Value and Supply Chain Management
- Namibia University of Science & Technology-

06.08.2019, Marc Stumpf
Introduction

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Senior Process Implementation Manager

Background

- 03/2015: Master degree in industrial engineering (major: supply chain management)
- 07/2015 – 08/2017: Management Start Up Trainee in Global Supply Chain Management at Roche Diagnostics
- 09/2017 – 10/2018: Global Planner and Project Manager
- Since 11/2018: Senior Process Implementation Manager

Experience

- 2013: Intern for project leader BMW i8 (Germany)
- 2014: Intern in supply chain planning BMW x-series (USA)
- Since 2015: Project manager for international supply chain projects with increasing responsibility
  Focus: Change and launch projects for product portfolios
Introduction

Project Management

Supply Chain

Project Management in Supply Chain
Lecture Goal
You will get a basic understanding of supply chain management

1. Get a basic understanding of the importance of supply chain management
2. Identify and describe the main elements/roles of a supply chain
Agenda

1. Supply Chain Processes
2. Roles in Supply Chain Management
Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities.

Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers’ requirements.

Supply Chain Planning (SCP) is the forward-looking process of coordinating assets to optimize the delivery of goods, services and information from supplier to customer, balancing supply and demand.

Source: Supply Chain Management, Terms & Glossary, CDCMP – Council of Supply Chain Management Professionals
Supply Chain Overview

Supplier Management / Procurement  Production  Distribution  Wholesaler  Customer

Supply Chain
Supply Chain

Example – Beer Brewery
**Processes**

**Supply Chain Network**

Reasons for Supply Chain Networks:

- **Quality**: Concentration on core competencies
- **Costs**: Not all processes are cost optimal
- **Delivery**: Processes are not fast enough
- **Flexibility**: Balancing of capacities
Processes

Procurement - Marketing

• *Procurement Marketing* is divided into:
  • Preparation: Set framework for design of procurement system (market research)
  • Design: Marketing process during design phase including product categorization, strategic positioning, supplier assessment and selection
  • Continuous: Continuous analysis of supplier market, supplier relationship management
Processes
Procurement - Logistics

• **Procurement Logistics**:  
  • Tasks:  
    • strategic: Design of procurement/supply system  
    • administrative: Execution of physical procurement, monitoring of supply processes until production
Processes

Procurement – Design of supply systems

- **Design of supply systems:**
  - General conditions – Are there any governmental conditions (e.g. laws, regulations)?
  - General principles – How shall the supply process look like?
  - Strategy – What is the desired supply process (e.g. JIT, JIS)
  - Supplier selection – Who can support the desired process?
  - Supplier integration – How can the supplier be integrated?
  - Supplier relationship management – How shall the relationship be maintained (bonus/malus)?
Selection of procurement strategy:

1. Classification of products to be supplied (strategic article, bottleneck articles, lever article, non-critical article)

2. Analysis of procurement market (supplier vs. buyer market)

3. Strategic positioning

4. Action plan
Processes

Procurement - Clustering

- **Lever article**
  - Usage of purchasing power
    - (abundant supply)

- **Strategic article**
  - Long term relationships
    - (scarcity)

- **Non-critical article**
  - Product standardization/
    - procurement efficiency
    - (abundant supply)

- **Bottleneck article**
  - Low control of suppliers
    - (product based scarcity)
Processes

Procurement - Clustering

- Bottleneck article: Global Sourcing
- Strategic article: Single/local sourcing
- Non-critical article: Multiple/global sourcing
- Lever article: Multiple/global sourcing

Supply volume:
- low
- high

Technical complexity/supply risk:
- low
- high
Processes

Procurement – Supplier Relationship Management

A process for providing the structure for how relationships with suppliers will be developed and maintained

• Supplier performance need to be continuously assessed
  • Bonus/Penalty (defined in contract)
  • Measures/actions to be defined with supplier

Carter’s 10 C’s of supplier selection:

1. Competency
2. Capacity
3. Consistency
4. Control of process
5. Cost/Price
6. Commitment to Quality
7. Cash/Finances
8. Clean
9. Culture & Relationships
10. Communication

Source: http://www.raycarter.co.uk/about.php
“Reinheitsgebot” sometimes called the "German Beer Purity Law" in English, is a series of regulations limiting the ingredients in beer to:

- water
- barley
- hops
- yeast
Supply Chain Overview

Supplier Management / Procurement

Production

Distribution

Wholesaler

Customer
Processes

Production

- a process of combining various material inputs and immaterial inputs (plans, know-how) in order to make something for consumption (output)
Just in sequence production:
Processes

Production – Example Brewery
Supply Chain Overview

Supplier Management / Procurement  Production  Distribution  Whole-saler  Customer

Supply Chain
## Processes

### Distribution – Stock types

| Location         | • Central  
|                  | • Decentral  
|                  | • Close to production  
|                  | • Close to customer  
| Size             | • To be determined depending on volume  
|                  | • Future growth  
|                  | • Expandability  
| Products         | • Consistence (Gas, fluid, solid)  
|                  | • Volume  
|                  | • Size  
|                  | • Weight  
| Temperature      | • Ambient  
|                  | • Cool  
|                  | • Frozen  
| Construction     | • Free warehouse  
|                  | • Closed warehouse  
| Operator         | • Internal staff  
|                  | • Warehouse provider  
| Technology       | • Without support devices  
|                  | • With support devices (conveyors, cranes, forklift)  
| Facilities       | • Bay warehouse (e.g. high bay rack, flow rack)  
|                  | • Closet storage  

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[Image of a warehouse]
Processes
Distribution – Inventory management

FIFO (First-In-First-Out)

LIFO (Last-In-First-Out)
Processes

*Distribution – Order processing*

Source: https://www.datexcorp.com/inventory-management-tips-optimizing-your-warehouse/
Processes

Distribution – Pick & Pack

- Pick by list - Printed picking list
- Pick by light - Shelf shows product and quantity
- Pick by voice - Voice direction and speech recognition
- Pick by vision - Picking with data glasses
- Pick by RFID - Recognition with RFID scanner
Processes

Distribution – Example Brewery

- Cooled
- Closed
- With support devices
Processes
Distribution - Handover

- Packed boxes (orders) will be sorted and bundled to one shipment
- Shipment will be loaded and handed over to carrier
- **Shipping documents** record the handover
Processes

Distribution – Transport Planning

Transport planning is defined as planning required in the operation, provision and management of facilities and services for the modes of transport to achieve safer, faster, economical and environment-friendly movement of people and goods.

<table>
<thead>
<tr>
<th>Transport good</th>
<th>• Consistence (Gas, fluid, solid)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Volume</td>
</tr>
<tr>
<td></td>
<td>• Size</td>
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<tr>
<td></td>
<td>• Weight</td>
</tr>
<tr>
<td>Volume/Frequency</td>
<td>• One time shipment</td>
</tr>
<tr>
<td></td>
<td>• Regular shipments</td>
</tr>
<tr>
<td></td>
<td>• Future growth</td>
</tr>
<tr>
<td>Temperature</td>
<td>• Ambient</td>
</tr>
<tr>
<td></td>
<td>• Cool</td>
</tr>
<tr>
<td></td>
<td>• Frozen</td>
</tr>
<tr>
<td>Destination</td>
<td>• National</td>
</tr>
<tr>
<td></td>
<td>• International</td>
</tr>
<tr>
<td>Mode</td>
<td>• Truck</td>
</tr>
<tr>
<td></td>
<td>• Air</td>
</tr>
<tr>
<td></td>
<td>• Sea</td>
</tr>
<tr>
<td>Provider</td>
<td>• Internal</td>
</tr>
<tr>
<td></td>
<td>• External (Service provider)</td>
</tr>
</tbody>
</table>
**Processes**

*Distribution – Shipment Planning*

**Service providers:**

1. **First Party Logistics Service Provider (1PL)** – Own transport (mostly national), no additional service provider
2. **Second Party Logistics Service Provider (2PL)** - Service providers that handle transportation, handling or storage services for other companies
3. **Third Party Logistics Service Provider (3PL)** – Service providers that organize the flow of goods and information for their customers, take care of all their logistics and sometimes offer financial and information services
4. **Fourth Party Logistics Service Provider (4PL)** - System integrators who stand between their customers and other logistics service providers to ensure the coordination and organization of all business processes along the value chain
5. **Fifth Party Logistics Service Provider (5PL)** – Providers that are involved in supply chain management and provide system-specific consulting services and value chain management to their customers
Processes

*Distribution – Shipment Planning*

**Bidding process:**

1. Bid preparation
2. Request for information (RFI)
3. Request for Proposal (RFP)
4. Request for Quote (RFQ)
5. Evaluation
6. Selection and post-bid activities
Processes

Distribution – Shipment Management

- Pick & Pack
- Loading
- Transport
- Customs
- Transport
- Customer

Packing list
Export documents
Customs documents
Customer documents
• **Import** = An import is a good brought across a national border, from an external source

• Party bringing in the good is called an importer

• Country has demand for an import when the price of the good (or service) on the world market is less than the price on the domestic market

• Trade deficit → import is larger than export

Every Country’s BIGGEST IMPORT
Processes

Distribution – Shipment Management

- **Export** = is a good or service produced in one country that is bought by someone in another country
- Seller of such goods and services is an exporter; the foreign buyer is an importer
- Export of goods often requires involvement of customs authorities (responsible for customs law, duties and taxes)
- Tariff is a tax for a specific good or set of goods exported from or imported to a country, creating an economic barrier to trade
- Free Trade Agreements (FTA) is a multinational agreement according to international law to form a free-trade area between the cooperating states.
  - determine the tariffs and duties that countries impose on imports and exports
  - goal of reducing/eliminating trade barriers

Processes

Distribution – Shipment Management

- **Incoterms** = **International Commercial Terms** are a series of pre-defined commercial terms published by the International Chamber of Commerce (ICC) relating to international commercial law.
Processes

**Distribution – Freight Accounting**

- Freight accounting based on volume and transport mode
- Rates are negotiated on an annual basis

<table>
<thead>
<tr>
<th>Mode</th>
<th>Avg. Costs/kg chargeable weight in € (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road freight</td>
<td>€ 0.36</td>
</tr>
<tr>
<td>Sea freight</td>
<td>€ 0.63</td>
</tr>
<tr>
<td>Air freight</td>
<td>€ 3.00</td>
</tr>
<tr>
<td>Courier</td>
<td>€ 4.40</td>
</tr>
</tbody>
</table>
Processes

Distribution – Example Brewery
Supply Chain Overview

- Supplier Management / Procurement
- Production
- Distribution
- Wholesaler
- Customer

Supply Chain
Processes

Distribution – Example Brewery
1. Supply Chain Processes

2. Roles in Supply Chain Management
Role Players

Supplier

- **Role:**
  - provide high-quality products from a manufacturer at a good price to a distributor or retailer for resale

- **Goal:**
  - Long term relationship with customer

- **Interfaces:**
  - Other suppliers
  - Procurement organization
  - Customer
Role Players

Procurement

**Procurement Organization**

- **Role:**
  - obtain goods and services in response to internal needs

- **Goal:**
  - Support organizational requirements, manage procurement and supply process, best possible price, manage relationships with interfaces

- **Interfaces:**
  - Suppliers
  - Internal stakeholders (e.g. manufacturing, logistics)
Role Players

Warehousing

**Warehouse Provider**

- **Role:**
  - logistics provider specialized on integrated operations of warehousing

- **Goal:**
  - Increase efficiency, improve customer service, increase sales, improve relationship

- **Interfaces:**
  - Manufacturing
  - Order Management
  - Forwarder
Role Players

Transportation

Transportation Provider

• **Role:**
  - logistics provider specialized on integrated operations of transportation

• **Goal:**
  - Transportation speed, transportation safety, shipping quality, volume utilization, competitive rate structure

• **Interfaces:**
  - Warehouse
  - Customer
  - Forwarder
Role Players
Ordering

Order Management/Customer Service

- **Role:**
  - face to the customer and responsible to answer customer requests

- **Goal:**
  - Increase customer satisfaction, decrease number of complaints, increase automation rate

- **Interfaces:**
  - Customer
  - Warehouse
  - Forwarder
Role Players

Quality

Logistics Quality

- **Role:**
  - define and facilitate logistics quality standards

- **Goal:**
  - Monitor quality KPI (Key Performance Indicator), resolve case investigation, decrease number of quality issues

- **Interfaces:**
  - Manufacturing/Supplier
  - Warehouse/Forwarder
  - Customer
Doing now what patients need next