



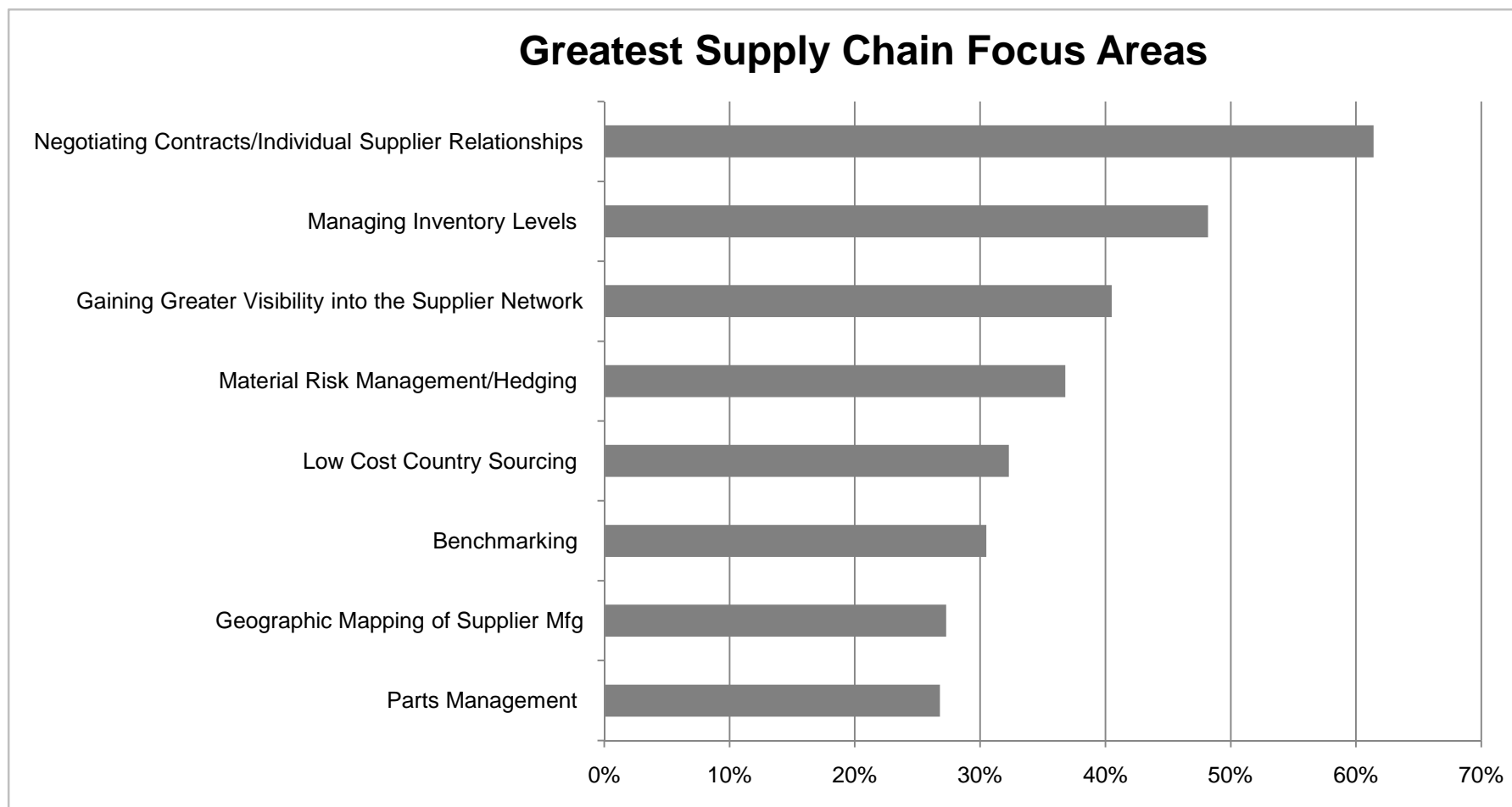
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# Managing Supply Chain Risk

Minimizing Exposure to Supplier Failure, Volatile Commodity Prices, and Manufacturing Disruptions



# Survey Findings Reveal Priorities



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



# Segmenting Supply Chain Risk: Categories

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- 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

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- **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



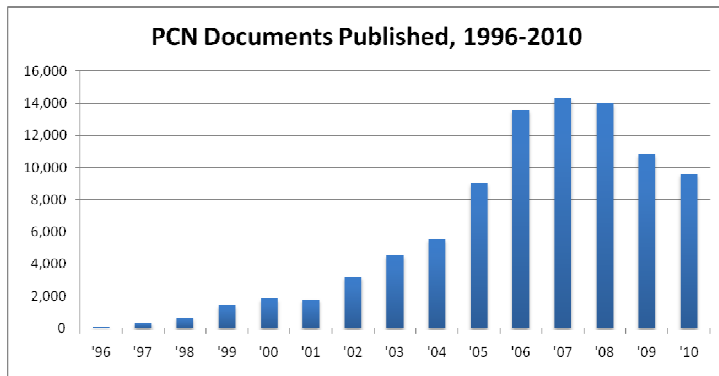
# Parts and Material Risk

Is change the only constant?

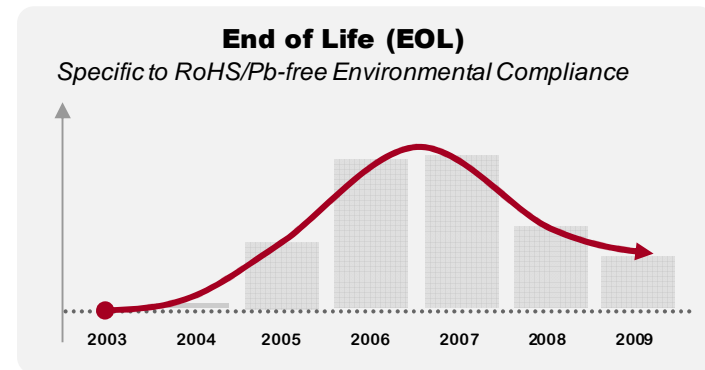
# Insight: PCN/EOL Correlate with Market Trends, Business Drivers, and Volatility



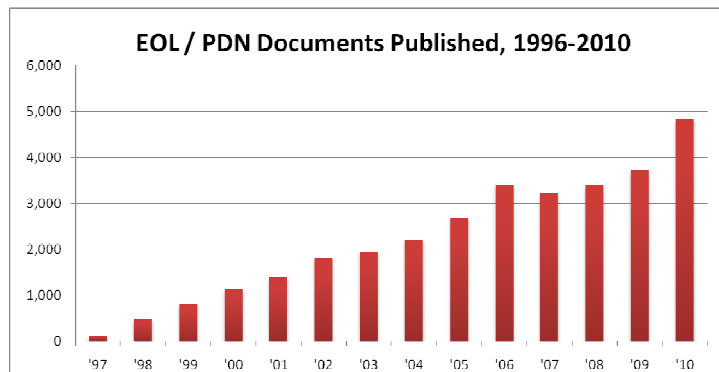
Component PCN 40% CAGR from 1997-2010



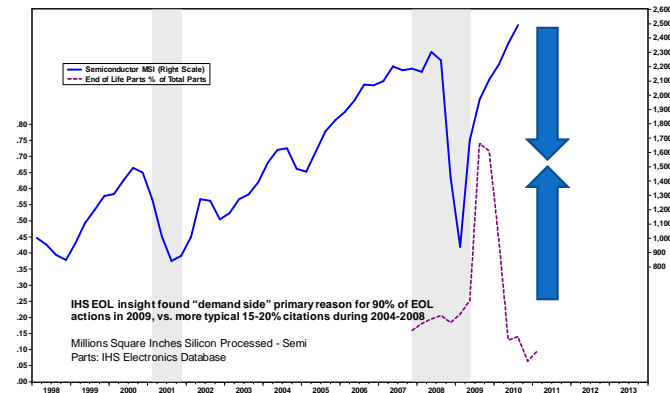
Lead-free creates 20% new EOL 2006-2007



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



The Source for Critical Information and Insight™

## PCNalert

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 )

Manufacturer	Alert Type	Affected Parts	DocumentID	Action Date	Countdown From Feb 15, 2012 (days)
<a href="#">Exar Corporation</a>	PCN -Assembly Process	<a href="#">2</a>	<a href="#">12-0126-02</a>	May 01, 2012	76

#### 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?

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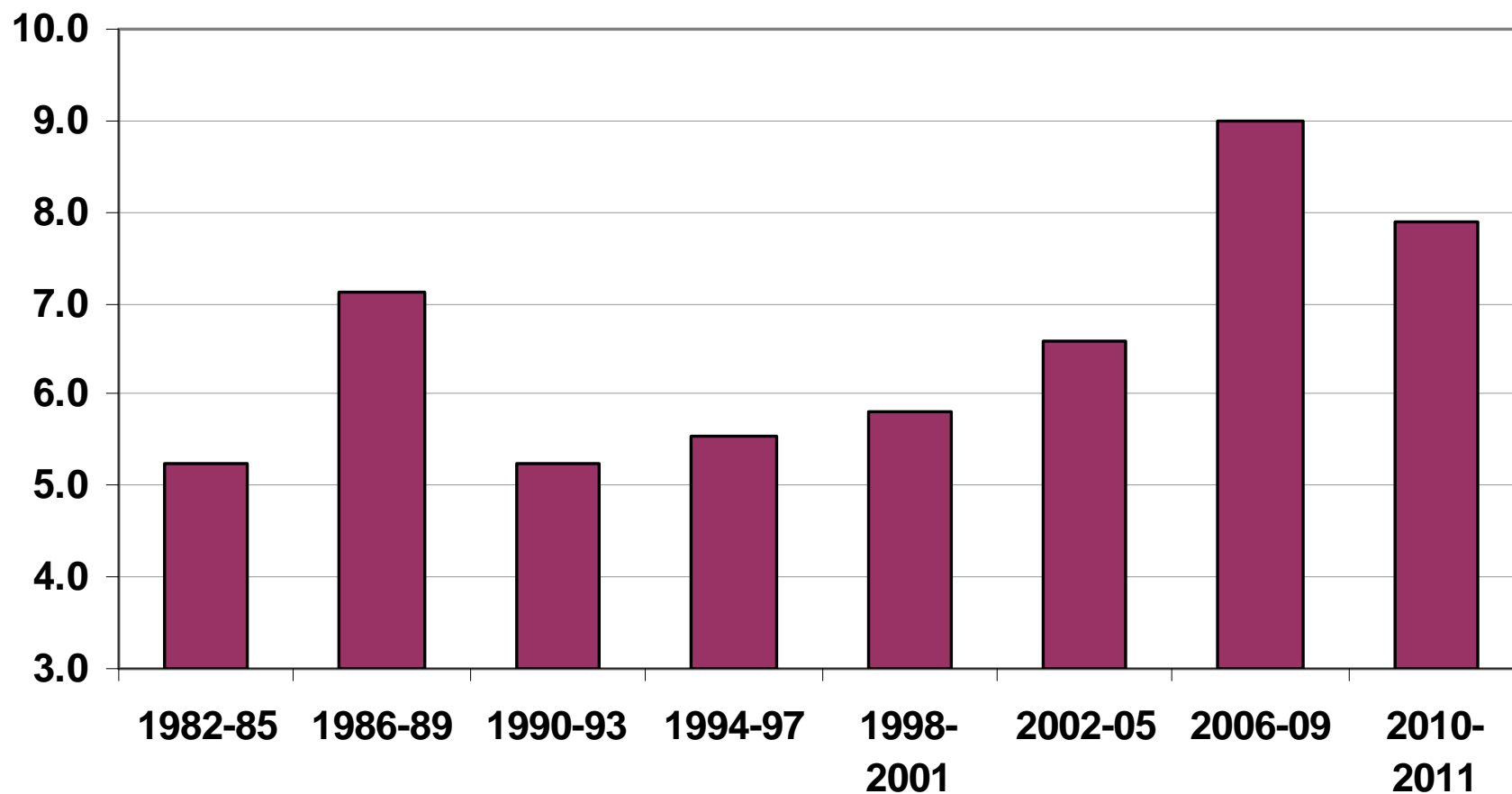
- Commodity prices exploded from 2002 to 2011
  - Average annual growth rate of 15%
- Why should we care about commodity prices?
  - This surge in prices has impacted profitability and complicated budget planning - elevating purchasing's role
- Higher prices joined by higher volatility in recent years
  - 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

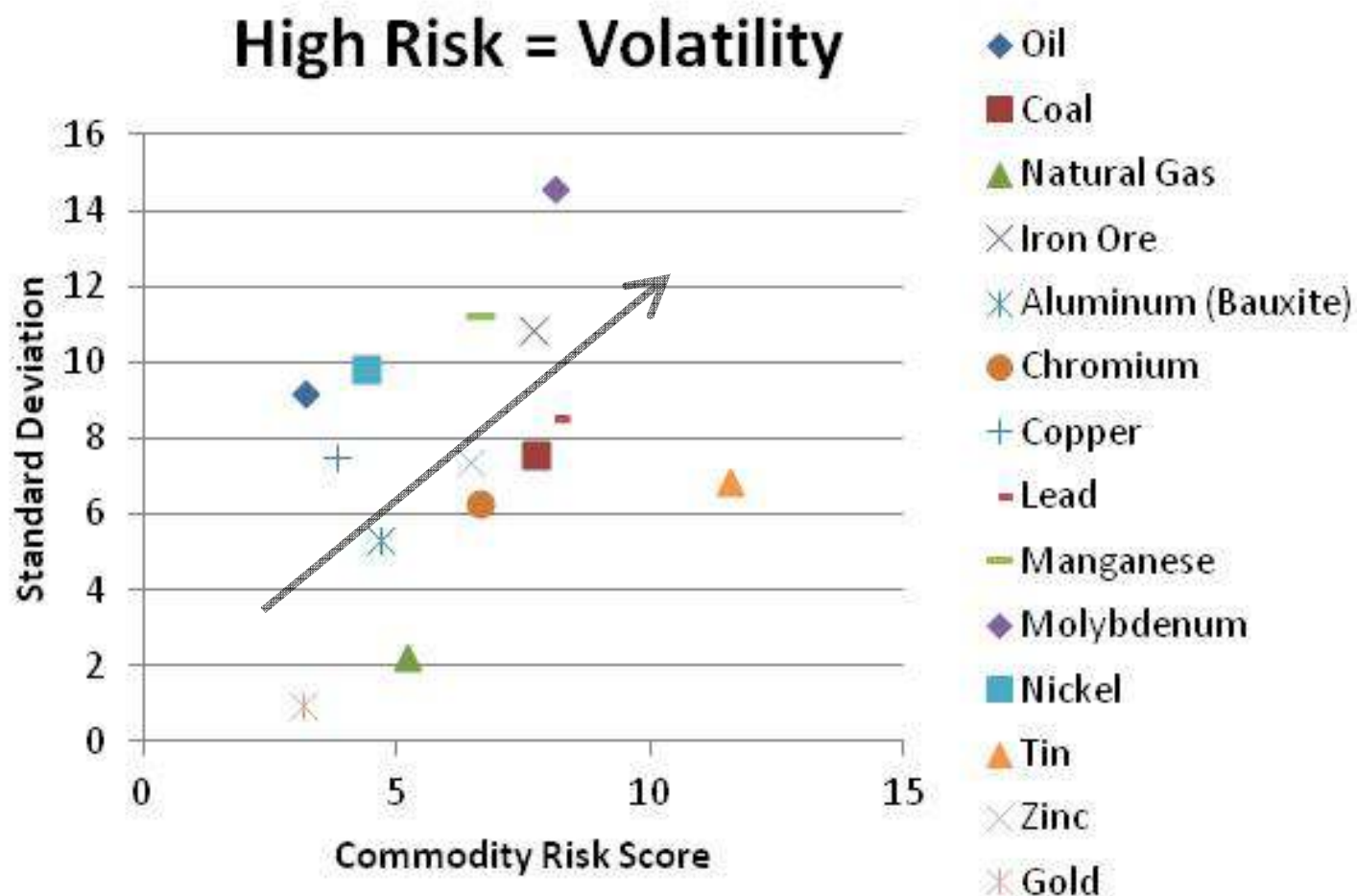
Standard Deviation in Monthly Price Changes\*



\*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





# Takeaways

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- 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



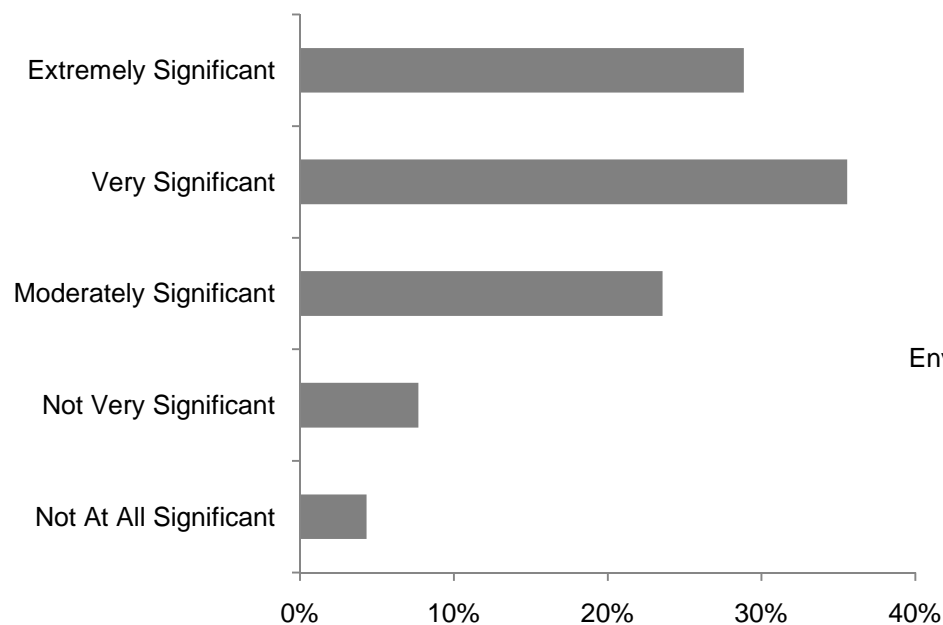
# Supplier Risk

Understanding Risk Throughout the Supplier Network

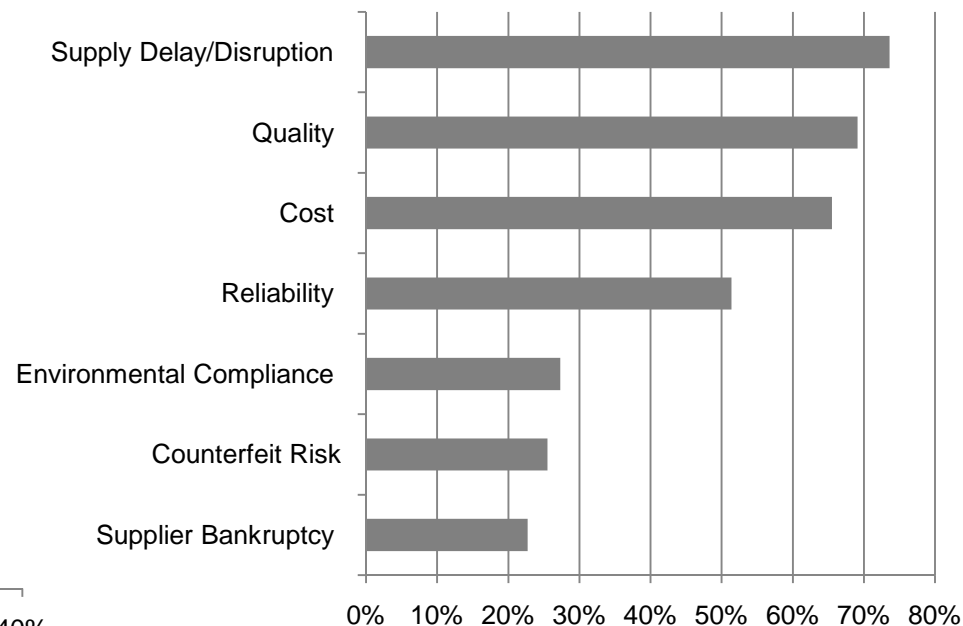


# Risk Survey Results

## Significance of Managing Supplier Risk to Operational Plan



## Most Pressing Supplier Risks



IHS Inc and Supply & Demand Chain Executive magazine, 2012 Survey Results

- 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

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- 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

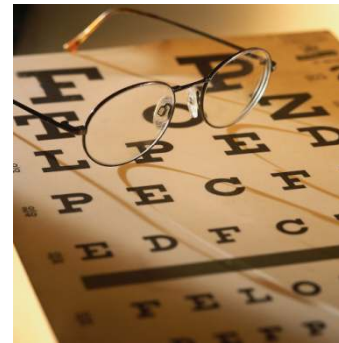


# Understanding the Supplier Network

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## 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

Partner

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

Bottleneck

For highly competitive commodities and parts, strategic timing of buys, effective contract negotiation, and benchmarking mean cost savings

Substitutes Available

Value of Spend

A large, grey, 3D-style arrow pointing upwards, indicating the direction of increasing value of spend.





# Delivery: Risk Rating Content Table Form

Rank		Current Overall Risk		12 Month Trend	Last Risk Change	Financial	Prod	Inv	MKT Share
15	Supplier 1	2.78	MEDIUM	▼	17-Oct-11	2.75	2.75	2.25	2.75
16=	Supplier 2	2.87	MEDIUM	►	21-Jan-10	2.75	2.75	3.25	3.00
16=	Supplier 3	2.87	MEDIUM	►	07-Apr-08	2.50	3.75	2.00	2.50
18	Supplier 4	2.88	MEDIUM	▲	06-Jul-11	2.50	3.50	2.25	3.00
19	Supplier 5	2.91	MEDIUM	▲	27-Jan-12	2.50	2.75	2.50	2.25
24	Supplier 10	3.11	SIGNIFICANT	►	01-Apr-10	2.75	3.25	3.25	3.25
25	Supplier 11	3.15	SIGNIFICANT	▲	27-Jan-12	3.25	3.25	3.00	3.50
26=	Supplier 12	3.22	SIGNIFICANT	▲	27-Jan-12	3.25	3.50	3.25	3.00
26=	Supplier 13	3.22	SIGNIFICANT	►	02-Jul-10	2.75	4.25	2.75	2.50
28	Supplier 14	3.29	SIGNIFICANT	▼	26-Apr-11	3.50	3.75	2.75	3.00
29	Supplier 15	3.30	SIGNIFICANT	▲	06-Jul-11	3.00	4.00	3.00	2.75

	Quote	IHS Risk Rating	Supplier Relationship
Supplier 1	\$145	2.0	Level 2
Supplier 2	\$160	1.7	Level 3
Supplier 3	\$137	3.5	None

Financial		Score
	Top-Line Score	2.75
	Revenue	1
	Revenue Growth	3
	Net Income	2
	Profitability	3
	Debt	3

Production		Score
	Top-Line Score	2.75
	Productivity	4
	Cost	3
	Flexibility & Diversity	2
	Counterfeit Risk	2

Inventory		Score
	Top-Line Score	2.25
	Capacity Tightness	2
	Levels	3

Market Share		Score
	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

Company Detail	IHS Default	User Defined		
Sample Company	2.1	2.2		
User Defined: Supplier Segment		Level 1: Partner		
User Defined: Spend		\$1,250,000		
User Defined: Supplier Performance Rating		4		
User Defined: Latest Quote		\$235	Part#46753SKU	
User Defined: Contract Notes		4/4/2012	Contract Renewal Asia Part #46753SKU	
Inventory	100.00% 17.20%	11.15%	2	
Capacity Utilization	17.20%	<input type="text" value="0.220"/> 11.15%	3	
Financial	59.24%	76.33%	1	
Revenue Growth	1.33%	<input type="text" value="0.500"/> 25.35%	1	
Profitability	3.68%	<input type="text" value="0.250"/> 12.68%	2	
Debt	3.68%	<input type="text" value="0.250"/> 12.68%	3	

- 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