ISM 125/225, LECTURE #3 (1/12/10)

Agenda

1. Achieving strategic fit in a SC (creating an SC strategy)
2. Supply chain structure (DRIVERS)
3. HW #1
4. PROJECT
1. Achieving strategic fit in a SC

Procedure:

1. Understand customer needs & the implied demand uncertainty (IDU); Map these needs onto an IDU spectrum (see last lecture's notes)

2. Understand SC strategy (trade-off between responsiveness & efficiency) relative to the firm's competitive strategy. Map the SC strategy onto a responsiveness spectrum (see last lecture's notes)

3. Combine the IDU spectrum with the responsiveness spectrum & create a zone of strategic fit.
3(a) Each company & easy supply chain needs to determine where it lies on the zone of strategic fit.

(b) Expand the scope of strategic fit to include:
(1) all functions with the company (product development, marketing, ...)
& (2) all the stages in the entire supply chain.
STAGES IN A SC

Suppliers  Manf.  Distr.  Retail  Customer

Functions (in the company)

Competitive (strategy)

R&D  Dev (strategy)

Marketing (strategy)

Supply chain (strategy)

1  2  3  4

1) Intracompany, intraoperations scope

Goal: Minimize the cost associated with a specific operation

E.g. Manufacturer might want to minimize transportation cost

Ship individually $5/item

Ship in lot size of 100

$0.25/item
(2) **Intra-company, intra-functional**

**Goal**: minimize costs associated with a function.

In this case, SC function

e.g. Balance transportation costs versus inventory costs

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smaller lot size
⇒ higher transportation cost but lower inventory costs (because of less storage)
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larger lot size
⇒ lower transportation costs but higher inventory costs
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(3) Intracompany, interfunctional scope

Goal: Maximize company profit (as in ISM 105/205)

E.g. Balance level of inventory vs. product availability to the customer

- SC group in general wants low levels of inventory
- Sales & Marketing want high product availability to the customer

(4) Intracompany, interfunctional scope

Goal: Maximize SC profitability (defined in Lecture 1)

Information (tracking, collaborating, etc.) is important to achieving this goal
Designing SC drivers

Competitive strategy

Position of the company in its industry/market landscape

Supply chain strategy

Position of the company in the zone of strategic fit

Efficiency (low cost)

Facilities

Inventory

Transportation

Responsiveness

Information
Facilities

Design of facilities involves
1. Number (how many?)
2. Location (where?)
3. Function (manufacturing, warehouse, ...)
4. Capacity (how big?)

Trade-off is between cost (i.e. #
of facilities, ... ) & responsiveness
(e.g., more facilities, located close to
the customer)

- Efficiency
  (minimize # of facilities)
- Responsiveness
  (maximize # of facilities)
2. Transportation
   Determine
   - what modes of transportation to use (air, water, etc.)
   - routes
   - etc.

Efficiency

\[ \Rightarrow \text{slower modes of transportation} \]

\[ \Rightarrow \text{faster modes} \]

\[ \Rightarrow \text{responsiveness} \]

3. Inventory
   Determine
   - cycle inventory (nominal inventory to meet average customer demand)
   - safety inventory (to meet uncertainties in customer demand)
   - seasonal inventory levels

Efficiency

\[ \Rightarrow \text{low inventory level} \]

\[ \Rightarrow \text{high inventory level} \]

Responsiveness