Sense-and-Respond Manufacturing for Short Product Lifecycle

- Methodologies to Reshape the Supply Chain

Mark Lee, MBA

Centre for the Advancement of e-Commerce Technologies
The Chinese University of Hong Kong
Common Questions

How to manage fashionable products with very short product life cycle
- Small Order Size
- Short Order Lead Time
- Frequent Changes

How to define replenishment strategy for retailing in Mainland China
- OEM/ ODM → OBM
Supply Chain Strategy

- Keeps almost half of its production in-house and outsource half of their production
- Leaves extra capacity in factories vs. maximize their output
- Produces small batches vs. economies of scale
- Strategically manages design, warehousing, distribution and logistics internally
Strict Replenishment Practice

Supply Chain Policy
- Rigid timetable for placing orders and receiving stock
- Put price tags on items before they are shipped
- Tolerates stock-outs

Hong Kong Related Case
- At the end-side of the chain, buyers are asking HK OEM/ODM to provide more value-added service to pick-pack-ship with more varieties
Sense-and-Respond Factory

- Organization
- Operational Procedures
- Performance Measures
- Office Layouts

<table>
<thead>
<tr>
<th>Traditional Supply Chain</th>
<th>Sense-and-Respond Supply Chain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process-centric</td>
<td>Customer-centric</td>
</tr>
<tr>
<td>Sequential</td>
<td>Collaborative</td>
</tr>
<tr>
<td>Functional</td>
<td>Teamwork</td>
</tr>
<tr>
<td>Fixed, inflexible</td>
<td>Agile, flexible</td>
</tr>
<tr>
<td>Low-velocity</td>
<td>High-velocity</td>
</tr>
<tr>
<td>Analog</td>
<td>Digital</td>
</tr>
<tr>
<td>Stand-alone</td>
<td>Internet and Intranet</td>
</tr>
</tbody>
</table>
Single, centralized design and production center and separated by major product lines
- Women’s
- Men’s
- Children’s

Objective
- Information channel is fast, direct, and unencumbered by problems in other channels
Integrate design next to production
- Designers sits right in the midst of the production process

Enhance market trend understanding
- Market specialists are assigned
- They had direct customer interaction experiences

Encourage cross team comments on new products
- Prototype Room is not just for designers and customers
- Create communication opportunities for departments to comment
Try to get your end-customer demand information
  - Franchises Channels and Direct Stores Channels

Avoid the usual problem of rushing through one step and waiting to take the next
  - Sales, Procurement, Production, Inventory are like “dancing together”
  - Move to a fast but predictable rhythm

Hong Kong Reference Case
  - Cosmos Machinery applies an Advanced Planning and Scheduling System to achieve “Equally Early – Equally Late”
Develop a mutual understood operating policy across departments

- Place order twice a week on Wednesday and Saturday
- Overnight shipment from warehouse
- Collaboration with synchronization

Look for the best shipment method instead of only the cheapest

- By airfreight, truck, ship to increase inventory velocity
- 98.9% accurate with less than 0.5% shrinkage
Reduce non-value added work
- Pre-priced and tagged
- Hung up on racks without having to iron to display

Inventory Cost
- 10% of Sales
- 14% - 15% at Benetton, H&M and Gap
善用資產加強彈性

Invest in capital assets to increase overall flexibility
  ■ Produce 50% by themselves
  ■ To control over schedules and capacities

Hong Kong Reference Case:
  ■ A HK high-end electronic manufacturer build up a new factory for a dedicated customer

Vertical Integration
  ■ Vertical integration to buy 40% of fabric from sister companies

Hong Kong Reference Case:
  ■ A listed HK-listed AV manufacturers produce its own electrical wire and transformers
  ■ Double the profit margin than competitors
善用資產加強彈性

Prepare for extra flexibility
- Operate many of its factories for only a single shift
- Operate extra hours if need be to meet seasonal or unforeseen demands

Use “Postponement” strategy
- Purchasing more than 50% of its fabrics undyed

Build up a single distribution center
- Risk pooling to reduce inventory
- Reserve extra space in warehouse