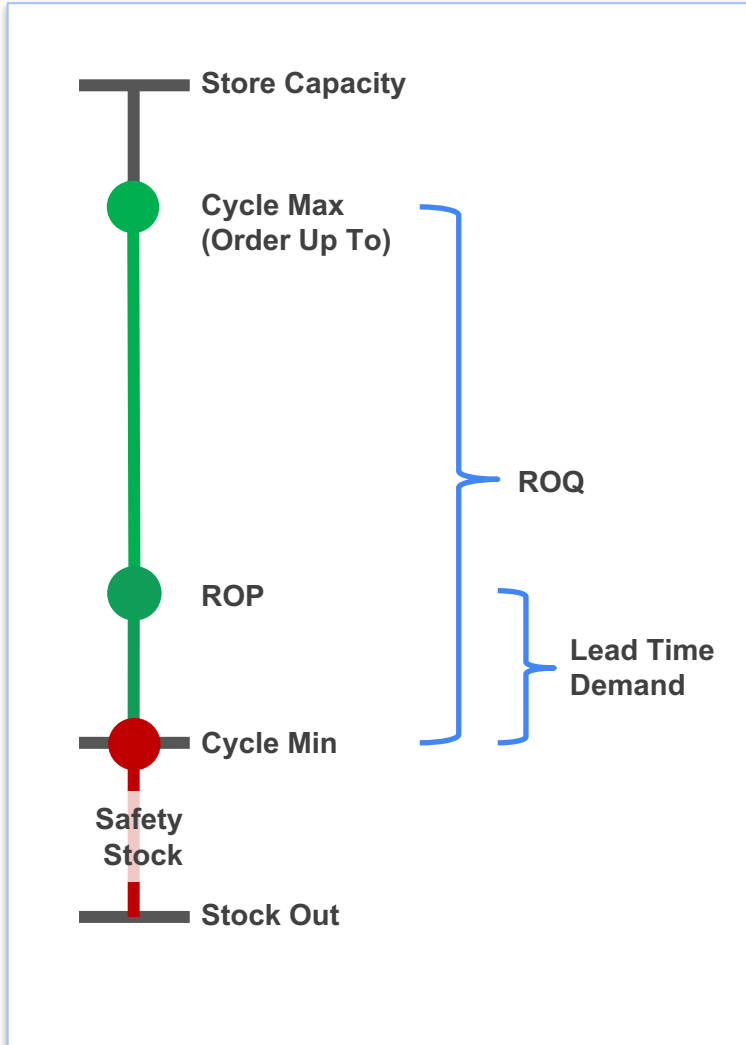
## Inventory Levels are determined by:

- ISP
- Forecast Error
- Distribution Network Lead Times





# A look at Replenishment Logic



|                  |   |
|------------------|---|
| <b>CYCLE MAX</b> | <ul style="list-style-type: none"> <li>Variable based on             <ul style="list-style-type: none"> <li>ROQ (Derived by an Independent series of variables – see below)</li> <li>Safety Stock / Min</li> </ul> </li> <li>Represents the maximum allowable on hand inventory level (for prescribed period)</li> <li>This quantity will never be less than the Min + ROQ</li> <li>This quantity will never be greater than total store capacity</li> </ul>  |
| <b>CYCLE MIN</b> | <ul style="list-style-type: none"> <li>Variable based on             <ul style="list-style-type: none"> <li>Calculated Safety Stock (Based on service level, lead time, forecast confidence)</li> </ul> </li> <li>Considerations will also be made for secondary non-calculable variables             <ul style="list-style-type: none"> <li>Minimum desired stock, NPI, Model Change (supersession)</li> <li>Perceived risk based on store performance, labor issues, etc...</li> </ul> </li> </ul>            |
| <b>ROQ</b>       | <ul style="list-style-type: none"> <li>Variable based on             <ul style="list-style-type: none"> <li>Forecasted Demand</li> <li>Lead Time Demand</li> <li>EOQ (Economic Order Quantity)</li> <li>SMOQ (Store Minimum Order Quantity)</li> </ul> </li> <li>Store Operational Capacity Constraints             <ul style="list-style-type: none"> <li>Store Inventory Capacity</li> <li>Configuration / Pack Quantities</li> <li>Ship Days per week (frequency of store order wave)</li> </ul> </li> </ul> |
| <b>ROP</b>       | <ul style="list-style-type: none"> <li>Point at which order is triggered</li> <li>This value will never be less than the Min quantity</li> </ul>  |