SUPPLY CHAIN RISK
ARE YOU EXPOSED?
Discussion Agenda

- Introduction
- Defining Supply Chain Risk
- Categorizing Supply Chain Risk
- Managing and Mitigating Supply Chain Risk
- Q&A/Closing
Ronald Rod, PMI, ISM, APICS, CSCMP

Ronald (Ron) Rod is the Senior Procurement and Supply Chain Practice Director for RGP.

Ron has over 30 years of experience in both operational and strategic management positions including 14 years leading consulting organizations. He is a noted subject matter expert and frequent presenter in the areas of Strategic Sourcing, Supply Chain Risk, Procure-to-Pay, SCM Technology, and Warehouse/Logistics Management.
WHO WE ARE

A leading innovator in professional services:
- founded in 1996
- with a Big Four heritage
- NASDAQ listed

$591 MM REVENUE IN FY 2015

| 3,300+ | PROFESSIONALS WORLDWIDE |
| 70+ | OFFICES GLOBALLY |
| 100% | TOP 50 CLIENTS RETAINED YEAR OVER YEAR |

WHAT WE DO

FUNCTIONAL EXPERTISE

- Legal & Regulatory
- Transformation Programs
- Business Process Re-engineering
- M&A/Business Integration
- Governance, Risk & Compliance
- Operational Excellence

- Shared Service
- Program / Project Management
- Supply Chain Management
- Change Management
- Benefits Realization / ROI

OUR APPROACH

PROVEN PROFESSIONALS
- 15+ years of industry, consulting, functional and leadership experience

PRACTICAL SOLUTIONS
- Formed by collaborating with client teams and developing customized/tailored solutions

KNOWLEDGE TRANSFER
- Embedded in our delivery of insights, strategy, project management and execution

“Intellectual capital on demand.”
Peter Drucker on RGP’s Business Model in the Harvard Business Review

OUR CLIENTS

88% OF THE FORTUNE 50
87% OF THE FORTUNE 100
59% OF THE FORTUNE GLOBAL 100
>80% OF FORTUNE 1000 DIVERSIFIED FINANCIAL COMPANIES
5 of the top 6 Fortune 500 Information Technology Service companies
7 of the top 10 Fortune 1000 Diversified Financial companies

ADVISORY PROJECT INTERIM
**What We Do**

Our wide array of expertise allows us to support both functional and enterprise-wide initiatives.

### Enterprise-Wide Initiatives
- Business process re-engineering
- Mergers & acquisitions
- Shared services
- policyIQ® software
- Regulatory compliance
- Transformation programs
- Outsource transition
- Operational excellence
- Pavisse™ software
- Sarbanes-Oxley

### Program Management • Project Management • Change Management

#### Procurement & Supply Chain
- Supply chain assessment
- Strategic sourcing
- Conflict Minerals compliance
- Commodity management
- Capital procurement
- Inventory rationalization
- Contract management
- Logistics & warehousing
- Vendor audit

#### Finance & Accounting
- Financial reporting
- Restatements
- General accounting
- Accounting standards
- Financial planning & analysis
- Finance transformation
- Shared services
- M&A integration
- Carve-out financials
- Remediation
- Process optimization

#### Governance, Risk & Compliance
- Internal & IT audit co-sourcing
- Sarbanes-Oxley compliance
- Performance & mock audits
- Contract / counter party audits
- Compliance audits
- Corporate governance
- Enterprise risk management
- Fraud / forensic audits

#### Information Management
- Business analysis & integration
- Process improvement
- Implementation
- Stabilization & optimization
- Quality Assurance
- Data management
- Report strategy & development
- IT governance & security
- Outsourcing strategy
- IT strategic planning

#### Human Capital
- Organizational development / design
- Change management
- HR transformations
- Training & communications
- Compensation & benefits redesign
- HR system initiatives
- HR restructuring
- Talent management
- Succession planning
- HR compliance

#### Legal & Regulatory
- Commercial transactions
- Mergers, acquisitions & restructurings
- Regulatory compliance
- SEC filings & corporate governance
- IP agreements
- Litigation management & investigations
- Employment/Employee benefits
- Legal operations optimization

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*Our wide array of expertise allows us to support both functional and enterprise-wide initiatives.*
RGP’s Procurement & Supply Chain (PSC) Practice helps companies achieve their strategic objectives by providing experienced practitioners and customized, functional supply chain solutions.
Defining Supply Chain Risk
Supply Chain Risk – What is it?

In today’s ever more complex business environment, organizations are required to take a more comprehensive approach to how they manage supply chain risks.

Illustrative Supply Chain

Supply Base
- Suppliers

Internal Operations
- Operating Company

Customer Base
- Customers

Risks
- Financial Health
- Compliance (Regulatory, Social and Environmental)
- CyberSecurity
- Quality
- Counterfeit Goods
- Natural Disasters
- Geopolitical
- Macroeconomic
- Labor

Multipliers
- Globalization
- Lean Operations
- Sole Sourcing
- Evolving & expanding scope of Threat Actors
- Limited Visibility & Transparency
- Changing Regulatory Environment
- Rapid New Product Introduction
The Impact of Risk – Supply Chain Disruptions

The impacts of supply chain risk have been widely observed, but the true cost to operations is often never completely quantified.

Revenue Impacted

“U.S. manufacturers affected by Tianjin explosion”

Profit Impacted

“The New York Times

Data Breach Hurts Profit at Target”

Brand Impacted

“The Wall Street Journal

“Bangladesh Fire: What Wal-Mart's Supplier Network Missed”

Companies are under increasing pressure to provide greater visibility to prevent the impact of supply chain disruptions
Poll Question 1

Which of the following supply chain risks has your organization experienced? Select all that apply.

- Financial (customer or supplier)
- Compliance
- Quality
- Data or CyberSecurity
- Labor
- Natural disaster
- Macro Economic
- Geopolitical
- Don’t know/ Not applicable

Almost half of the respondents experienced Supply Chain related risk in the areas of Finance, Compliance and Quality.
Supply Chain Risks are on the rise

Global integration and an increasing upward trend in significant disruptive events continues to highlight both direct and indirect sources of supply chain risk.

"Supply Chain Risk a Hidden Liability for Many Companies"  
- Forbes

### Top-5 Event Summary

<table>
<thead>
<tr>
<th>Event Type</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Events</td>
<td>353</td>
<td>339</td>
<td>741</td>
</tr>
<tr>
<td>Factory Fires</td>
<td>82 (23%)</td>
<td>44 (13%)</td>
<td>126 (17%)</td>
</tr>
<tr>
<td>Merger &amp; Acquisitions</td>
<td>35 (10%)</td>
<td>35 (10%)</td>
<td>107 (14%)</td>
</tr>
<tr>
<td>Labor Disruption</td>
<td>43 (12%)</td>
<td>44 (13%)</td>
<td>94 (13%)</td>
</tr>
<tr>
<td>Typhoon/Hurricane</td>
<td>34 (10%)</td>
<td>34 (10%)</td>
<td>61 (8%)</td>
</tr>
<tr>
<td>Earthquake</td>
<td>31 (9%)</td>
<td>29 (9%)</td>
<td>48 (7%)</td>
</tr>
</tbody>
</table>

Source: Resilinc/EventWatch: Top-5 Event Summary

Source: Resilinc/EventWatch: Bulletins by Event-Type
The proliferation of globalization and the extended enterprise magnifies CyberSecurity threats as risks to the supply chain that can have impact beyond the organization’s “four walls”

<table>
<thead>
<tr>
<th>Threat Actor</th>
<th>Attack Targets</th>
<th>Enterprise Impact</th>
</tr>
</thead>
</table>
| Organized Criminals              | • Financial & Payment systems  
          • Credit Card and Personal Data                                              | • Lawsuits & Increased Regulation  
          • Brand & Reputation  |
| Nation States                    | • Infrastructure/ systems  
          • Trade Secrets & Intellectual Property  
          • Sensitive Business Data  |
| “Hacktivists” & Terrorists       | • Personal Data (key personnel)  
          • Sensitive Business Data  
          • Sensitive Business Data  
          • Personnel Data  
          • Trade Secrets & Intellectual Property  |
| Insiders & Competitors           |                                                                              | • Physical disruption  
          • Loss of competitive advantage  
          • National Security concerns  
          • Physical & Operational disruption  
          • Brand & Reputation  
          • Loss of competitive advantage  
          • Operational disruption  
          • Brand & Reputation  |

**Extended Supply Chain Impacts:**

- Core Suppliers & Key 3rd Party Vendors performing critical business functions
- Critical operating infrastructure & communications
- Disruption of Supply
- Damaged Relationships and loss of competitive advantage
- Limited ability to mitigate/remediate

Cybersecurity threats found to be “highest risk for short and long term”
- Gartner 2016 Chief Supply Chain Officer Survey
The financial penalties associated with compliance failures can be significant.

- **J.P. Morgan Chase** $5.1 billion related to mortgages
- **Johnson & Johnson** $2.2 billion related to drug marketing
- **SAC Capital** $1.8 billion for insider trading
- **Transocean** $1.4 billion for Gulf oil spill
- **UBS** $885 million for mortgage-backed bonds
- **RBS** $612 million for interest-rate complications
- **Total SA** $398 million for alleged bribery
- **Weatherford** $252 million for alleged bribery

Sources: WSJ staff reports, Society of Corporate Compliance and Ethics
Supply Chain Risk Categories
Segmentation and a focus on risk types will enable an organization to better assess the impact of vulnerabilities across the supply chain.

- Location
  - Natural Disaster
  - Geopolitical
  - Macroeconomic
  - Local or Site specific risk
- Recovery
  - Recovery Times
  - Business Continuity Capabilities
  - Alternative Supply
  - Cyber Resiliency
- Operational
  - Delivery Reliability
  - Lead Time Performance
  - Infrastructure Security/Redundancy
  - Quality, Cost & Flexibility
- Compliance
  - Regulatory
  - CSR & Environmental
  - Records Management
  - Data Handling & Management
- Financial
  - Financial Health
  - Credit Risk
  - Z-Score
  - Debt Rating

The impact of these risks is heavily dependent on the value derived from the supplier & 3rd party relationships involved.
Risk Category 1: Location Risk

Location Risk factors focus on the risk introduced into the supply chain due to the physical location of an element of the company’s supply chain (internal or external).

Factors to consider:

• Natural Disaster
  - Weather (Hurricane, Typhoon, Tornado, Drought conditions, flooding)
  - Seismic (Earthquake, Tsunami, Volcano)

• Geopolitical
  - Political Turmoil
  - Military Conflict

• Macroeconomic
  - Financial Markets
  - Currency Stability

• Local or Site-specific risks/vulnerabilities
  - Labor Strike / Worker Disruption
  - Plant Fire or Explosion

Top 5 Supply Chain Disruptions of 2015 (revenue impact)
1. Typhoon Soudelor – Taiwan/China/Philippines ($20+ Billion)
2. Typhoon Dujuan – Taiwan/Japan/Philippines ($10+ Billion)
3. Tianjin Explosions – Port of Tianjin/China – ($9+ Billion)
4. Typhoon Mujigae – China/Vietnam/Philippines ($2+ Billion)
5. Typhoon Goni – Taiwan/China/Japan/Philippines ($1.5+ Billion)

Top 5 Supply Chain Disruptions of 2014 (revenue impact)
1. Typhoon Halong - Western Japan ($10 Billion)
2. New York Flooding – New York, USA ($4 Billion)
3. Typhoon Rammasun – Asian Seaboard ($1.5 Billion)
4. Taiwanese Gas Explosions – Southern Taiwan – ($900 Million)
5. Arizona Chemical Spill – Phoenix, AZ, USA ($900 Million)

Source: Resilinc 20150& 2016 SC Disruption report
Risk Category 2: Interruption/Recovery Risk

Interruption/Recovery Risk Factors focus on the ability of a node within the supply chain to recover if disabled or impacted by an interruption.

- Recovery Times – time (and ability) to bring facility or critical infrastructure back on line after disruption?
- Business Continuity / Redundancy – plan to resume normal operations?
- Alternative Supply – options to mobilize alternative suppliers or shift to other sources?
- Cyber Resiliency – ability to detect, defend, contain and remediate from cybersecurity attacks or related events

*DATA IS SLIGHTLY MODIFIED TO PROTECT PROPRIETARY INFORMATION
SOURCE DAVID SIMCHI-LEVI
Supply Chain failures create Operational Risks that can have significant impact on customer relationships, reputation, and revenue.

- Delivery reliability
  - Production and Order Fulfilment performance
  - Transportation (internal and external)
- Lead Time performance
  - Inbound transportation
  - Inventory level & accuracy
  - Production lead time
- Infrastructure Security/Redundancy
  - Key direct assets & technologies
  - Critical indirect infrastructure
- Quality, Cost & Flexibility – inherent to the system, as configured
Risk Category 4: Compliance and Environmental Risk

Regulatory and Internal Compliance initiatives also create significant costs to comply - and even greater cost and impact from non-compliance.

- Regulatory compliance in the Supply Chain
  - Conflict Minerals & 3rd Party Oversight
  - California Transparency in Supply Chain Act
  - UK Anti-Human Trafficking Act
  - CTPAT & Import/Export Compliance
  - Revenue Recognition
  - Data Security & Privacy (PII, PHI, etc)
  - Environmental (REACH, RoHS, etc)
- Internal Compliance
  - Procurement Policies
  - Brand management
Risk Category 5: Financial Risk

Financial Risk factors focus on the financial stability/instability of the supply chain partners and the impact that has on supplier selection and management.

Factors to consider:

- Financial health of suppliers
- Currency Stability
- Credit Risk
- Z-Score
- Debt rating
Poll Question 2

Which of the following risk categories do you see as immediate concerns to your organization? Select all that apply.

- Location
- Recovery
- Operational
- Compliance
- Financial
- Don’t know/ Not applicable

*Of most immediate concern were Operational followed by Compliance risk.*
Managing and Mitigating Supply Chain Risk
Determining the proper level of investment to mitigate risk is a critical and often overlooked step in treating supply chain risks.

**Impact of Supply Chain Risks**

**Cost of Mitigation Strategies**

**Optimal Level of Mitigation Investment to Reduce Risk Impact:**
Additional strategies implemented yield diminishing return
Managing Supply Chain Risk – Critical Success Factors

More than ever, companies need an integrated and common view of risk. Be it a supplier of goods or a vendor of services, companies must take a unified approach to effectively and efficiently manage supply chain risks.

Critical success factors in managing Supply Chain Risk:

- Senior management buy-in and communication
- Understand inherent risks in supplier relationships (direct & indirect)
- Engage cross-functional stakeholders
- Risk standards and measures
- Effective use of contracts and policies to manage / mitigate
- Ongoing assessment and performance monitoring
- Broad communication and training
An Integrated Supply Chain Risk Framework

Below is an illustrative modular solution that enables organizations to manage a variety of supply chain risks on a more proactive and sustainable basis.
Summary Activities

This solution begins by defining the key elements of risk facing the organization. This is followed by a series of activities to identify, assess, and embed repeatable processes throughout the company.

1. Define project scope and objectives
2. Define program governance model
3. Define risk taxonomy and standards
4. Inventory suppliers/vendors
5. Stratify suppliers/vendors
6. Develop risk assessments by stratification
7. Document and verify risks
8. Review contracts and other artifacts for risk treatments
9. Refine risk assessments
10. Develop risk remediation and mitigation strategies*
11. Develop management implementation plan to treat priority risks
12. Identify and design risk remediation and mitigation strategies*
13. Develop management implementation plan to treat priority risks
14. Document and approve RACI matrix and procedures
15. Develop standardized reports and metrics
16. Develop and delivery training
17. Monitor and collaborate with the supply chain and regularly assess risk
18. Establish internal controls and quality reviews to measure performance
19. Develop contingency plans to address different supply chain risks

* Activity is optional depending on the scope of risks.
This framework can be applied to a variety of client industries, geographies, and types of supply chain relationships.

**Financial Services**
- Current regulatory guidance regarding assessing and managing risks associated with supply chain relationships
- Requires comprehensive oversight throughout each phase of a bank’s business arrangement with third parties, including consultants, joint ventures, affiliates, subsidiaries, payment processors, computer network and security providers

**Sourcing, Manufacturing & Distribution Operations**
- Monitor and assess direct and indirect suppliers across the extended supply chain
- Provide visibility and increased transparency of potential supply chain risk
- Support regulatory and corporate compliance initiatives relating to conflict minerals, corporate social responsibility, supplier codes of conduct
Poll Question 3

Does your organization have an integrated supply chain risk framework?

- Yes, it is well developed and integrated
- Yes, but further integration is required
- No, but we are looking at establishing one in the near future
- No, but we really need to develop one!
- Don’t know/Not applicable

Only 14% have an integrated supply chain risk program and 53% are either trying to better integrate their existing program or need to develop one.
Questions & Discussion