The Resilient Enterprise

Overcoming Vulnerability for Competitive Advantage

Yossi Sheffi
Professor of Engineering, MIT
Director, MIT Center for Transportation & Logistics

2007 LAI Annual Conference
Cambridge, MD
April 18, 2007
What Can Go Wrong?

- March 2000; Philips fire
- December 2001; UPF Thompson bankruptcy
- February 1997; Aisin fire
- September 1999; Taiwan earthquake
- August 2001; dialysis filter deaths
- February 2001; FMD
- 9/11; Terrorism
Classification:

☐ Categorize outcome

- How likely?
- How bad?

Consequences

Disruption Probability

Light

Severe

High

Low
Classification:

- Categorize outcome
  - How likely?
  - How bad?

- Characteristics:
  - Public fear
  - Government “over-reaction”
  - Unexpected connections and consequences
  - Not very unlikely
Reducing the Likelihood

- Detection
  - Baxter, 2001; The Spanish influenza
  - SPC
  - When do organizations “know”? 

- Security
  - Layering
  - Balancing
  - Profiling
  - Collaboration
  - Culture
  - Drilling
Resilience through Redundancy

- System-wide (USPS and Anthrax)

- Inventory for redundancy (J&J, SOR)

- Redundant capacity (Boston Scientific, Intel)

- Redundant IT systems (Merrill Lynch)
Resilience through Flexibility

- Interchangeability
  - Plants
  - Part/product standardization
  - Pliable people

- Speed
  - Concurrent processes

- Postponement
  - Late customization
  - Surge Response
  - Built to order
Suppliers and Customers

- Procurement

- Customer-Facing
  - Sell what you have
  - Customers can help
  - Triage

**Diagram: Shallow vs. Deep Supplier Relationships**

- **Shallow Relationships**
  - Single Supplier
  - Several Suppliers

- **Deep Relationships**
  - Single Supplier
  - Several Suppliers

**Legend:**
- Red checkmark: Safe
- Red alert: Risk

.sell what you have
Customers can help
Triage
Flexibility DNA

- **Culture**
  - Continuous communications (informed employees, environment, status)
  - Distributed power (Toyota, US Navy, Zara, World, US Coast Guard)
  - Passion for work and the mission
  - Deference to expertise (Marines, FAA, Chemical plants)
  - Conditioning for disruptions

- **Culture change**
  - Safety
  - Quality
  - Many others (smoking, drinking-and-driving...)

© Yossi Sheffi, MIT
Making Lemonade from Lemons

How to:

- Use security measures for process tightening
- Take advantage of flexibility to increase competitiveness
- Utilize opportunities to increase market share
Questions?

Yossi Sheffi
sheffi@mit.edu

http://www.TheResilientEnterprise.com