

# Walking the High Wire

## Risk Management in Supply Chain



Managing Business Risk  
*Minimizing the "Oops!" in Operations*



SUPPLY CHAIN / LOGISTICS  
SPECIAL INTEREST GROUP

# Agenda

- Why managing risk in supply chain is important
- Definition of supply chain risk management
- How changes in the supply chain have affected risk
- What you can do to help manage risk

# Supply Chain is BIG Business

- A large portion of many countries' GDP is driven by logistics/supply chain
  - 15% of China
  - 13% of India
  - 9.4% of US
    - \$1.3 trillion in US expenditure for logistics
    - US supply chain expenditure is larger than all but 12 GDPs of countries in the world

# Some Definitions

## Supply Chain

- A sequence of events intended to satisfy a customer.
- A series of activities and organizations that materials move through on their journey from initial suppliers to final customers.

# Some Definitions (cont'd)

## Supply Chain Management

- Managing the transport and storage of materials on their journey from original suppliers, through intermediate operations, to the final customer.
- Managing the flow of materials through the supply chain, to achieve high customer satisfaction while using resources efficiently to minimize cost.

# Some Definitions (cont'd)

## Risk

- A chance that an unexpected event can harm or negatively impact an organization.

## Risk Management

- The process for systematically identifying, analyzing, quantifying and responding to risks that can impact an organization.

# Today's Supply Chain. . .

- Integration of previously separate and stand-alone functions into a single group
- Increased data for analysis
- Globalization of marketplace
- Organizations focusing on core competencies
- Improvements in transportation
- More accurate cost accounting
- Reduction of “slack” in supply chain

# . . . And Results

- Removing redundancies
- Improvement in forecasting
- Expanded marketplace opportunities
- Greater interaction with customers
- Transfer of risk to third parties
- Reduction of costs
- Improved profit opportunities

# Today's Supply Chain . . .

- Shift in power to the retailer/customer
- Economies of scale
- Direct, small deliveries

## . . . And Results

- Continual drive to reduce costs
- Increased severity of risk
- Increased per shipment transportation costs

# Why Worry About Risk in the Supply Chain?

- The focus on cost savings has not taken into account the associated risks
- Supply chain is expanding, leaving less control to the organization
- Retailers/customers less tolerant of failure
- Over-optimization has led to a lower safety net
- Global economy has created additional risks

# What Has Happened?

- Lead paint in the toys caused a recall of 1.5 million products imported from Chinese suppliers.
- A West Coast port strike caused stock outages of Wii game due to delays in receipt of key component parts.
- A disruption of delivery by Hurricane Katrina caused a 67% increase in polyethylene foam price.
- Reputation of a well-known food manufacturer was negatively impacted when it became known that child labor was used to harvest produce – provided by one of their 3<sup>rd</sup> tier suppliers.

# What Has Happened (cont'd)?

- A bottling company in Belgium had problems with contamination traced to a local supplier of carbon dioxide. The Co<sub>2</sub> was not tested at the bottler because they assumed it was pure, and the vendor never tested the product because it wasn't required.
- Hurricane Floyd flooded a North Carolina automotive component plant, disrupting deliveries and closing 7 assembly plants across North America for 3-7 weeks.

# A Tale of Two Companies

A thunderstorm in New Mexico produced a lightning strike and power surge that caused a fire in the Phillips chip-making facility in Albuquerque NM.

The fire was contained and put out by the automatic sprinkler system, lasting no more than 10 minutes. Damage to the building was slight.

Thousands of chips that were in production were destroyed

Water and smoke damage to the rest of the building - including the sterile area where chips were stored - contaminated millions of chips

# A Tale of Two Companies

## Ericsson

- Single sourced to Phillips
- Discounted fire
  - expected 1 week return to service
  - Actual 3 week shutdown and 6 months to return to 50% capacity
- Estimated \$400 million in costs
- Share price dropped 14%

## Nokia

- Multi-sourced – some to Phillips
- Supply Chain trouble shooter
  - Identified issues immediately
  - Pressured Phillips to divert mfg to other plants
  - Changed designs to accept other chips from other sources
- New chips delivered within 5 days

# Where Does Risk Originate?

## Internal

- From operations within the organization
  - Inherent
    - Accidents
    - Loss of IT systems
  - Decision-based
    - Batch size
    - Safety stock

## External

- From the environment
  - Accidents
  - Extreme weather
  - Natural disasters
  - Legislation
  - Pressure groups
  - Crime

## Supply Chain

- From operations associated with suppliers
  - Reliability
  - Availability of material
  - Delivery issues
- From operations associated with customers
  - Variable demand
  - Order & payment problems
  - Customization requirements

# Risk Classifications

- Strategic
- Natural Events
- Political
- Economic
- Physical Events
- Supply
- Market
- Transport
- Products
- Operations
- Financial
- Information
- Organization
- Management
- Planning
- Human
- Technical
- Criminal
- Safety
- Environmental

# Weighing the Risks

## Single Source Supplier

### Reward

- Stronger relationship with vendor
- Economies of scale
- Easier communication
- Joint forecasting
- Greater confidentiality
- Less variation in materials and suppliers

### Risk

- More chance of disrupted supplies
- Increased price due to lack of competition
- Inability to deal with varying demand
- Lack of innovation
- No additional sources in event of supplier bankruptcy or disaster

# Weighing the Risks (cont'd)

## Reduced On-Hand Inventory

### Reward

- Reduce inventory holding costs
- Minimize potential for obsolete inventory
- Reduce warehouse space requirements

### Risk

- Removed buffer to counter S/C disruption
- Increased costs for “emergency” shipments
- Increased risk of reputation issues & customer penalties
- Loss of business due to stock out situations

# Moving Towards the Future

## Become a Leader in SCRM

- Risk manager takes a strategic role
- Embed risk management activities into all processes and functions
- Implement cross-functional team to identify and manage supply chain risk
- Be innovative/creative

# How Can IT Help?

- Actively participate in the risk management cross-functional team
  - Utilize your experience in project management
    - Identification / Assessment / Monitoring
    - Development of Project Management Office
- Develop analytical tools to summarize and report on supply chain risk
  - Country
  - Supplier
  - Product

# How Can IT Help?

- Develop tools to pro-actively manage risk
  - Dashboard notification of risk status
    - Inventory monitoring
    - Geo-political review
    - Weather monitoring
  - Create pro-active monitoring systems
    - EDI transmissions on shipment status (ASN's)
    - Order status updates
    - Reports to key individuals

# For Additional Information

## Books

- Supply Chain Risk Management – Donald Waters
- PMI Body of Knowledge – Project Management Institute
- The Definitive Handbook of Business Continuity Management – Andrew Hiles

## White Papers

- Risk in 21<sup>st</sup> Century Supply Chains – AON & State of Flux
- Stemming the Rising Tide of Supply Chain Risks – Marsh
- Risk Management in a Global Economy – FM Global

# For Additional Information

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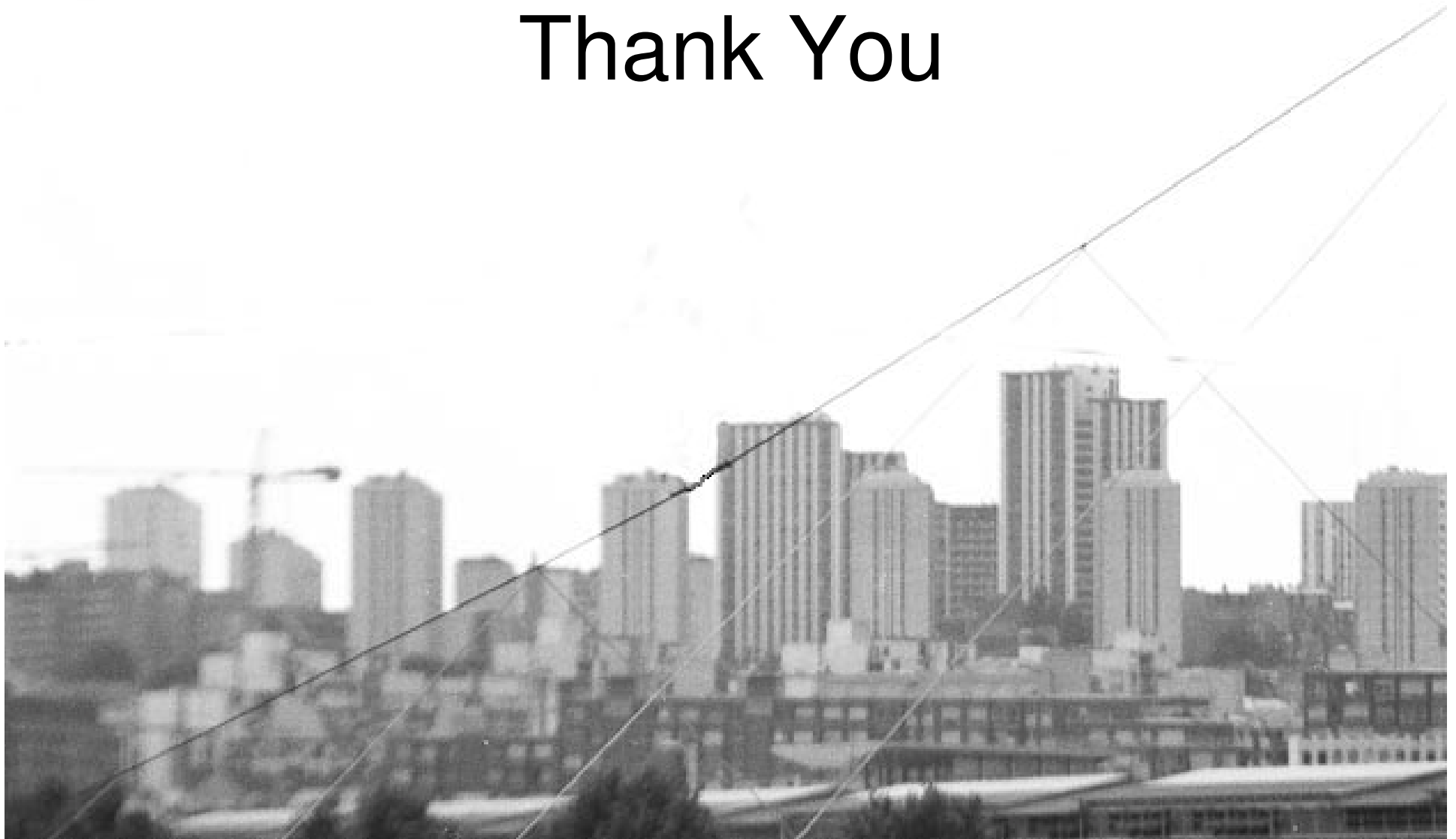
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# Thank You



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