How Will Western Manufacturers Survive?

Webcast
January 2008
Agenda

- Outsourcing and off-shoring continue to grow
- Western manufacturing losing ground
- This problem won’t go away
- The high-growth opportunity
- The art of high-cost country sourcing (HCCS)
Outsourcing and off-shoring continue to grow
The off-shoring trend is continuing

Source: Boston Strategies International analysis
Manufacturing is outsourced more than services

Percent Outsourced, by Function

- Manufacturing
- Procurement
- Lab Services
- IT
- Call Centers
- R&D

Source: Boston Strategies International analysis
Asia is the lowest-cost area for labor

Source: Economist Intelligence Unit
China’s manufacturing sector is growing

Manufacturing as a Percent of GDP

Source: Boston Strategies International analysis of Chinese government data
Multinationals are migrating to China

Recent Corporate Relocations

<table>
<thead>
<tr>
<th>Corporation</th>
<th>Presence in Asia</th>
</tr>
</thead>
</table>
| Caterpillar         | • Relocation of Asia-Pacific Operations headquarters from Tokyo, Japan to Beijing, China  
                      • Vice President with administrative responsibility for manufacturing operations in Asia will relocate as well |
| General Motors      | • Relocation of Asia-Pacific headquarters from Singapore to Shanghai  
                      • $253.7 million initiative with a Chinese partner |
| Goodyear            | • Relocation of Asia-Pacific headquarters from the U.S. to Shanghai |
| Stora Enso          | • Relocation of Asia-Pacific headquarters from Singapore to Shanghai, China |
| Visteon             | • Relocation of Asian headquarters from Tokyo to Shanghai |
| Volkswagen          | • Relocation of Asia-Pacific regional center from Wolfsburg to Beijing |

Sources: Boston Strategies International analysis
Foreign direct investment is flowing into China

Foreign Direct Investment

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>PRC</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Taipei</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Philippines</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

Source: UNCTAD
Western manufacturing losing ground
Prices of US manufactured goods have gone flat

US GDP and Manufacturing Prices Over Time

Index (1947=100)

Sources: Boston Strategies International, Bureau of Economic Analysis, National Association of Manufacturers
Mfg’s share of the economy is shrinking

Sources: Boston Strategies International analysis of Bureau of Economic Analysis and other data
This problem won’t go away
The weak dollar is helping to level the field

US Dollar Exchange Rate

Sources: Oando
The differential could shrink but won’t disappear

Difference Between Western and Emerging Economy Costs – Illustrative

Low-Cost Source
Rising Labor Costs
Exchange rates
Rising Shipping Costs
Dual Sourcing
Environmental
Remaining Gap
Western Cost

Sources: Boston Strategies International analysis
The trend is slowing, but will continue

US Manufacturing Contribution to GDP

Sources: Boston Strategies International analysis
Repetitive MTS manufacturers are at risk

Propensity to Off-Shore by Supply Chain Type™

<table>
<thead>
<tr>
<th>FLOW/CONTINUOUS</th>
<th>BATCH/CELLULAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel/Railcar</td>
<td>Vessel/Railcar</td>
</tr>
<tr>
<td>TL/IM</td>
<td>TL/IM</td>
</tr>
<tr>
<td>LTL/Sm. Pkg/Air</td>
<td></td>
</tr>
</tbody>
</table>

| Make to Plan | 1. Extraction | 4. Make-to-Stock Manufacturing |
| Make to Stock| 2. Process Manufacturing |
| Assemble to Order | Off-Shoring |
| Make to Order | 3. Engineer to Order |
| Engineer to Order | 5. Make-to-Order Manufacturing |
|                | 6. Distribution |
|                | 7. Re-Selling |

Sources: Boston Strategies International
Western manufacturing has a high-growth opportunity
Manufacturing can be as profitable as services

World Sales Growth Rate by Sector (2006 to 2007)

Sources: Boston Strategies International analysis of Global Insight data
Manufacturing correlates with higher growth

**Correlation Between Secondary Sector Prominence and Economic Growth**

- GDP Growth Rate
- Secondary Sector as a Percent of GDP

R² = 0.5235

Sources: Boston Strategies International, Bureau of CIA data
# A new model: knowledge-based services

## Stages of Economic Development

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Preindustrial, Agrarian</th>
<th>Industrial</th>
<th>Postindustrial, Knowledge-based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leading economic sector</td>
<td>Agriculture</td>
<td>Industry</td>
<td>Services</td>
</tr>
<tr>
<td>Nature of dominant technologies</td>
<td>Labor – and natural resource – intensive</td>
<td>Capital-intensive</td>
<td>Knowledge-intensive</td>
</tr>
<tr>
<td>Major type of consumer products</td>
<td>Food and hand-made clothes</td>
<td>Industrial goods</td>
<td>Information and knowledge services</td>
</tr>
<tr>
<td>Nature of most production processes</td>
<td>Human-nature interaction</td>
<td>Human-machine interaction</td>
<td>Human-human interaction</td>
</tr>
<tr>
<td>Major factor of economic wealth/growth</td>
<td>Nature's productivity (soil fertility, climate, biological resources)</td>
<td>Labor productivity</td>
<td>Innovation/intellectual productivity</td>
</tr>
</tbody>
</table>

Sources: World Bank
Low cost is only 30% of the equation

Importance of Cost and Other Factors by Supply Chain Type™

- Security
- Local market growth prospects
- Good work ethic
- High educational level
- Tax incentives
- Low raw materials cost
- Low labour cost

Sources: Boston Strategies International analysis
The art of high-cost country sourcing (HCCS)
The path toward differentiated manufacturing

The Services-Technology-Premium Cycle

Value-Added Services

Technology Edge

Premium Positioning

Sources: Boston Strategies international
Recommendations – Governing Boards

• Ensure a level playing field for CEO selection to include foreign nationals
• Promote skills in finance and negotiation in global contexts
• Focus business growth around core competencies; elevate Engineering and Marketing
# Recommendations – CEOs

## Recommendations by Supply Chain Type™

<table>
<thead>
<tr>
<th>Supply Chain Type™</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Extraction</td>
<td>• Move up the value chain</td>
</tr>
<tr>
<td>II. Process manufacturers</td>
<td>• Offshore labor-intensive activities</td>
</tr>
<tr>
<td>II. Process manufacturers</td>
<td>• Outsource R&amp;D</td>
</tr>
<tr>
<td>III. Engineer-to-order manufacturers</td>
<td>• Focus on premium</td>
</tr>
<tr>
<td>IV. Make-to-stock manufacturers</td>
<td>• Differentiate with value-added services</td>
</tr>
<tr>
<td>V. Make-to-order manufacturers</td>
<td>• Position as premium</td>
</tr>
<tr>
<td>VI. Distribution</td>
<td>• Focus on Asia and Middle East marketing and sales</td>
</tr>
<tr>
<td>VII. Reselling</td>
<td></td>
</tr>
</tbody>
</table>
Recommendations – managers

- Build strong engineering skills
  - Do not overemphasize cost
- Enable employees to personalize, customize, and offer tailored value-added services
  - Through advanced information technology applications (esp. CRM)
- Position and brand as premium and high-quality
  - Differentiate you and your organization; prevent commoditization
- Know low-cost country environments personally
  - Open your mind to low-cost country travel and expatriate assignments
Boston Strategies International

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Boston Strategies International is a global management consulting firm that helps market leaders achieve competitive advantage through supply chain management through:
• Supply Market Analysis that helps identify emerging issues that affect their supply chains
• Supplier Enablement that facilitates global growth and local content requirements
• Supply Chain Optimization that reduces project and life cycle costs

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