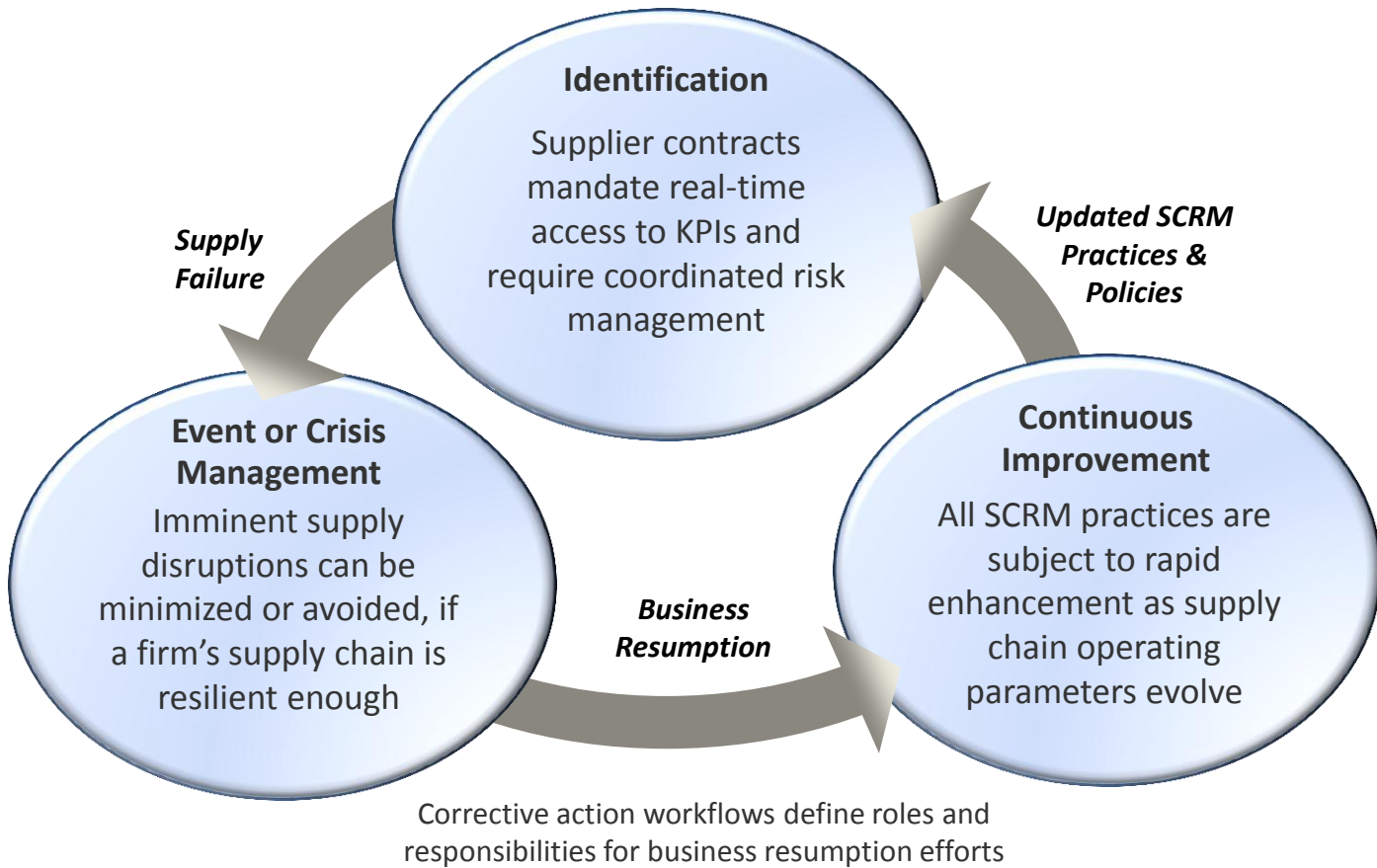


**Firms with Resilient Supply Chains Minimize Supply Disruptions**

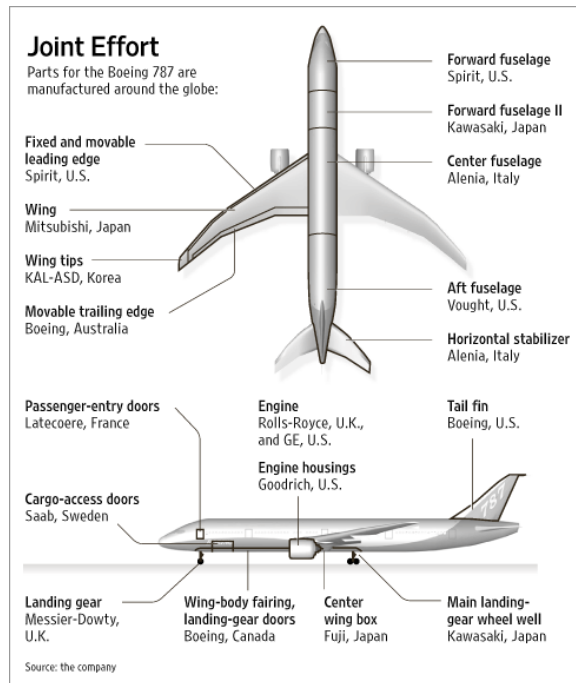


**Caterpillar's Success Story**

- Sole-sourced couplings factory half-destroyed by a tornado
- 12 hours after the tornado hit, CAT executives inspect the factory
- Launch a worldwide recovery plan immediately to find and produce couplings
- Plan to restart production at damaged factory within two weeks
- With their rapid recovery, customer production was not impacted

## What went wrong with the Boeing 787 supply chain?

*Complexity and emphasis on lean concepts resulted in more than a 3-year delay as well as additional costs, lost revenue and lost enterprise value of millions and millions of dollars to Boeing and its shareholders*



**Current global supply chains are more susceptible to disruptions, because they emphasize low-cost operations**

- More outsourcing & single sourcing
- Co-located supplier operations
- Little slack or excess inventory in supply chain
- Strong global competition

**Every firm faces increased financial, strategic, operational and hazard-related risks if operations are globalized**

- GM identified 125 separate risk types
- The probability of a specific event is low, while the likelihood of several events is 100%
- With globalized supply chains comprised of dozens of firms, the risk of supply chain disruption increases

**Leaning out a global supply chain creates the conditions that cause supply chain events to disrupt product supply**

- Companies lack risk management techniques to:
  - Identify potential problems quickly
  - Avoid & minimize supply disruptions

# The Consequences of Supply Disruption



DISRUPTION FINANCIAL IMPACTS	ORGANIZATIONAL BARRIERS
Publicly traded firms lose more than 7% of the stock market value on average due to supply disruption	Conventional supply chain lean techniques focus on lowest cost and not on overall, global supply chain risks
On average, share prices of firms with significant supply disruptions were 35% lower than peer companies	Causes of disruptions include part shortages, ramp-up, order changes, production, quality and development
Operating income, ROS and ROA for median firms facing supply disruptions fell by 42%, 32% and 36%, respectively	Firms globalize their supply chains to compete effectively, but the techniques used to manage these slack-free supply chains have not been updated, despite the much higher supply disruption risk

Supply Chain Problem Resolution Process	SCRM Processes	SCRM Best Practice Technique Categories
<p><b>Disruption Building Up</b></p> <p><b>Business Event</b></p> <p><b>Data Available</b></p> <p><b>Insight Delivered</b></p> <p><b>Decision Made</b></p> <p><b>Action Taken</b></p>	<p><b>Monitor &amp; Identify Risks</b></p>	<ul style="list-style-type: none"> <li>▪ Near real-time supply chain data</li> <li>▪ Automated event management: identify, investigate, resolve or escalate</li> <li>▪ Supply chain business rules</li> <li>▪ Risk identification &amp; assessment</li> </ul>
	<p><b>Collect Facts &amp; Develop Alternatives</b></p>	<ul style="list-style-type: none"> <li>▪ Sourcing risk mitigation</li> <li>▪ Supplier contracts require process and metrics transparency</li> </ul>
	<p><b>Evaluate &amp; Recommend Alternatives</b></p>	<ul style="list-style-type: none"> <li>▪ Business continuity plan in place</li> <li>▪ Coordinated risk management</li> </ul>
	<p><b>Agree on Priorities &amp; Authorize Changes</b></p>	<ul style="list-style-type: none"> <li>▪ Supply chain network optimization</li> <li>▪ Crisis management plan in place</li> </ul>
<p><b>Drive Response Time to Zero</b></p>	<p><b>Execute Agreed-upon Recovery Plan</b></p>	<ul style="list-style-type: none"> <li>▪ Business resumption process initiated</li> <li>▪ Communication plan in place</li> </ul>

**Executives Need to Have a Systematic Focus**

- ❑ Most companies today are fire-fighters, when it comes to SCRM with each emergency requiring a rallying of resources
- ❑ No systematic effort to understand root causes or prevent disruptions
- ❑ No consideration of risk trade-offs in sourcing
- ❑ No understanding that lean techniques are creating too much risk

**Best-Practice Companies Focus on Time-to-Resolve**

- ❑ Culture is risk-attentive, requiring key suppliers to provide near real-time data on delivery progress
- ❑ Analysts use BPM event management to monitor key operating parameters
- ❑ Have developed joint response plans with suppliers and customers
- ❑ Early detection and process automation reduces time-to-resolve

**SCRM Improvements Focus in Five Main Areas**

- ❑ **Roles & Responsibilities:** Clarify who does what, and when & how it must be done
- ❑ **Process/Workflow:** Provide data, analysis & decisions, as needed
- ❑ **Business Intelligence:** What is monitored by whom & how is the data collected?
- ❑ **Corrective Actions:** Quickly evolve practices to reflect root-cause-analysis findings
- ❑ **IT Enablement:** Use analytics on global supply chain operational data store

## Supply Chain Risk Management Assessment Client Values

- SCRM benchmarking:
  - Compares current practices to SCRM best practices
  - Creates a quantitative SC Resiliency index for each unique client supply chain
- In-depth examination of each significant supply chain supports fact-based analysis
- Mappings show clearly where gaps exist currently
- Analysis of key suppliers identifies opportunities for improved partnering
- The recommendations we make create a SCRM action plan for the client

## Typical Scope of a Supply Chain Risk Assessment

Qualitative Benchmarking

Mapping of Disruptions

Supplier Analysis

Recommended Improvements

### Practice Maturity Assessment:

- Design for risk
- Risk identification
- Risk resolution
- Business Resumption

### Resiliency Scoring:

- Unique supply chains
- Individual organizations
- Corporate level

### Business Event Analysis:

- Source of disruption
- Detection
- Data collection
- Analysis
- Decision-making rules
- Resolutions to reduce risks

### Scope:

- Practices
- Processes
- IT support requirements
- Roles & responsibilities

### Partnering Assessment:

- Contracts
- Data and strategy sharing
- Performance/event monitoring

### Readiness Assessment:

- Resiliency questionnaire
- Evaluation of performance
- Supplier resiliency heat mapping

### Project Recommendations:

- Resiliency ROI
- Improved practices
- Roles & responsibilities
- Strategic sourcing
- Supply chain optimization
- Supplier transparency
- Improved analytics
- Pilot projects
- Lean & flexible

## Thomas Group offers three standard SCRM services:

- ❑ Supply chain risk assessments: What are your risks?
- ❑ Resilient supply chain design initiatives: How do you fix them?
- ❑ Pilot implementations: How do you demonstrate value?

### What is a resilient supply chain?

- ❑ Resilient supply chains detect and resolve supply problems before they cause a supply disruption
- ❑ Supplier contracts mandate real-time access to KPIs and require coordinated risk management
- ❑ Most adverse supply chain events are resolved routinely
- ❑ More serious events are promptly escalated using process automation
- ❑ All SCRM practices are subject to rapid enhancement as operating parameters evolve

### Scope of our Maturity Model

- ❑ **Design for Risk:** Business Rules, Supplier Contracts, Flexibility, Supply Chain Network Optimization, BI
- ❑ **Risk Identification:** Classification, Planning & Analysis, Sourcing Risk Mitigation, Coordinated Risk Management, Business Continuity Planning
- ❑ **Risk Resolution:** Event and Crisis Management, Communication Management, Business Resumption
- ❑ **Organizational Development:** Supplier Management, Order Fulfillment, Culture

### How will we work together?

- ❑ A design initiative normally follows a SC risk assessment
- ❑ The priorities for improving SC design are defined in the risk assessment phase
- ❑ We optimize the sequence of design efforts to focus on areas of highest risk first
- ❑ Redesign efforts include all aspects of SC risk: roles & responsibilities, policies, best practices, analytics, IT support including automated work flows & performance measurement

### Maturity Summary Level Example

Best Practice Category	Tactical	Strategic	Optimized	Resilient
Risk Classifications	Inaccurate forecasts and significant but unmanaged replenishment, quality and supplier status risks	Categories used to capture supplier or customer bankruptcy risks, variability of demand and logistics risks	Classifications also include: internal capacity inflexibility, supply chain structure, strikes, absenteeism, and the existence of an inflexible workforce internally or with key suppliers	Classifications also include information technology, macro-economic factors and government and regulatory risks. Best companies organize risks into major groups, e.g., financial, strategic, operating and hazard categories of risk

**Why Thomas Group Pilots are Important\***

- Creates a Sense of Urgency
- Pulls Together the Guiding Team
- Develops The Change Vision and Strategy
- Communicates for Understanding and Buy-in
- Empowers Others to Act
- Produces Short-Term Wins
- Moves Concepts to Practice-Don't Let Up
- Begins to Create a New Culture

**Major Roles & Responsibilities of Pilots**

- Pilots are used to accelerate adoption of SCRM best practices
- Pilot programs implement best practices on a narrow scope
- Quick results and uncompromised pilot objectives advance SCRM
- TG helps client executives recruit opinion leaders for pilot teams
- TG consultants co-lead pilots with company personnel
- Steering committee is co-led by TG and company executives
- Steering committee drives pilots to accelerate acceptance and optimize ROI

\* Using a pilot to accelerate Kotter-style change

