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Chemical Supply Chain and Resilience Project

FY 2010 Workshop

Capability Panorama

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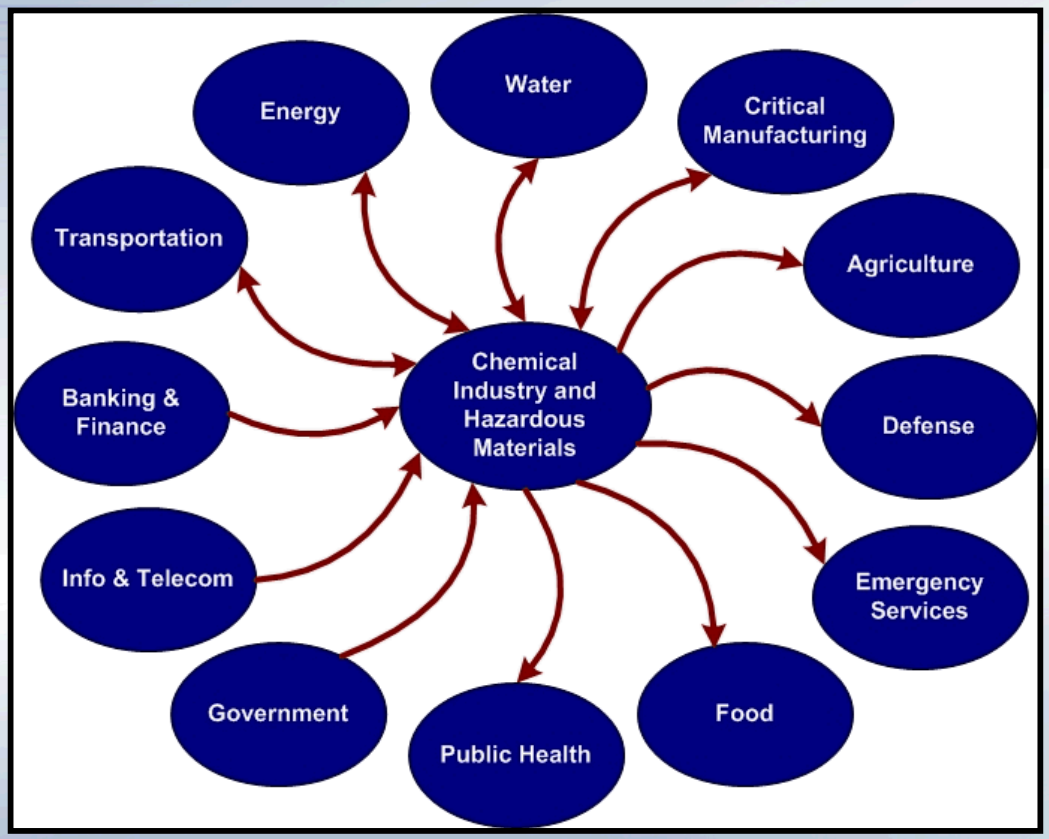
Connectivity and the Chemical Sector

- **Chemical sector is highly connected to multiple infrastructures**
  - Energy
  - Petroleum
  - Transportation
  - Water
  - Public health
  - Agriculture
  - Telecommunications
  - Banking and Finance

  and commercial sectors
  - Mining
  - Critical manufacturing



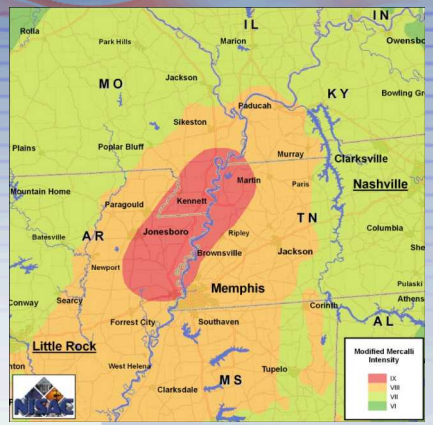
Consequence Analysis for the Chemical Sector

- **Consequence analysis must consider**
  - Disruptions of the chemical sector
  - Disruptions of interdependent infrastructures, and
  - National, regional, and facility perspectives.
- **We need to address direct impact questions, such as**
  - What is the area of direct impact?
  - What chemical facilities are directly affected?
  - What chemicals do they produce?
  - What percentage of capacity does this represent?
- **And cascading impacts questions, such as**
  - What additional facilities will be affected?
  - What additional supply chains will be affected?
  - What is the total loss to the system?
  - How long before we return to 'normal'?

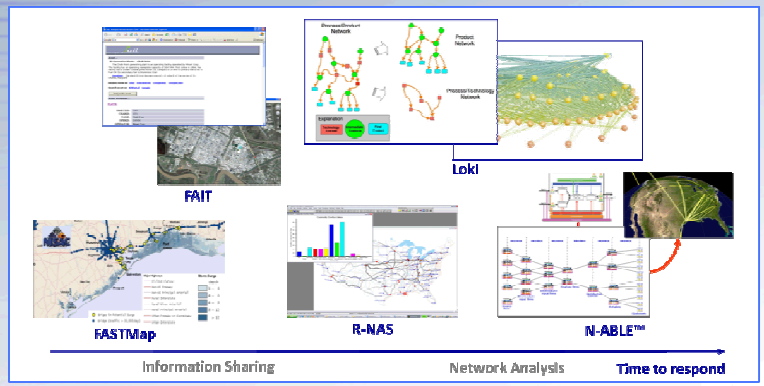
Project Intent: Not Classical Supply Chain Analysis

- **A variety of supply chain models/frameworks exist**
  - Supply Chain Council (SCC) Supply Chain Operations Reference (SCOR)
  - Supply Chain Management Institute (SCMi) framework
  - American Productivity & Quality Center (APQC) Process Classification Framework (PCF)
  - Supply Chain Consortium Supply Chain Best Practices Framework
- **These models/frameworks**
  - Are 'enterprise centric'
  - Are focused on value chain optimization
  - Are best suited (and are used) for supply chain management
  - Frameworks are often qualitative in nature
- **Analysis requirements at a sector level call for a capability beyond that which currently exists**

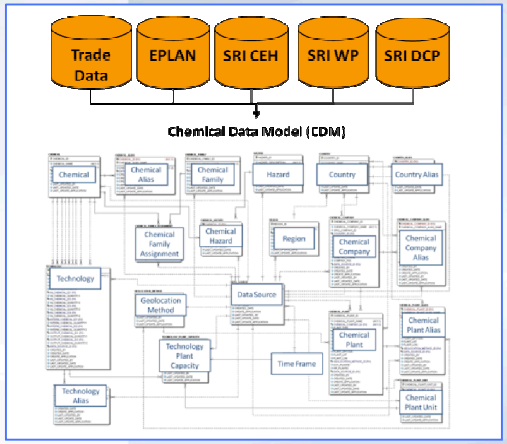
Project Intent: Cross-Enterprise Consequence and Resilience Analysis



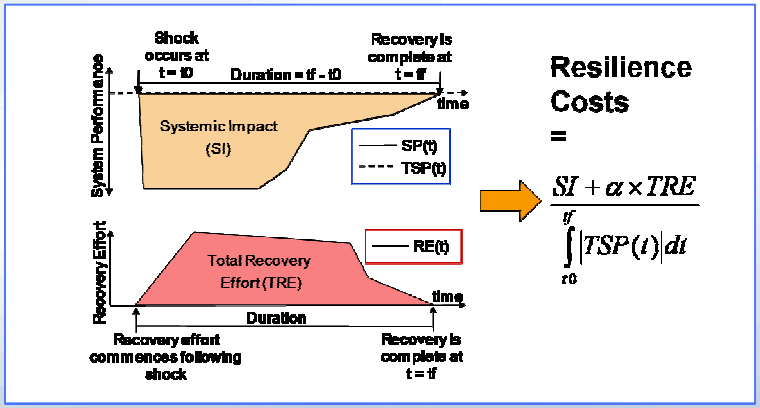
When disruptive effects occur…



…a suite of analytic capabilities can be brought to bear…



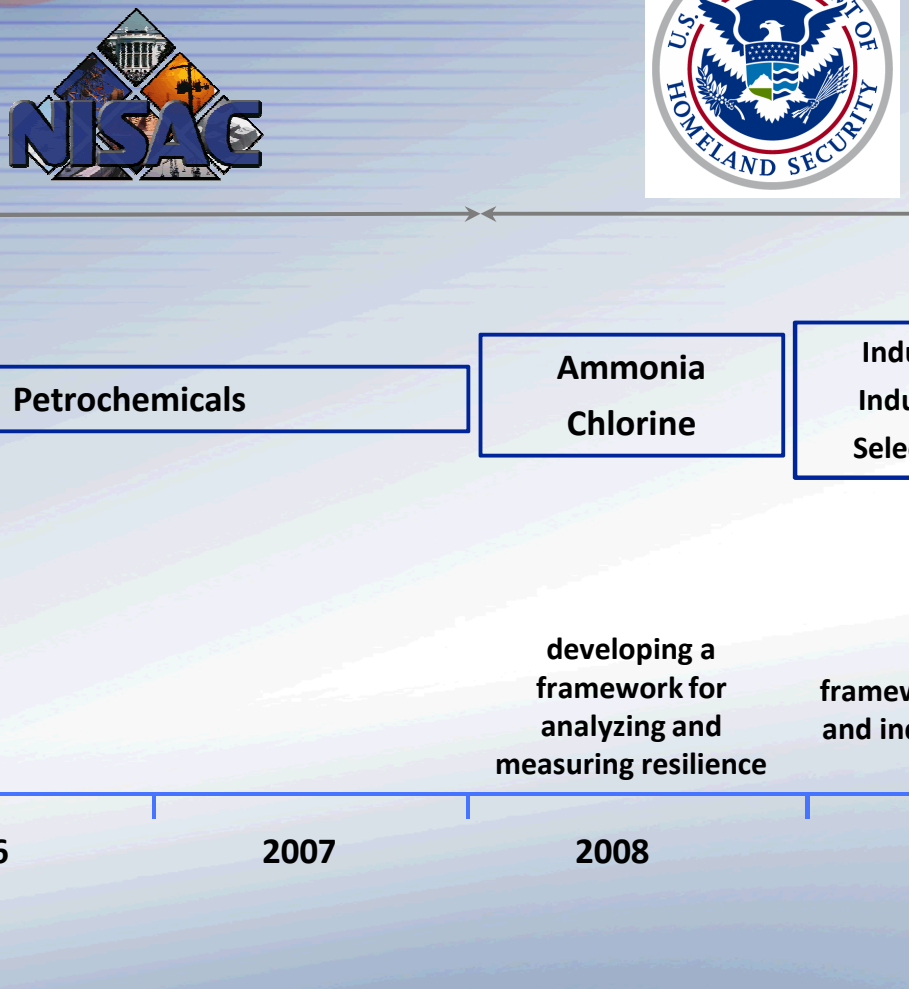
…all drawing on a common data model and underlying subject matter expertise…



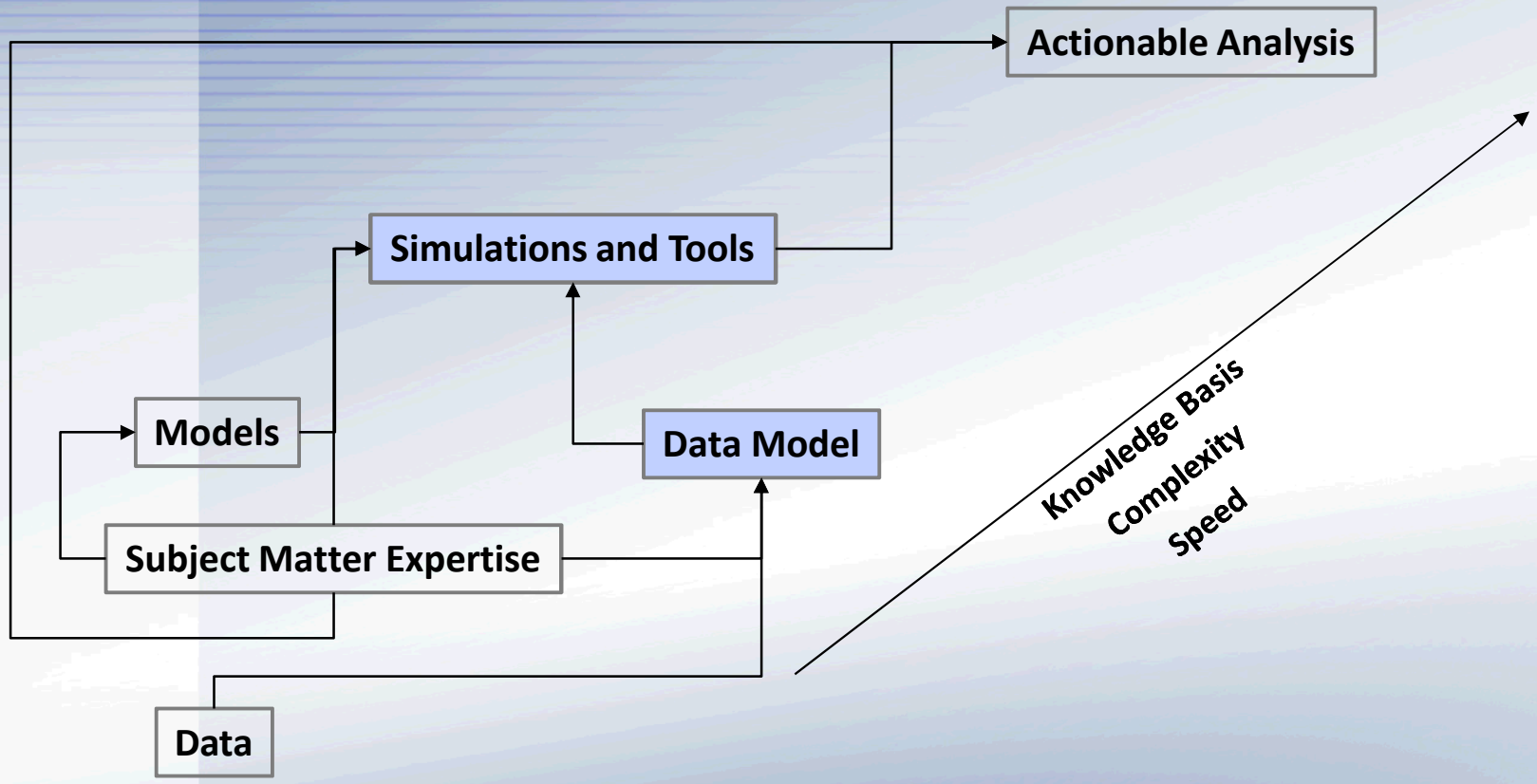
…to estimate consequences and calculate resilience.

Project Direction and Scope

Science and Technology



Technical Structure



Today's Agenda

Time	Topic
8:45	Capability Demonstration
9:45	Break
10:00	Capability Panorama
10:15	Behind the Dataset
11:00	Analysis Tools
11:30	Lunch
12:45	The N-ABLE™ Chemical Supply Chain Model
1:45	Break
2:00	The N-ABLE™ Simulation Environment
2:45	Documentation, Caveats, and Use Cases