SupplyVelocity

Supply-Chain Council

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Supply Chain Operations Reference Model

Overview

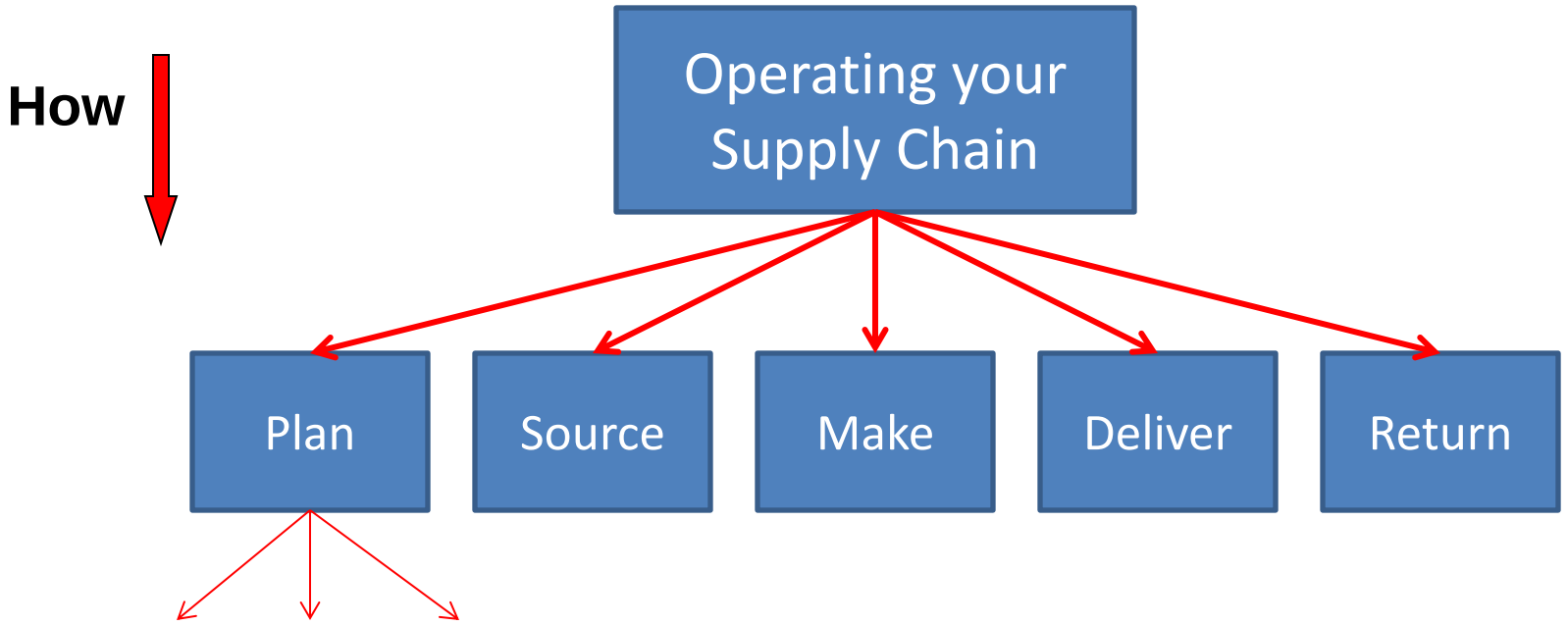
By

SupplyVelocity

What is an Operations Reference?

- A Process Model
  - How you operate your supply chain
  - SCOR standards
  - Improving your processes
- A Measurement Model
  - Five elements of supply chain excellence
  - Nine to ten high level performance measures
  - Hundreds of “sub” and “sub-sub” measures

Level 1 Process Model



Plan

- Processes that balance aggregate demand and supply to develop a course of action that best meets sourcing, production and delivery requirements
  - Level 2:
    - Balance resources with requirements
      - Determine customer requirements
      - Define Resources
        - » people, money, equipment, facilities, systems, etcetera
    - Manage regulatory risk

Source

- Processes that procure goods or services to meet planned or actual demand
  - Level 2:
    - Supplier selection
    - Purchase – receive – verify – authorize payment
    - Assess supplier performance
    - Manage the supply network (suppliers' suppliers)
    - Manage supplier risk
      - Single source, country-risk, currency hedging
    - Manage import / export requirements

Make

- Processes that transform products to a finished good to meet planned or actual demand
  - Level 2:
    - Engineering / design
    - Production
      - Waste disposal
    - Testing
    - Packaging

Deliver

- Processes that provide finished goods and services; typically including order, transportation and distribution management
  - Level 2:
    - Manage warehouse
      - Receive – pick – pack – ship
    - Route shipments
    - Select carriers
    - Installation
    - Invoice customer

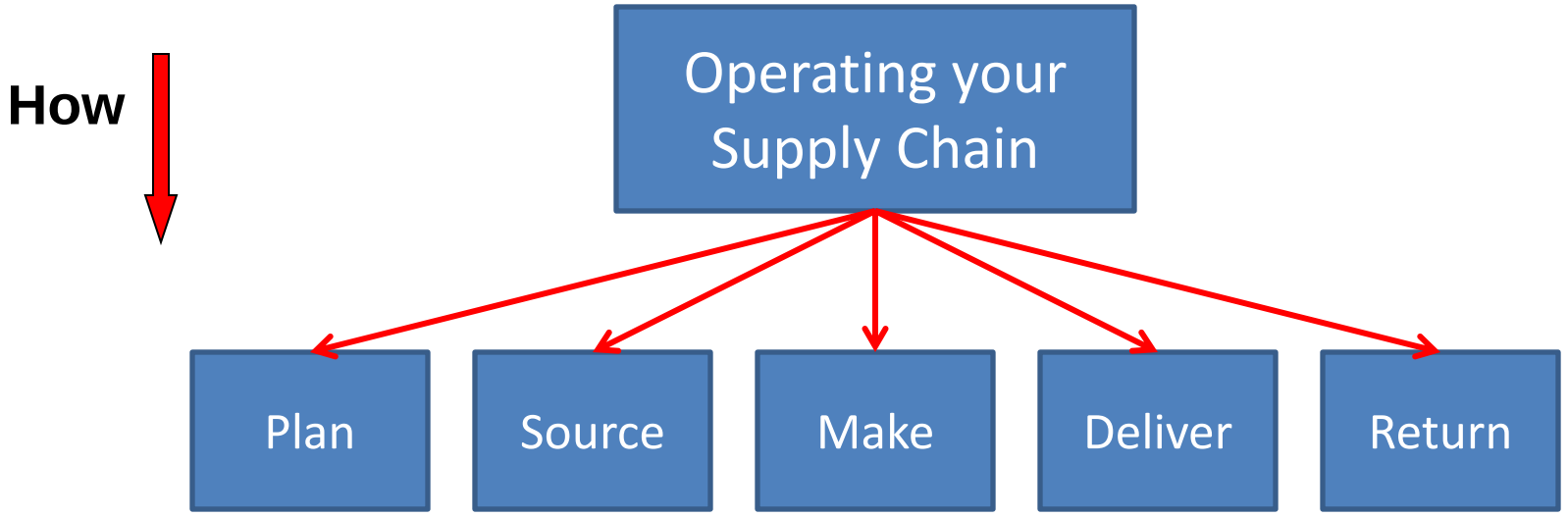
Return

- Processes associated with returning, or receiving returned products, for any reason; typically including post delivery customer support
  - Level 2:
    - Defective product to suppliers
    - Defective product from customers
    - Products sent to suppliers for maintenance, repair or overhaul
    - Products sent from customer for maintenance, repair or overhaul

Process Decomposition

- Getting to Level 3
- Use the Analytical Hierarchy Process (Saaty, 1990)
- Also called Service Flow Structure
- Same process often used for creating a Strategy Map

Level 3: Process Flow Mapping



Measurement Model

Supply Chain Excellence

- Customer Facing (Voice of the Customer)
  - Reliable
  - Responsive
  - Agile
- Internally Facing (Voice of the Business)
  - Low cost
  - Efficient asset management

Perfect Order Fulfillment

POF = (Total number of perfect orders) / (Total number of orders)

- Perfect =
  - Correct item
  - Quantities match the order
  - Delivery meets committed date
  - Documentation is accurate and complete
  - Product is not damaged and performs per specifications

Order Fulfillment Cycle Time

OFCT = (Actual Cycle Time for all orders) /
(Total number of orders)

- Includes (if applicable) =
  - Source cycle time
  - Make cycle time
  - Delivery cycle time

Upside Supply Chain Flexibility

The number of days required to achieve an unplanned, sustainable 20% increase in quantities delivered.

- Includes (if applicable) =
  - Source
  - Make
  - Deliver
  - Source return
  - Deliver return

Upside Supply Chain Adaptability

The maximum percentage increase in quantity delivered that can be achieved within 30 days.

- Includes (if applicable) =
  - Source
  - Make
  - Deliver
  - Source return
  - Deliver return

Downside Supply Chain Adaptability

The reduction in quantities ordered at 30 days prior to deliver that can be achieved with no inventory or cost penalties.

- Includes (if applicable) =
  - Source
  - Make
  - Deliver

Total Supply Chain Management Costs

TSCMC = Sales – Profit – SG&A

- Includes (if applicable), Cost to =
  - Plan
  - Source
  - Make
  - Deliver
  - Return
  - Mitigate risk

  SG&A = sales, general and administrative

Cash to Cash Cycle Time

C2CCT = Inventory days of supply + Days sales outstanding – Days payable outstanding

The time for an investment made in raw materials to flow back into the organization.

Cash to Cash Cycle Time

- Inventory days of supply = (Average value of inventory) / (Annual cost of goods sold) / 365
- Days sales outstanding = (Average accounts receivable) / (Total annual sales) / 365
- Days payable outstanding = (Average accounts payable) / (Total annual material purchases) / 365

Return on Supply Chain Fixed Assets

RSCFA = (Supply chain revenue – Cost of goods sold – Supply chain management costs) / Fixed Assets

The return an organization receives on its invested capital in fixed assets.

Note: Supply chain revenue is used instead of revenue as their may be other sources of revenue besides the supply chain.

Return on Working Capital

RWC = (Supply chain revenue – Cost of goods sold – Supply chain management costs) / (Inventory + Accounts receivable – Accounts payable)

RWC assesses the magnitude of investment relative to the organization's working capital position versus revenue generated from the supply chain.

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