Reducing Risk of Fashion Merchandise Using Flexible Supply Options

Harvard Center for Textile and Apparel Research
Presentation to the Apparel Industry
NYC, October 3, 2008

www.hctar.org
Agenda

- Tracing the rationale for U.S. Apparel Production
- Opportunities in today’s volatile market
- Flexible Supply Options
- Summary and Next Steps
The Dominant 20\textsuperscript{th} Century Sourcing Strategy

Domestic Production Only
\~1900-1950’s

- Basic items were made in the U.S. South
- Women’s Fashion was made in N.Y. City
- Only unique fabrics and native designs came from abroad for the very wealthy
What Changed?

- The Relative Strength of the U.S. Economy
- Demand for More Products and More Differentiation
- Lower Tariffs
- Efficiency of Transportation & Shipping
- Technology
The “Old” Global Sourcing Model

Shop the World for the Lowest Price
~1970’s-Today

- Production Cost
- Transportation Cost

SE Asia

The decision has changed!
Things are Still Changing

- Preferential Bi-lateral Trade Agreements
- Information Technology
- Lean Manufacturing, Quick Response, and Shareholder Value
- Risk-shifting from Retailers to their Manufacturers
“Lowest Price” has Other Costs

- Lowest-price suppliers are often far away

- Flexibility and ability to respond is sacrificed to procure lowest price.

- This generates real economic consequences
  - Liquidation Losses
  - Missed Sales opportunities
  - Unacceptable RISK.
The New Global Sourcing Model

Shop the World while considering Total Cost, Margins, and Risk

- Production and Transportation Cost
- Policy Costs (Tariffs)
- Modern Inventory Carrying Costs
- Risk Exposure
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Modern Supply Chain Risk

- Labor Instability
- Fuel Costs
- Currency Fluctuations
- Credit Markets
Managing ICC and Risk

- To Lower ICC and Reduce Risk
  - Shorten the Supply Chain
  - Frequent, Dynamic Replenishment
  - Commit later and purchase reactive capacity
  - Pre-validate regional suppliers
Conclusion: Geography Matters

- Geography Matters when Choosing a Supplier
  - Regional Trade Benefits
  - Length of the supply chain determines inventory costs
  - Length of the Supply Chain determines the opportunity to lower risk
Conclusion: Proximate Suppliers Enable Flexible Supply

- Information Technology provides an opportunity to KNOW real-time fashion demand!
- Short Local Supply Chains create an opportunity to MEET current fashion demand!
How do We Meet this Opportunity?
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The Value of Flexible Supply Options

- Flexible Supply Options allow retailers to optimize their Open-to-buy:
  - Only buy products with high margins that will sell at full retail
Flexible Supply Options

- A Flexible Supply Option (FSO) is a **Contract** between a manufacturer (Buyer) and a jobber or a sub-contractor (Seller).

- FSO’s are **purchased** prior to the season

- FSO’s can be exercised during the season for an additional cost

- FSO’s expire beyond a specified time
Utilizing FSO’s – Basic Example

- 100% cotton, cheetah-print mesh.
- Made in SE Asia
- Retail Price: $119
- Uncertain market acceptance

Buyer Chooses Order Quantity
### Step 1: Determine a Two-Case Sales Forecast (Boom or Bust)

- Consider 51 like-styles from past years:
  (Average Sales = 2,100 units)

<table>
<thead>
<tr>
<th></th>
<th><strong>Low Demand</strong></th>
<th><strong>High Demand</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>36 of 51</td>
<td>15 of 51</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>1,200 units</td>
<td>4,200 units</td>
</tr>
<tr>
<td><strong>Std. Dev.</strong></td>
<td>240 units</td>
<td>1,050 units</td>
</tr>
</tbody>
</table>

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Step 2: Place Orders to Create a Flexible Supply Quantity

- Place a conservative order from the standard supplier.
- Purchase options from *a pre-qualified supplier* to replenish in case of high demand.

<table>
<thead>
<tr>
<th></th>
<th>Standard Supplier</th>
<th>Option Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase</td>
<td>1,270 units</td>
<td>2,745 Options</td>
</tr>
<tr>
<td>Up-front Cost</td>
<td>$40</td>
<td>$17</td>
</tr>
<tr>
<td>Total Landed Cost</td>
<td>$40</td>
<td>$51</td>
</tr>
</tbody>
</table>

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Step 3: Use POS Data to Manage Inventory Position

- Determine whether the style is “cold” or “hot”
- Exercise the appropriate number of options, if necessary, to receive additional units by week 5 or 6.

<table>
<thead>
<tr>
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<th>Low Demand</th>
<th>High Demand</th>
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</thead>
<tbody>
<tr>
<td>Exercised Options</td>
<td>0</td>
<td>2,745</td>
</tr>
<tr>
<td>Total Supply</td>
<td>1,270 units</td>
<td>4,015 units</td>
</tr>
</tbody>
</table>
The Traditional No-Option Benchmark

- Forecast Distribution is created by combining **ALL** 51 past like-styles.
  - Mean = 2,100
  - Std. Deviation = 1,550
- Optimal Single Order Quantity = **3,540**
  (According to Forecasting System)
## Performance Results

<table>
<thead>
<tr>
<th></th>
<th>Current Plan</th>
<th>Proposed Options Plan</th>
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</thead>
<tbody>
<tr>
<td><strong>Starting Inventory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units Purchased</td>
<td>3,540</td>
<td>1,270</td>
</tr>
<tr>
<td>Options Purchased</td>
<td>-</td>
<td>2,745</td>
</tr>
<tr>
<td><strong>Low Demand Outcome</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercised Options</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Units On Hand</td>
<td>3,540</td>
<td>1,270</td>
</tr>
<tr>
<td><strong>Unsold Units to be Cleared</strong></td>
<td>2,340</td>
<td>70</td>
</tr>
<tr>
<td><strong>High Demand Outcome</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercised Options</td>
<td>None Available</td>
<td>2,745</td>
</tr>
<tr>
<td>Total Units On Hand</td>
<td>3,540</td>
<td>4,015</td>
</tr>
<tr>
<td><strong>Customer Service Level</strong></td>
<td>83%</td>
<td>95%</td>
</tr>
</tbody>
</table>
# Financial Results

<table>
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<tr>
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<td>-</td>
<td>2,745</td>
</tr>
<tr>
<td><strong>Value at Risk</strong></td>
<td>$141,600</td>
<td>$97,465</td>
</tr>
</tbody>
</table>

## Low Demand Outcome

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cost of Good Sold</td>
<td>($48,000)</td>
<td>($48,000)</td>
</tr>
<tr>
<td>Cost of Unused Options</td>
<td>0</td>
<td>(46,665)</td>
</tr>
<tr>
<td>Liquidation Costs*</td>
<td>(62,010)</td>
<td>(1,855)</td>
</tr>
<tr>
<td>Sales</td>
<td>142,800</td>
<td>142,800</td>
</tr>
<tr>
<td>Profit</td>
<td>$32,790</td>
<td>$46,280</td>
</tr>
</tbody>
</table>

## High Demand Outcome

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</tr>
</thead>
<tbody>
<tr>
<td>Cost of Good Sold</td>
<td>($141,600)</td>
<td>($190,795)</td>
</tr>
<tr>
<td>Cost of Unused Options</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Liquidation Costs*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sales</td>
<td>421,260</td>
<td>477,785</td>
</tr>
<tr>
<td>Profit</td>
<td>$279,660</td>
<td>$286,990</td>
</tr>
</tbody>
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Offering Flexible Supply Options

- Flexible Supply Options sold by local pre-qualified suppliers become part of a blended sourcing strategy.

- FSO’s Depend on Quick Response and Short Lead-times.
Next Steps

- Pilot the Model with a forward-looking Retailer/Manufacturer
- Identify Several Local Suppliers Willing and Capable to offer FSO’s
For More Information

Please visit The Harvard Center for Textile and Apparel Research (HCTAR)

www.hctar.org

Thank You
Opportunities Vary by Style

- Specific Product Characteristics Matter in Choosing a Supplier
  - Labor Content (as a percentage of cost)
  - Material Requirements (cost and availability)
  - Length of the Selling Season
  - Demand Forecast: What we Think we know