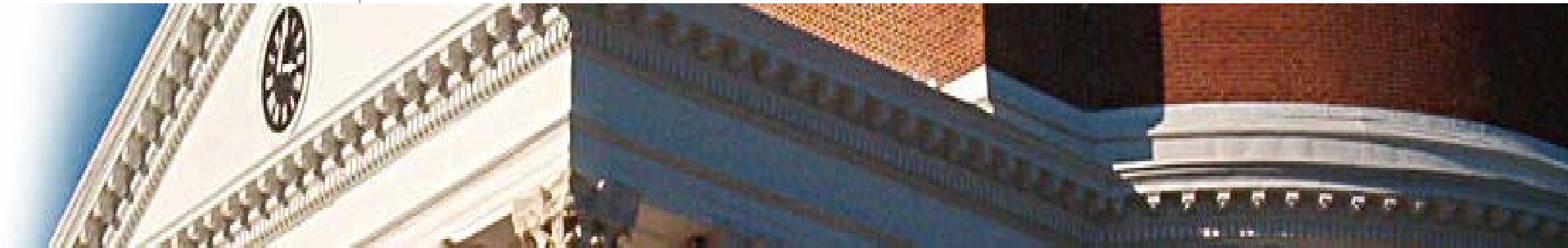


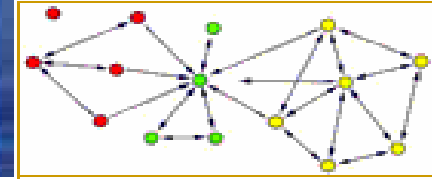
# Defense Intelligence Agency Case Study: Applying Network Analysis to Create a Vital Community of Practice (CoP)

February 2006



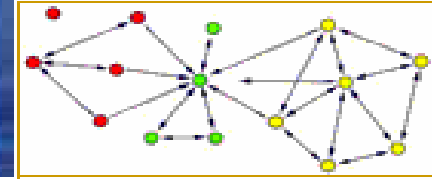
*The* **NETWORK ROUNDTABLE** *at the* **UNIVERSITY OF VIRGINIA**

# Agenda



- About the Defense Intelligence Agency (DIA)
- How the Knowledge Lab Supports DIA Strategy
- Approach to Applying Organizational Network Analysis (ONA)
- Key Findings and Recommendations
- Smart Mentoring
- Critical Success Factors and Lessons Learned
- Appendix
  - How to Interpret a Network Diagram

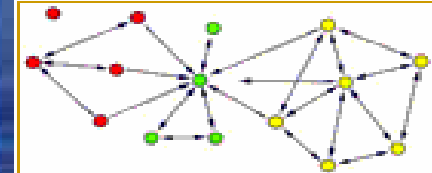
# About the Defense Intelligence Agency (DIA)



- The DIA's mission is to provide timely, objective, all-source military intelligence to policy makers, war fighters, and force planners to meet a variety of challenges across the spectrum of conflict.
- The DIA was established October 1, 1961, and designated a combat support agency in 1986.
- DIA is a major producer and manager of foreign military intelligence for the Department of Defense and a principal member of the United States Intelligence Community.
- DIA has a workforce of over 8,000, and is staffed with highly skilled civilian and military personnel with the goal of discovering information and creating knowledge that provides warning, identifies opportunities, and delivers overwhelming advantage
- Agency headquarters are at the Pentagon, Arlington, Virginia; however, DIA personnel are located throughout the world.

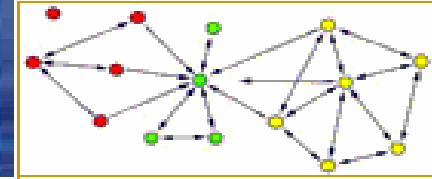


# The DIA's Knowledge Laboratory Was Recently Formed to Facilitate the Flow of Information



- The Knowledge Lab was created out of a strategic planning process
  - There was a stated need to challenge existing assumptions and change behavior.
  - The Lab's goal is to create more collaborative, integrated functions, where stovepipes are eliminated.
- Formation of the Lab depended on three critical success factors
  - It couldn't be embedded in one line organization; it had to operate across the entire DIA.
  - The sponsorship of senior leadership was required.
  - Key people in the network were leveraged, particularly central people who were willing to engage and take positive steps (i.e. spanning boundaries, adapting new tools and processes).
- The Lab operates under “three V” principles
  - Virtual (no physical space)
  - Volunteers (no “program”)
  - Virus approach (to transmit new values where work takes place)

# Network Analysis Was a Key Step to Launching and Maintaining the Knowledge Lab Community



## Plan

- create network survey
- define community members
- obtain senior sponsor

## Run

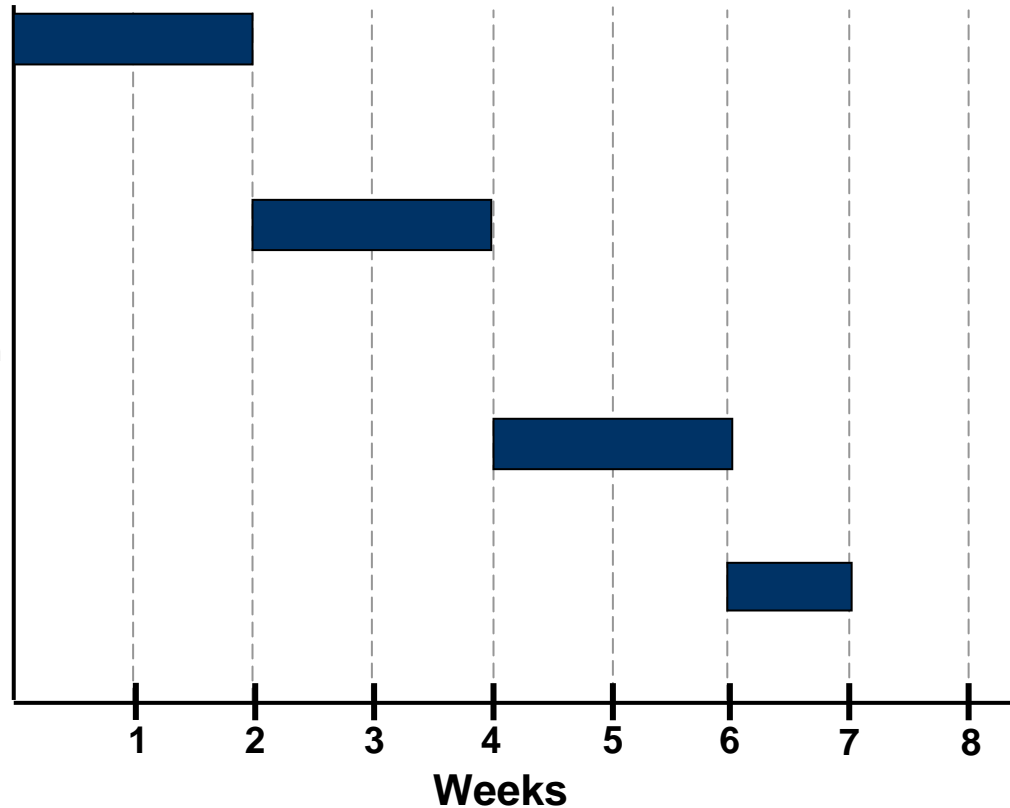
- test diagnostic with small sub-group
- administer Web-based diagnostic
- send system-generated e-mails to obtain responses

## Assess

- create recommendation report
- provide personalized Web sites

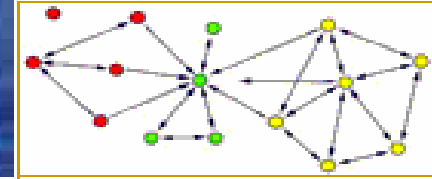
## Apply

- develop and implement project plan
- take action on personal network results



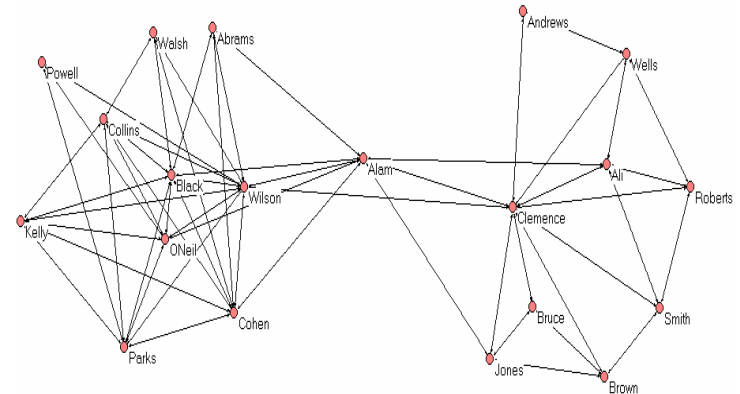
**In less than two months, network analysis provided important insights into the state of the network and identified what actions would have the biggest impact to create a stronger network.**

# Network Analysis Clearly Identified Gaps and the Targeted Actions Necessary to Close Them



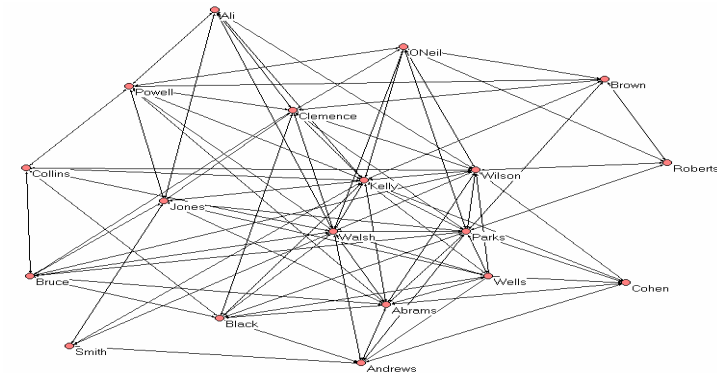
- **Network Analysis Helped to Strengthen the Community**
  - Understand the current state
  - Establish a baseline of measurement
  - Produce and act on a handful of meaningful action items
  - Identify resources for launching a new community

## Illustrative Network: Initial Analysis



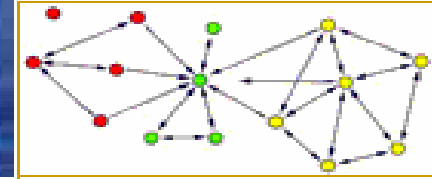
- **Network Analysis Will Help Track Progress and Target Future Efforts**
  - Survey community members within one year
  - Analyze impact of productivity interventions
  - Validate investment and expand scope as warranted

## Illustrative Network: After Interventions



**By taking a before and after snapshot of collaboration in the community, a leader can both improve effectiveness of their interventions as well as track progress over time.**

# Network Analysis Helped to Jumpstart the Knowledge Lab Shortly After Its Formation



- **The Knowledge Lab was created in January 2005.**
  - The Lab was formed with one full-time person who identified a group of 27 core volunteers.
  - The core group in turn identified another 125 people to join the community.
  - The majority of this nascent community participated in the network analysis three months later.
- **The purpose of the network analysis was to assist in the “change management strategy”**
  - View a microcosm of entire agency
  - Assist in the transmission of new values
  - Identify how to improve specific functions such as:
    - Onboarding new employees
    - Creating a mentoring program
    - Creating high performance teams

Network Measures	Current State	Target
Density	6.5%	10.9%
Cohesion	2.6	2.0
Centrality	8.9%	15

*Note: Targets were determined by The Network Roundtable high performer benchmark database.*

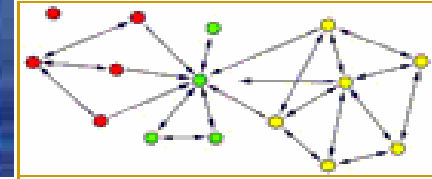
## Definitions of Network Measures

**Density:** Robustness of network. The number of connections that exist out of 100% possible in that network. More points connected often can mean quicker and more accurate information flow.

**Cohesion (Distance):** Ease with which a network can connect. Shows average distance for people to get to all other people. Shorter distances mean faster and more accurate transmission/ sharing.

**Centrality (Degree):** Identifies influential people (individual measure). Number of direct connections (ties) that individuals have with others in the group.

# The Top Findings and Recommendations at the Knowledge Lab Pinpointed Specific Improvements



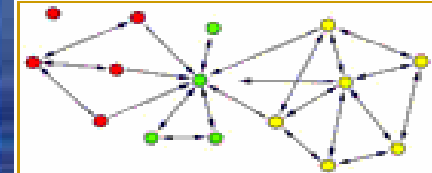
## Findings

## Recommendations

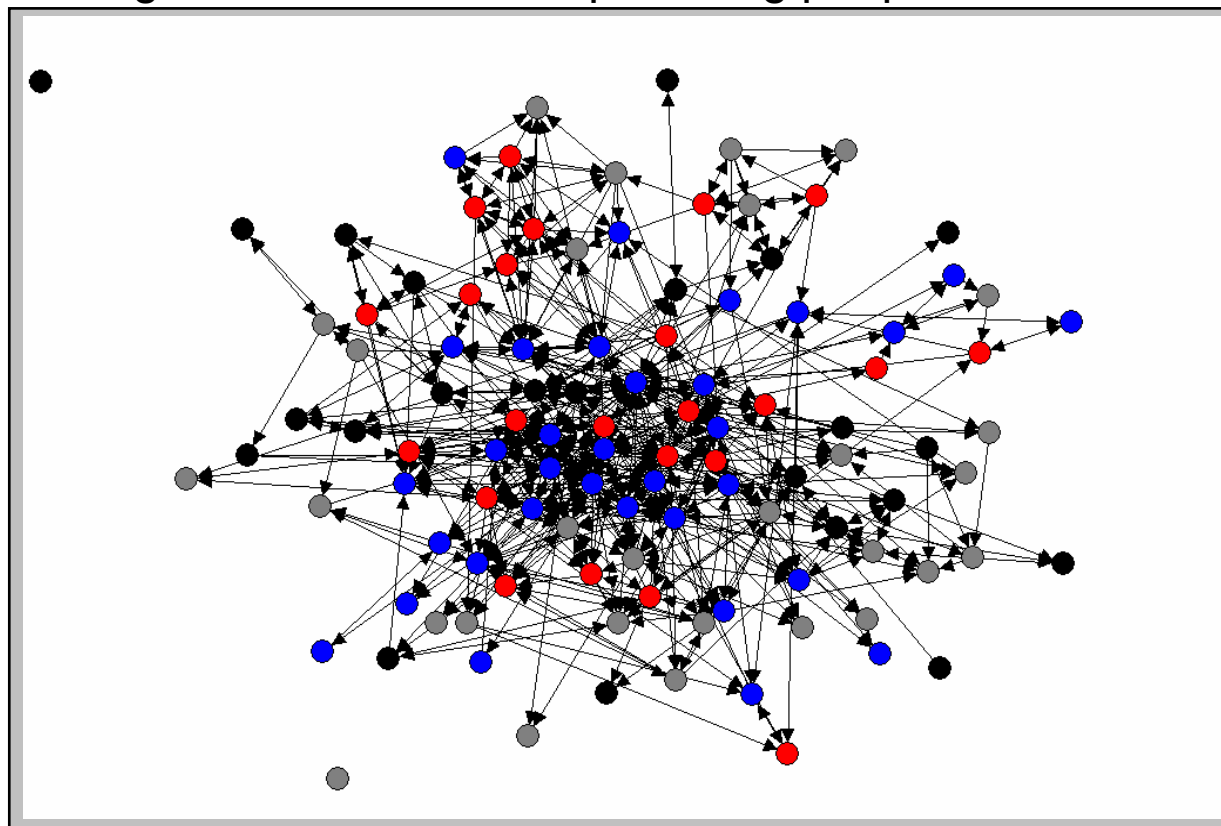
<p><b>Connect the right people within and across the Lab to create a tight-knit network</b></p>	<ul style="list-style-type: none"> <li>• Identify a highly connected sub-group and commit to periodic meetings</li> <li>• Use part of each meeting to share information, most importantly to identify key wins &amp; challenges to engage everyone in problem solving</li> <li>• Commit to reaching out to 1-2 peripheral members (people who often have innovative ideas but their expertise is not known)</li> </ul>
<p><b>Increase awareness of expertise in the network</b></p>	<ul style="list-style-type: none"> <li>• Conduct problem-solving sessions in periodic meetings</li> <li>• Provide persona books in both an on-line and bound format</li> </ul>
<p><b>Develop connectivity across divisions</b></p>	<ul style="list-style-type: none"> <li>• Identify within unit points in the network where collaboration is going well and define practices (e.g., project planning, meetings, physical space, technology) that could be shared/implemented with other units</li> <li>• Identify a limited number of high potential improvement opportunities coming from better connectivity across functions</li> </ul>
<p><b>Overcome barriers of physical distance</b></p>	<ul style="list-style-type: none"> <li>• Bridge distance through job rotation</li> <li>• Hold planned and impromptu gatherings and re-design physical space</li> <li>• Promote collaborative tools (i.e. video/audio conferencing and IM)</li> </ul>
<p><b>Pursue cultural change in the network</b></p>	<ul style="list-style-type: none"> <li>• Identify key cultural gaps (e.g., flexibility/learning) and work through those in both formal and informal positions of influence</li> <li>• Look for levers to systematically encourage desired behaviors (e.g., formal and informal rewards). Behavioral change often precedes cultural change.</li> </ul>



# The Analysis Revealed a Somewhat Connected Network With Many People on the Periphery



Highly tenured employees were central in the network, and people with low tenure were on the periphery. Innovative ways of on-boarding members would help to bring people into the network.



## Agency Tenure

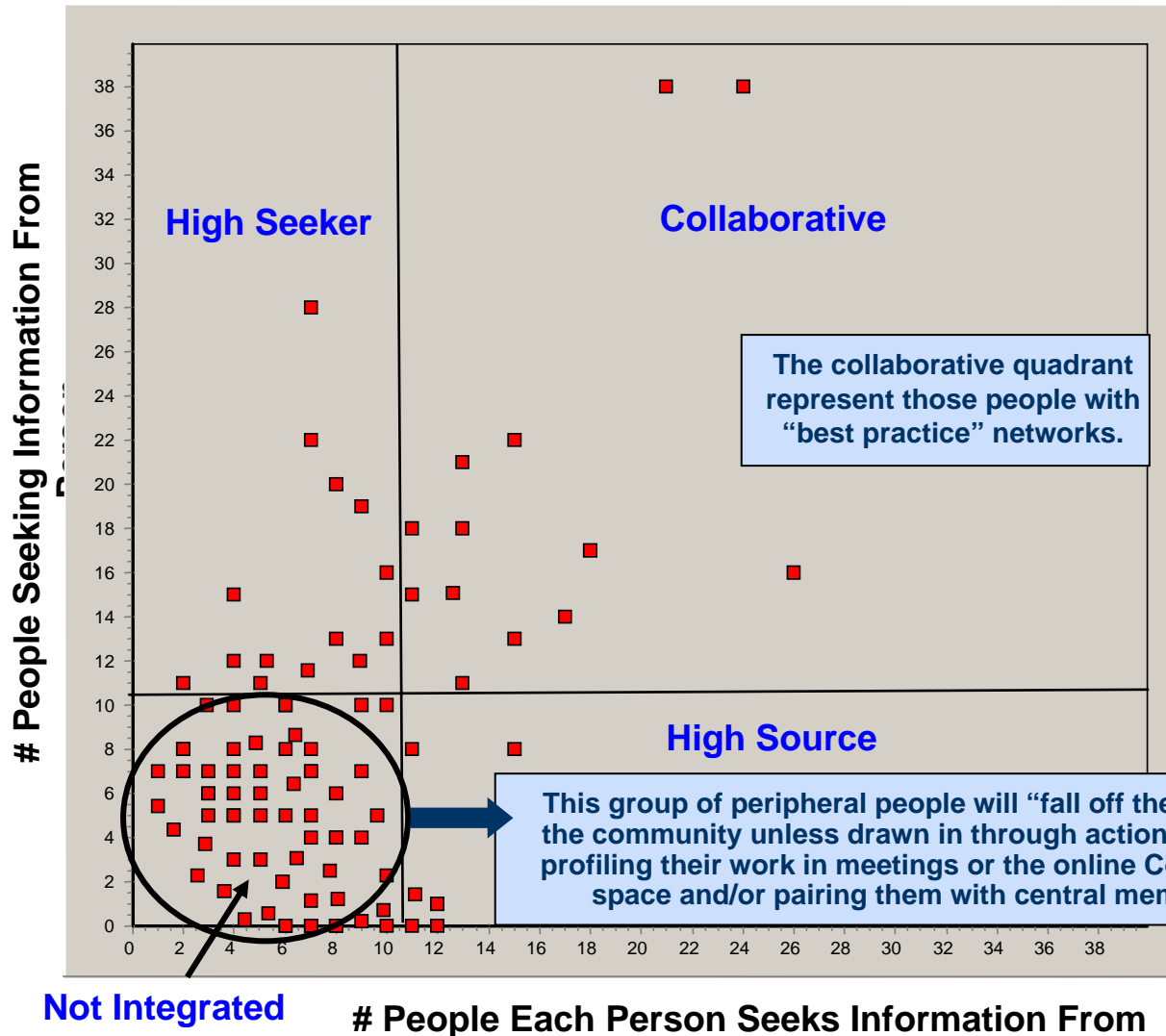
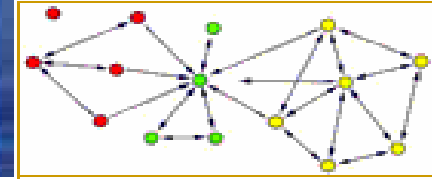
- = 0 to 1 year
- = 1 to 3 years
- = 3 to 10 years
- = 10+ years

## Network Measures (Benchmarks)

Density = 4.4% (10.9%)  
Cohesion = 2.93 (2.0)  
Centrality (IN) = 6.014 (15)

This network depicts respondents answers of frequently and very frequently to the question, "Please indicate the extent to which the people listed below provide you with information you use to accomplish your work."

# Moving Individuals Into the “Collaborative” Quadrant Would Increase Awareness and Distribution of Expertise

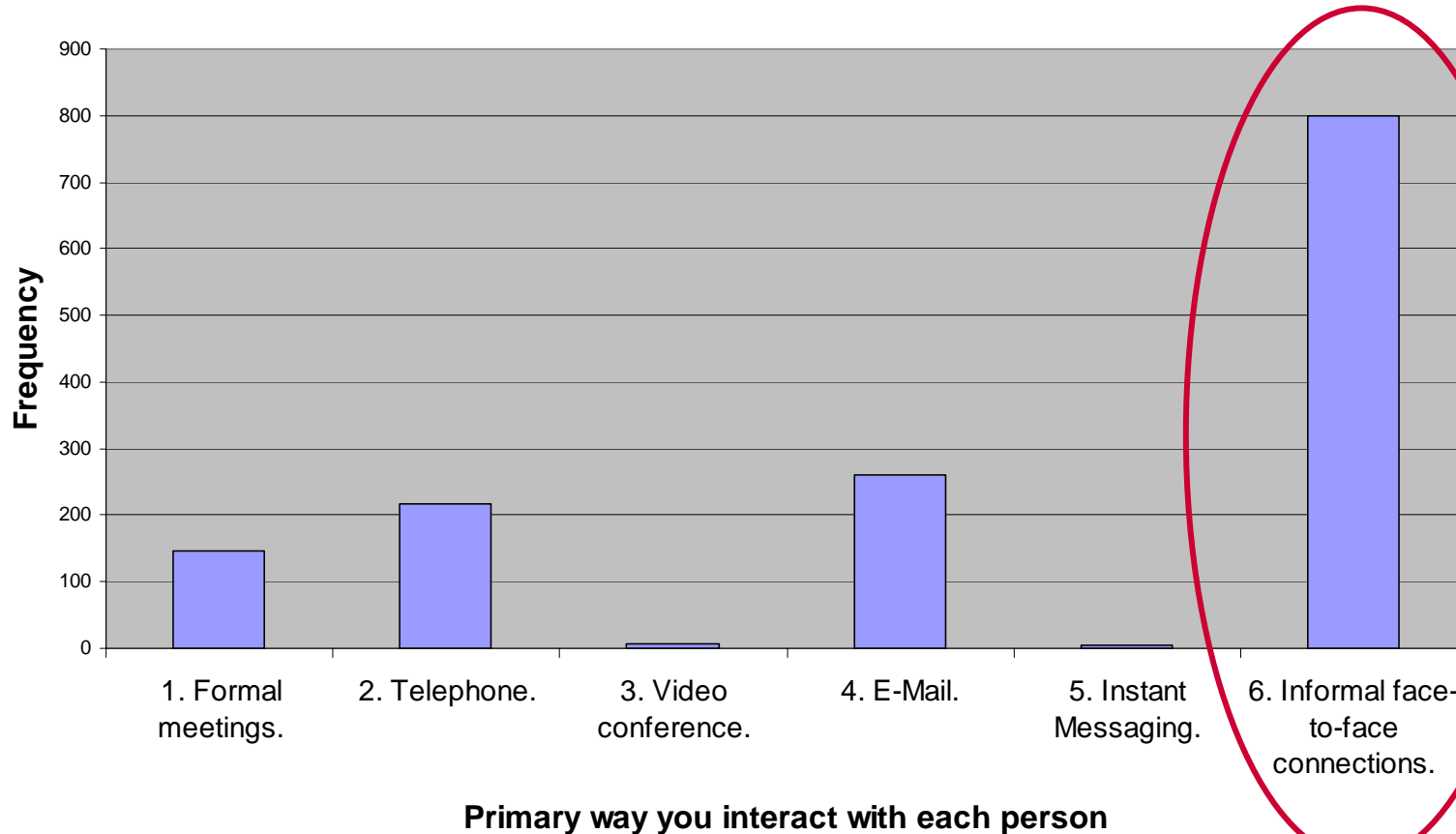
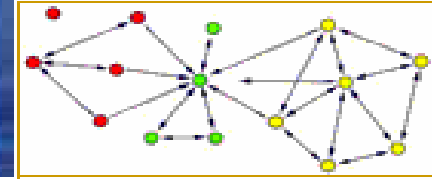


**Engaging peripheral people (in the lower left quadrant) by building out their network appropriately, will optimize the skills and talents of the work force.**

**By creating a means for collaborative individuals to mentor 2-3 of the more isolated employees, there is an opportunity to improve cohesion of the network by 24%.**

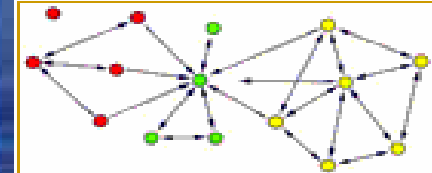
Note: Based on Frequent and Very Frequent Interactions

# The Vast Majority of Interactions Were Through Informal, Face-to-Face Connections



**Given that teams are dispersed across buildings and floors, the use of collaborative technology to support more virtual communications should be promoted.**

# There is an Opportunity to Improve Collaboration Within and Across Buildings



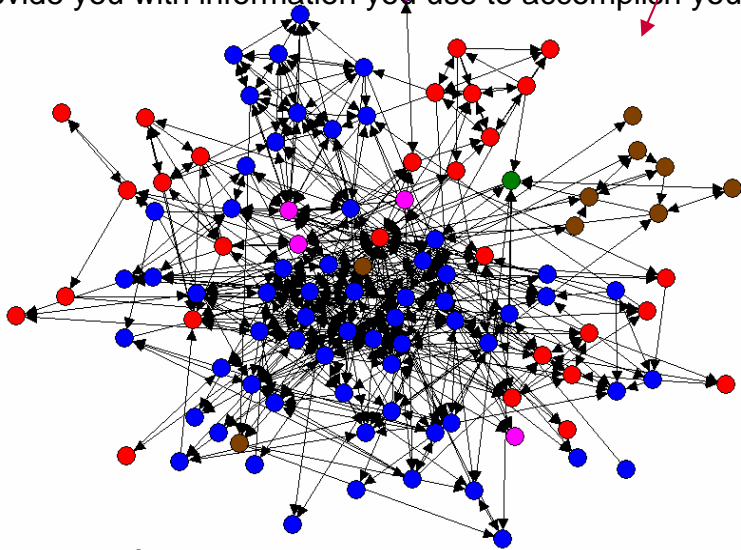
There is little information sharing between buildings. Target collaboration across groups (off diagonal) is dependent on strategy; the goal is typically 10-30% in critical areas.

**Information Providers**

	Bldg A	Bldg B	Bldg C	Bldg D	Bldg E	
Information Seekers	Building A	9%	3%	1%	4%	4%
	Building B	3%	9%	1%	6%	7%
	Building C	1%	3%	12%	20%	2%
	Building D	4%	6%	10%	N/A	0%
	Building E	6%	6%	0%	0%	10%

## Information Sharing Across Buildings

“Please indicate the extent to which the people listed below provide you with information you use to accomplish your work.”



Responses of somewhat frequently and frequently

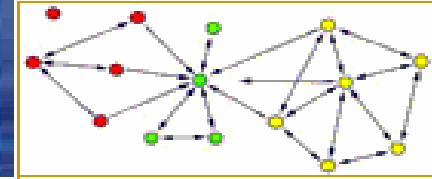
**Building**

- = A
- = B
- = C
- = D
- = E

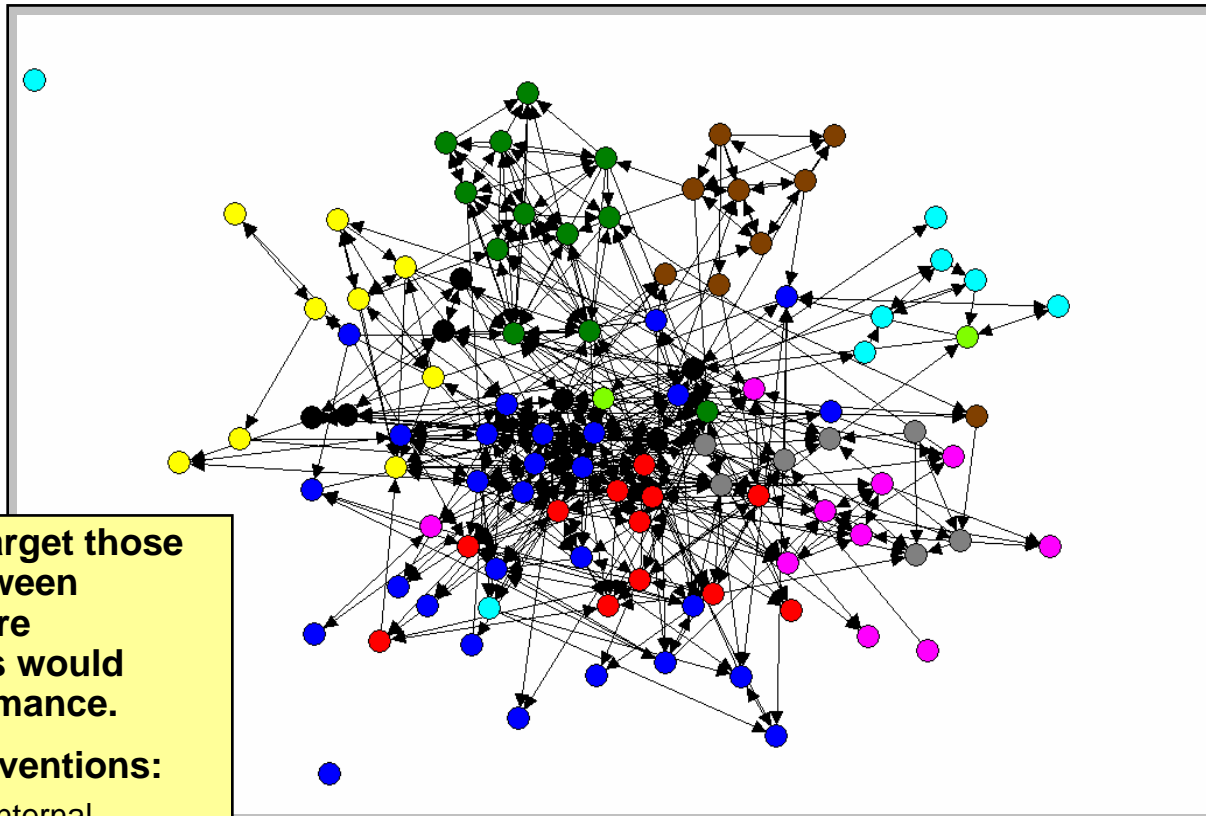
### Interpretation of Chart Above

Each cell reflects the percent of information seeking ties out of 100% that could exist if everyone were connected to everyone else at that juncture. For example, we see that within Building C, 12% of the possible collaborative relationships existed whereas only 1% of possible ties existed between Building C and Building A. The table is read from row to column when assessing who seeks info from whom.

# Targeted Actions Would Improve Connectivity Across Divisions



“Please indicate the extent to which the people listed below provide you with information you use to accomplish your work.” Responses of frequently, and very frequently.



## Directorates (Divisions)

- = AA
- = BB
- = CC
- = DD
- = EE
- = FF
- = GG
- = HH
- = II
- = Other Agency

**Identify and target those junctures between divisions where improvements would impact performance.**

### Possible interventions:

- Joint work on internal assignments
- Staff rotations
- Share best practices across boundaries via an online Community space

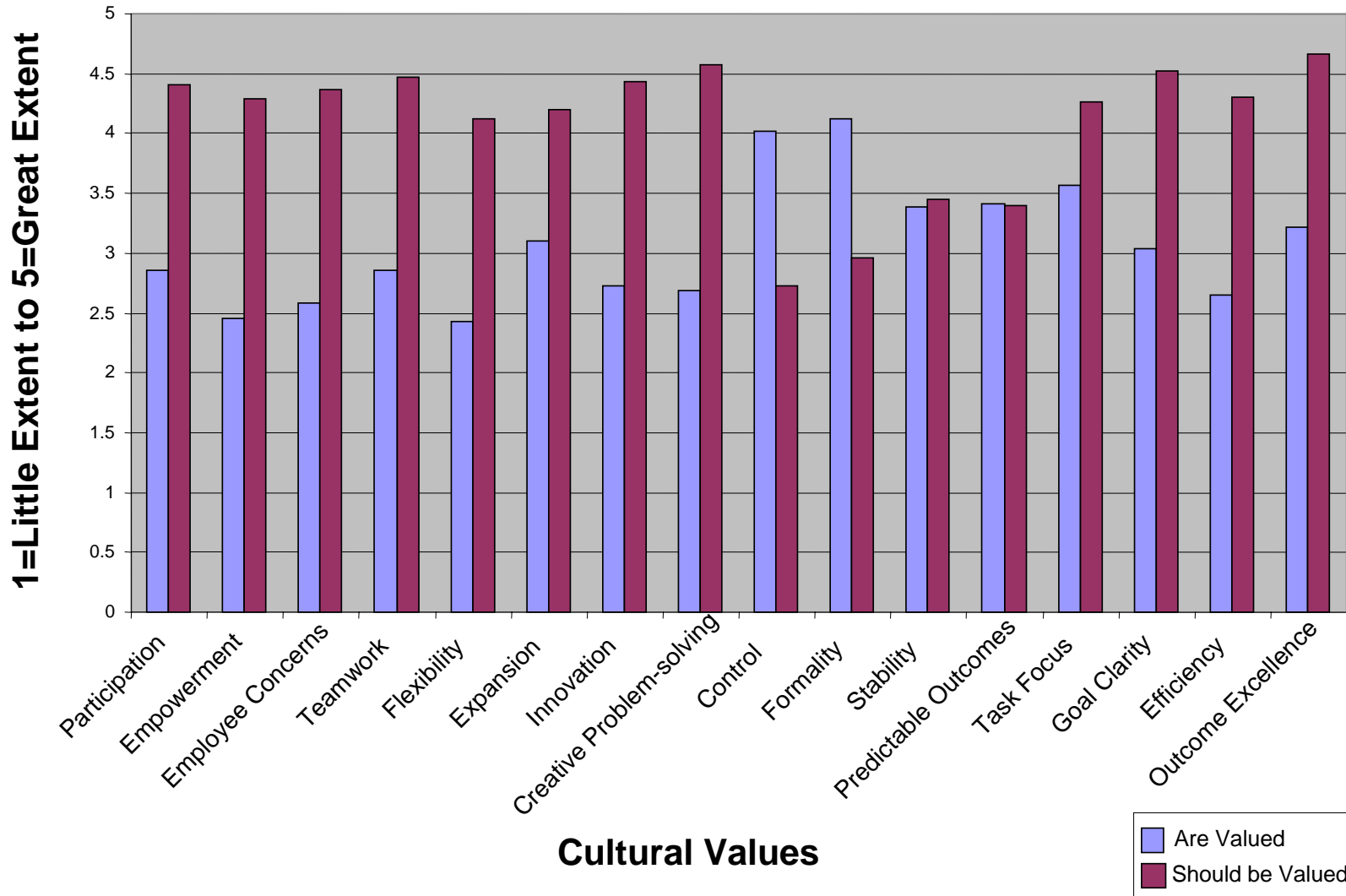
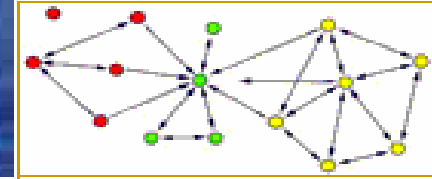
## Network Measures

Density = 4.4%

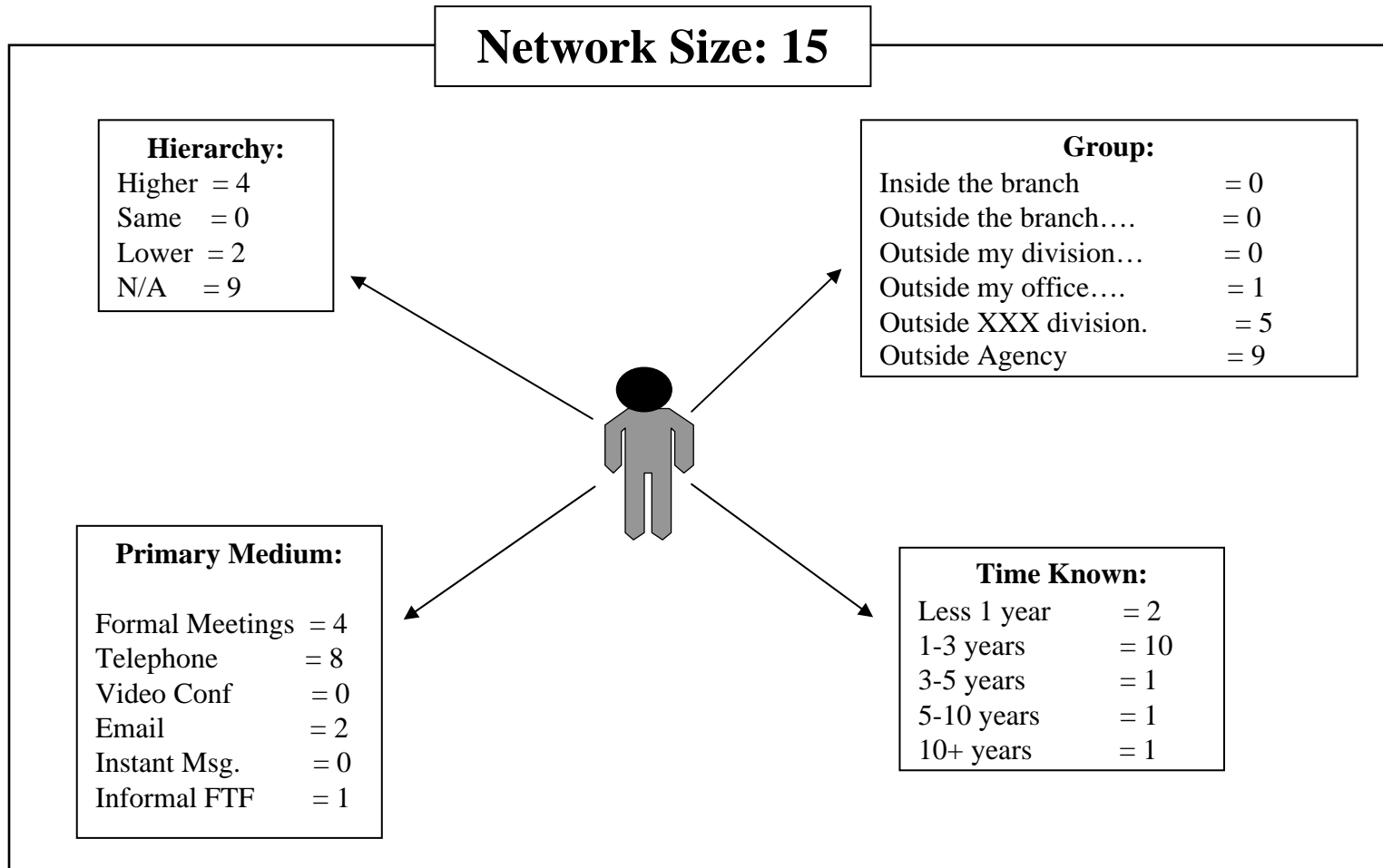
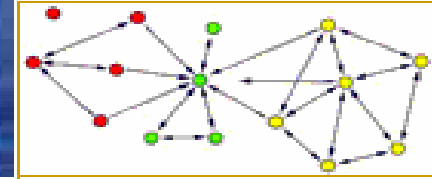
Cohesion = 2.93

Centrality (IN) = 6.014

# Employees Desire a More Flexible, Decentralized, Innovative Culture

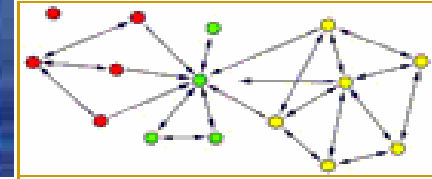


# Network Analysis Produced Detailed Individual Analyses In Addition to Group-level Feedback



**Assessing personal connectivity of central or influential network members can reveal key learning opportunities impacting the whole network.**

# One of the First Actions Taken After the Network Analysis Was a “Smart Mentoring” Initiative



## Objectives

- **For the most collaborative to help the least collaborative**
  - Achieve a diversity of networks
  - Engage in activities that keep people on the cutting edge
  - Spend time getting work done (vice “politicking”)
- **For the least collaborative to help most collaborative**
  - Identify bottlenecks experienced by new employees
  - Become a “connector” with newer employees
  - Bring more energy and new skill sets

## Actions

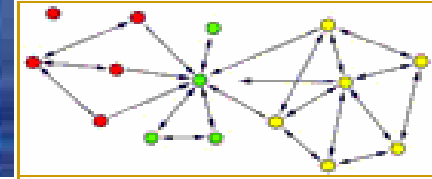
- **Identified 12 most collaborative and 12 least collaborative to create 12 pairs**
  - Most collaborative tended to have highest tenure
  - Least collaborative tended to have least tenure
- **Self-selection**
  - The most collaborative wrote biographies and included a photo
  - The least collaborative picked their top three choices
- **Evaluation of project**
  - Why were selections made the way they were?
  - Why were objectives reached/not reached?

### The Early Feedback is Positive

- “For the first time in a year since joining DIA, I am breaking out of my strictly administrative role and am beginning to understand how my work impacts others.”
- “During my year here, I never actually explored the building’s many floors and wings. I have now seen the people I support and now understand their daily lives and work environments.”



# Factors Critical for Successful Network Analysis Projects at the DIA

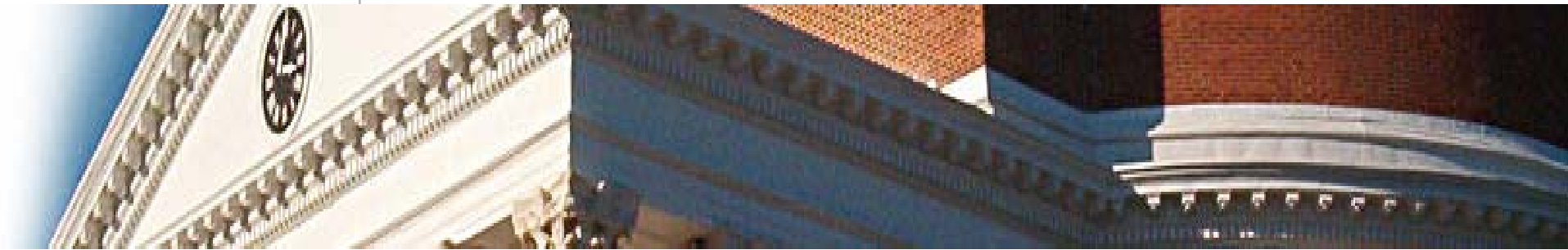


- The opportunity to obtain an outside-in view and translate findings into action
- Leadership advocacy at the most senior levels
- An organization-wide scope to understand the network across teams, divisions and locations
- Communicating the value of the network (and the network analysis) in a way that identifies how each individual will benefit, and answers the question, “What’s in it for me?”
- Conceptualizing what “teamwork” really means by providing a sense of self-determination and self-initiative to leverage the way people actually want to and actually do work together

## Key Stakeholder Comments

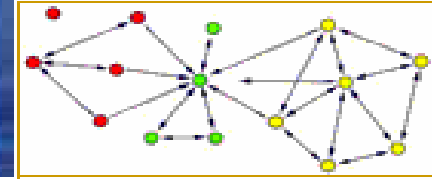
- “The success of the Knowledge Lab has been critically dependent upon the creation and sustainment of the volunteer network. Network analysis revealed key changes necessary to build this network to improve knowledge sharing across the agency.”
- “We have seen how the volunteers have served as a sensing mechanism and this has helped us identify opportunities to try new processes and instill a sense of innovation and agility—that it is possible to really become a learning organization.”

# Appendix



*The* **NETWORK ROUNDTABLE** *at the* **UNIVERSITY OF VIRGINIA**

# Why We Should Focus Our Attention on Organizational Networks



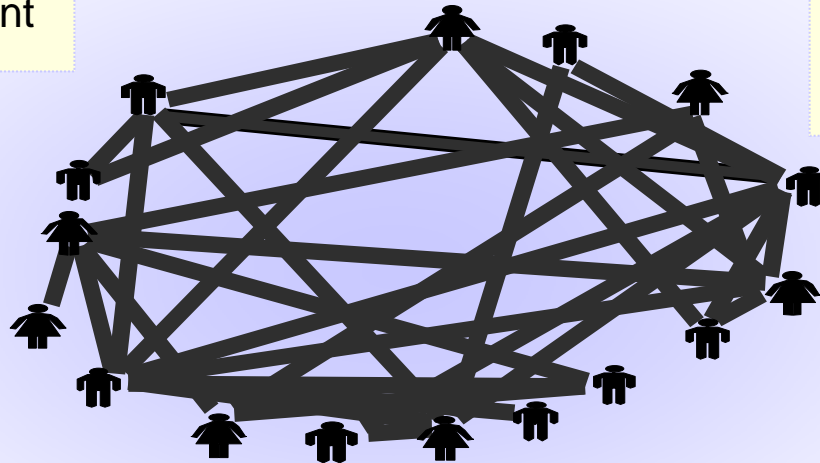
## Key Reasons Why Organizational Networks Are Important

### Where Work Happens

- Lack of boundaries
- Informal networks increasingly important

### Where People Engage

- Join and commit to people
- Trust accrues in networks of relations



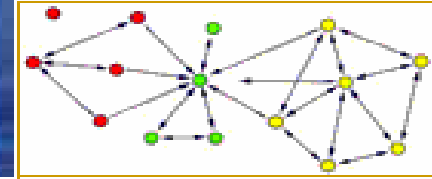
### Where Knowledge Lives

- Rely on people for information
- People can provide more than databases

### BUT...

- Invisible
- Complements formal structure

# How to Interpret a Network Diagram



- **Central People**

- Are an important source of expertise
- May become bottlenecks

- **Peripheral People**

- Are underutilized resources
- Feel isolated from the network
- Have a higher likelihood of leaving

- **External Connectivity**

- Provides balanced and appropriate sources of learning
- Holds relevant influence with key stakeholders

- **Brokers**

- Are critical connectors between diverse information sources and specific kinds of expertise. High leverage points.

- **Fragmentation Points**

- Affect information flow across boundaries (e.g., cross functional, hierarchical, geographical, or expertise)
- Provide targeted opportunities

- **Personal Connectivity**

- Improves community leader effectiveness
- Enables grass roots network development efforts

