

# Social Network Management for Homeland Security

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The logo for the MITRE Technology Program, featuring a stylized graphic of stacked cubes in yellow, orange, and blue to the left of the text.

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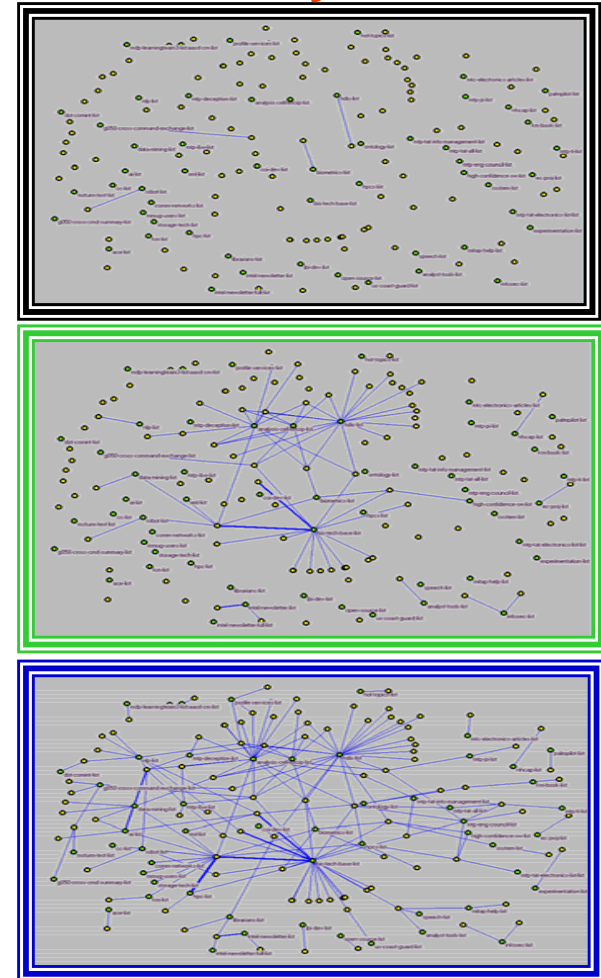
# Problem

- Networked organizations are distinct from traditional hierarchies – they are multi-networks, cellular, and distributed.
- Networked organizations are adaptive – new structure emerges, roles change.
- Adaptation or self-organization without central control does not guarantee effectiveness.
- New tools – applied at the nexus of formal and informal organizations – are needed to affect performance:
  - Detect, track, and influence emergent organizations
  - Engineer hybrid adaptive organizations

# Background

- Communication networks and organizational forms are undergoing rapid change driven by advances in communication technology.
- Network forms of organization are emerging; juxtaposed between traditional hierarchies and marketplaces.
- Networks are built around flows that link people locally and globally.
- Networks as organizations bridge space and time. Hypothesis: networked organizations are processes that can be “managed.”

## Community Evolution



# Objectives

- **Tools That Make Organizational Networks Visible**
  - Track ongoing work and collaboration areas
  - Assess resource utilization, etc.
  - Risk & vulnerability analysis (e.g., stovepipes)
- **Tools for Network Analysis**
  - Identify cohesive or fragmented work areas
  - Key person analysis: leaders, brokers,...
  - Community design; optimize coordination
- **Services and Embedded Functionality**
  - Tools to manage professional networks
  - Social networks integrated into core services

# Activities

- **Target Key Problems and Candidate Applications**
  - User interviews used to ensure organization relevance
  - Proof-of-concept demonstrations used to validate problem set and bootstrap target problem list
- **Extended Network Data Collection Architecture**
  - Enhanced collection tools developed under the Social Information Retrieval MSR (FY03)
- **Selected Prototyping Initiated**
  - Ad hoc team generation
  - Knowledge network analysis

# Ad hoc Team Generation

Team Finder

Basic Search Advanced Search

Enter Query

Search

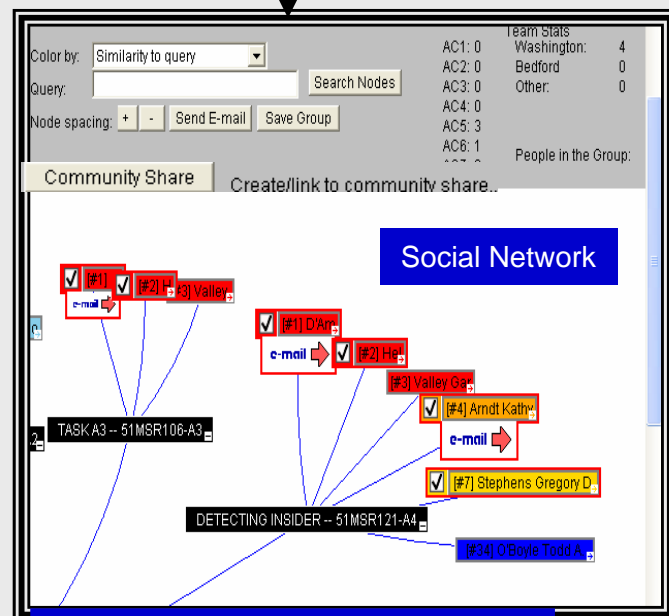
Help | Questions? | Show full network

Note: for better results use phrases enclosed in double quotes, e.g., "data mining"

Query

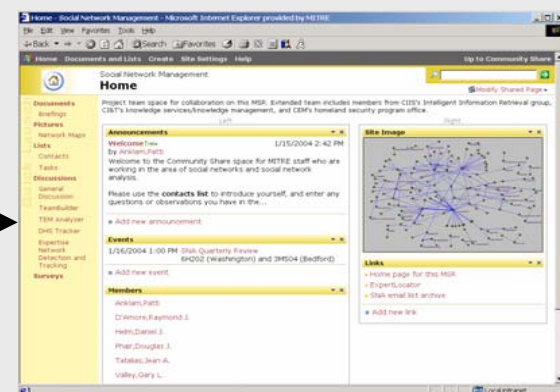
Users need help building cross-organization teams.

How can teams be assembled with the “right” staff?



Archive/Retrieve Team

Captured Work



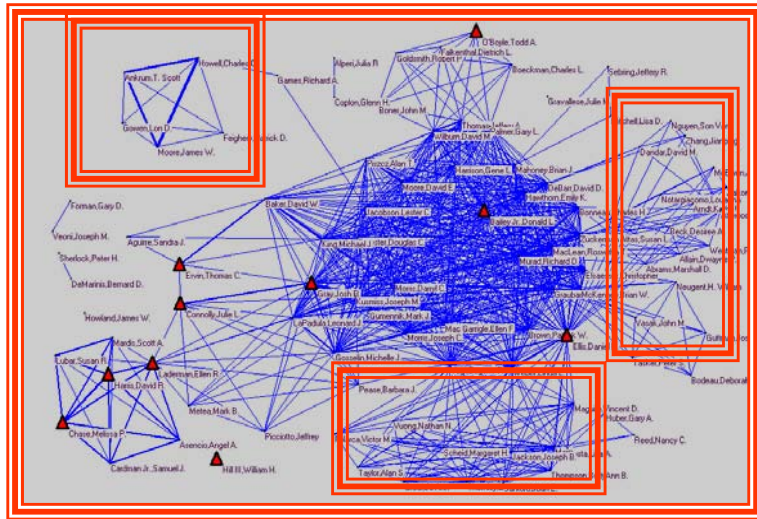
Export Team to Community Ware

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# Knowledge Networks Analysis: TEMS

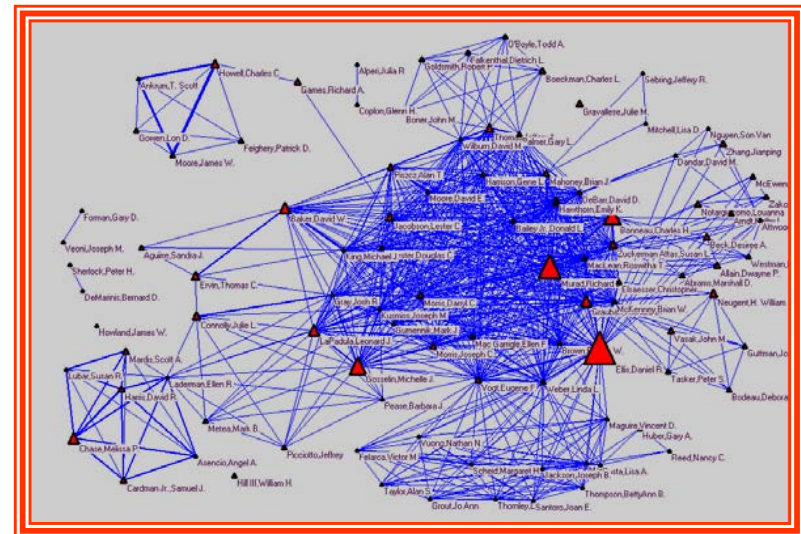


User is organizing a Technical Exchange Meeting (TEM) on the topic of Malicious Code. The Domain Network is automatically generated.

How are selected speakers  embedded within it? Is there a selection bias? Are there gaps? 

Other Key Persons   
Automatically Detected

How are other key staff  
embedded within network?  
Which key persons participate  
at the TEM? Who doesn't?



# Impacts

- **New ways to view enterprise work that make visible the juxtaposition of formal and informal organizations**
- **More effective use of organizational resources to meet shifting mission requirements**
- **Tools that are easy to use and intuitive; that allow individuals, groups, and whole organizations to assess their embeddedness within operational domains**
- **Tools that work for MITRE and for MITRE's sponsors**

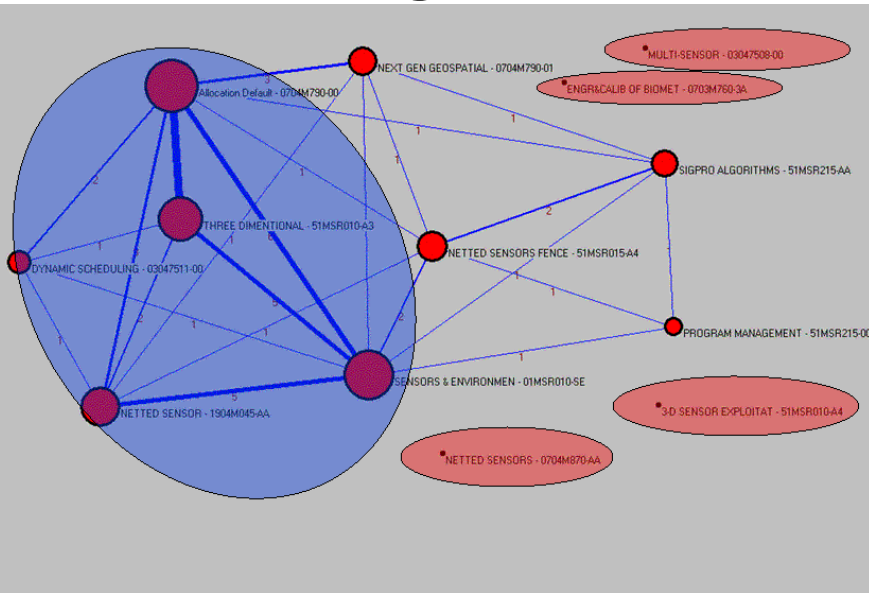


# Future Plans

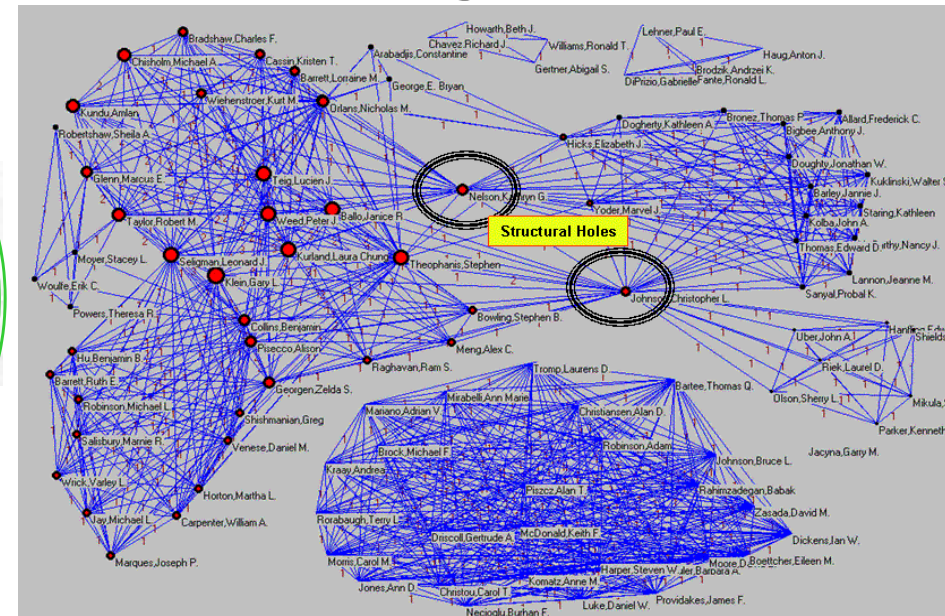
# Detecting Network Vulnerabilities or Risks that Affect Performance

# Performance Optimization Through Social Network “Management”

# Work Fragmentation



## Connecting Communities



# Social Network “Management” Tools

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