

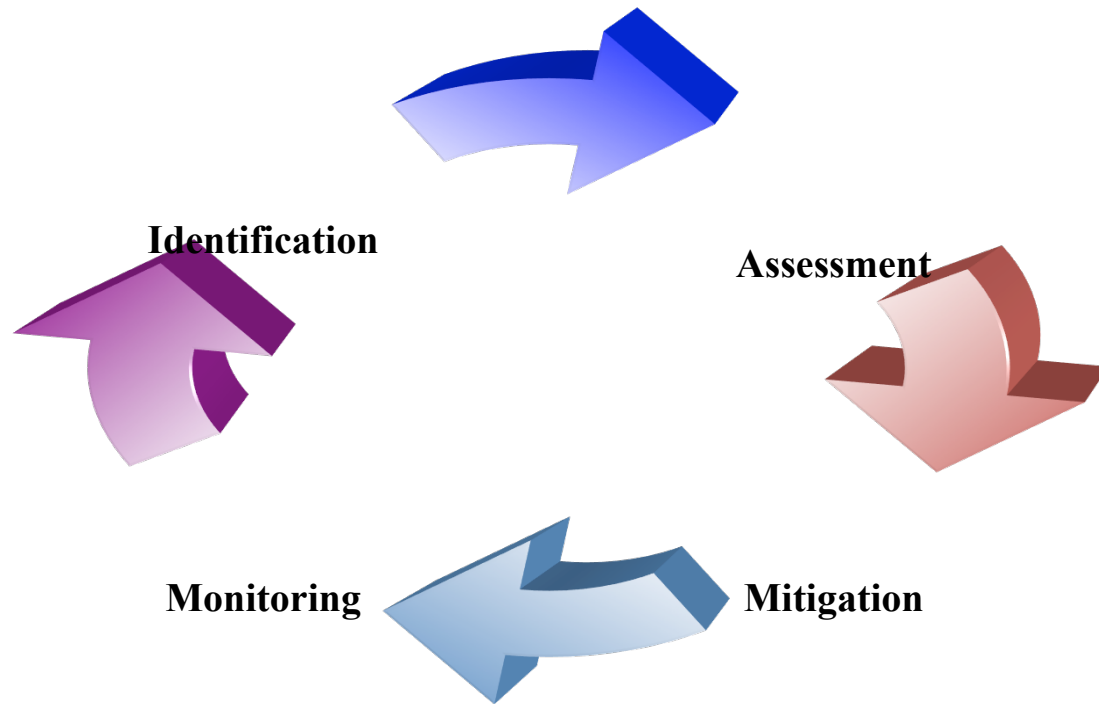
# Supply Chain Risk Issues and Opportunities



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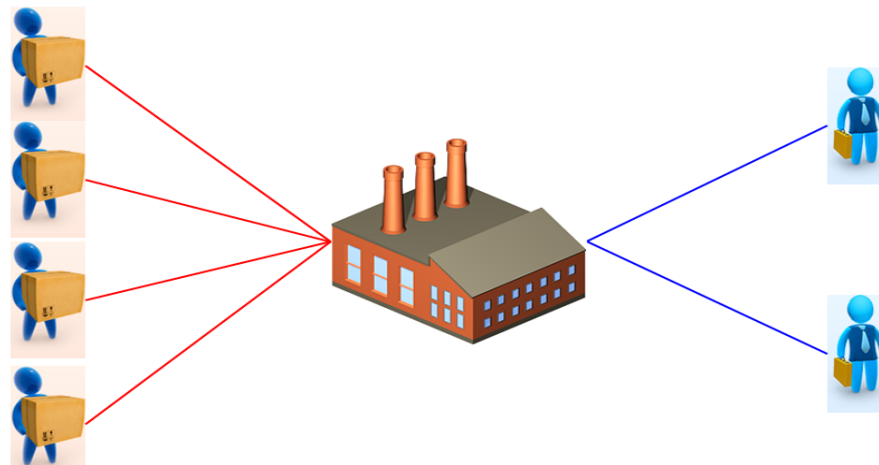
**September, 2015**

# Supply Chain Risk Management



Systematic identification, assessment, and mitigation of potential supply chain disruptions with the objective to reduce their negative impact on business performance.

# Historical Supply Chain Overview



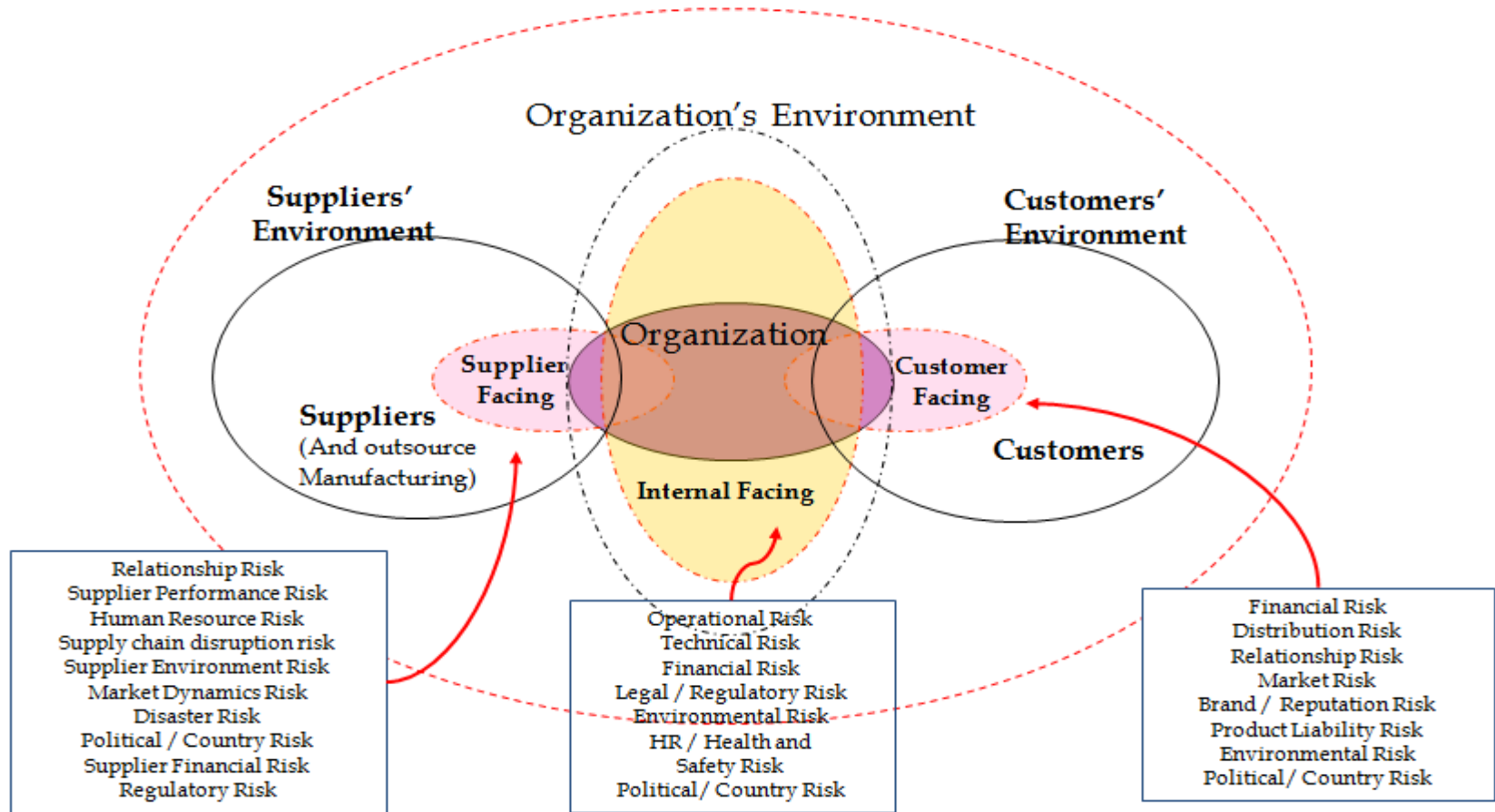
Historically, most organizations assess supply chains based on their immediate vendors, and linear to their end customer.

# Changes in Historical Production Structures Force Us to Re-evaluate How We Look at Supply Chains

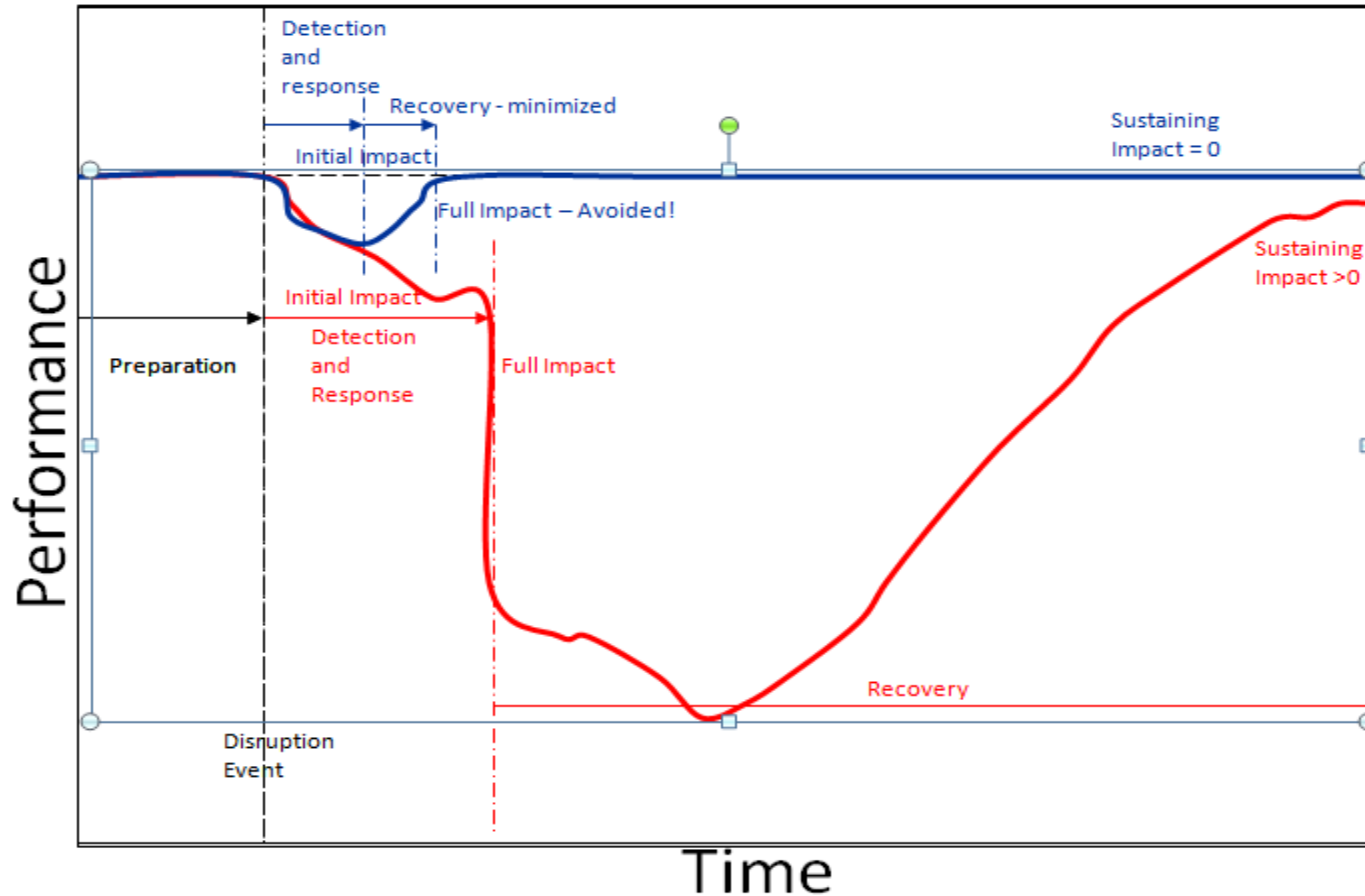
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- Just in time production
- Customer Requirements (on demand)
- Movement away from vertical integration (outsourcing)
- Global spread of manufacturing
- Complex transportation schemes

# 2015 Global Supply Chain Overview

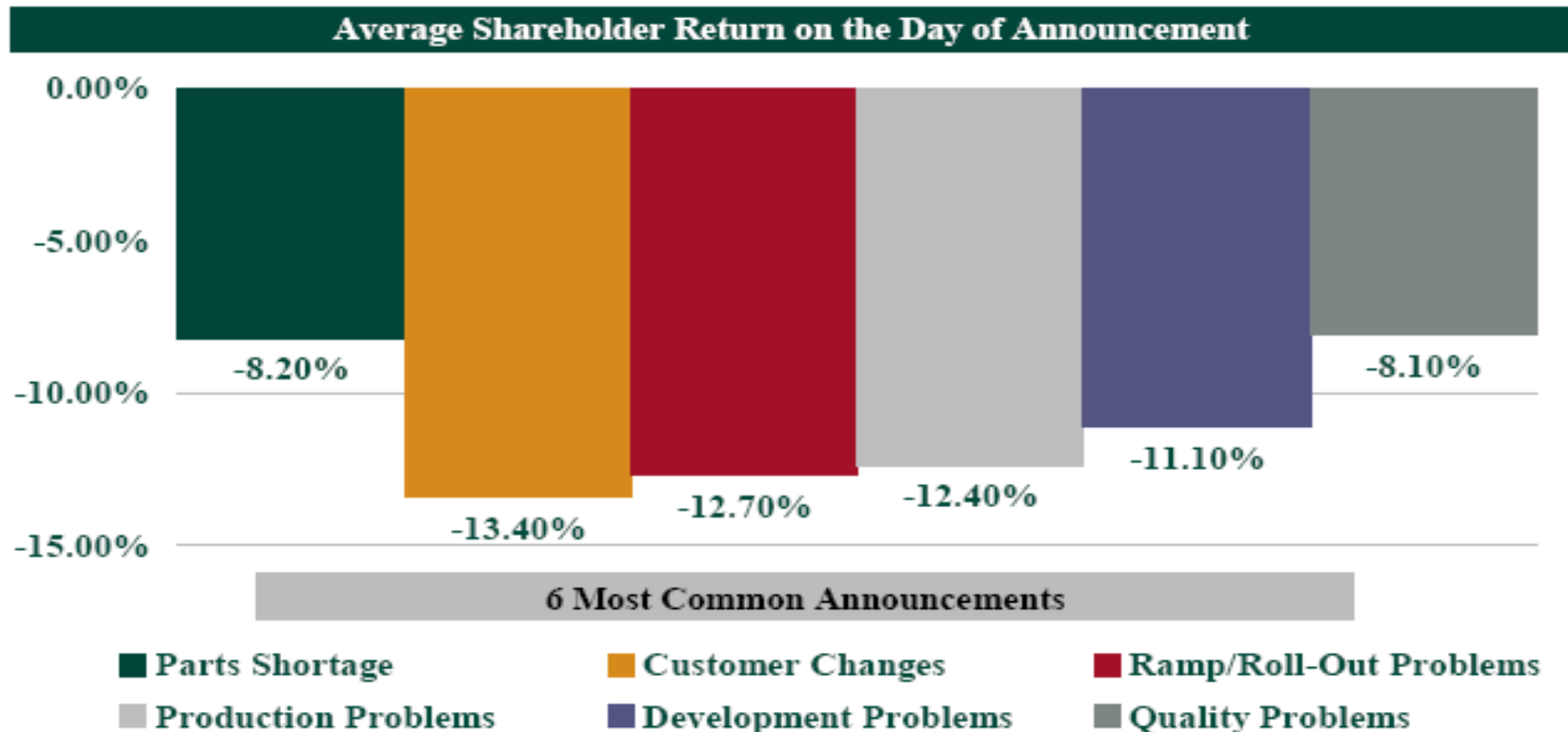


# Why Should We Manage Supply Chain Risk?



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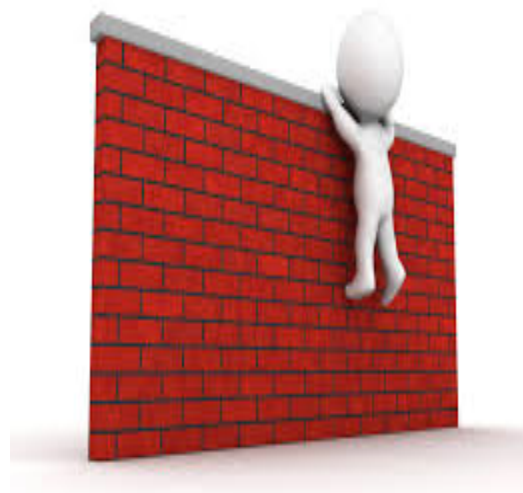
Empirical evidence suggests a direct relationship between supply chain management and stock price performance



Source: *Supply Chain Performance and Shareholder Value* – Kevin Hendricks and Vinod R. Singhal, December 2000

# Hurdles to Effective Risk identification

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- Differing agendas from internal stakeholders
- Limited understanding of supply chain interdependencies
- Poor communication of risk exposures within an organization



# Risk Identification Techniques

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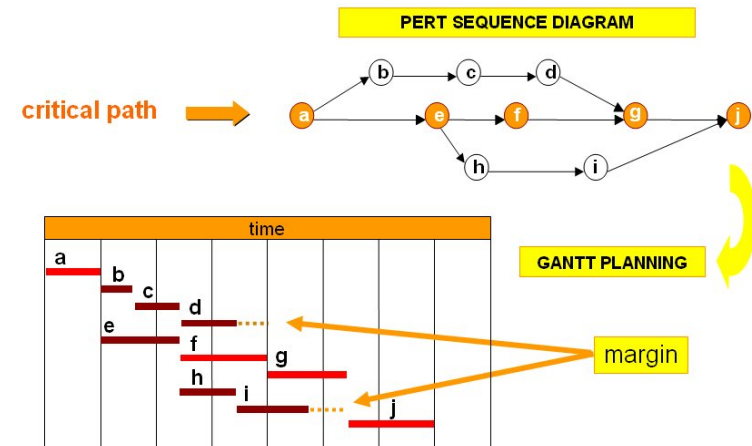
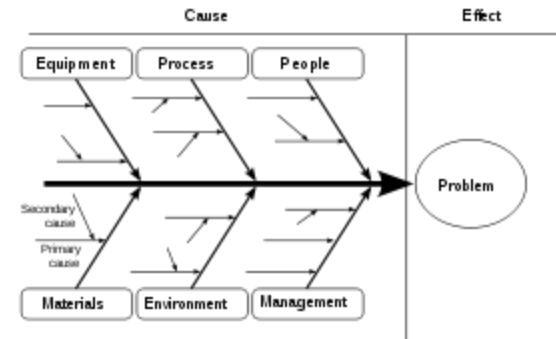
- Geomapping/Supply Chain Mapping
- Analysis of Historical Data
- Researching Industry Data
- Brainstorming with Internal Stakeholders
- Assessment Surveys
- Site Visits
- Information Audits

# Risk Identification Tools

- Risk Checklists

- Cause-and-effect diagrams

- Gantt Charts



# Common Risk Exposures to a Supply Chain

## Physical Risk Exposures

- Wind
- Fire
- Ice
- Flood
- Seismic
- Transportation Routes

## Internal Risks

- Production Bottlenecks
- Information Technology
- Infrastructure
- Labor Disruptions
- Machinery Breakdown

## External Risks

- Third-Party Suppliers
- Sole Source Suppliers
- Single Source Suppliers
- Change in Demand Level
- Financial Risks
- Geopolitical Environment

# Common Risk Exposures to a Supply Chain

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## Low Frequency/high Severity Risks

- Catastrophe
  - hurricanes, Earthquakes, Volcanic Eruptions, Pandemics, Terrorism
- Merger of key suppliers, or with competitor

# Unique Supply Chain Risks- Mexico

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- Mexico City Earthquake
- Mexico City/Popocatépetl volcano ramifications
- Verification of supplier factory work conditions
- Corruption implications and compliance with developing laws
- Language /cultural barrier issues
- Theft by narcos/gangs
- Condition of roads/vehicles/equipment

# Unique Supply Chain Risks- Canada

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- Variances in provincial law and differences between provincial laws versus US law
- Tax implication and Canadian protectionism
- Training of own employees and suppliers on compliance issue and guidance on how to mitigate compliance risk
- Major NatCat events on Canadian West Coast and implications on supply chain
- Major earthquake in Quebec
- Some language barrier issues in Quebec
- Mechanical problems associated with severe weather

# Positive Risk Management attributes- RFID, connected Technologies, GPS

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- More proactive risk control over a supply chain
- Improvements in instances of theft and accident incidents
- An improved operational supply chain through these technologies implies an improved risk culture
- Superior risk cultures drive superior claim results over time

# Premium Credits

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- Generally not a clearly delineated credit scheme in place by insurance industry
- Insurance industry tends to require extensive credible data prior to issuing blanket credits
- Initially such proactive controls tend to be expensive – costs decline significantly over time
- Market penetration over time implies more of an insurance cost reduction nexus
- **However**, clearly a factor that will be positively recognized by Underwriters on a case-by-case basis (the overall risk mitigation mindset). Currently these technologies are a “soft benefit” to insurance costs.



# Driverless Cars – Future Impact



- Legal liability- product liability
- Federal Regulation Vs. State Regulation
- Underwriting criteria
- Repair Costs
- Automobile ownership

# Final Thoughts

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- Collaborate internally before you try external collaboration
- Identify single point failures
- Help your partners to work with you
- Start small (limited # of selected partners) and stay focused on what you want to achieve in the collaboration
- Put a metrics program in place that allows you to monitor your partners' performance
- Make sure people are kept part of the equation
- Systems do not replace people

# Contact

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