Predicting Project and Organizational Outcomes using Network Analysis

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Management issues

- Silos
- Repeated mistakes/Re-invent the wheel
- Effects of management changes?
- Groups fall short of potential?
"Now that's what I call data harvesting."
Organizational Chart


Also responsible to the Executive Vice President and Chief Operating Officer
Also responsible to the Vice President and Dean, School of Medicine
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
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 potential
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

Graph of trust relationships among individuals:
- Andy
- Amy
- Jennifer
- Mary
- Charlotte
- Linda
- Kyle
- Bill
- Tommy
- Jack
- John

The network of trust connections is shown with lines indicating trust relationships.
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
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)
- Personal Discussion: 21%
- Email: 45%

Time zone difference < 4hr (n=693)
- Personal Discussion: 44%
- Email: 29%
Network Structure: The constellation
Network Structure: The spider
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?

- Innovate and improve
- Share best practices
- Eliminate repeated mistakes
- Dense local networks
- Rich methods of communication
- Globally distributed connections
- Redundant connections
- Connections to all silos
- Weekly frequency
Dense local networks
Dense local networks
Massachusetts Office
Washington Office
Texas Office
Rich methods of communication

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

Communication Richness

- Rich: 57%
- Distant: 43%
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
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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Resources

The Hidden Power of Social Networks
Understanding How Work Really Gets Done in Organizations
Rob Cross • Andrew Parker
Harvard Business School Press

The Tipping Point
How Little Things Can Make a Big Difference
Malcolm Gladwell

“A fascinating book that makes you see the world in a different way.” — Fortune