

Predicting Project and Organizational Outcomes using Network Analysis

John Wanberg

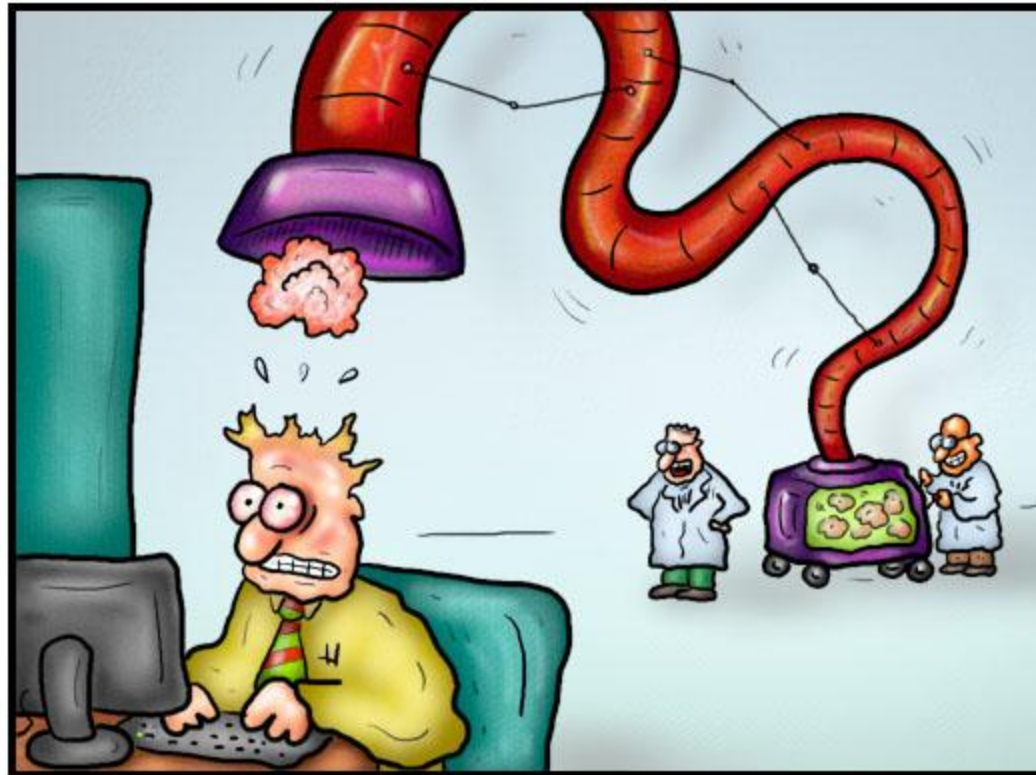


Management issues

- Silos
- Repeated mistakes/Re-invent the wheel
- Effects of management changes?
- Groups fall short of potential?

DOCTOR FUN

29 July 2002



"Now that's what I call data harvesting."

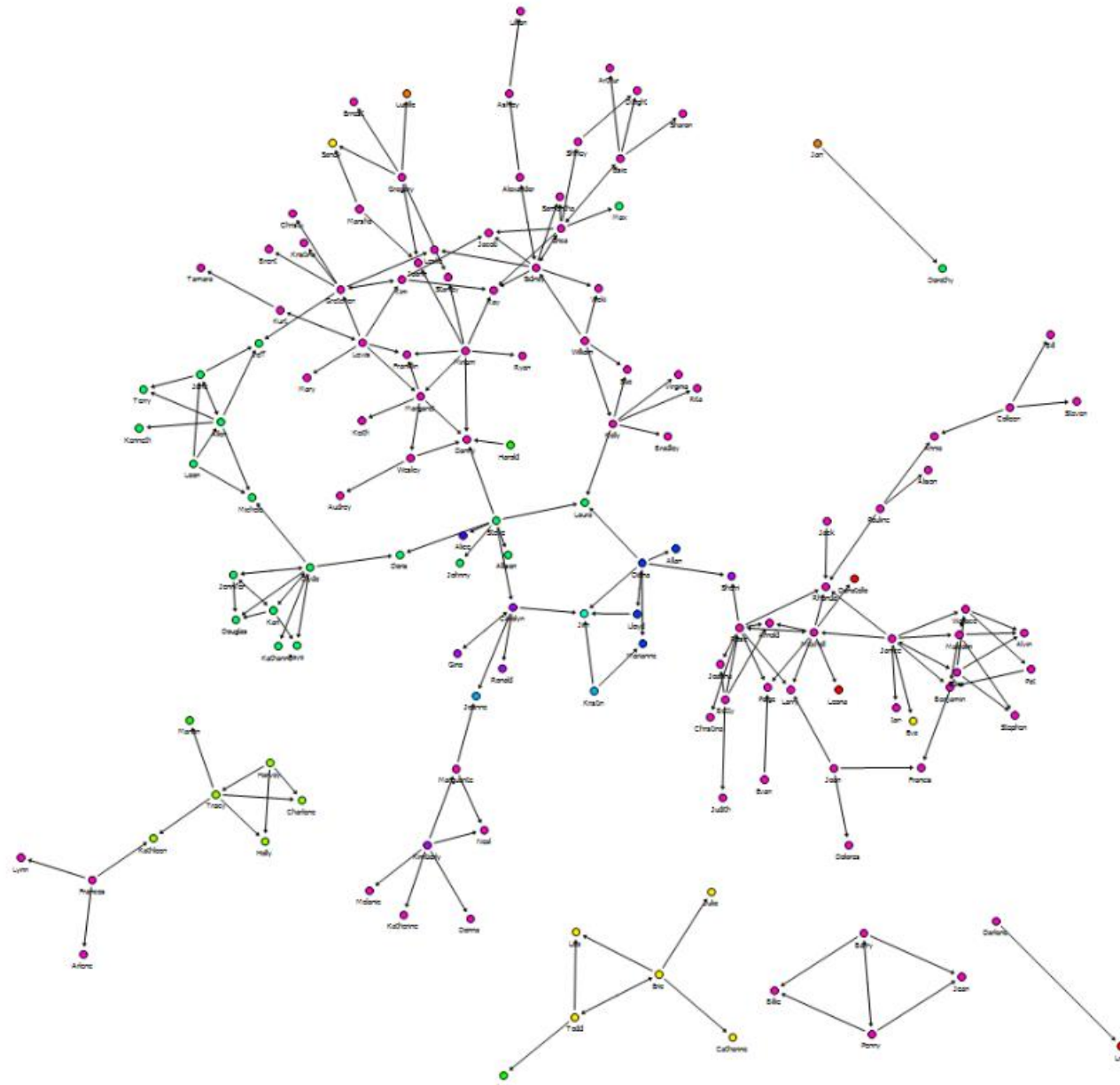
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Social Network Perspective





What can we do with network analysis?

1. Maximize employee potential



Not everyone has the same skills...

2. Reveal team problems that were previously hidden



Don't wait until it affects performance

3. Evaluate innovation and learning

- Excellent
- Very good
- Good
- Average
- Poor

4. Assess the execution of strategy



Today's Focus

- Go through each of the 4 applications of network analysis
- Provide real examples and outcomes
- Discuss management strategies



STRATEGIC CONNECTIONS

Bring together the right PEOPLE in the right RELATIONSHIPS to accomplish a given goal

Maximizing employee

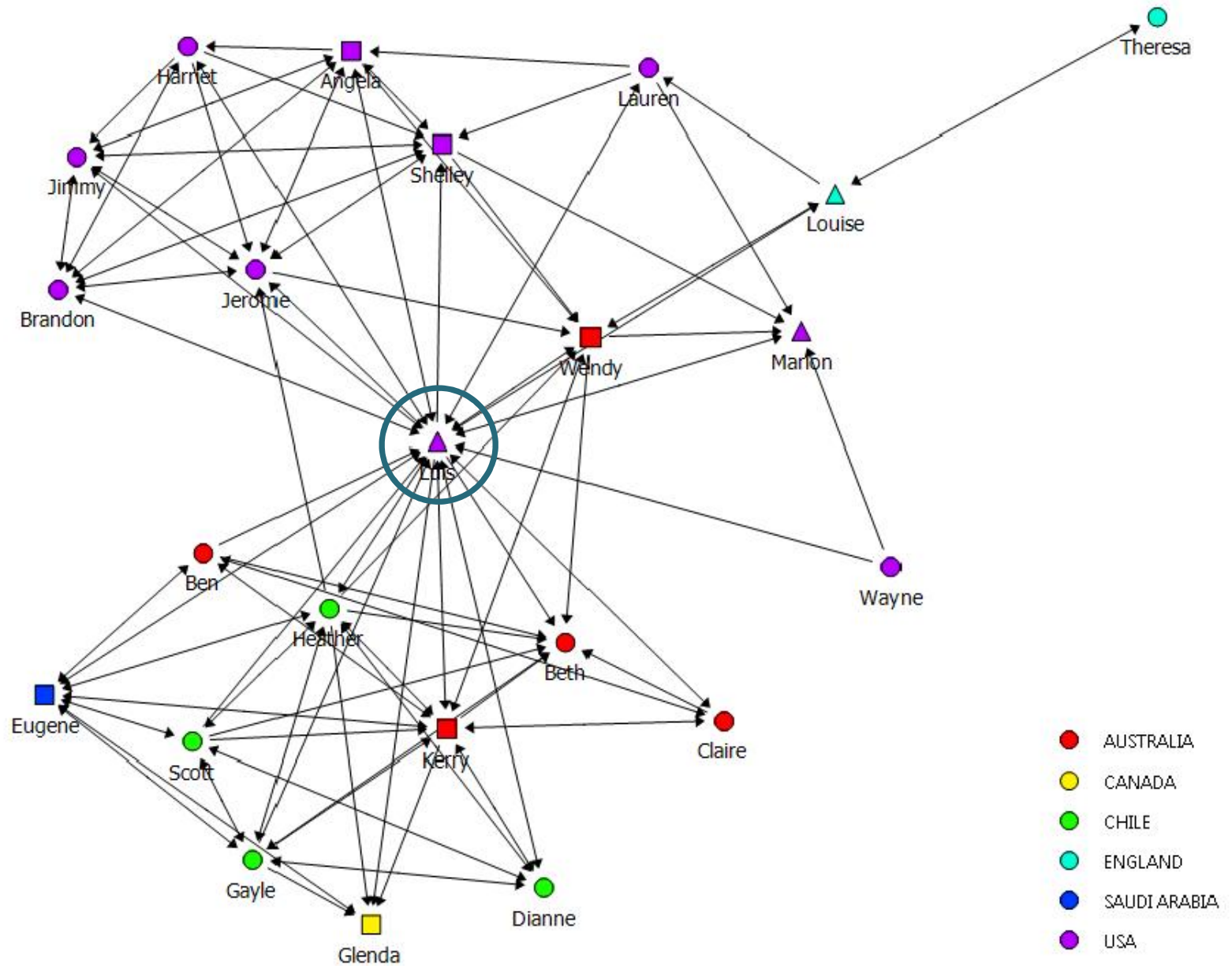




Connectors

- Vital hubs
- Good for “memory”
- They know who would know
- First person you go to with question

Connectors

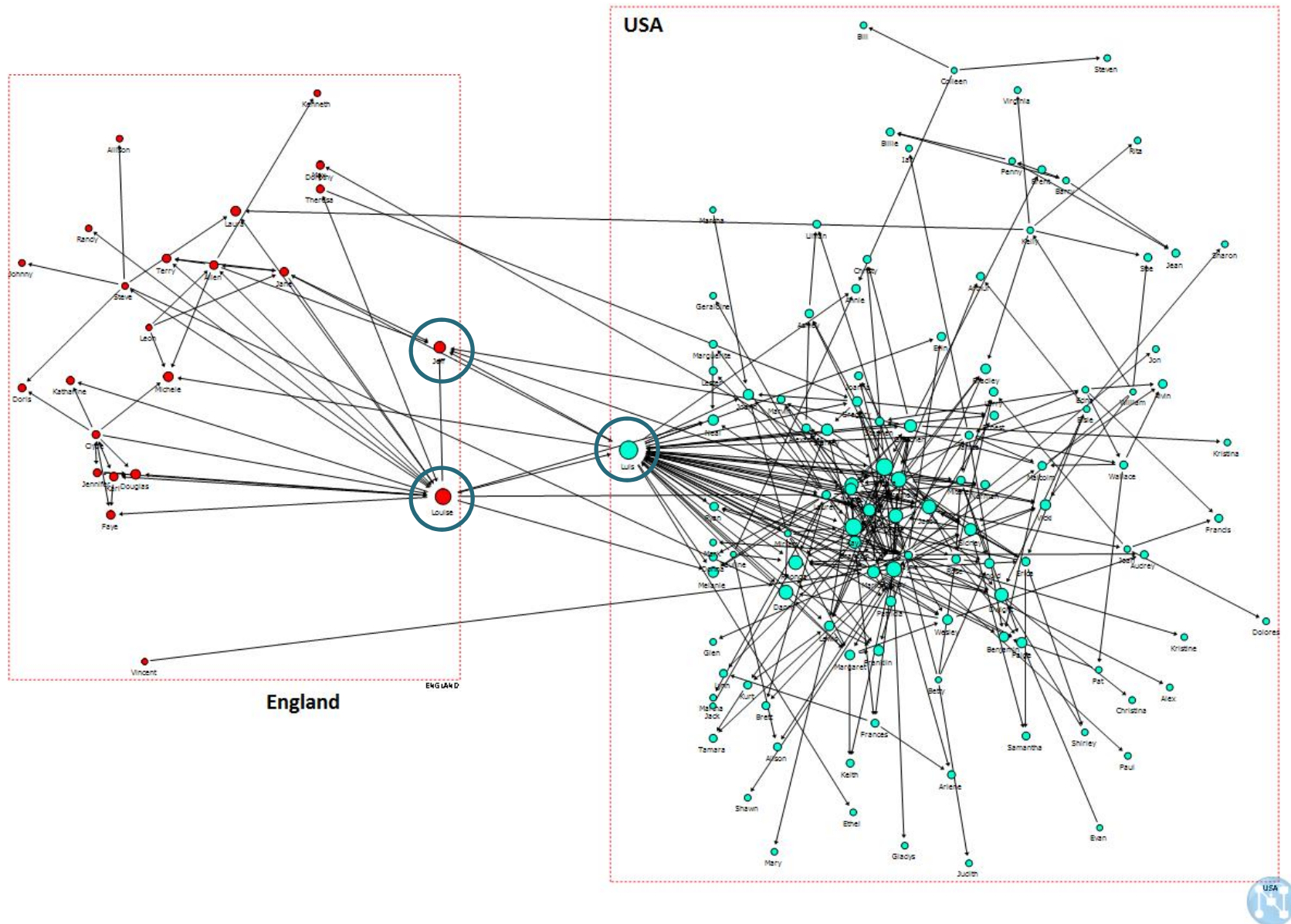




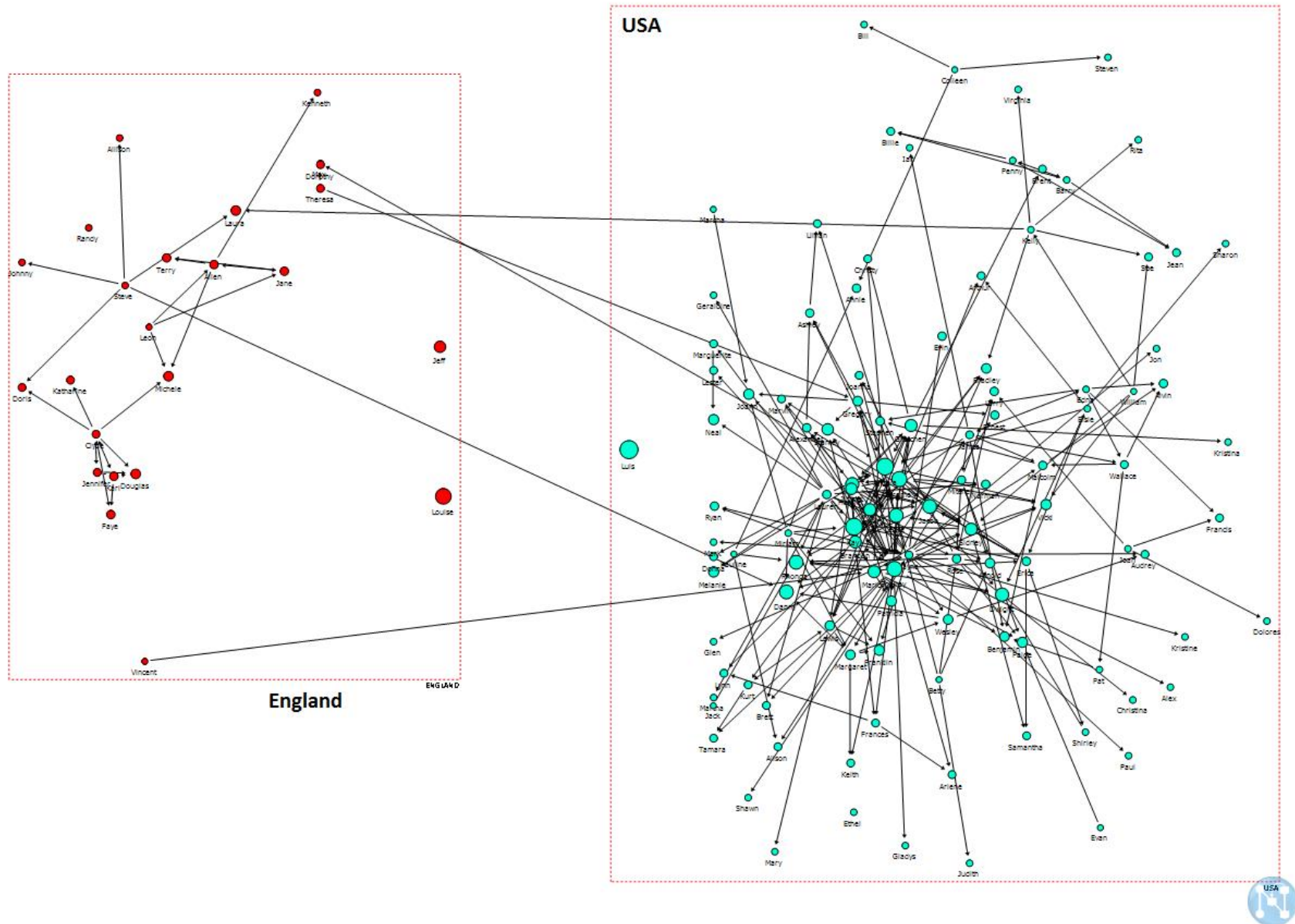
Boundary Spanners

- People who stand in the middle
- Could cross geographic, disciplinary, or organizational boundaries
- Integrate different knowledge bases

Boundary Spanners



Boundary Spanners

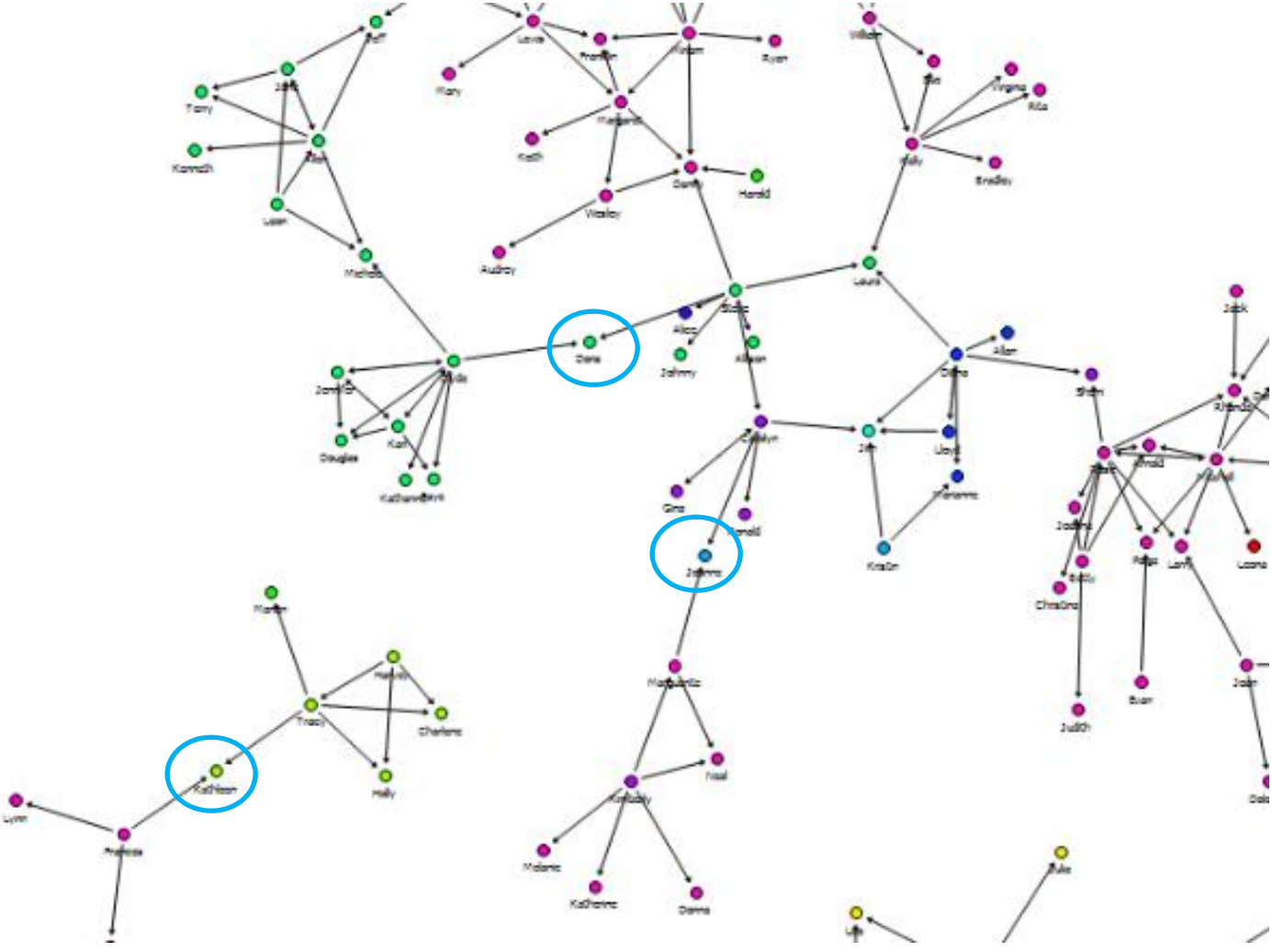




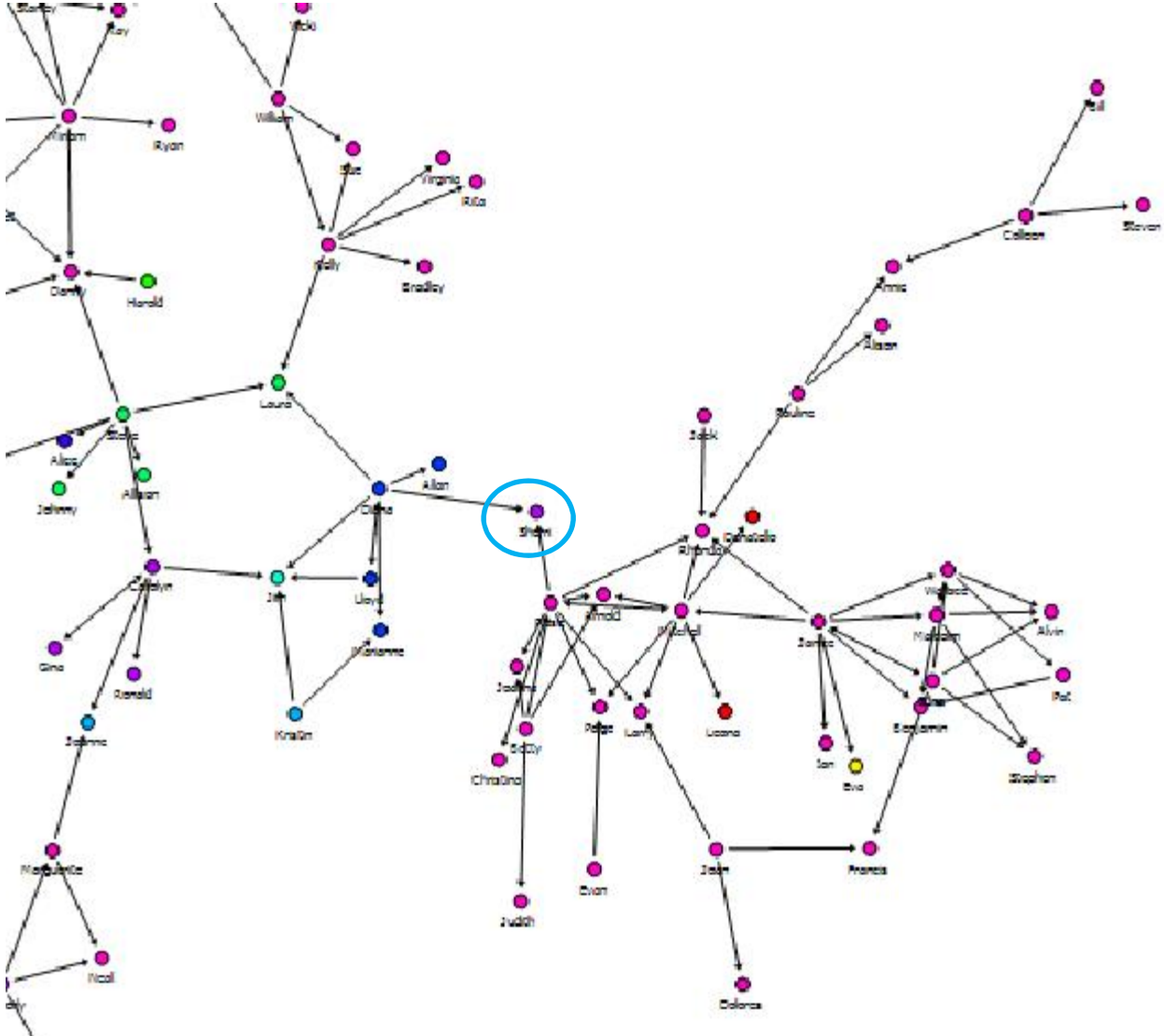
Brokers

- Conduits for information/communication
- In the path of knowledge flow
- Without them, distance increases

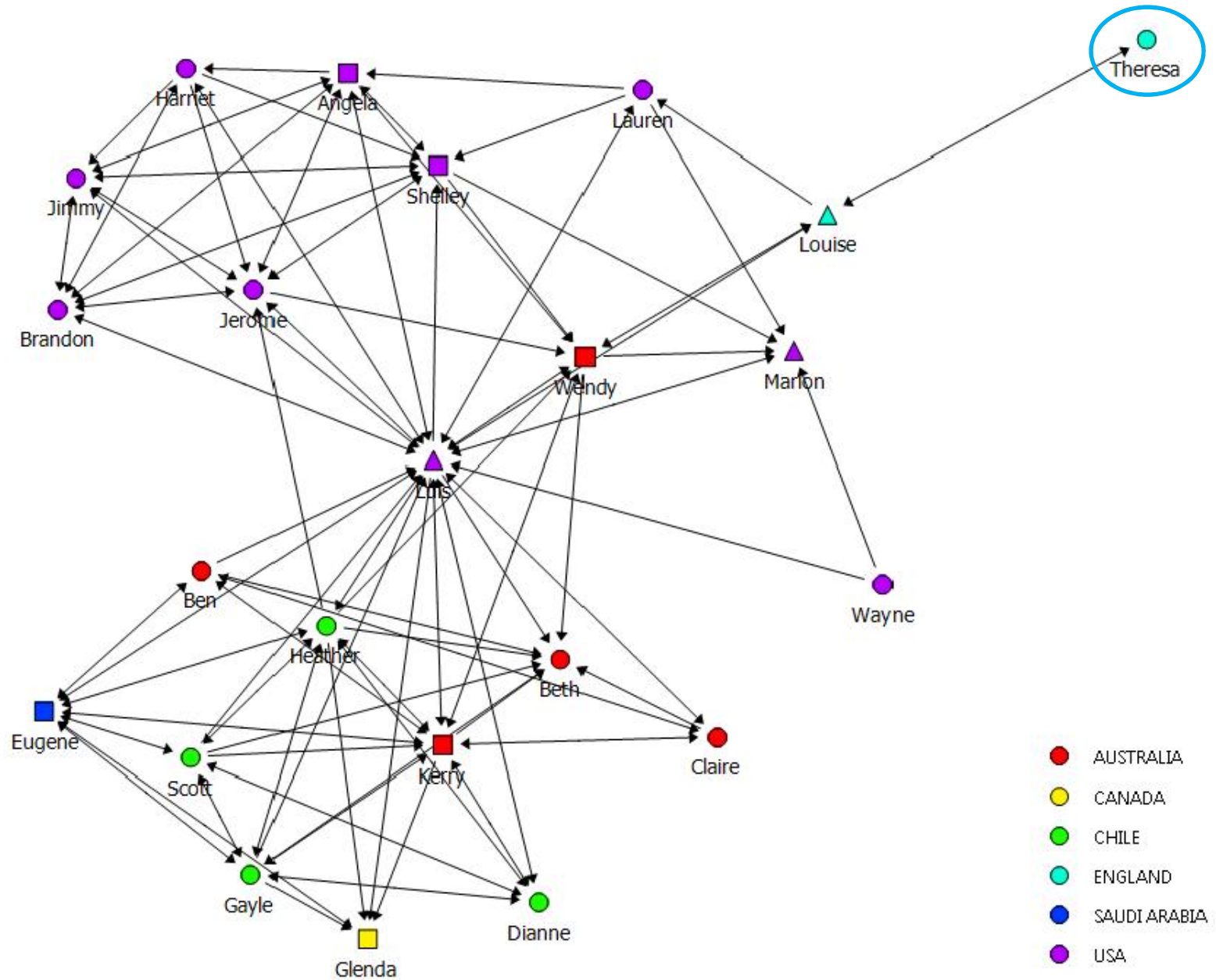
Brokers



Brokers



Outsiders





Outsiders

- Time intensive job task - Researcher
- Underutilized knowledge resource
- This is not main project/task
- Need more training



Employee Potential - Summary

1. Identify roles within group:
 - a. Connector
 - b. Boundary Spanner
 - c. Broker
 - d. Outsider
2. Map roles to the goals of the group
3. Adjust network to reflect goals

Finding hidden problems: A case study of a project management team



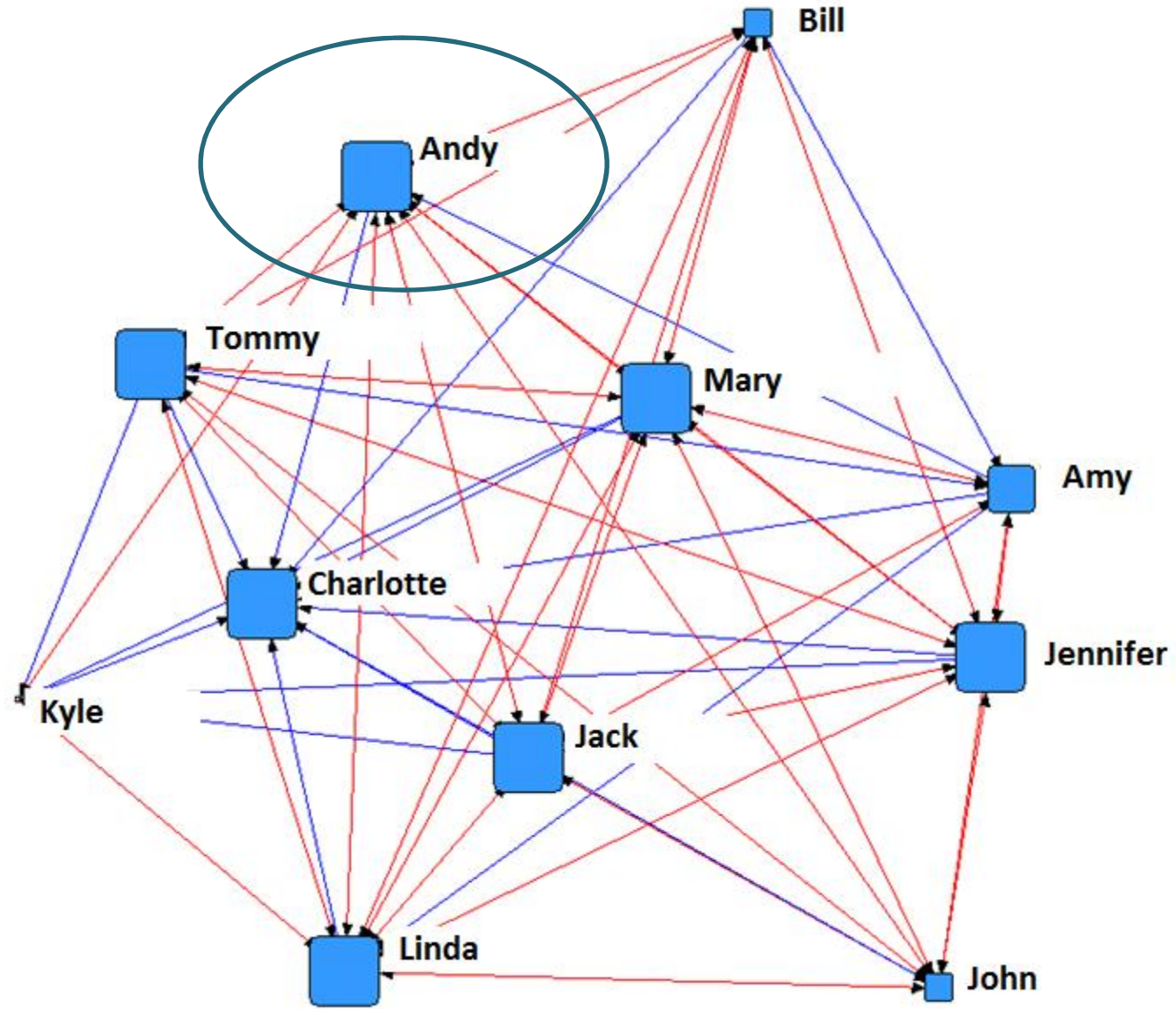


Background

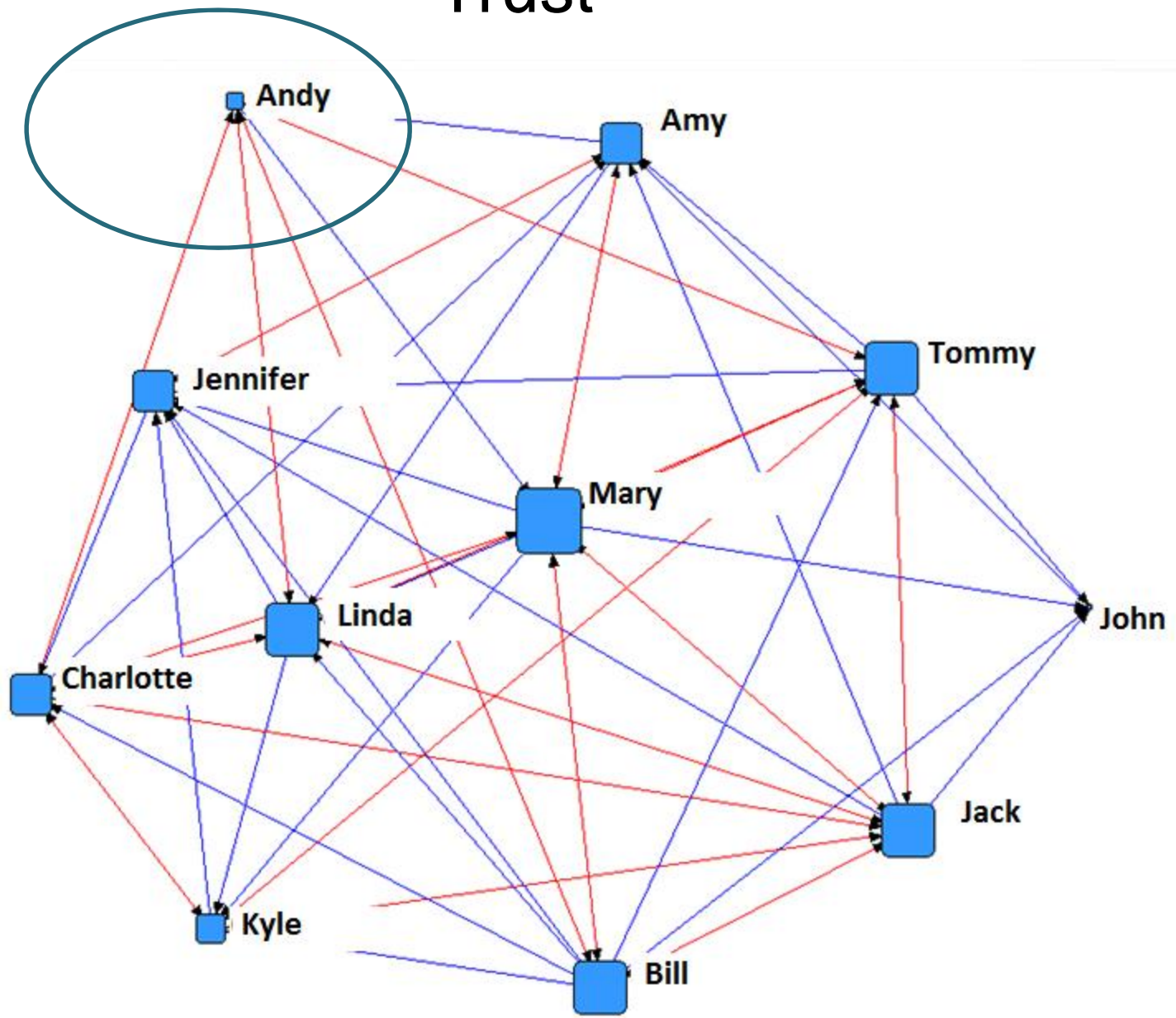
- Group working as Owner's Rep
- Oversaw retrofit of power plants

- Team was **NOT EFFECTIVE**

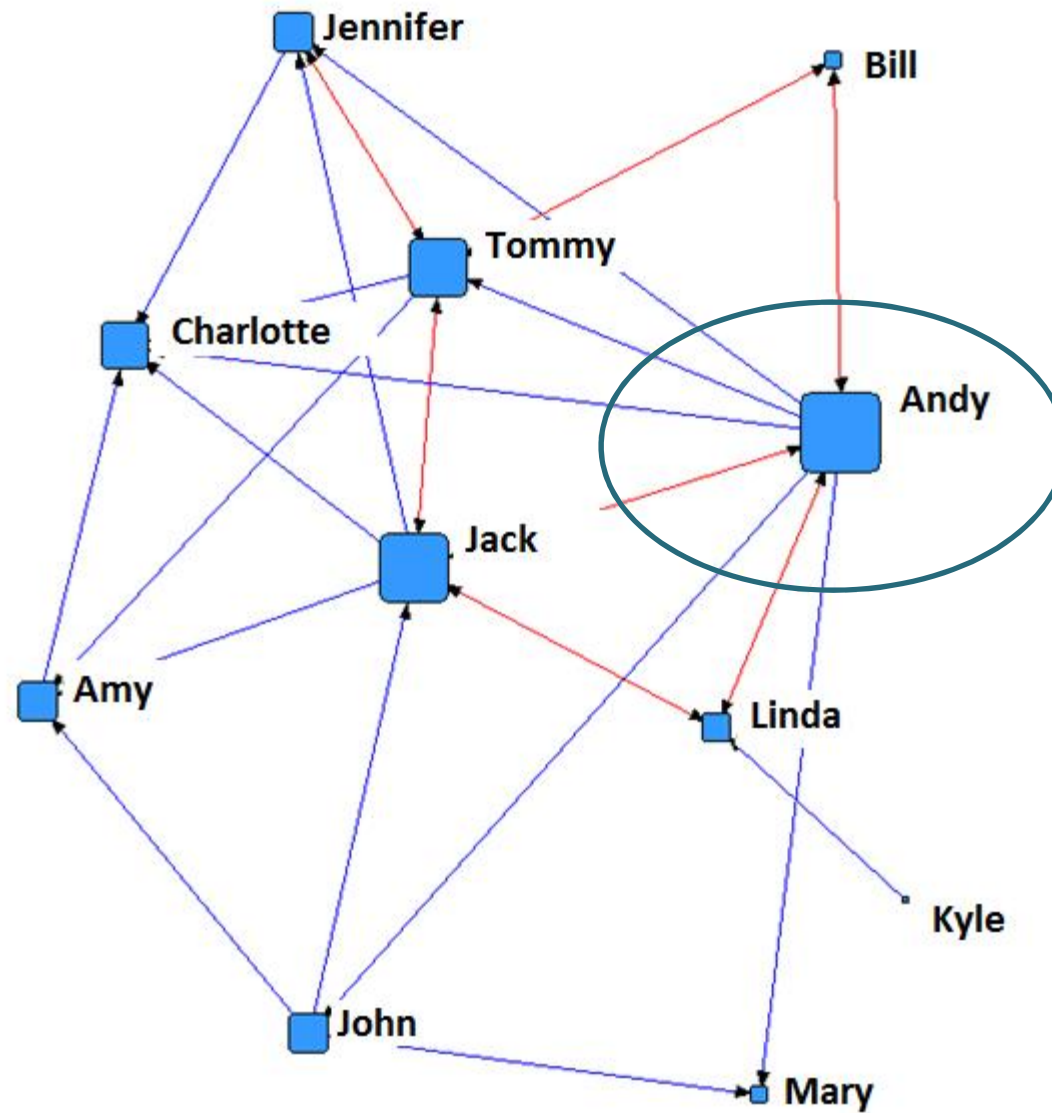
All Communication



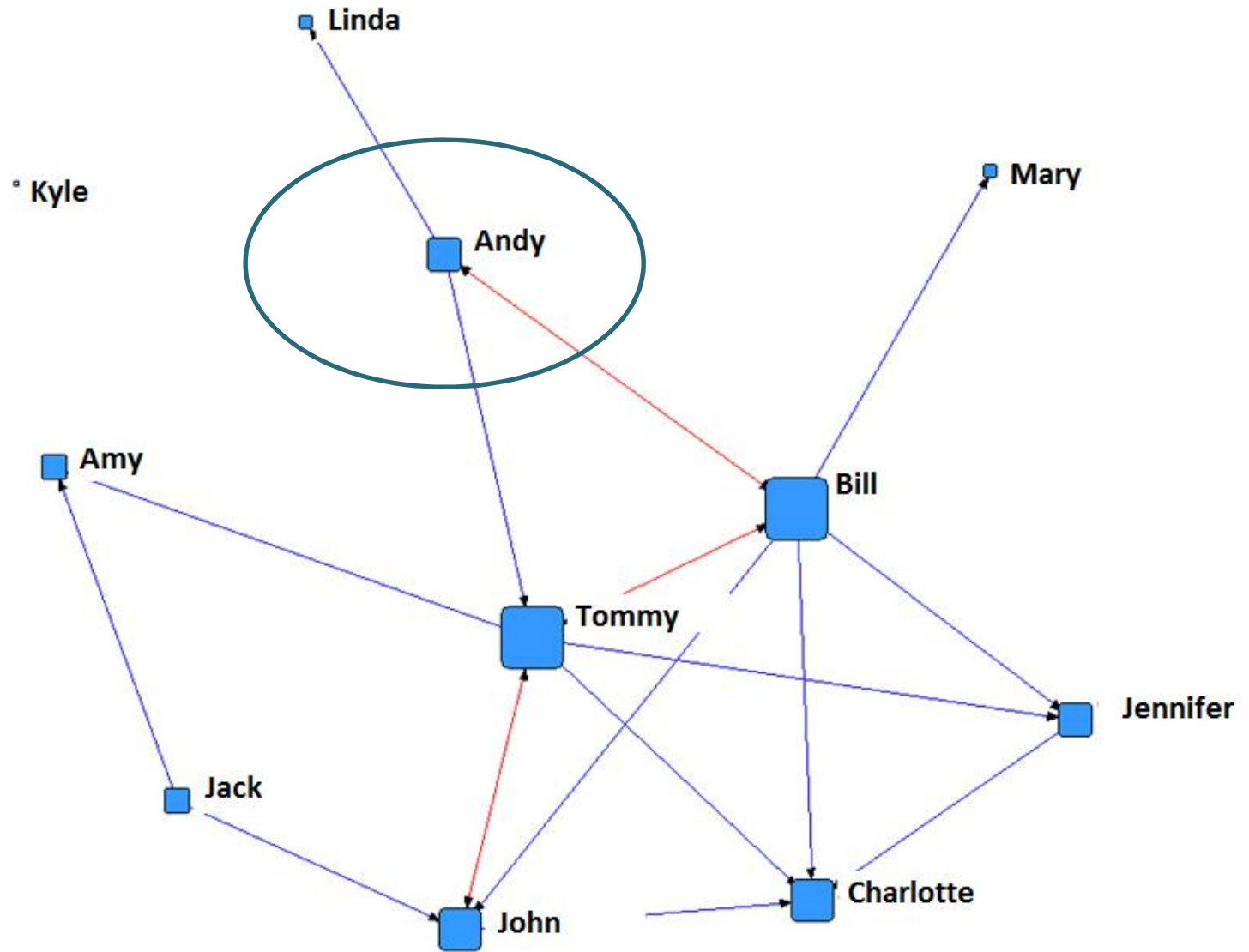
Trust



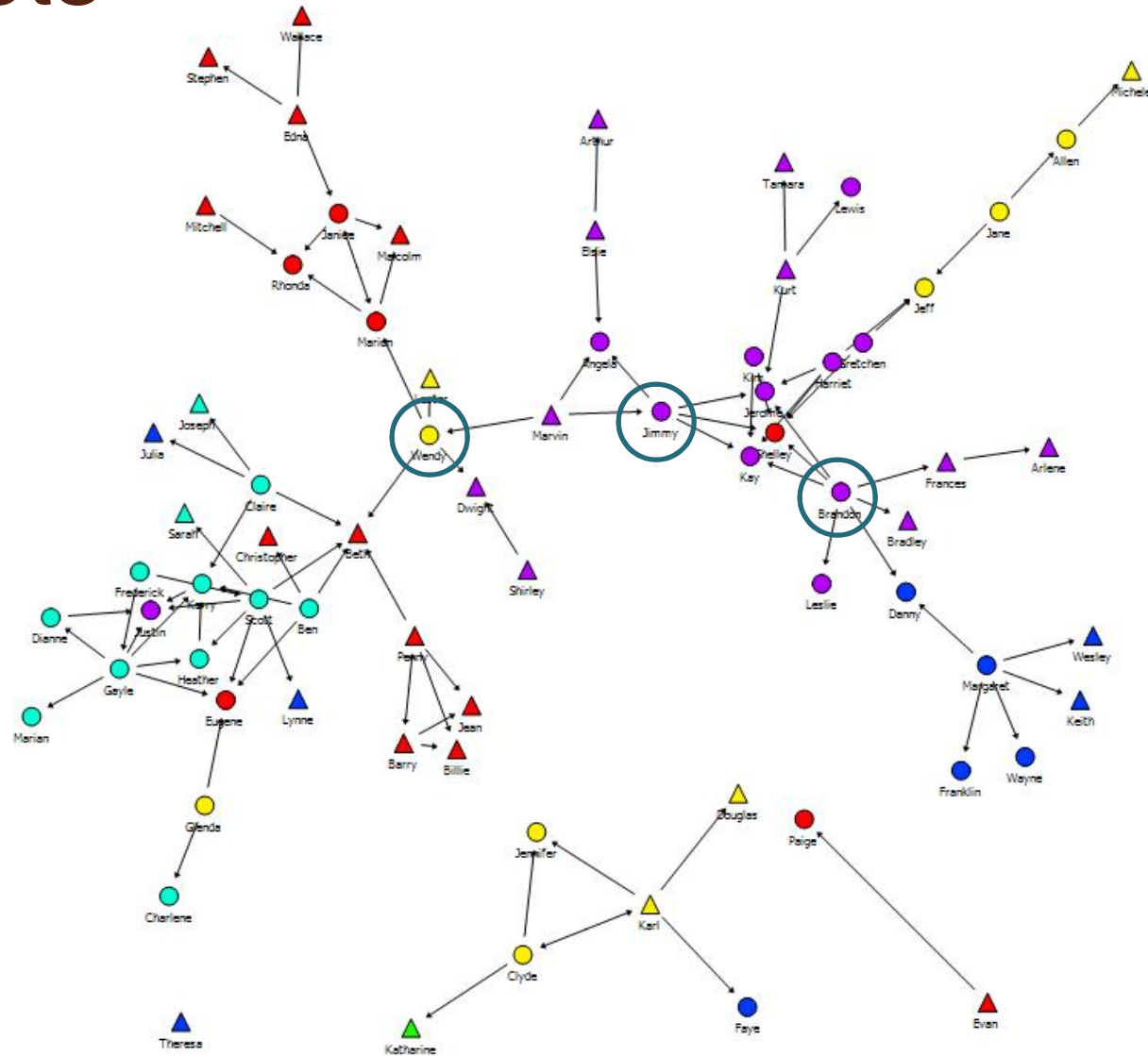
Project Communication - Weekly



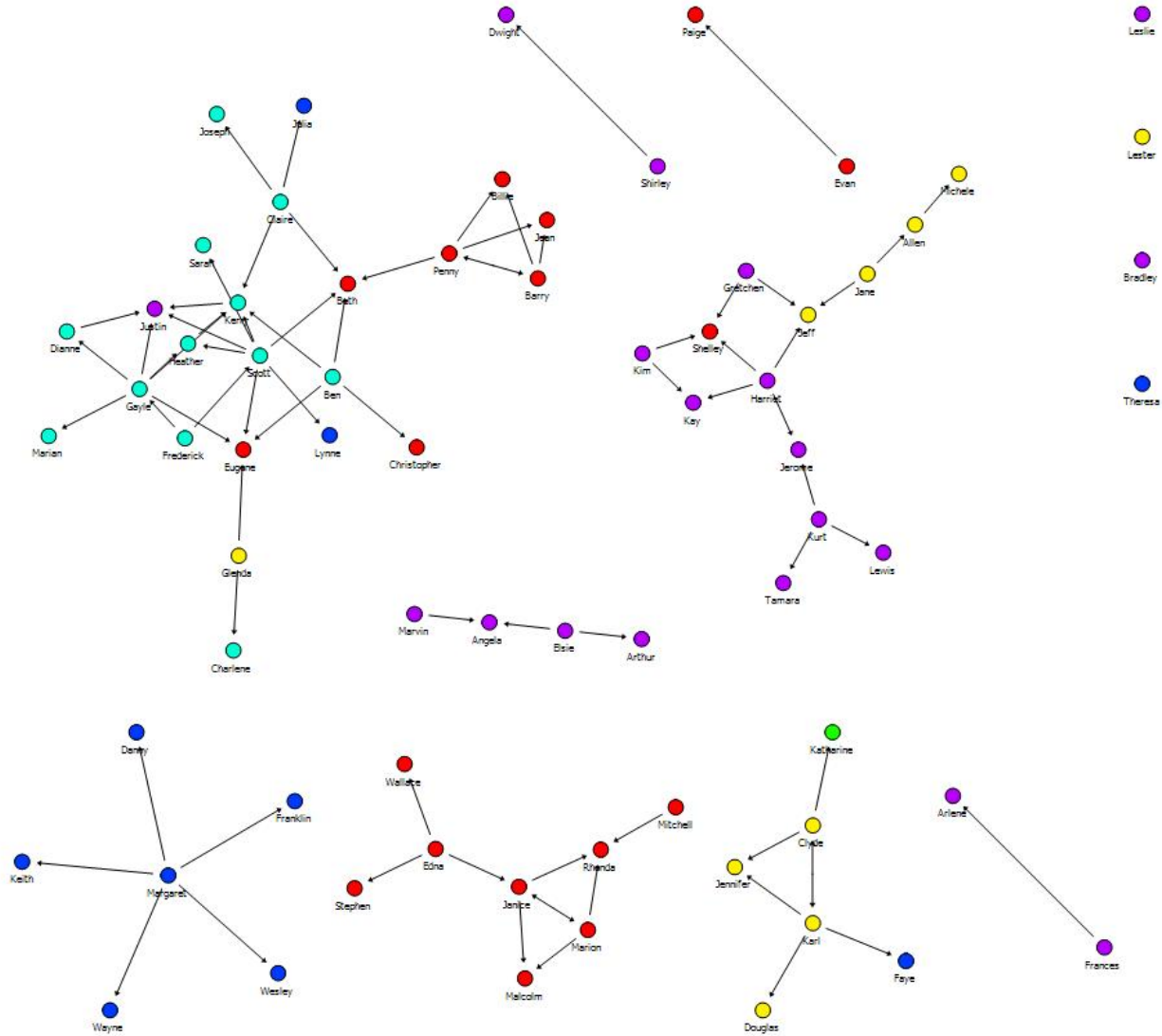
Knowledge Exchange



Unseen Problems: Vulnerable Spots



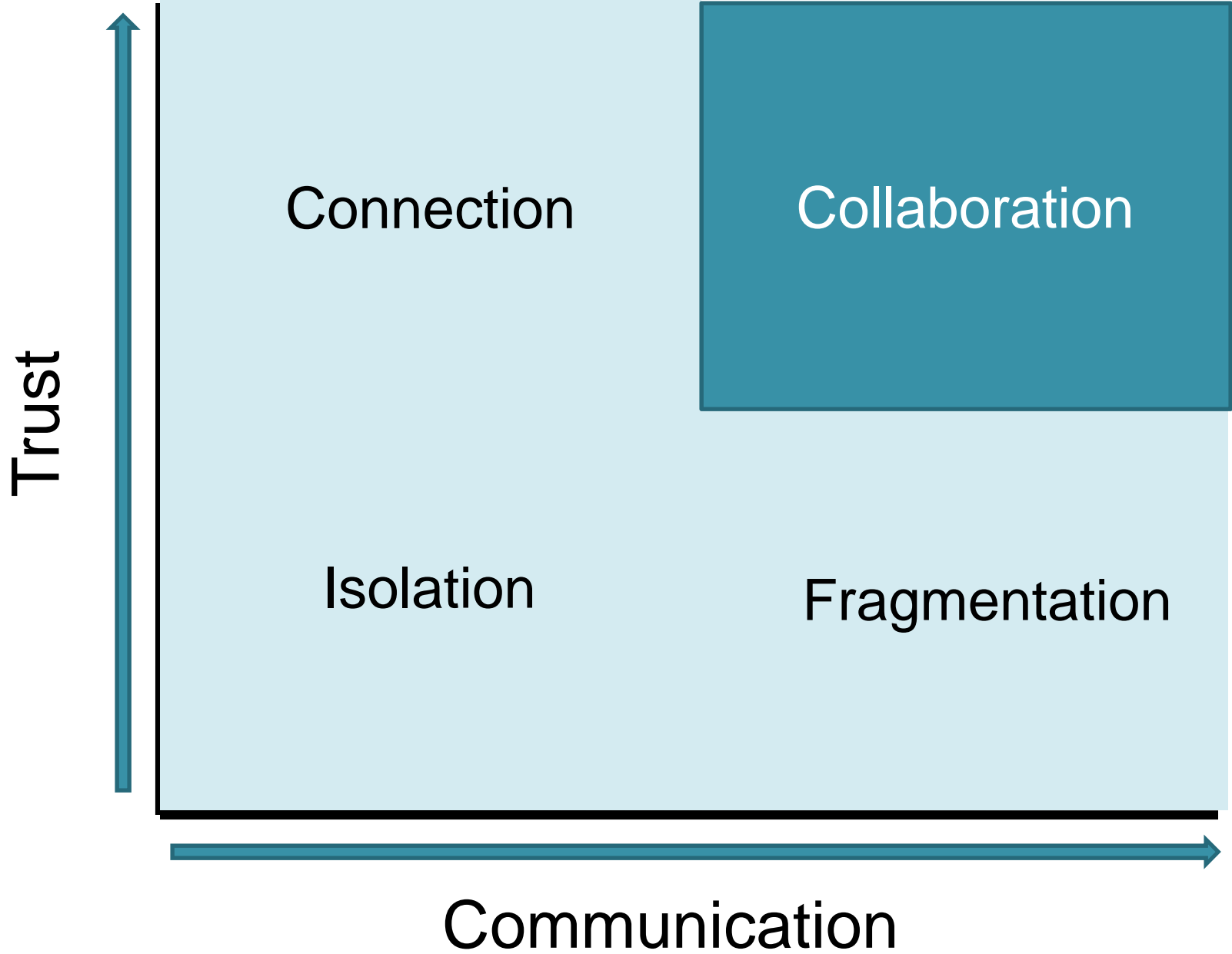
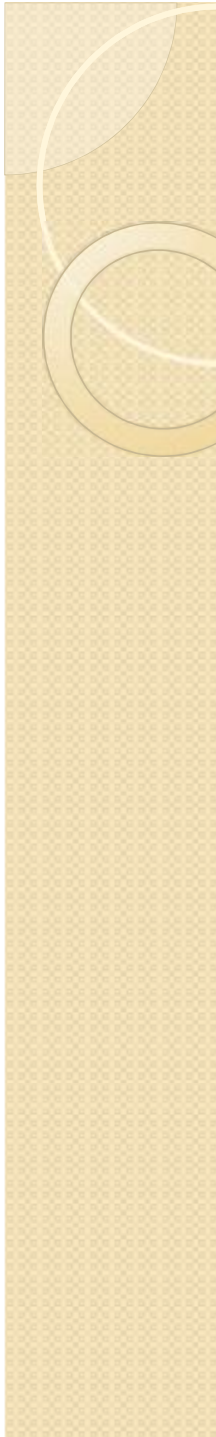
Unseen Problems: Vulnerable Spots





Remedies

- Identify weak spots in network
- Create redundant connections around essential people
- Work to retain essential people



Evaluate innovation and learning

- Excellent
- Very good
- Good
- Average
- Poor



What are the metrics?

- Type of knowledge sharing
- Connections
 - Frequency of exchange
 - Method of exchange
- Network structure
- Distribution of knowledge resources

Knowledge Sharing: Types



Tacit

Knowledge Sharing: Types



Explicit



Knowledge Sharing: Types

- Innovative organizations have both types
- Online platform not enough
- Requires connecting people
- Supportive environment

Connections: Frequency of exchange

Monthly

- Lower coordination
- Less knowledge intensive

Weekly

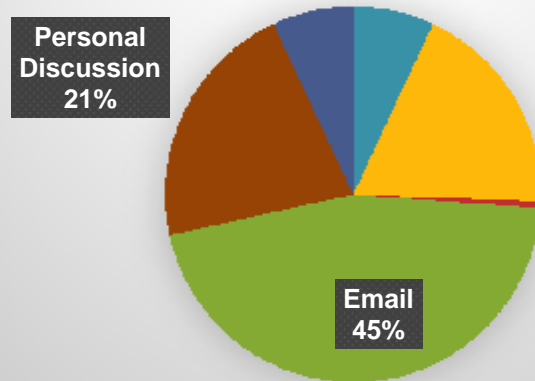
- More coordination
- Tasks on shorter cycle

Daily

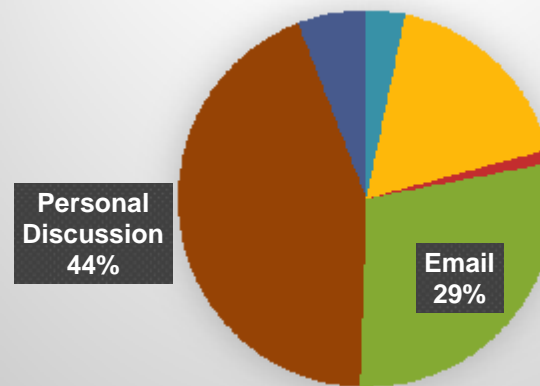
- High coordination
- Fast paced project speed

Connections: Method of exchange

Time zone difference > 4hr (n=172)

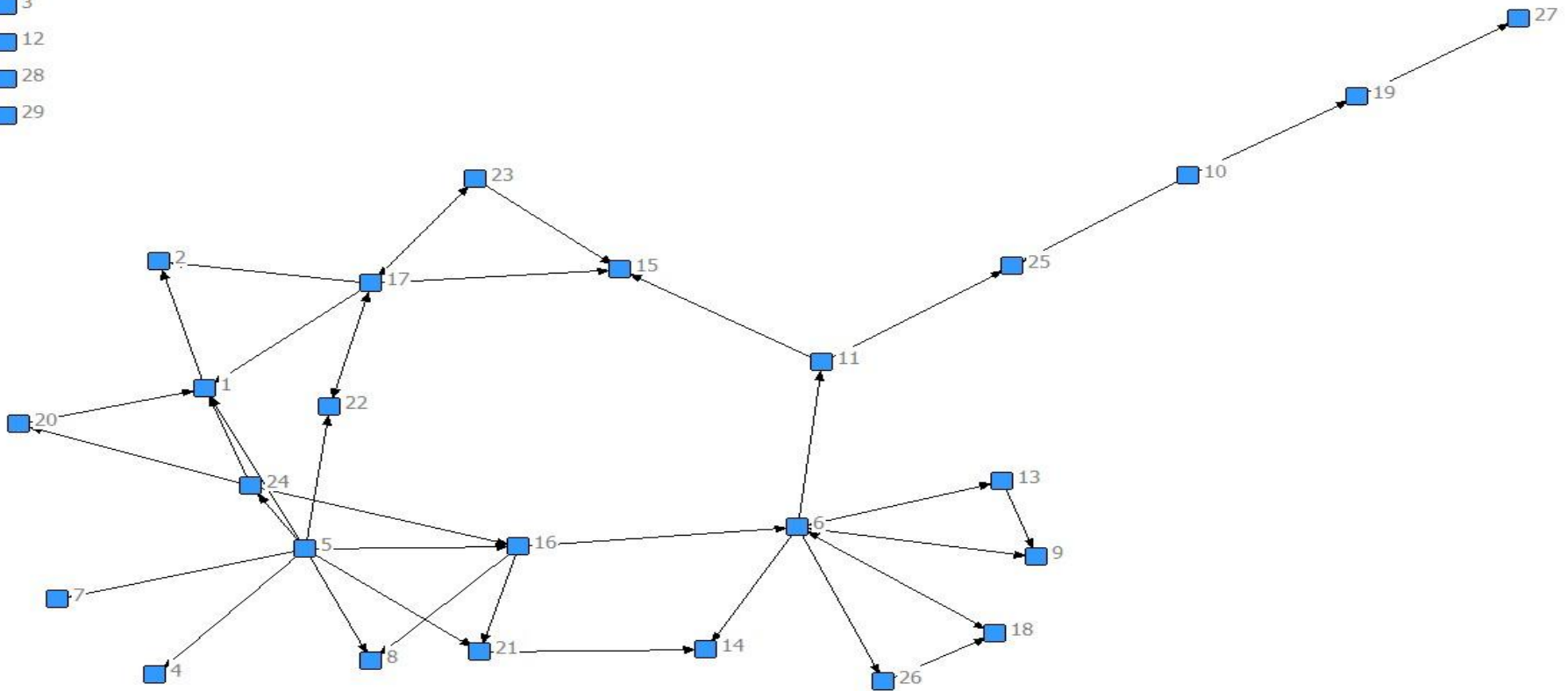


Time zone difference < 4hr (n=693)



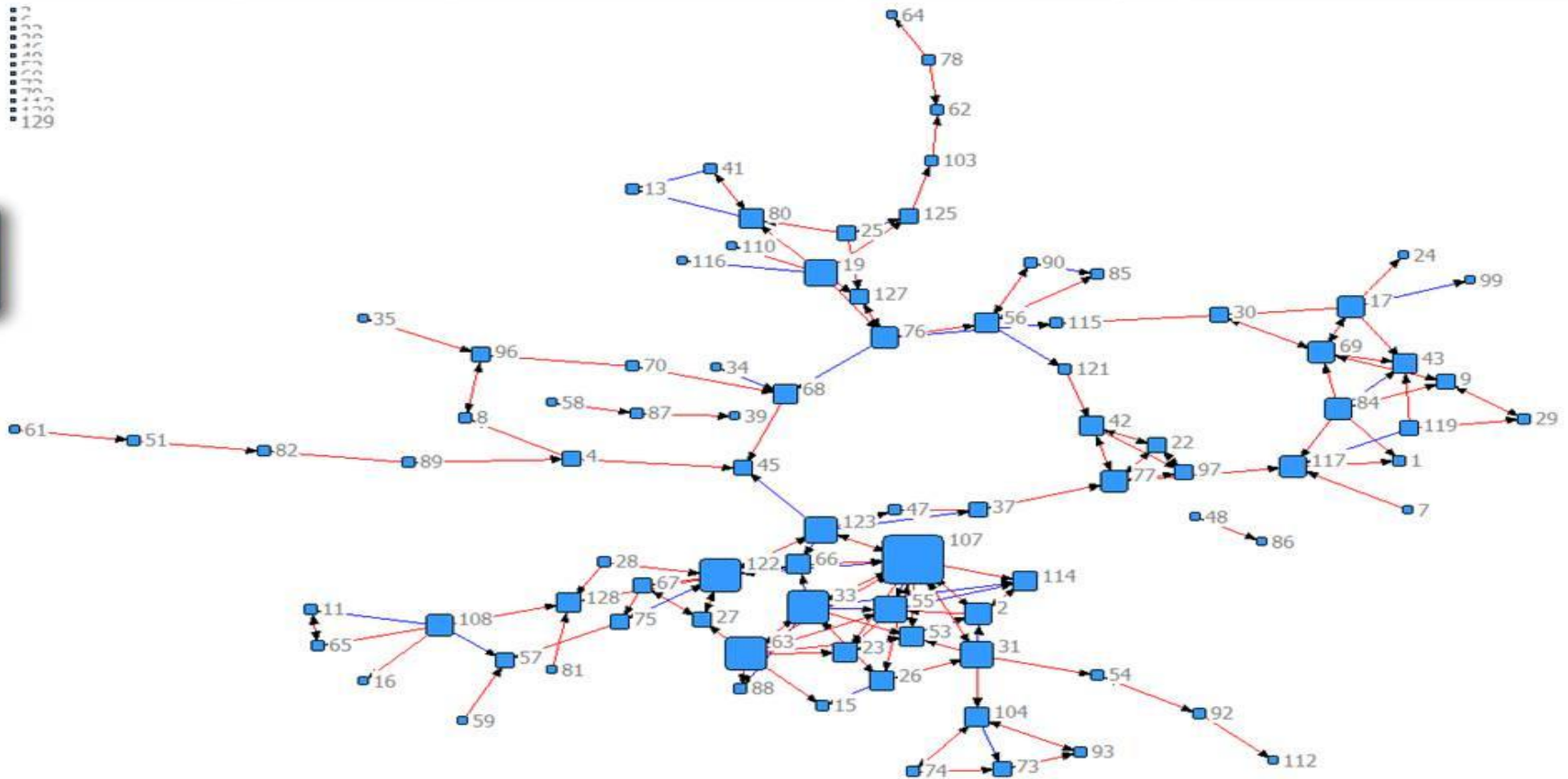
Network Structure: The constellation

- 3
- 12
- 28
- 29

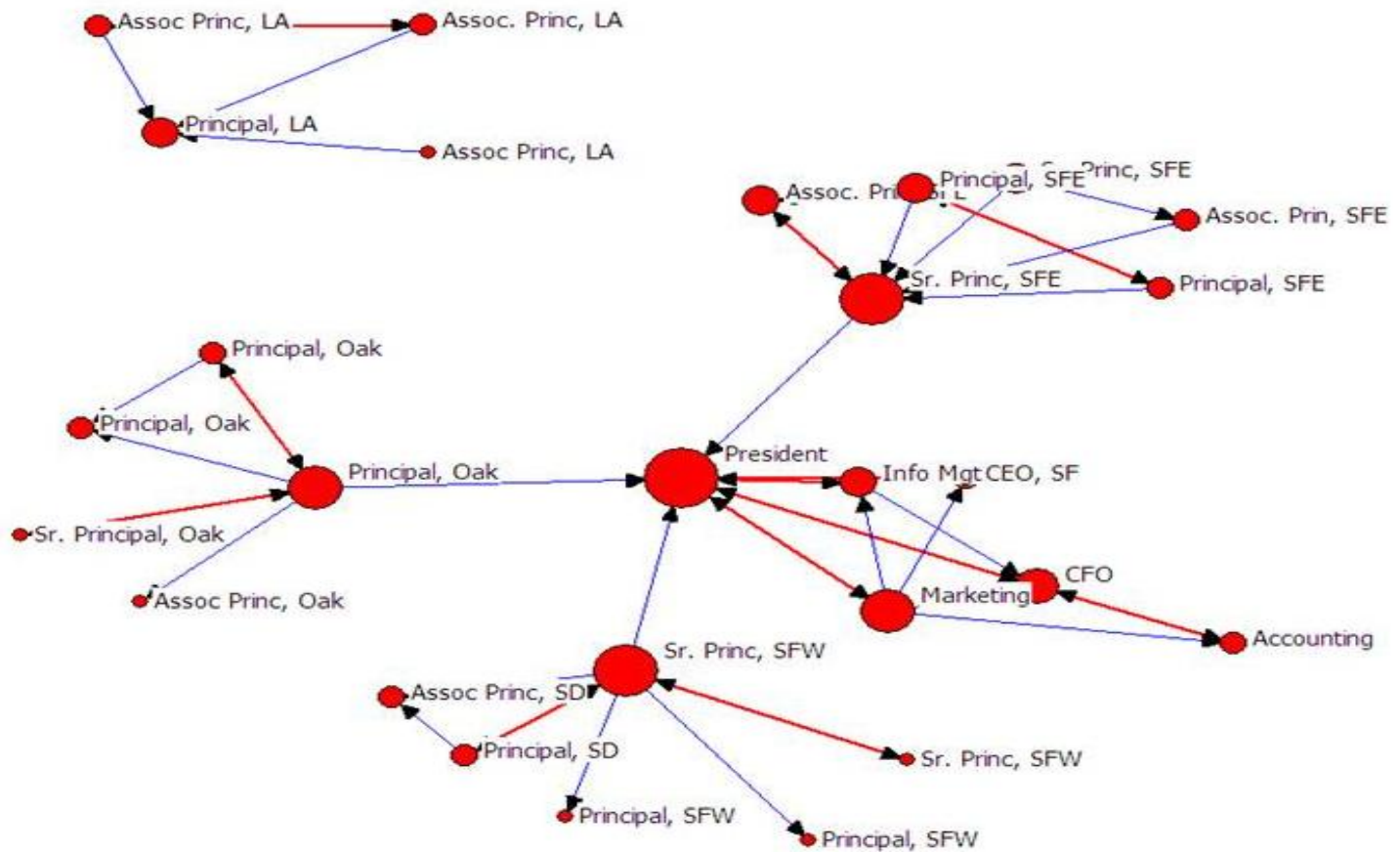


Network Structure: The spider

129



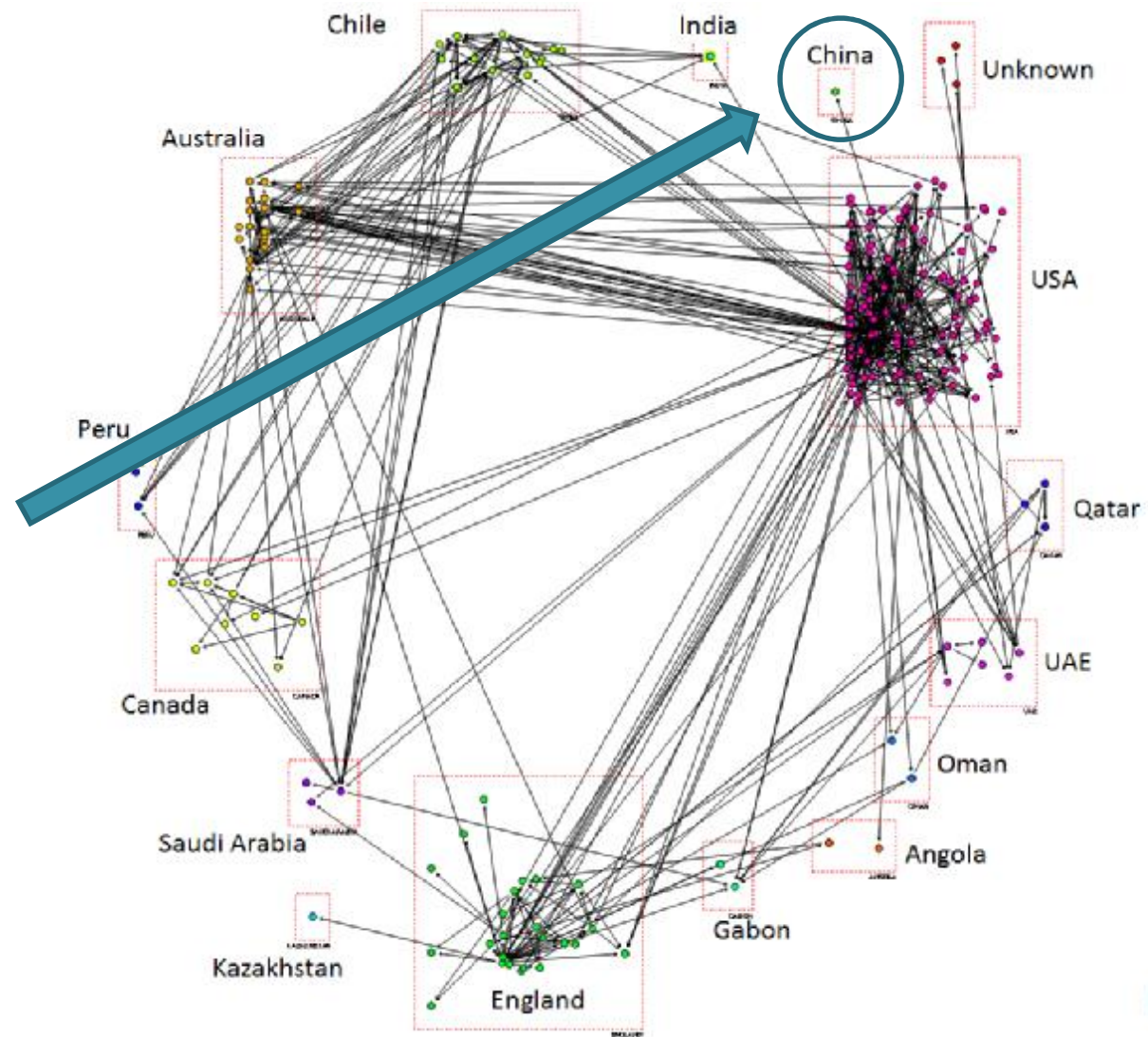
Network Structure: Islands



Distribution of Knowledge Resources

500 person office
in China

COMPLETELY
disconnected



Assess execution of strategy





Case Study: Process improvement CoP

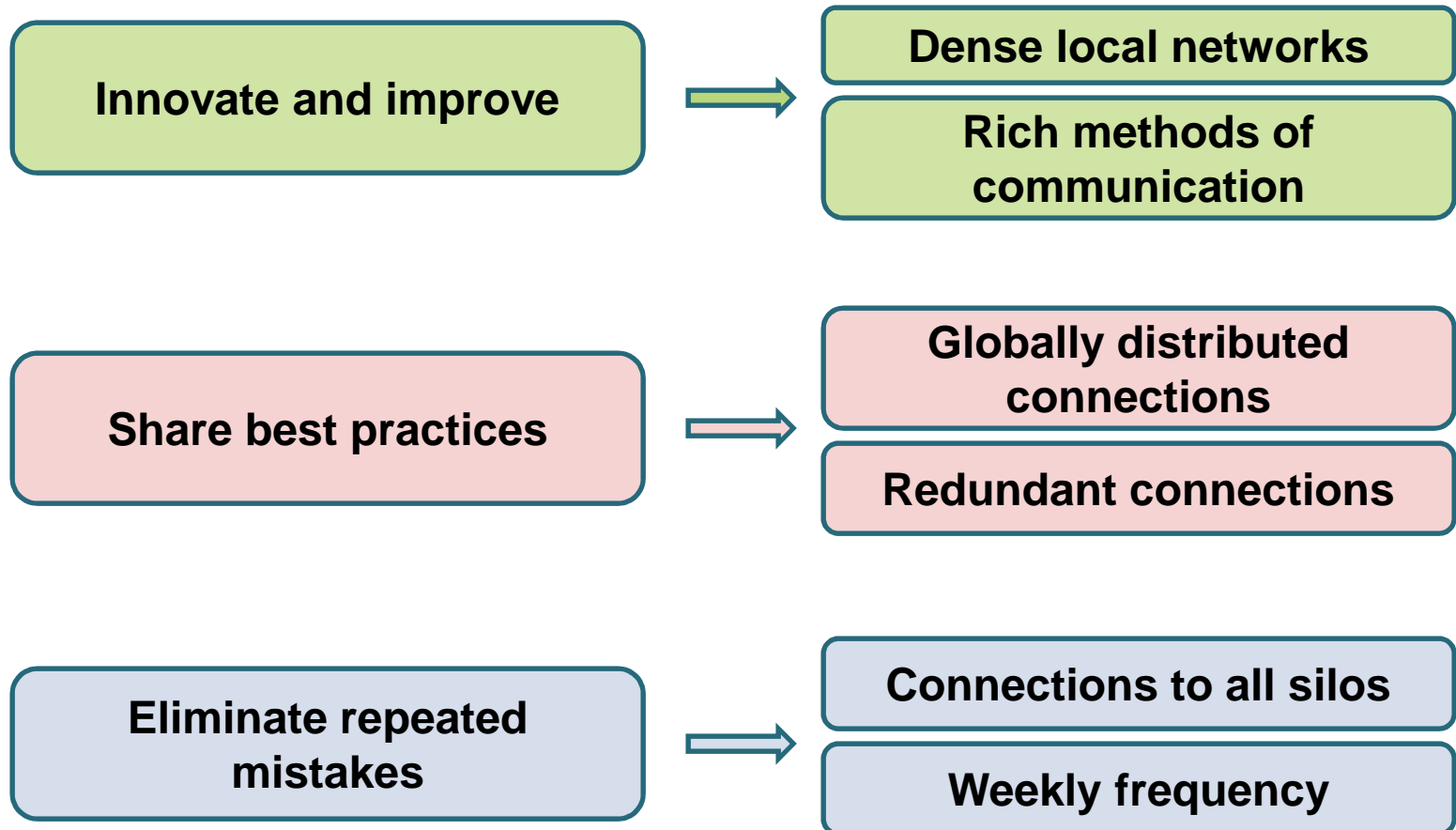
– Goals:

- Innovate and improve processes within the company
- Share best practices globally
- Eliminate repeated mistakes

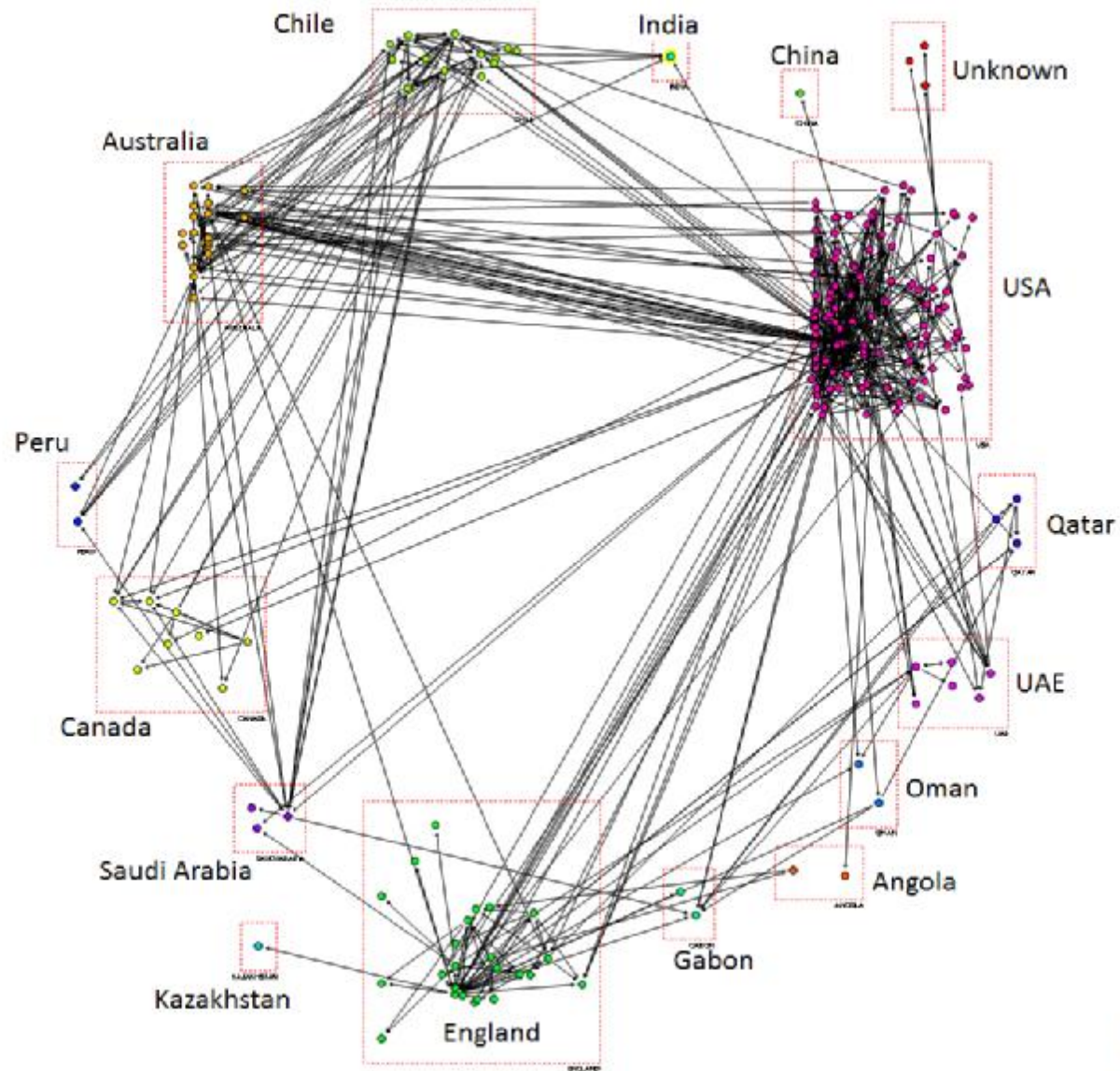
– 273 members

– Globally Distributed

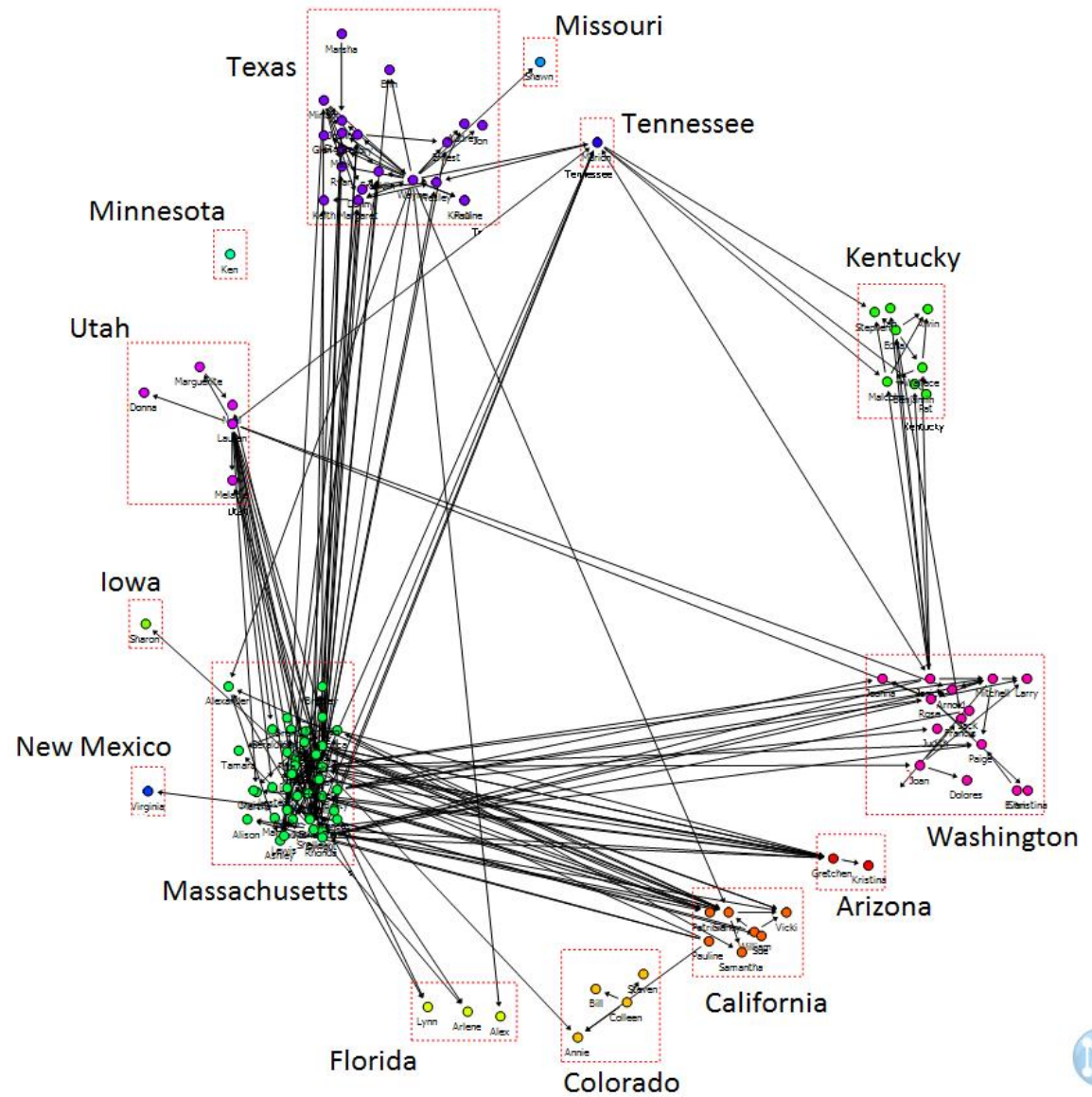
What are we looking for?



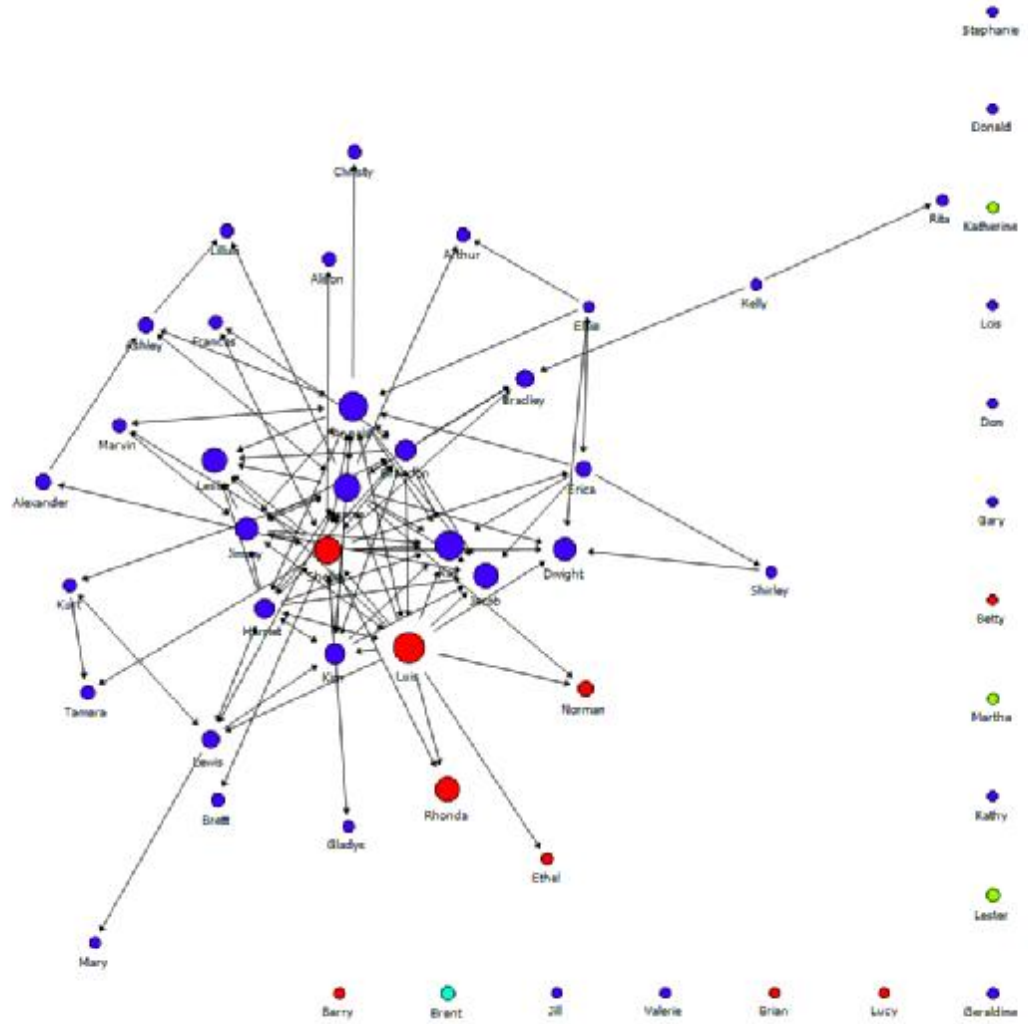
Dense local networks



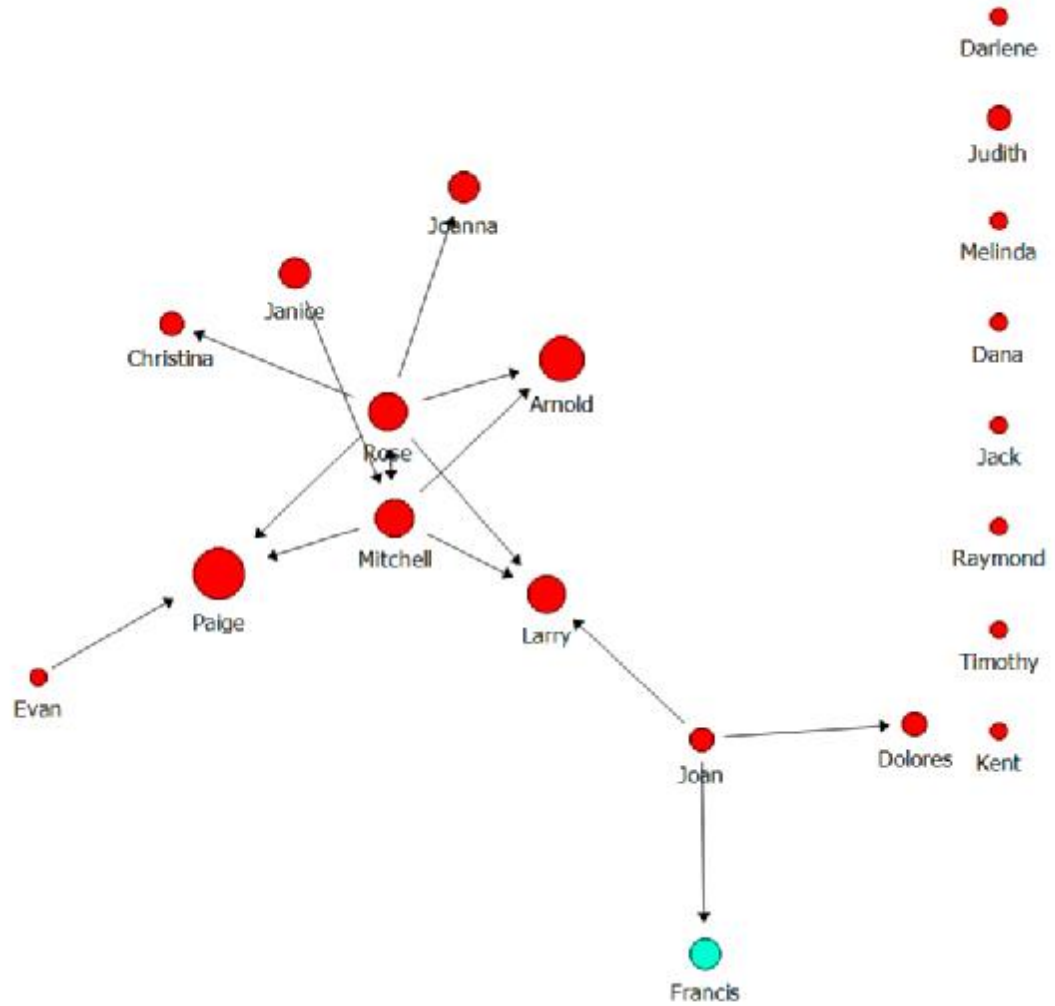
Dense local networks



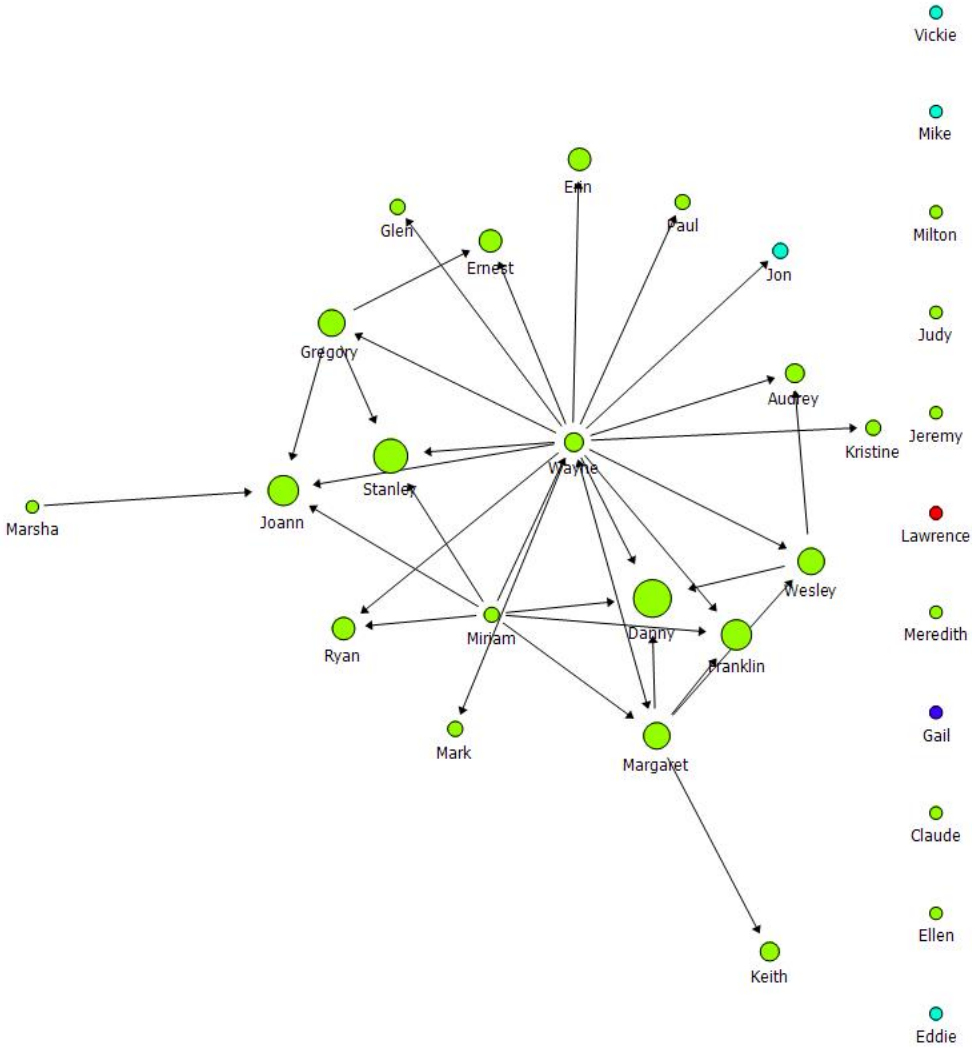
Massachusetts Office



Washington Office



Texas Office



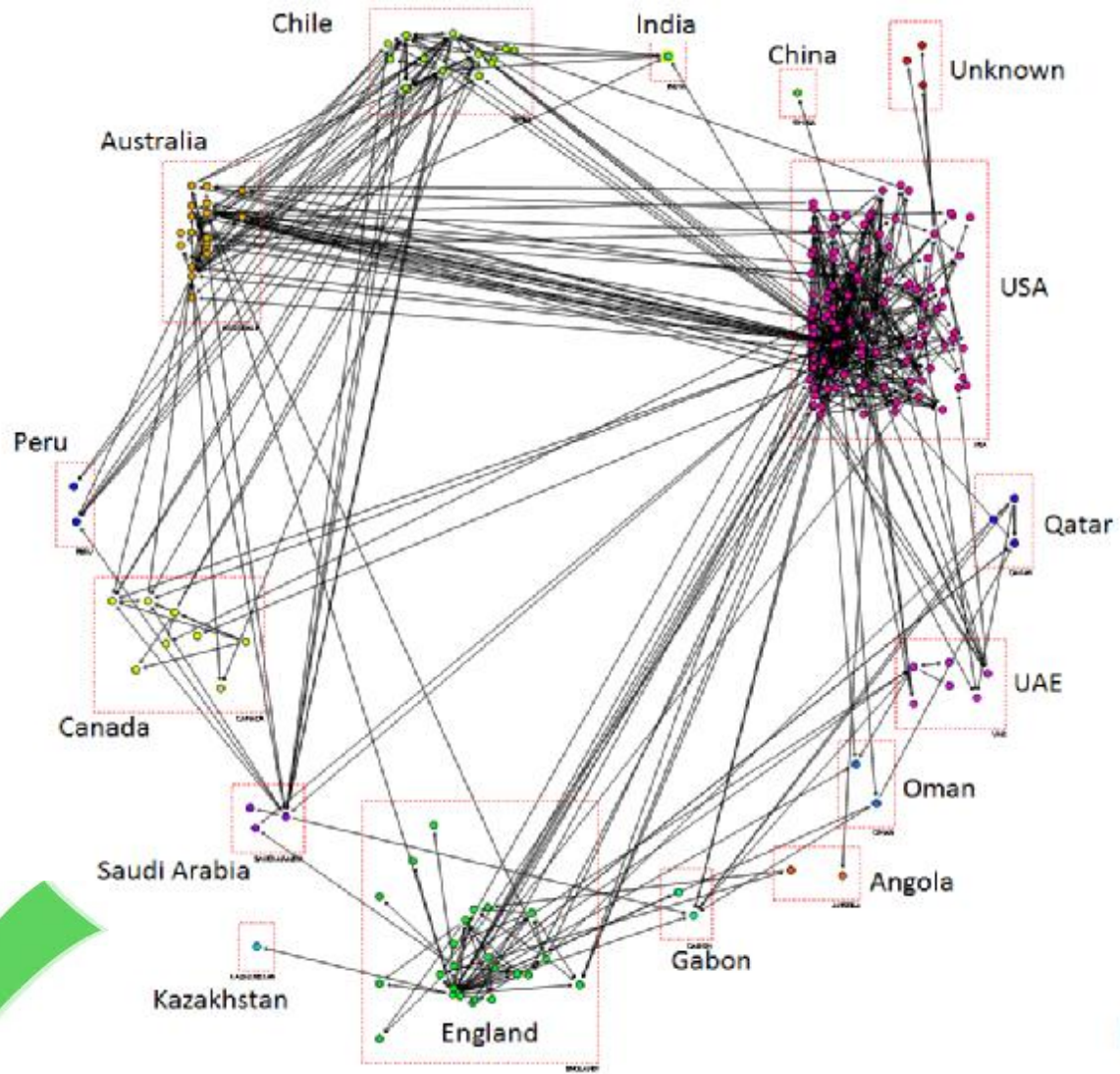
Rich methods of communication

Method Used	#	%
Personal Discussion	342	39%
Email	276	32%
Meetings	153	18%
Instant Messaging	54	6%
Reports	35	4%
Intranet (SharePoint)	9	1%
<i>Sum</i>	<i>869</i>	<i>100%</i>

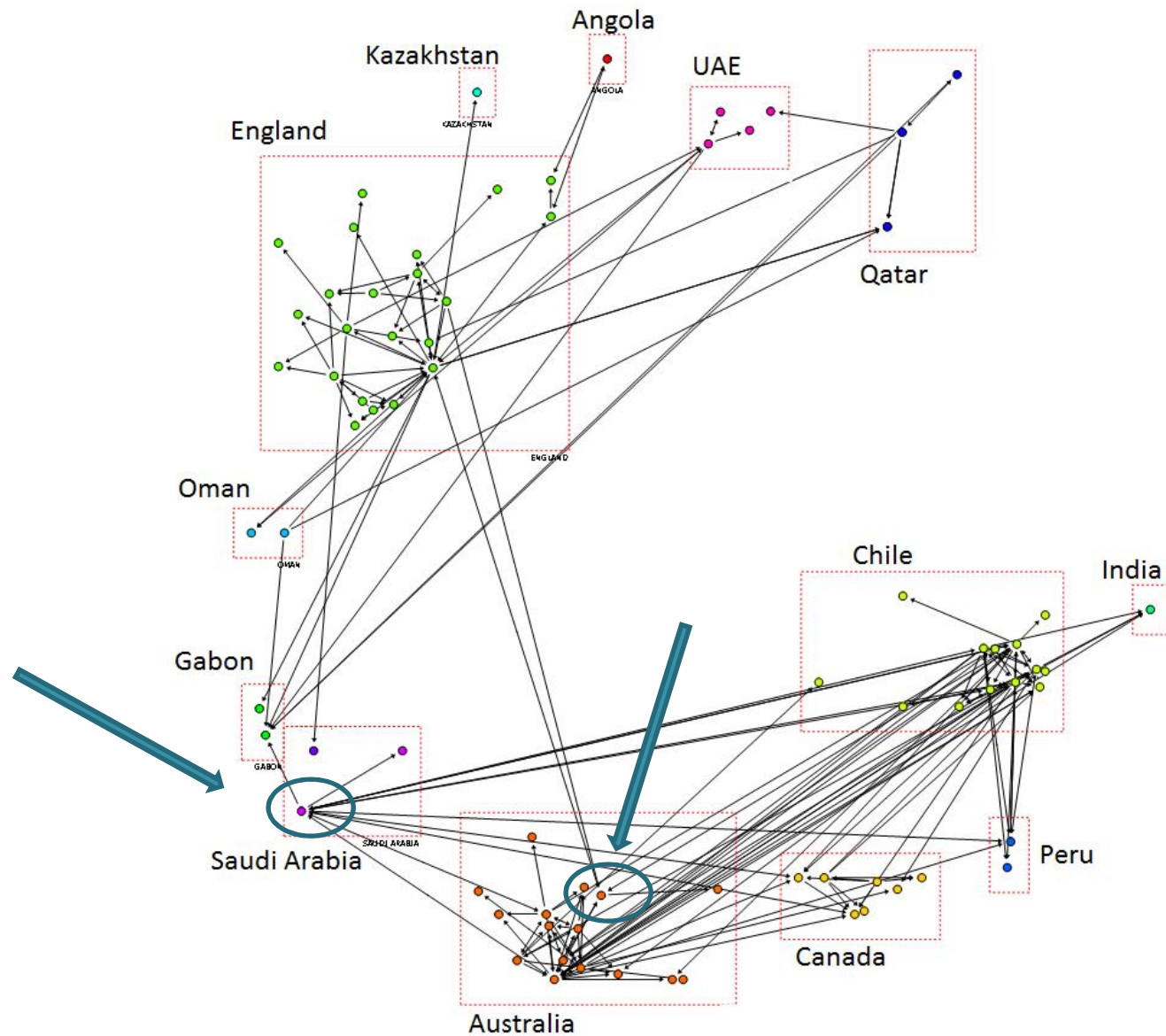
Communication Richness



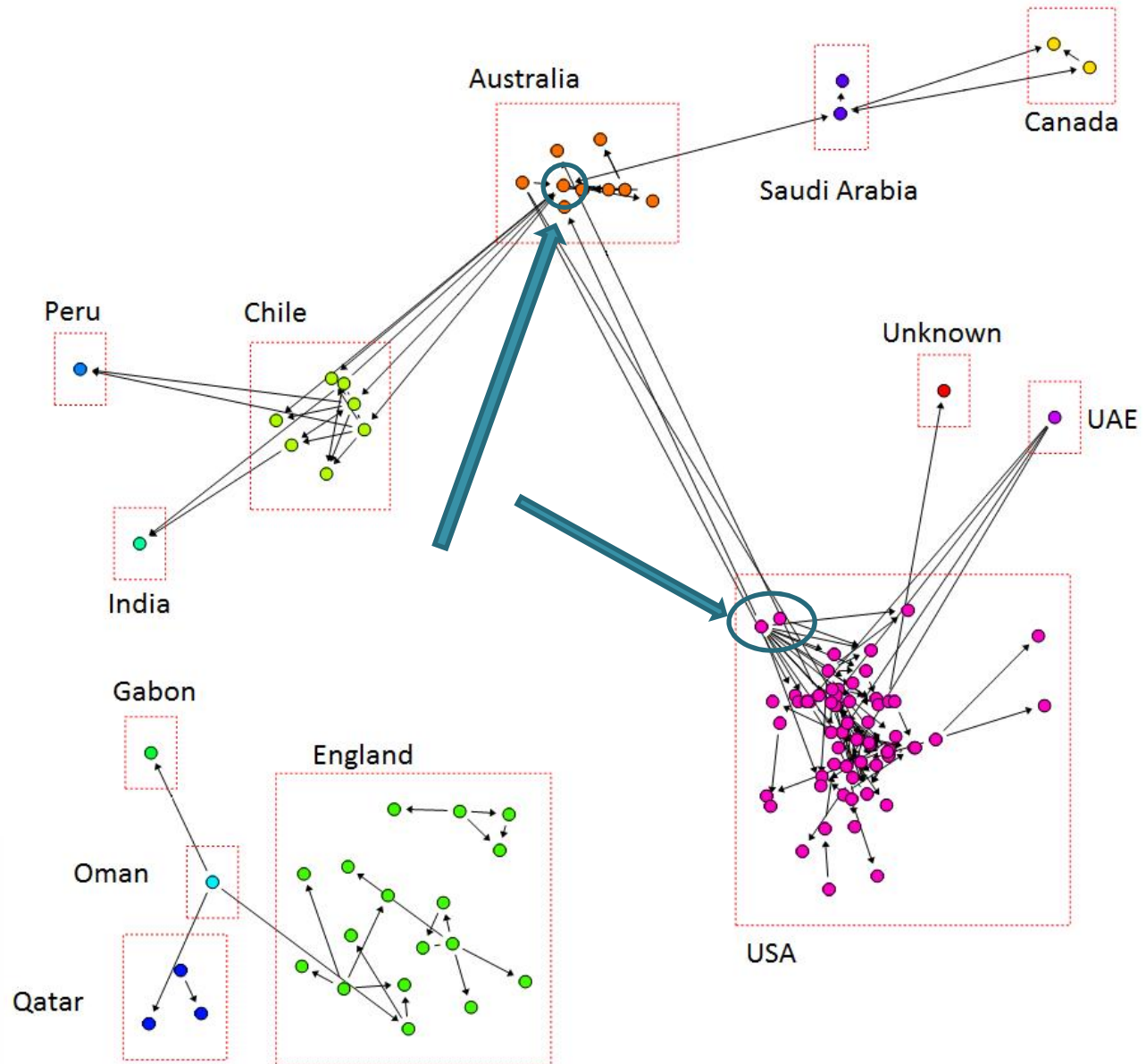
Globally distributed connections



Redundant Connections

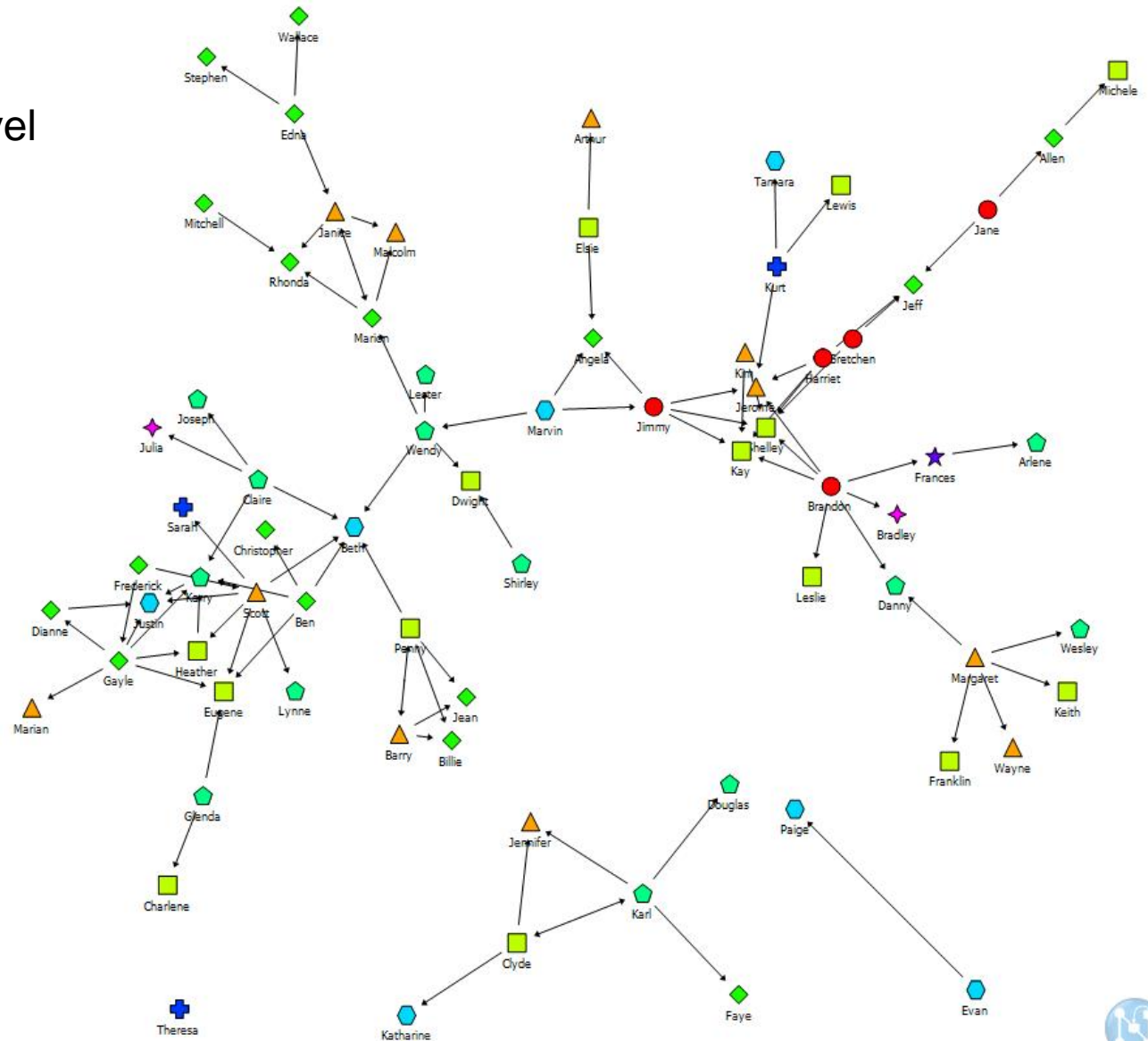


Redundant Connections



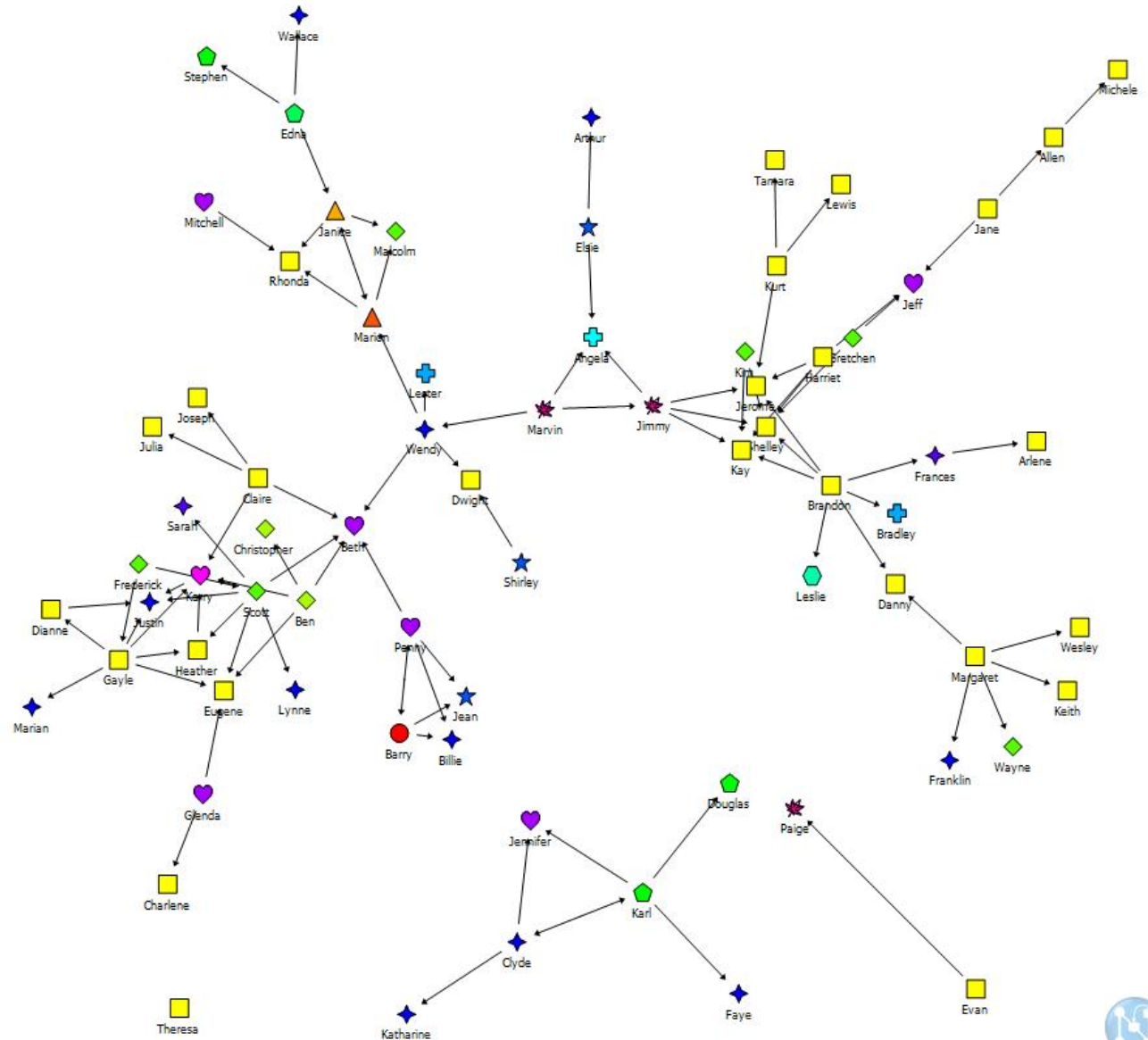
Breaking down Silos

By Grade Level



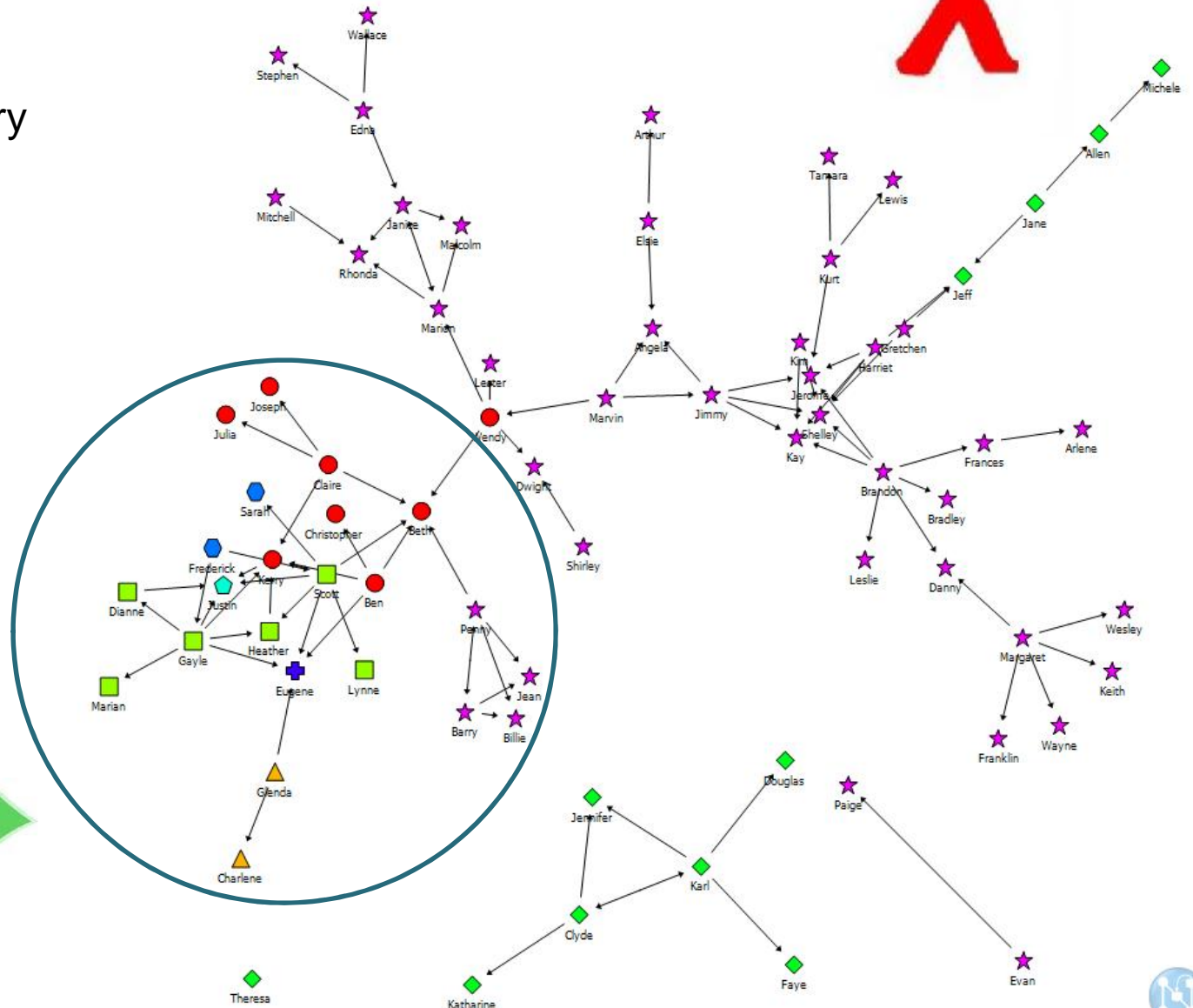
Breaking down Silos

By Discipline



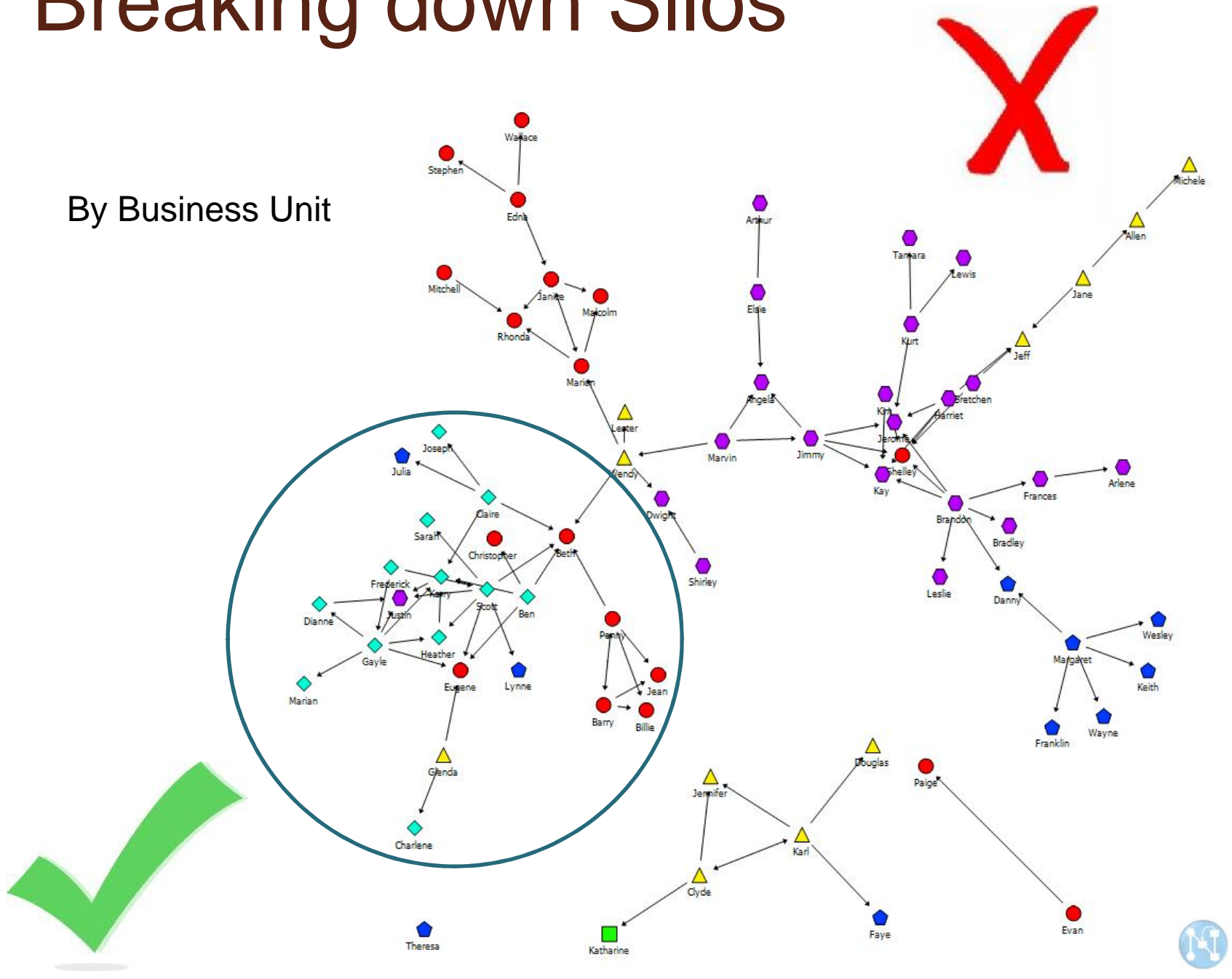
Breaking down Silos

By Country



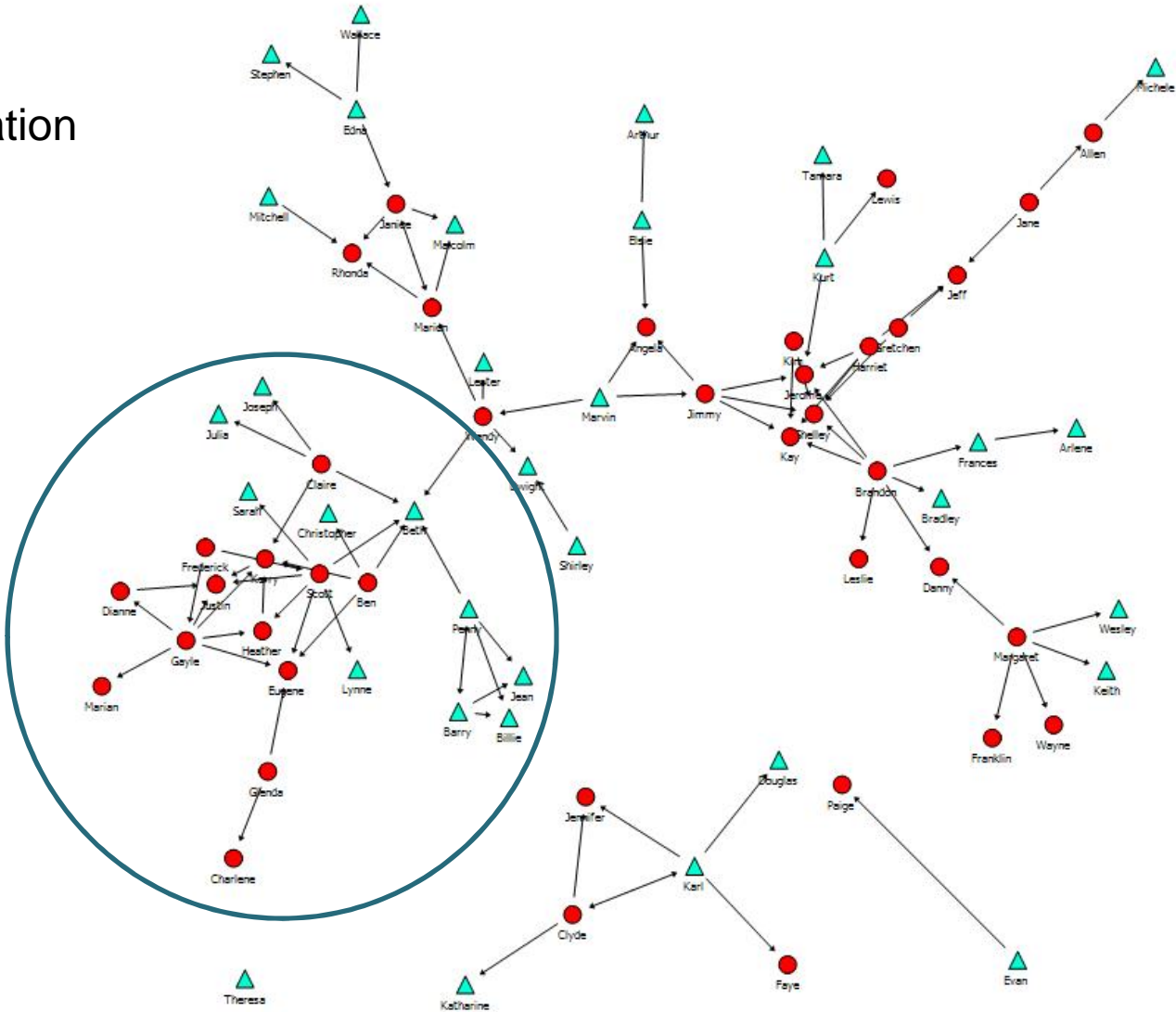
Breaking down Silos

By Business Unit



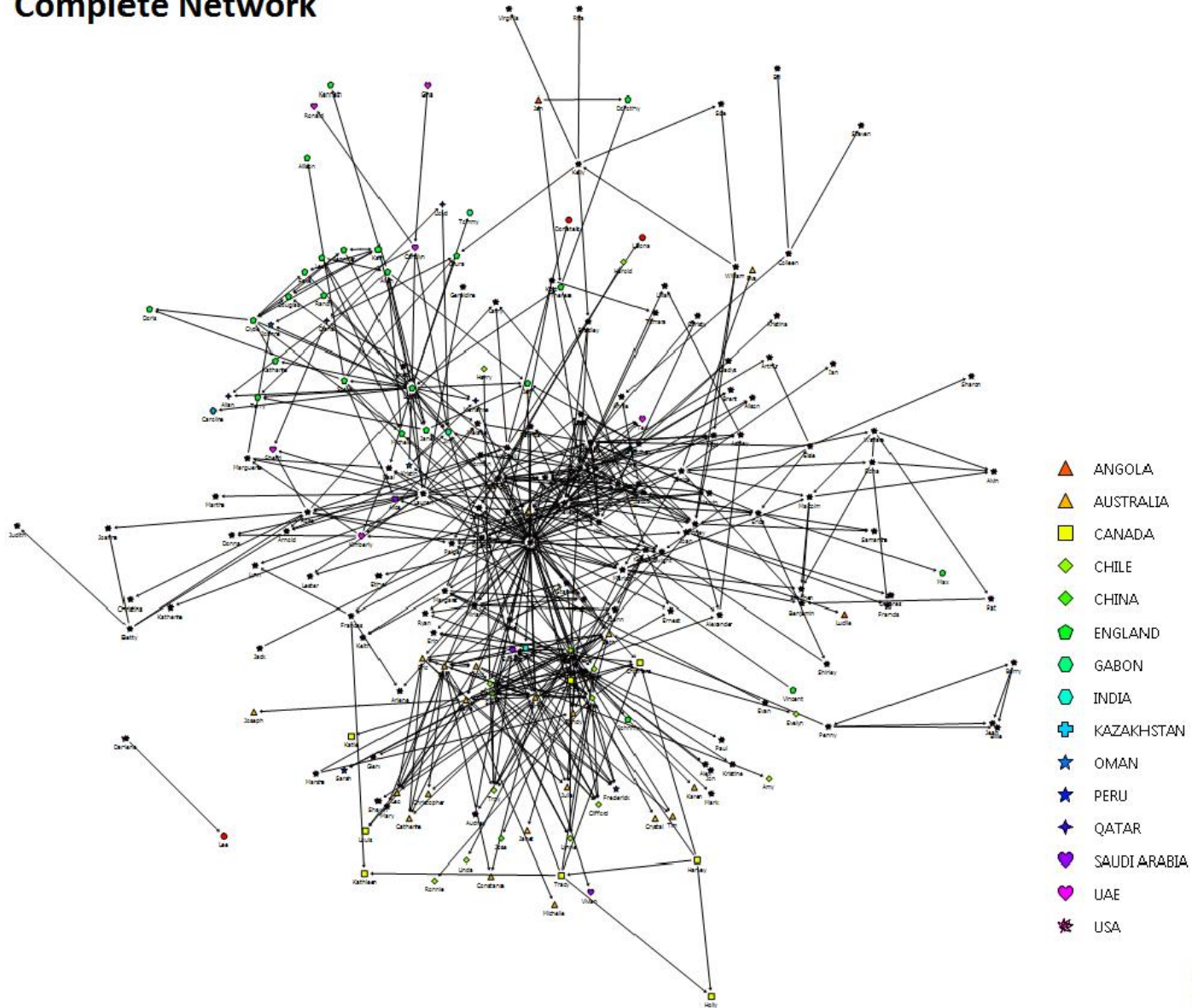
Breaking down Silos

By Integration

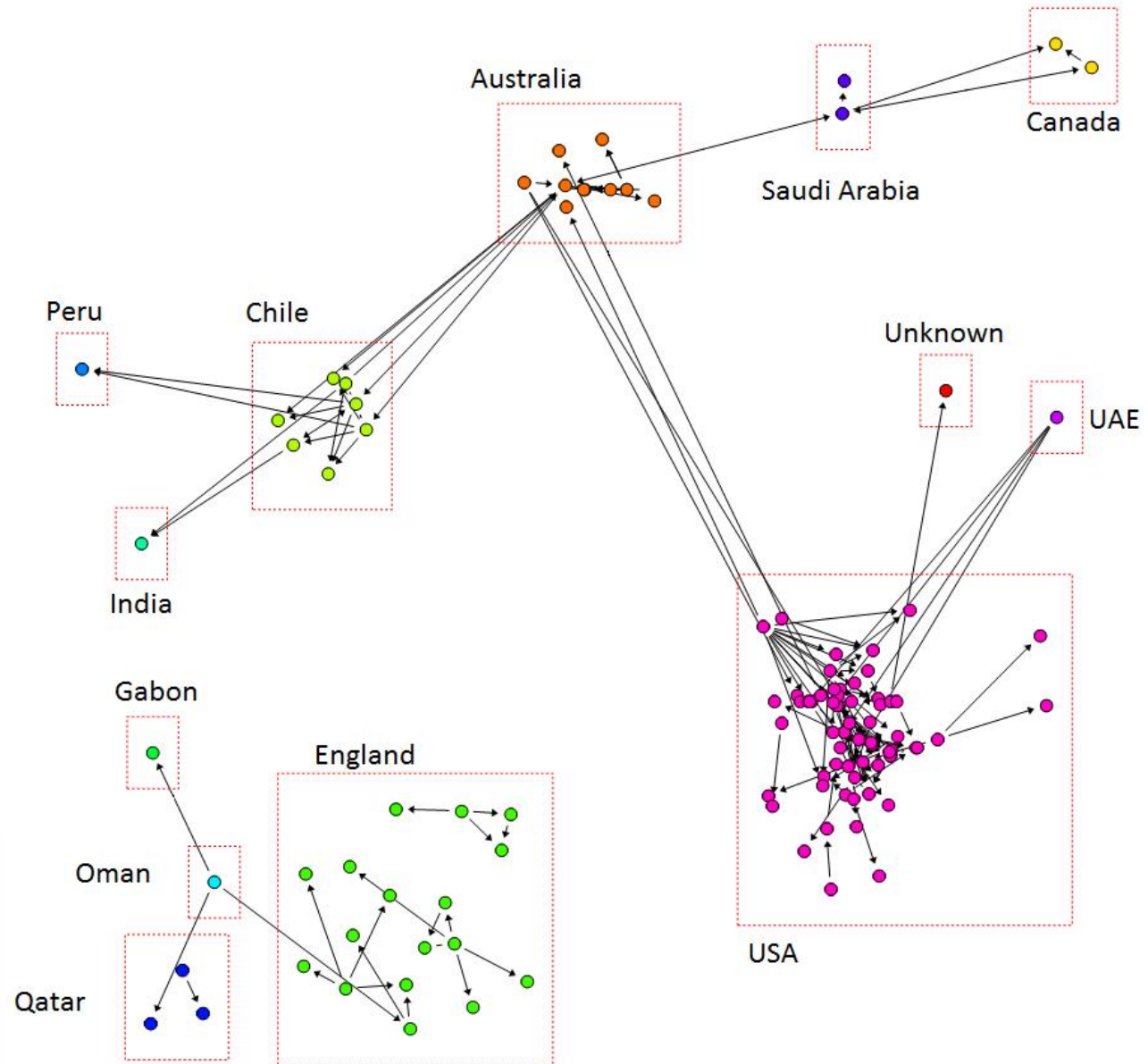


High frequency of exchange

Complete Network



High frequency of exchange



How did they do?

Innovate and improve



Dense local networks



Rich methods of communication



Share best practices



Globally distributed connections



Redundant connections



Eliminate repeated mistakes



Connections to all silos



Weekly frequency



Recommendations

Dense local networks



Increase connection density through local presentations and workshops

Redundant connections



Create connections through mutual project assignments, conferences, and work rotations

Connections to all silos



Focus on organizational issues of country and business unit boundaries

Weekly frequency



Establish rhythm of weekly process improvement report releases on global level, educate community members on frequency

Takeaways



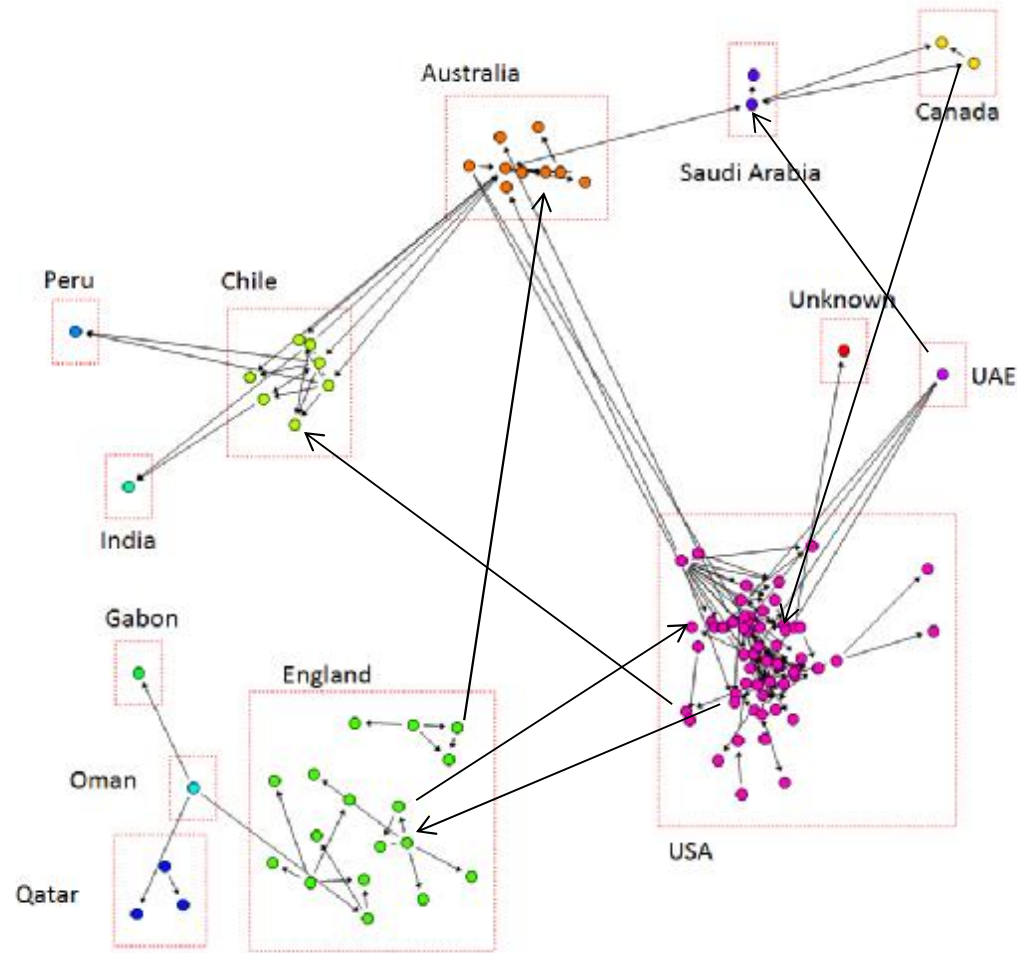
1. Understanding informal networks is vital to harnessing the collective power of groups

Takeaways



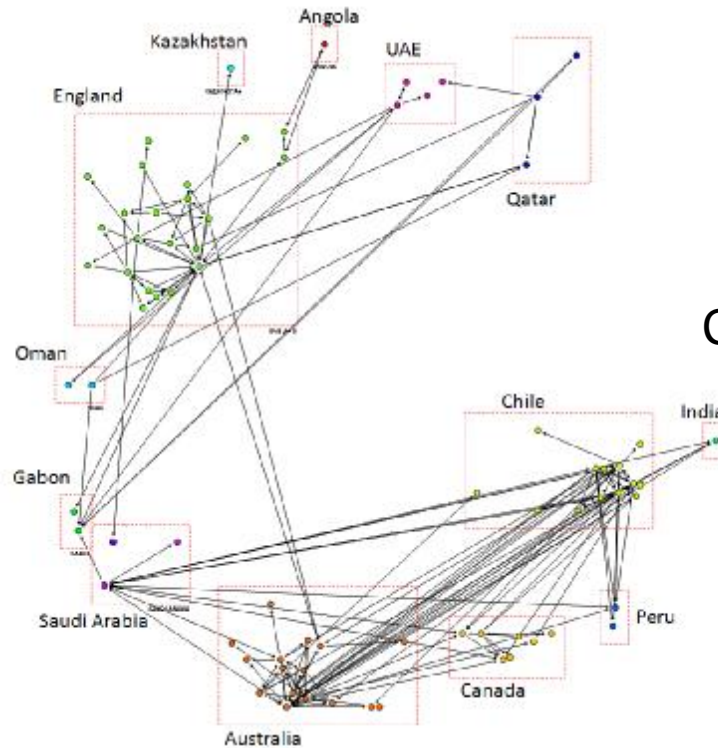
2. Network analysis allows you to “look under the hood” of your organization

Takeaways



3. Use strategic connections to align these informal networks with the organization's goals

Questions?



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A special thanks to Dr. Paul Chinowsky and Dr. Amy Javernick-Will for providing data from their own studies for the content of this presentation

Resources

