Supply Chain Overview
ITA 2007

Mike Skorija
RTI International Metals, Inc.
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Objective

1. To create a synergistic supply chain model in sync with customer demand and operational capabilities.

2. To allow visibility into all segments of the business to drive and measure our performance.

3. To take a complex set of situations and business requirements and break them down into manageable components where actions will receive clear bottom line benefits.
Supply-Chain Operations Reference-model

SCOR is Based on Five Distinct Management Processes
Common SCM objective — achieve “market-winning” fulfillment time with the least inventory risk. *Example*: replenish-to-order Deliver network. Plan Deliver activities are already in place and ready to be executed when Customer Order Signal is received.
Scope of SCOR Processes

- **Demand/Supply Planning and Management**
  - Balance resources with requirements and establish/communicate plans.
  - Management of business rules, supply chain performance, data collection, inventory, capital assets, transportation, planning configuration, and regulatory requirements and compliance.
  - Align the supply chain unit plan with the financial plan.

- **Sourcing Stocked, Make-to-Order, and Engineer-to-Order Product**
  - Schedule deliveries; receive, verify, and transfer product; and authorize supplier payments.
  - Identify and select supply sources when not predetermined, as for engineer-to-order product.
  - Manage business rules, assess supplier performance, and maintain data.
  - Manage inventory, capital assets, incoming product, supplier network, import/export requirements, and supplier agreements.

- **Make-to-Stock, Make-to-Order, and Engineer-to-Order Production Execution**
  - Schedule production activities, issue product, produce and test, package, stage product, and release product to deliver.
  - Finalize engineering for engineer-to-order product.
  - Manage rules, performance, data, in-process products (WIP), equipment and facilities, transportation, production network, and regulatory compliance for production.

- **Order, Warehouse, Transportation, and Installation Management for Stocked, Make-to-Order, and Engineer-to-Order Product**
  - All order management steps from processing customer inquiries and quotes to routing shipments and selecting carriers.
  - Warehouse management from receiving and picking product to load and ship product.
  - Receive and verify product at customer site and install, if necessary.
  - Invoicing customer.
  - Manage Deliver business rules, performance, information, finished product inventories, capital assets, transportation, product life cycle, and import/export requirements.

- **Return of Raw Materials and Receipt of Returns of Finished Goods**
Measuring Supply Chain performance

- Customer Service:
  - Finished Goods Stock Turn
  - Customer complaints
  - Customer OTIF
  - Lead-time

- Business processes:
  - Supply chain costs
  - Forecast accuracy
  - New product introduction time
  - Activity based costing allocation
  - Cash to cash cycle time

- Supplier performance:
  - Supplier OTIF
  - Raw material stock turn
  - Supplier Cpk
  - Supplier lead-time

- Asset effectiveness:
  - Process capability (Cpk)
  - OEE (continuous/batch)
  - Value added productivity
  - Grade change times
## Key Supply Chain metrics

<table>
<thead>
<tr>
<th>Customer Service</th>
<th>Finished Goods Stock Turn</th>
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<td>Customer complaints</td>
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Example: Total Inventory vs. Total Output
Example: Stock Turns

INVENTORY TURNS

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<tr>
<td>Turns</td>
<td>2.87</td>
<td>2.79</td>
<td>2.91</td>
<td>3.23</td>
<td>3.39</td>
<td>4.13</td>
<td>3.99</td>
<td>3.41</td>
<td>3.37</td>
<td>3.85</td>
<td>4.45</td>
<td>4.78</td>
<td>4.61</td>
<td>5.09</td>
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Example: Lead Times - 2004

MAJOR PRODUCT LEAD TIMES 2004

- SCBA
- Linear (SCBA)
- MULTIGAS
- Linear (MULTIGAS)
- SINGLE GAS
- Linear (SINGLE GAS)
Summary:

- Focus on understanding the key drivers in your business and define your PLAN.
- Understand your material requirements and the types of suppliers necessary to SOURCE your materials.
- Develop discipline in scheduling your production cycle so that the MAKE portion is in line with the PLAN and SOURCE activities.
- Communicate your delivery commitments based on your capacity and throughput.
- But for the most part:
  - Measure
  - Measure
  - Measure
“If we change the way we look at things, the things we look at will change”.

Sir Winston Churchill
Questions?
Thank you for your time and support