SCRM--Supply Chain Risk Management: “Fundamentals & Taxonomies”

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SCRM Taxonomies Agenda….

- Our View of Supply Chain Risk Management
- What is a Taxonomy
- The Devastating Impacts of Supply Chain Disruptions
- New SCRM Frameworks
- Emerging Plans, Maturity Rates and Adoption
SCRM--Supply Chain Risk Management:
“Our View of SCRM”

Gregory L. Schlegel CPIM, CSP, Jonah
World Economic Forum’s View of Risk
Supply Chain Risk Management (SCRM)....”It is the implementation of strategies to manage every day and exceptional risks along the supply chain through continuous risk assessment with the objective of reducing vulnerability and ensuring continuity. One way to view SCRM is to think of it as the intersection of supply chain management and risk management.”----Dr Robert Trent & Gregory L. Schlegel, Lehigh University

Thailand Flood

Sandy

SCRM has been in the news!

Iceland

Stock Market

BP Oil spill

GLOBAL COST OF THE 2011 THAILAND FLOOD

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21st Century Supply Chain Risk Model

Identify, Assess, Mitigate & Manage Risk

As your Supply Chain Maturity Grows------

Your Supply Chain Inherent Risks Decrease

HIGH RISK  MEDIUM RISK  LOW RISK
Emerging Elements of SCRM....
What we are teaching at Lehigh, Villanova & APICS

1. Risk Assessment & Tools
2. Uncertainty, Complexity & Risk
3. Risk Mitigation Strategies & Tactics
4. Fraud, Theft & Counterfeiting
5. Business Continuity Planning
6. Risk Mitigation Tools & Techniques
7. Organization Development & KRI’s
8. Governance, Risk & Compliance
9. ERM, Enterprise Risk Management
10. 21st Century Supply Chain Maturity Model

Tools: Supply Chain Risk Assessment –

APICS’ New SCRM CERTIFICATE

APICS Connection
Your link to supply chain and operations management education resources, and a worldwide professional community

Supply Chain Risk Management Assessment

SherTrack
1) Detailed assessment
2) Action plans
3) Trained Lean Assessors

Tools: Supply Chain Risk Assessment – “Heat Map”

Description
A structured assessment tool for each dimension of the supply chain network. It combines best practice standards and is tailored to industry specifics.

Typical Deployment
All elements of the organization are evaluated using a Risk Maturity Assessment Tool.
A comprehensive process checklist is developed during the implementation covering all aspects of the organization’s supply chain network. Each aspect is rated based on Best-in-Class Risk Maturity Models and industry risk elements.
The workshop leader is responsible for planning and delivering the results for each attendee and discussing the assessment score.

Supply Chain Risk Management Assessment

Assessment Score
Target Score

Leadership
Balanced Scorecard
S&OP Processes
Industry Information Systems
Manufacturing
Integrated Supply Chain Logistics
Customer Demand

0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00

SherTrack
APICS’ New SCRM CERTIFICATE

Introducing the new APICS Risk Management certificate

APICS now offers a comprehensive, results-driven program that will prepare you to lead risk management initiatives or participate in the development of global risk mitigation strategy. The APICS Risk Management certificate validates that you have received 12 educational contact hours in risk and enterprise risk management topics.

Obtain the hours necessary to earn the certificate by attending the Risk Management Learning path of the 2013 APICS International Conference. To earn 12 hours and participate in one of the following to complete the remaining 7 hours:
- 12 hours at an APICS educational session including the APICS International Conference & Expo, APICS Supply Chain Risk Conference, or APICS Risk Management Seminar (7 hours)
- Pre-approved risk management education sessions at partner events.

LEHIGH UNIVERSITY

SUPPLY CHAIN RISK MANAGEMENT CONSORTIUM™
The Four Spheres of Supply Chain Risk

SUPPLY
DEMAND
PROCESS
ENVIRONMENTAL
LANDSCAPE
SCRM--Supply Chain Risk Management:

“What is a Taxonomy”

Gregory L. Schlegel CPIM, CSP, Jonah
**RISK TAXONOMY: A Definition…**

- **Taxonomy** is the practice and science of naming, classifying and defining relationships between resources, risks, goals and business processes in the enterprise.

- Without a risk taxonomy you can’t compare different types of risks across the enterprise. Without it there’s no common set of standards or way to manage relationships between different data types.

- Without a taxonomy, every department and level would potentially speak a different language!
Risk Management Terms

• *Risk* – Identification, management and mitigation of adverse events that could potentially impact a decision or organization

• *Risk acceptance* – A decision to continue with a course of action even though risk is present

• *Risk analysis* – A review of the uncertainty associated with the research, development, and production of a product, service, or project

• *Risk appetite* – The degree to which a company chooses to engage in activities that increasingly involve it in the possibility of an adverse outcome
Risk Management Terms (cont’d)

• *Compliance* – Meeting the required or mandated regulations, whether they be governmental, industry-specific or internally imposed

• *Decisions under risk* – Decision problems in which the analyst elects to consider several possible futures, the probabilities of which can be estimated

• *Governance* – The frameworks and tools, such as policies, procedures, controls, and decision-making hierarchy, employed to manage the business

• *Resilience* – The ability of a company to recover from disruptions of any type
Risk Management Terms (cont.)

- **Risk aversion** – The degree to which a company will not engage in activities that increasingly involve the possibility of an adverse outcome

- **Risk avoidance** – Changing a plan to eliminate a risk or to protect plan objectives from its impact

- **Risk register** – A report that contains all identified risks and associated details

- **Risk response plan** – Defines known risks including description, cause, likelihood, costs, and proposed responses. It also identifies current status on each risk
• Supply chain risk – Decisions and activities that have outcomes that could negatively affect information or goods within a supply chain

• Vulnerability – The potential impact on a company presented by the combination of the likelihood of a disruptive event and its potential severity
SCRM--Supply Chain Risk Management:
“*The Devastating Impacts of SC Disruptions*”

Gregory L. Schlegel CPIM, CSP, Jonah
Where Are the Risks?

- Global Economic Environment: 26%
- Government Spending: 21%
- Regulatory Changes: 19%
- Social Media: 17%
- Financial Risk: 17%

Deloitte 2012
<table>
<thead>
<tr>
<th>Why are These Risks Occurring?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low cost country sourcing</strong></td>
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<tr>
<td><strong>Outsourcing</strong></td>
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<tr>
<td><strong>Lean and just-in-time</strong></td>
</tr>
<tr>
<td><strong>Supply base rationalization</strong></td>
</tr>
<tr>
<td><strong>“Siloed” business processes</strong></td>
</tr>
</tbody>
</table>
Tale of Global Disruptions

- Hurricane Katrina (US$125 billion) - 2005
- Sub Prime Mortgage Crisis (US$945 billion) - 2007
- Chile Earthquake (US$30 billion) - 2008
- Thailand Tsunami (US$47 billion) - 2009
- China Earthquake (US$85 billion) - 2010
- Japan Earthquake (US$300+ billion) - 2011
- Hurricane Sandy (US$65.6 billion) - 2012
- US Drought (US$150 billion) - 2013

Reference: The Smart Cube
WHY we feel SCRM is Important…..

- Based on a sample of 885 disruptions announced by publicly traded firms, companies on average experience…
  - A 107 percent drop in their Operating Income
  - A 114 percent drop in Return on Sales
  - A 93 percent drop in Return on Assets
  - 6.92 percent lower Sales Growth
  - 10.66 percent growth in Cost and 13.88 percent growth in Inventories

- Another study of 1,000 companies’ supply chain glitches determined their subsequent impacts to be about 10 percent reduction in shareholder value!

- Deloitte 2012 Disruption Study……
  - Over 200 current & emergent risks impacting supply chains
  - 85% of global supply chains have experienced at least one disruption in last 12 months

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Hendrick & Singhai—“The Effect of Supply Chain Disruptions on Long-Term Volatility”
ChainLink Research—“Shareholder Value, Profitability and Share Price”
Deloitte Consulting LLP—“Visualizing Risk”, Logistics Magazine, 2012”
SCRM—Supply Chain Risk Management:

“New SCRM Frameworks”

Gregory L. Schlegel CPIM, CSP, Jonah
**Basic Concept of Risk Management**

- Risk stems from uncertainty or lack of full and timely information
- Risk must be evaluated relative to its potential cost exposure and the likelihood of occurrence

**“Risk Frontier”**

- Very undesirable: High risk and low reward
- Very desirable: Low risk and high reward
Failure Concept Categories

- **Less-likely failures with high impact**
- **More-likely failures with high impact**
- **Less-likely failures with low impact**
- **More-likely failures with low impact**

**Goal**

**Avoid**


SUPPLY CHAIN RISK MANAGEMENT
CONSORTIUM™
Enterprise Risk Management (ERM)........

“\textbf{A process for effective identification, assessment, and management of all significant risks to an entity.}\n
\textbf{This includes not only the traditional areas of financial and hazard risk, but also larger operational and strategic risk. ERM refers to the people, tools, systems and structures that are part of a broader framework of Governance, Risk and Compliance. (GRC)}”
Basic ERM Model

1. Define internal risk environment
   - Define the business environment regarding how risk is viewed, risk appetite, and philosophy

2. Insert risk into strategy
   - Insert risk management into the business strategic process so that risk objectives are consistent with risk appetite and business mission

3. Disruptive event identification
   - Identify internal and external events that could disrupt the business

4. Risk assessment
   - Detail the probability of risk occurrence and the level of organizational impact

5. Risk response
   - Development of a portfolio of responses to meet type and severity of risk

6. Information and communication
   - Detail how event and response information is captured, communicated, and monitored

7. Risk event monitoring
   - Define how progress of risk response and time to recovery are measured
ERM: What Types of Risk?

- **Hazard risk**
  - liability torts, property damage, natural disasters

- **Financial risk**
  - pricing risk, asset risk, currency risk, liquidity risk

- **Operational risk**
  - customer satisfaction, product failure, integrity and reputational risk

- **Strategic risk**
  - competition, social trends, and capital availability
SCRM--Supply Chain Risk Management: “Emerging Plans, Maturity Rates & Adoption”

Gregory L. Schlegel CPIM, CSP, Jonah
What are the Plans to Manage Risk

- Elevate risk mgmt within Org
- Reorganize to support ERM
- Provide more staff training
- Incorporate more technology
- Integrate into strategic planning

TOP 5 Responses %

Deloitte 2012
SCRM Spheres/Pillars Maturity

FOUR Pillar SCRM Maturity & Activity Level 2013

The Difference Between the Top & Bottom of Each Box Indicates the Scope of Activity
SCRM Adoption Curve

Figure 2.4
SCRM Adoption Curve
The SCRM “Holy Grail”

1) Reduce time & duration of the event
2) Reduce severity & slope of the event
3) Accelerate the T-t-R, Time to Recovery
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