

# **SUPPLY CHAIN PREPAREDNESS AND RESPONSE MANAGEMENT**

**Defense Industrial Base – Critical Infrastructure  
Protection Conference  
8 April 2008**

**John F. Rank**  
Vice President, Supply Chain Management  
General Dynamics Land Systems, and  
Chair, General Dynamics  
Supply Chain Management Council

# DIB CIP CONFERENCE

A CAUSE FOR ACTION...

- **U.S. Government Mantra & Policy**
- **An Industrial Base Perspective**
- **What Can and Should Supply Chain Management be Doing?**

# A CAUSE FOR ACTION

- **Homeland Security Presidential Directive 7**
  - Policy
    - **Enhance protection of critical infrastructure** and all key resources to assure no negative affect or cascading disruption
    - **Protect transportation** systems
    - **Secure IT** systems (Cyberspace)
    - **Department of Defense** (DoD) designated to cover Defense Industrial Base Infrastructure

# A CAUSE FOR ACTION

## ➤ **Coordination with Private Sector**

- **Collaborate and Support Private Sector**  
Coordinating Mechanisms
- **Prioritize** the Protection of Critical Infrastructure and Key Resources
- **Facilitate Information Sharing**

**U.S. Government Agencies and Industrial Base  
are Partnering on Preparedness and Response**

# A CAUSE FOR ACTION

- **Homeland Security Presidential Directive – 8**
  - “This directive establishes policies to strengthen the preparedness of the United States to **prevent and respond** to threatened or actual **domestic terrorist attacks, major disasters, and other emergencies...**”

# A CAUSE FOR ACTION

- **Defense Industrial Base (DIB)  
Sector-Specific Plan (SSP)**
  - Guidance Developed by **Collaboration of Industry and U.S. Government** Security Partners
  - Plan covers:
    - Goals
    - Identification of Assets
    - Assessment of Risk and Risk Management
    - Asset Prioritization Model (APM) which includes (16) factors classified into: (5) Mission, (5) Threat, (4) Economic, and (2) “Other”
    - Development of Protective Systems
    - Measurements on Progress/Goals
    - Research and Development
    - Management and coordination of the Sector Specific Agency (SSA)

# A CAUSE FOR ACTION

## We Cannot be Complacent

- **Al-Qaeda has a 20 Year Plan**
  - Total Confrontation by 2016
  - Definitive Victory by 2020
    - Will focus on “Critical” Infrastructure
- **Goal Should be to Make the U.S. Industrial Base Strive to Make Nothing Critical**
- **A “Sense of Urgency When There is no Emergency”**

## An Industrial Base Perspective

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### General Dynamics and it's Supply Chain Challenges



# Industrial Base Perspective

## General Dynamics Corporation

Corporate Overview

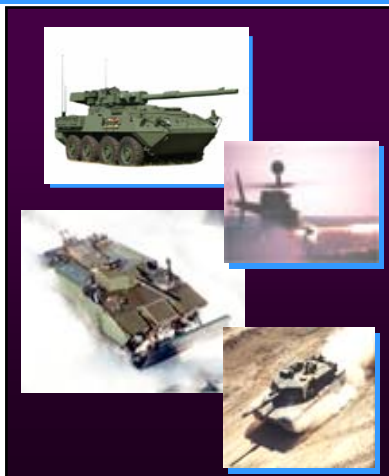
Business Segments

Combat Systems

Land Systems

# General Dynamics Corporation

Charlie Hall  
Executive VP  
Combat Systems

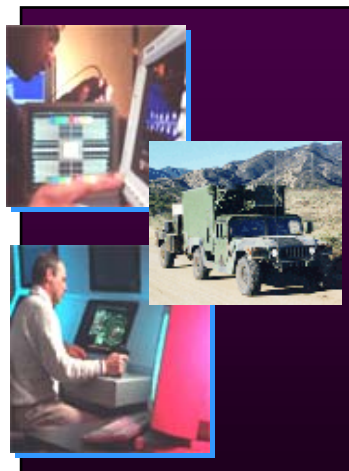


Combat  
Systems

Nick Chabraja  
Chairman & CEO

- Revenues: \$27 Billion
- Employees: 82,500

Jerry DeMuro  
Executive VP  
IS & T



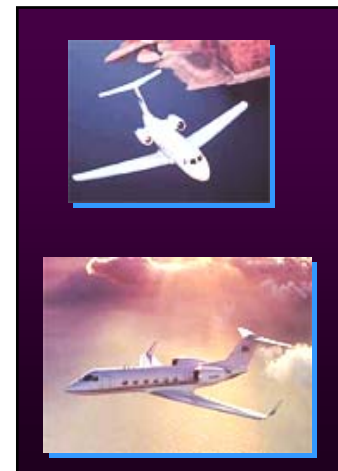
Information  
Systems & Technology

Mike Toner  
Executive VP  
Marine



Marine

Joe Lombardo  
Executive VP  
Aerospace



Gulfstream

# Combat Systems

## Land Systems



## Armament and Technical Products



## Ordnance and Tactical Systems



**MOWAG**



**Steyr**



**Santa Barbara Sistemas**

## European Land Systems



# GD Land Systems (GDLS) Full Spectrum Product Offering

**Warrior**



**Robotics**



**JLTV**



**LAV / Stryker**



**MRAP**



**Cougar**



**R-31**

**FCS**



**GDLS Lead**

**MCS**

**RSV**

**C2V**

**Common Chassis**

**EFV**



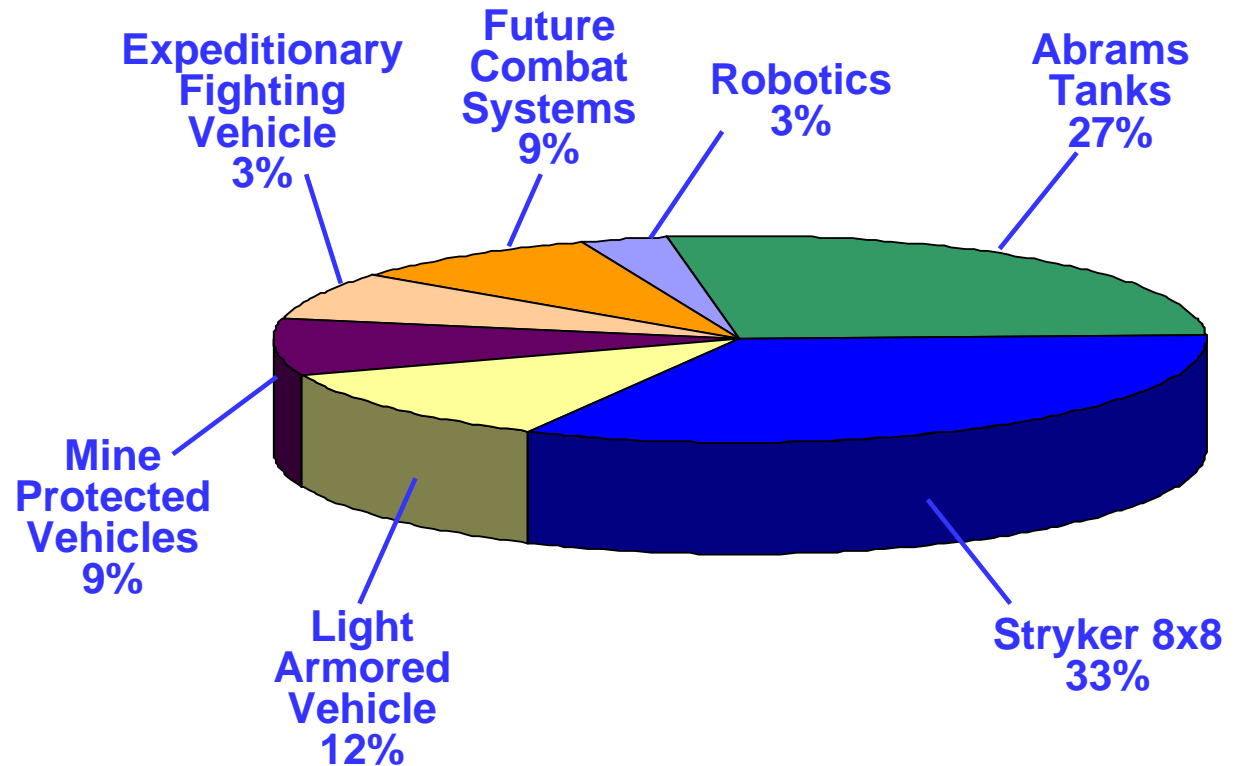
**Abrams MBT**



# CY2007 Overview

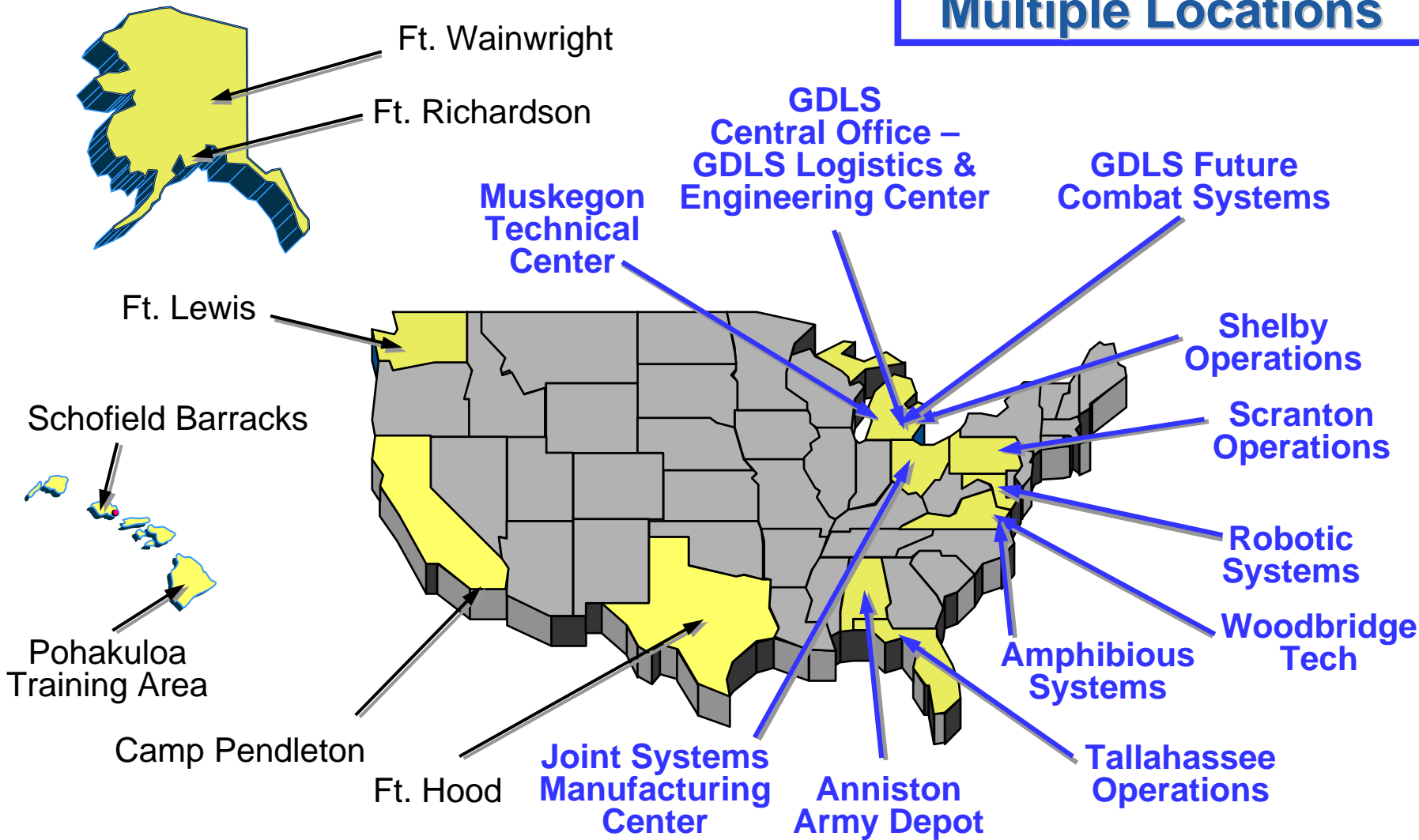
- **Combat Vehicles and Subsystems**
- **Global Business Base**
- **9,100 Employees**
- **ISO “9001-2000” Registered**
- **SEI Level V Certified**

## Multiple Products & Multiple Customers

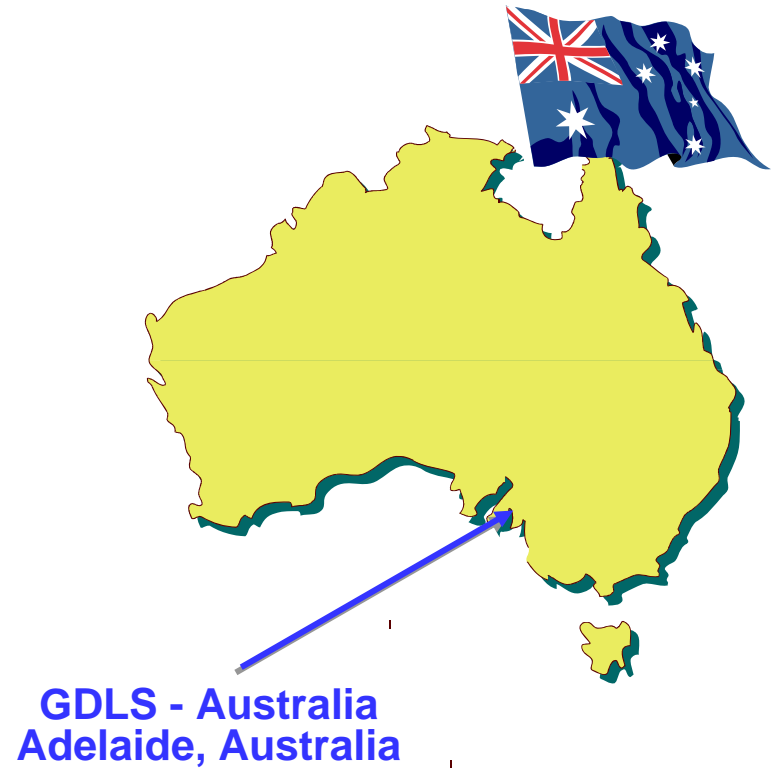
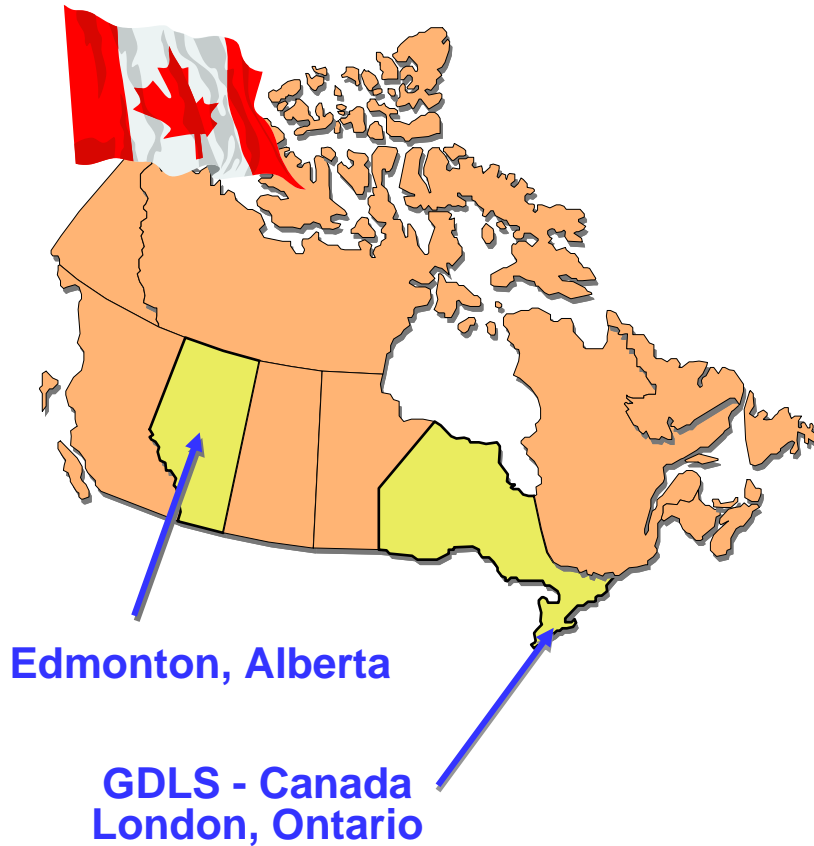


# U.S. Locations

**Multiple Locations**



# International Locations



# Supplier Base

## Land Systems - Supply Chain Exposure

- **> 60% of Sales Revenue is Through Purchased Products & Services**
- **Over 3600 Suppliers**
- **180 Critical Suppliers**
- **250 Offshore Suppliers**
- **2007 Spend was \$2.2B**



# Industrial Base

- **Critical Subsystems & Commodities**

- Mills for Raw Material
- Heavy Fabrications
- Mission Equipment; Fire Control, Electro-Optical
- CLS Support Structure; Repair and Overhaul, Spares
- Survivability and Armament
- Subsystem Assemblies

**U.S. DEFENSE PRODUCTS CONTAIN MANY SUBSYSTEMS WHICH ARE CUSTOM DESIGNED AND UNIQUE**

# GDLS Partnerships on Major U.S. Platforms

## PROGRAM

## MULTIPLE INDUSTRY PARTNERS

Future Combat Systems (FCS)

BAE

Abrams and Bradley Modernization

BAE

Mine Resistant Ambush Protected (MRAP)

Force Protection (Force Dynamics)

Joint Light Tactical Vehicle (JLTV)

AM General (General Tactical Vehicles)

**SHARED PROCUREMENT RESPONSIBILITIES**

# Threats to the Infrastructure

## THREATS TO THE DEFENSE SUPPLY CHAIN INFRASTRUCTURE

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### A BROAD PERSPECTIVE

### WHAT CAN AND SHOULD WE BE DOING?

## Theme for Supply Chain Management Portion of the Conference:

“Threats to the supply chain, programs and action to mitigate security and continuity challenges, and approaches to foster supply chain response.”

# SUPPLY CHAIN INFRASTRUCTURE

## Affect on Business if Disruption or Security Breach

- **Loss of Customer Confidence**
  - Company Image
- **More U.S. Government Oversight**
- **Loss of Revenue**
- **Legal Issues**

# SUPPLY CHAIN INFRASTRUCTURE

## What are the threats:

- **Terrorists / Activists**

- Acts
- Ownership of Suppliers

- **Acts of War**

- **Disasters**

- Tornados, hurricanes, floods, wild fires, earthquakes
- Industrial Fires
- Blackouts
- Environmental

# SUPPLY CHAIN INFRASTRUCTURE

- **IT/Cyberspace/Telecommunications**
  - Disruptions
  - Infiltration
- **Work Stoppages**
  - Sabotage
- **Financial Stability**
- **Customs (Foreign & Domestic) and Border Issues**
- **Political Instability**
- **Civil Disturbance**

# SUPPLY CHAIN INFRASTRUCTURE

## Global Procurement Adds Another Dimension to Control and Protection

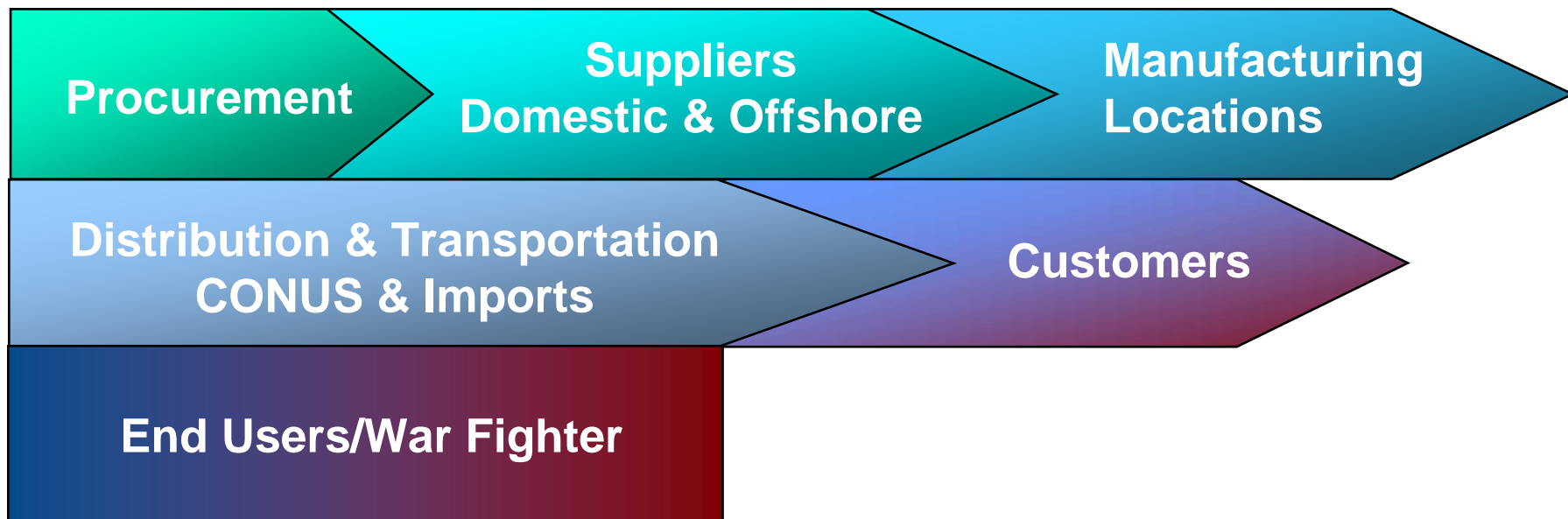
- **Import Control**
- **U.S. Government Agency Infrastructure and Support is Limited**
- **Legal Action and Enforcement of Contracts and Purchase Orders**
- **Political and Civil Unrest**



## What Can and Should Supply Chain Management (SCM) be Doing?

# What Should SCM Do?

**Recognize the Broad Spectrum of the Supply Chain that can be Affected**



# What Should SCM Do?

- **Recognize That the Supply Chain is Interconnected:**
  - There are Multiple Exchanges Along the Continuum
  - If One Piece of the Supply Chain Link is Harmed or Fails, There can be a Major Impact
  - Trying to Protect the Entire Supply Chain may be Impractical or Impossible
    - However, the Threats and Need for Protection cannot be Ignored

# What Should SCM Do?

- **Recognize There is a Cost**

- The Cost of Supply Chain Security is Anticipated to Exceed \$151B, Annually \*
- Cost of Prevention Versus the Risk of Loss is a Difficult Balance
  - Is There A Return On Invested Capital (ROIC)?

\* "Five Tenants of Security – Aware Logistics and Supply Chain Operations", by Dawn M. Russell and John Saladana in [Transportation Journal](#)

# What Should SCM Do?

**What Can We do to Protect  
the Supply Chain and Make it  
More Resilient?**

# What Should SCM Do?

## Protection and Resiliency

- **Catastrophic Risk Management should be an Element of Business Strategy**
- **Flexibility and Redundancy must be Added to the Supply Chain in Order to be Proactive When Disaster Strikes**
  - Cost Issue
- **Security and **Planning** are Key**

# What Should SCM Do?

- **Preparedness Should be a Way of Thinking**
  - Requires Adoption of a **Security-Minded Culture**
- **Program Training, **Awareness**, and Maintenance are Essential for Execution**
  - Must Flow Down
- **A **FORMAL PLAN** is Needed**
  - How to Protect Resources
  - How to Recover Quickly
- **A Common Guideline or International Standard Needed?**

# What Should SCM Do?

## Anticipate and Assess Risk Levels:

- **With Suppliers**
  - Alternate Sources
- **Transportation Modes**
- **Warehousing**
- **Availability of Alternate Work Sites**
- **Threat to Intellectual Property**
- **Allocation of Resources**
  - Can They Work Remotely?



# What Should SCM Do?

- **IT Solutions**

- Data Back Up
- Manual Approach
  - Electronic Purchase Orders
- Equipment Availability
  - Blackberry Back Up

- **Telecommunications**

- Land Lines and Cell Phones

- **Interdependency Analysis**

- **Benchmark Industry**



# What Should SCM Do?

## Develop an Executable Disaster Business Continuity and Recovery Plan

- Focus on Safeguarding: People, Assets, Financial Stability, Customer Deliverables
- Determine How to Assure Business Continuity
- Identify threat Deterrents
- Development of Plan Requires Collaboration with:
  - Industrial Security
  - IT Support
  - Human Resources
  - Operations/Manufacturing
  - **Government Agencies**
  - **Industrial Supply Base**

# What Should SCM Do?

## Crisis Communication and Contact Plan

- **Need Points of Contact (POC) that are Readily Available**
  - Suppliers
  - Internal
    - Industrial Security
    - Human Resources
    - Operations/Manufacturing
    - Leadership
  - Customers
  - U.S. Government Agencies
  - Employees
    - Key Employees
    - Cascading Contact Plan

# What Should SCM Do?

- **Contact Plan Requires POC Information:**
  - Name & Title/Role/Responsibility
  - Land Line Telephone Number
  - Cell Phone Number
  - Home, if Possible
  - Alternate POC

# What Should SCM Do?

- **Determine How Long of a Downtime Period the Business can Sustain**
  - Number of Days/Weeks by Internal Function and/or Supplier
- **Determine Recovery Time Lines**
  - Facility Availability
  - Resources
  - IT and e-Business Systems Operation
    - MRP
    - Electronic Purchase Orders
    - Documentation and Release Data
    - Logistics and Routing
    - Finance

# What Should SCM Do?

## Supply Chain Vulnerability is Underestimated. So, What can We do with the Industrial Supply Base Beyond Exchanging POC Information?

- **Assess Where Weak Links may be**
- **Require Security and Preparedness Plans from Critical Suppliers**
- **Encourage Customs-Trade Partnership Against Terrorism (C-TAPT) Certification or Similar Involvement**
- **Review Who is Involved in Their Manufacturing and Distribution Chain**
  - **Lower Tiers, also**

# What Should SCM Do?

- **Develop Alternate Suppliers for Critical Items**
  - Offshore Suppliers Backed up by Domestic Sources or from Alternate Low Cost Countries
    - Utilize 3<sup>rd</sup> Party Advisory Consultants to Validate Suppliers
- **Have Alternate Freight Carriers and Modes of Transportation Available**
- **Apply Technology**
  - Radio Frequency Identification (RFID)
  - Smart Chips

# What Should SCM Do?

## Summary:

- Recognize there is Cause for Action
- Collaboration Between Industry, it's Supply Base, and U.S. Government Agencies is Mandatory
- Assess Threats and Vulnerability
- Create the Plan, Policies, and Procedures
- Assess the Level of Maturity of the Plan and Execute Accordingly
  - Implementation is Top Down
- Monitor and Measure

**Access**



**Implement a Plan**



**Monitor**



# *Questions*