Managing Through the Crisis

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Rio de Janeiro, Brazil.
Volatility
Brazilian Real to U.S. Dollar
Structure Drives Behavior

- Structure determines behavior
- Behavior does not determine structure
Drivers of Business Resilience

- Disruption Prevention
- Foresight
- Adaptability
- Agility
- Diversity
- Security
- Safety
- Strategic Alliances
- Resource Efficiency

Diamond-Shaped Supply Chain Nexus Suppliers

Supplier ($S_{2,1}$) -> Supplier ($S_{1,1}$) -> Focal Firm ($F_1$) -> Customer ($C_{1,1}$) & Customer ($C_{1,2}$)

Supplier ($S_{1,2}$) -> Focal Firm ($F_1$) -> Customer ($C_{1,1}$) & Customer ($C_{1,2}$)

Supplier ($S_{1,3}$) -> Focal Firm ($F_1$) -> Customer ($C_{1,1}$) & Customer ($C_{1,2}$)
Types of Risk

- Financial
- Supply
- Information
- Variability
- Environmental
- Regulatory
- Labor
- Infrastructure

ASU W.P. CAREY SCHOOL OF BUSINESS
Complex Supply Networks
Structuring Supply Chain Risk

Causes

Disruption Events

Consequences
Risk Management – Early Warning

- LexusNexis
- Resilinc
- Google Alerts
Do not be caught off guard by global supply chain disruption events.

**Test Drive EventWatch® Today**

Resilinc EventWatch® is the leading global supply chain event monitoring and analysis service. Get access now to 24/7 global event monitoring.
Resilinc Your Supplier Network

Resilinc, the LinkedIn® for your supply chain community, is a leading cloud provider of supply chain risk and resilience intelligence and analytics.

Industry leaders rely on Resilinc to mitigate risks and address compliance challenges, while achieving long-term competitive advantage and building brand & shareholder value.
Google Alerts

Google Alert - Pharmaceutical Africa

Google Alerts

Pharmaceutical Africa

Daily update · November 5, 2016

NEWS

Pharmaceutical Packaging Equipment Market Detailed Analysis and Forecast by 2021

Digital Journal

The global market for pharmaceutical packaging equipment has been ... Pacific, and Rest of the World (Latin America, the Middle East and Africa).

See more results · Edit this alert
Business Continuity
Supply Chain Flows

- Product Flow
- Financial Flow
- Information Flow
Global Recall:
Mattel Toys – Prague, Czech Republic
Supply Chain Financing

Fund the Growth
Sources of Supply Chain Capital

- Pricing
- SKU Rationalization
- Supply Chain Savings
- Functional Savings
- Mix Management
Crisis Births
Appropriate Models for Risk Management

- Systems approaches/thinking
- Risk management of complex systems is
  - Multi-objective
  - Multi-decision maker
  - Hierarchical (overlapped)
  - Sometimes conflicted/confounded
- Complex systems exceed human capacity to capture everything in a simple model.
Attenuation

- Attenuation is a decrease in signal strength during transmission.
- Attenuation is the opposite of amplification, and is normal when a signal is sent from one point to another.
- If the signal attenuates too much, it becomes unintelligible, which is why most networks require repeaters at regular intervals.
Decision Tree Analysis
“I know we are having a pretty good quarter. I just hate to waste a good recession.”

Response from CEO of large 3PL when asked why he was cutting 5% from every division in his firm.

March 25, 2009.
Managing Through the Crisis

- Leadership
- Direction
- Inspiring others
- Defining expectations and rewards

% of respondents, n = 763

<table>
<thead>
<tr>
<th>Most important organizational capabilities for managing corporate performance</th>
<th>Through current economic crisis</th>
<th>After current economic crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Ability to ensure that leaders shape and inspire the actions of others to drive better performance</td>
<td>40</td>
</tr>
<tr>
<td>Direction</td>
<td>Capacity to articulate where company is heading and how to get there, and to align people appropriately</td>
<td>46</td>
</tr>
<tr>
<td>External orientation</td>
<td>Capacity to engage in constant two-way interactions with customers, suppliers, and/or other partners</td>
<td>34</td>
</tr>
<tr>
<td>Innovation</td>
<td>Ability to generate a flow of ideas so company is able to adapt</td>
<td>33</td>
</tr>
<tr>
<td>Capabilities</td>
<td>Capacity to ensure sufficient internal skills and talent to support company’s strategy and to create competitive advantage</td>
<td>31</td>
</tr>
<tr>
<td>Motivation</td>
<td>Ability to inspire and encourage employees to perform well and stay with the company</td>
<td>30</td>
</tr>
<tr>
<td>Coordination and control</td>
<td>Ability to measure and evaluate business performance and risk</td>
<td>26</td>
</tr>
<tr>
<td>Accountability</td>
<td>Capacity to structure reporting relationships and evaluate individual performance to ensure accountability/responsibility for business results</td>
<td>23</td>
</tr>
<tr>
<td>Environment and values</td>
<td>Ability to shape employee interactions and foster a shared understanding of values</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: McKinsey Research
End of presentation

Extra slides follow
Pinpointing Vulnerability

Operational Risk

Financial Risk

Recovery Risk

Location Risk
Nexus Suppliers
Increase in risk is multiplicative. Improving visibility is required.
Nexus Suppliers

- Critical nodes hidden within supply networks.
- Suppliers, or supplier sites, that might be in the second-tier or lower.
- Buying companies would ordinarily have no contact and might not even know exist.
- Disruption of its operation would have a surprisingly huge impact on the original-equipment manufacturer’s production.
- Supplier may possess critical market information.
- Complex supply chains pose unprecedented risks and opportunities.
- Big buying companies cannot afford to be in the dark about suppliers far down their supply chains.
Nexus Supplier

2217 TT’s Exposure to Related Companies:
Suppliers are sorted by the cost (COGS/CAPEX/SG&A/R&D) paid by 2017 TT.
Customers are sorted by the revenue 2017 TT gets from the customers.
<table>
<thead>
<tr>
<th></th>
<th><strong>Strategic Supplier</strong></th>
<th><strong>Nexus Supplier</strong></th>
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</thead>
<tbody>
<tr>
<td>Tier in the supply network</td>
<td>Top-tier</td>
<td>Any tier</td>
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<tr>
<td>Visibility to the focal buying firm</td>
<td>Visible</td>
<td>Not necessarily visible</td>
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<tr>
<td>Profit impact</td>
<td>High and direct</td>
<td>Potentially high and indirect</td>
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<tr>
<td>Mutual dependence</td>
<td>High and direct</td>
<td>Potentially high and indirect</td>
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<tr>
<td>Ideal relationship with the focal buying firm</td>
<td>Close</td>
<td>Not necessarily close</td>
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<tr>
<td>Sources of value</td>
<td>Superior internal capabilities and resources</td>
<td>Unique positions in interorganizational networks</td>
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<tr>
<td>Characteristics of the Three Types of Nexus Supplier</td>
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<td>-----------------------------------------------------</td>
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<td><strong>Operational Nexus Supplier</strong></td>
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<tr>
<td>Network type</td>
<td>Supply network</td>
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<tr>
<td>Structural characteristics</td>
<td>High degree, betweenness, and eigen-vector centrality</td>
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<tr>
<td>Industry Examples</td>
<td>Honda’s fastener supplier</td>
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<tr>
<td>Criticality</td>
<td>Significant impacts on the operational performance of the end product</td>
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<td>Roles</td>
<td>System integration Cost and quality control</td>
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<tr>
<td>Total interdependence</td>
<td>High</td>
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<tr>
<td>Interdependence asymmetry</td>
<td>Low</td>
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<tr>
<td>Performance implications</td>
<td>Cost, risk, and responsiveness</td>
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<tr>
<td><strong>Monopolistic Nexus Supplier</strong></td>
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<tr>
<td>Network type</td>
<td>Extended industrial network</td>
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<tr>
<td>Structural characteristics</td>
<td>High betweenness centrality</td>
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<tr>
<td>Industry Examples</td>
<td>Evonic</td>
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<tr>
<td>Criticality</td>
<td>Significant impacts on supply continuity due to low substitutability</td>
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<td>Roles</td>
<td>Supply assurance</td>
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<td>Total interdependence</td>
<td>Medium</td>
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<td>Interdependence asymmetry</td>
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<td>Performance implications</td>
<td>Responsiveness and risk</td>
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<td><strong>Informational Nexus Supplier</strong></td>
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<td>Network type</td>
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<td>Sources of early market and technological information</td>
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Nexus Suppliers

- **Supplier A**: Informational nexus supplier
- **Supplier B**: Monopolistic nexus supplier
- **Supplier C**: Operational nexus supplier
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Risk is a Concept

- **Risk** is intuitive and familiar to everyone, yet it can be sophisticated and elusive when organizations seek definitions of risk for specific risk management programs.
- As a broad concept, risk inherently has many possible meanings depending on the individual or organization.
Risk assessment is not a single process, but a systematic approach to organizing and analyzing knowledge and information that supports a risk decision.

Risk management is a systematic process for the identification, assessment, control and communication of risks to life, property, or other valued objects.
Consumer Requirements: From Expectation to Integration

- Risk reduction
- Offset new product cost
- Demand environmentally responsible options to dispose of obsolete product
- Consumer expectations will eventually result in lower costs
Revenue at Risk (RaR)

New Metric for Supply Management
Example – FCA Engine Part Supplier

- Privately held engine parts supplier financially distressed and will have to cease manufacturing
- Supplier makes 5 parts for best-selling FCA engine
- FCA has three choices
  - Buy supplier
  - Develop capability to make parts at risk
  - Substitute
FCA engineers made estimate of bringing parts fabrication in house:

- $5 million for tooling
- 52 week leadtime
Example – FCA Engine Part Supplier

Revenue at Risk (RaR) would be:

- Net present value of:
  - Wholesale price of vehicles containing impacted engine times
  - Times number of vehicles
  - Times 52 weeks
Revenue at Risk (RaR)

- RaR would be a metric used by supply management groups to measure the impact of supplier discontinuity or other supply problems.
- RaR would be calculated for each supplier (important ones – probably not really all suppliers).
- Nexus supplier?
Other Considerations?
Constituents

- Stakeholders
- Employees
- Intra-Firm Organizations
- NGOs
- Government Regulation
- Media
- Bloggers
- Competitors
- Service Firms
- Suppliers
- Customers

Internal Pressure

External Pressure

Supply Chain Partner Pressure
Managing Through the Crisis

1. Leaders must face reality.
2. No matter how bad things are, they will get worse.
3. Build cash - SC used to "fund".
5. Be aggressive.