Managing Supply Chain Risk
Minimizing Exposure to Supplier Failure, Volatile Commodity Prices, and Manufacturing Disruptions
Survey Findings Reveal Priorities

Greatest Supply Chain Focus Areas

- Negotiating Contracts/Individual Supplier Relationships
- Managing Inventory Levels
- Gaining Greater Visibility into the Supplier Network
- Material Risk Management/Hedging
- Low Cost Country Sourcing
- Benchmarking
- Geographic Mapping of Supplier Mfg
- Parts Management

IHS Inc and Supply & Demand Chain Executive magazine 2012 Supplier Risk Survey results
Segmenting Supply Chain Risk: Categories

• Material & Parts Risk
  • Commodity Price Volatility
  • Parts Change Notifications
  • Obsolescence
  • Production Disruptions

• Supplier Risk
  • Low Cost Country Sourcing
  • Supplier Health
    • Financial viability
    • Ability to cope with disruption
    • Market share
Segmenting Supply Chain Risk: Types

**Resting Risk**
- Supplier Segmentation – Partner, Critical, Bottleneck, Transactional
- Fragmentation of Supply
- Conflict Metals or soon-to-be Non-Compliant substances in Supply Chain
- EOL and PCN alerts
- Counterfeit Parts

**Reactive Risk**
- Natural Disaster Disruptions
- Political Disruptions
- Supply Disruption Alerts/Notices specific to supplier
- Cost – rising & volatile prices for key material inputs
Parts and Material Risk

Is change the only constant?
Insight: PCN/EOL Correlate with Market Trends, Business Drivers, and Volatility

Component PCN 40% CAGR from 1997-2010

Lead-free creates 20% new EOL 2006-2007

Component EOL 40% CAGR from ‘97 to ‘10

Demand weakness 90% of EOL in 2009

Charts Courtesy of IHS Inc., 2011
PCNalert: Illustrate Material/Price Volatility

This email alert is being sent to update you on component and supplier information that may impact your AVL parts.

Click the **Affected Parts** link to view the potential impacts or the **Supplier Document ID** link to view the Supplier’s PCN/EOL Document. To view all of the notifications sent to date, click **My Notifications**

### IHS® PCNalert Summary Index for Feb 15, 2012 (1 Notices)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Alert Type</th>
<th>Affected Parts</th>
<th>DocumentID</th>
<th>Action Date</th>
<th>Countdown From Feb 15, 2012 (days)</th>
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<tbody>
<tr>
<td>Exar Corporation</td>
<td>PCN -Assembly Process</td>
<td>2</td>
<td>12-0126-02</td>
<td>May 01, 2012</td>
<td>76</td>
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</table>

**Description**

Bond wire is changed from gold to copper. **REASON FOR CHANGE:** To prevent a cost increase of product to customers due to the rising prices of gold

Your AVL was last updated: Oct 25, 2011
What Has Changed?

- Commodity prices exploded from 2002 to 2011
  - Average annual growth rate of 15%
- Why should we care about commodity prices?
  - This surge in prices has impacted profitability and complicated budget planning - elevating purchasing’s role
- Higher prices joined by higher volatility in recent years
  - Upside risk and downside risk combine to create wild gyrations in prices on a month to month basis
- Emerging markets have exploded onto the global economy
  - Influence will continue to grow over the next decade
  - Resource nationalism is becoming a factor
- Investors are now firmly entrenched
Price Volatility Has Increased

Standard Deviation in Monthly Price Changes*

*Gold, silver, oil, aluminum, copper, coffee, sugar, rubber, cotton, corn, wheat, lumber, steel scrap, steel plate, HR carbon steel sheet
Quantified Risk Correlates With Volatility

![Graph showing the correlation between Commodity Risk Score and Standard Deviation, with different commodities represented by various markers.](image-url)
Takeaways

• Commodity prices exploded since 2005
  • Global economy continues to struggle from the Great Recession; however
    prices have almost regained previous peaks
  • A new higher cost profile has been placed under many commodities

• Volatility has increased significantly – and is likely a permanent
  feature of supply chains

• This raises the need to not just track commodity prices but also
  the corresponding factors that drive prices
  • Build a cost profile of your key materials
  • Identify key production centers and raw material exporters
  • Be aware of changes and potential changes in policy – these do influence
    investor flows

• Be prepared for volatility
  • Formal hedging strategies should be considered if not already in place
Supplier Risk
Understanding Risk Throughout the Supplier Network
Survey results confirm supplier risk management is integral to 2012 operational plans.

Delays and disruption are the biggest concern, with quality and cost following closely behind.
Supplier Risk Rating Service

• IHS is developing a pilot service to provide supplier risk ratings for electronics manufacturers

• The service helps users
  • Understand the total picture of supplier risk
  • Manage their supplier networks and make business critical decisions
  • Calculate trade-offs between cost and risk

• Outputs are based on financial, regional, production, and market share factors, that combine to form a comparable, quantitative risk rating scheme
Understanding the Supplier Network

Supplier Relationship Management

• Building Partnerships
• Gaining Visibility
• Understanding Risk
• Avoiding Disruption
• Achieving Cost Savings
Assessing Supplier Risk

- The impact of a disruption to the supplier relationship should influence your relationships with suppliers.
- Balancing risk and cost is integral to effective supplier management.

For the most integral and high-value inputs to your supply chain, grow strategic partnerships with your suppliers.

For lower value, but still integral inputs coming from a short list of suppliers, close inventory monitoring is required.

For highly competitive commodities and parts, strategic timing of buys, effective contract negotiation, and benchmarking mean cost savings.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Supplier</th>
<th>Current Overall Risk</th>
<th>12 Month Trend</th>
<th>Last Risk Change</th>
<th>Financial</th>
<th>Prod</th>
<th>Inv</th>
<th>MKT Share</th>
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<tbody>
<tr>
<td>15</td>
<td>Supplier 1</td>
<td>2.78 MEDIUM</td>
<td></td>
<td>17-Oct-11</td>
<td>2.75</td>
<td>2.75</td>
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<table>
<thead>
<tr>
<th>Supplier</th>
<th>Quote</th>
<th>IHS Risk Rating</th>
<th>Supplier Relationship</th>
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<tbody>
<tr>
<td>Supplier 1</td>
<td>$145</td>
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<td>Level 2</td>
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<td>Supplier 2</td>
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<td>Supplier 3</td>
<td>$137</td>
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</table>

- **Financial**: Top-Line Score 2.75, Revenue 1, Revenue Growth 3, Net Income 2, Profitability 3, Debt 3
- **Production**: Top-Line Score 2.75, Productivity 4, Cost 3, Flexibility & Diversity 2, Counterfeit Risk 2
- **Inventory**: Top-Line Score 2.25, Capacity Tightness 2, Levels 3
- **Market Share**: Top-Line Score 2.75, Current Strength 1, Future Revenue Growth 3, Innovation & Investment 4

Data above are for illustrative purposes only and do not reflect actual risk scores for any company.
### Delivery: Client Loaded Data

<table>
<thead>
<tr>
<th>Company Detail</th>
<th>HS Default</th>
<th>User Defined</th>
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<tbody>
<tr>
<td>Sample Company</td>
<td>2.1</td>
<td>2.2</td>
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<tr>
<td>User Defined: Supplier Segment</td>
<td>Level 1: Partner</td>
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<tr>
<td>User Defined: Spend</td>
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<td>User Defined: Supplier Performance Rating</td>
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<td>User Defined: Latest Quote</td>
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<td>Part #46753SKU</td>
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<td>User Defined: Contract Notes</td>
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<td>Capacity Utilization</td>
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<tr>
<td>Financial</td>
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<tr>
<td>Revenue Growth</td>
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<tr>
<td>Profitability</td>
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<td>0.250 12.68%</td>
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<tr>
<td>Debt</td>
<td>3.68%</td>
<td>0.250 12.68%</td>
</tr>
</tbody>
</table>

- Users can modify the weights of individual rating factors
- Users can upload their internal metrics to stratify risk across the supply base
- Specific contracts or part buys can be commented on and recorded in the system