

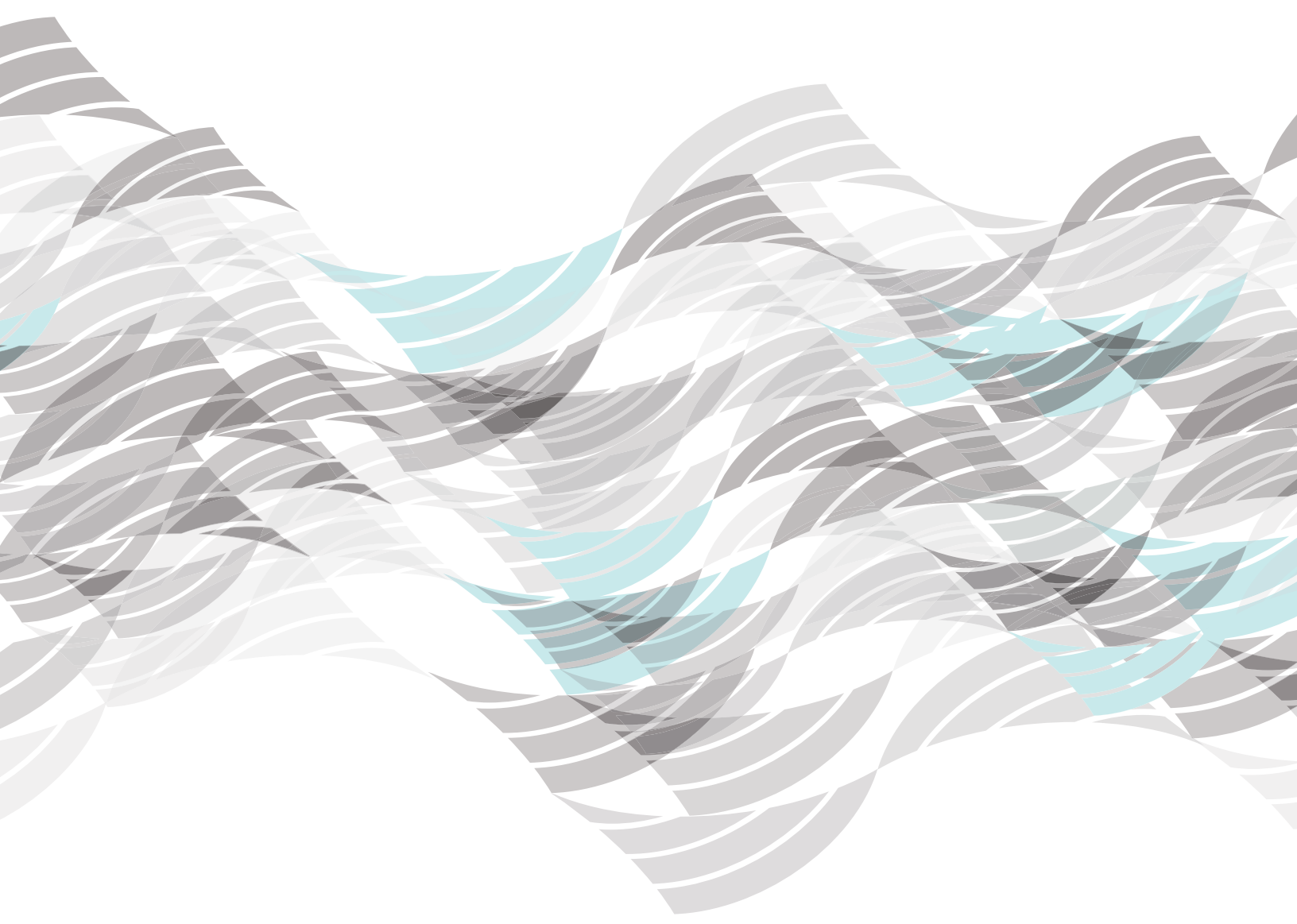
WHITE PAPER

Developing Network Perspective

Understanding the Basics of Social Networks and their Role in Leadership



By: Kristin L. Cullen, Charles J. Palus, and Craig Appaneal





Contents

Introduction	2
Are Your Organization's Networks Helping or Inhibiting Success?	3
Scalability: From Personal to Societal	8
How to Analyze and Interpret Networks	10
Network Roles	11
Fileshare: Improving Strategic Alignment	12
Applications for Leaders and Organizations	15
Seven Reasons to Develop Network Perspective	19
Appendix: Network Patterns and Structures	20
References	24
About the Authors	25



Introduction

Do you have a clear picture of the relationships within your organization? Do you see the ties that extend beyond your organization, into other organizations, communities, and the broader society? If so, you have what we call **network perspective**.

People with network perspective understand the dynamic web of connections that have an impact on their work, their leadership, and the leadership culture of their organization. They can identify patterns of relationships and people in their personal network and the broader organizational network that will foster strategic success—and those that will inhibit or undermine it.

This paper introduces you to the concept of network perspective: what it is, why it matters, and how to develop it. We also show how developing network perspective can foster learning, growth, and change for individuals, groups, organizations, and society.

For more on CCL's point of view on Interdependent Leadership
see the *Interdependent Leadership* blog

www.leadingeffectively.com/interdependent-leadership

Are Your Organization's Networks Helping or Inhibiting Success?

The volatile, global, and technology-enhanced environment that organizations face has changed the way they operate. In this interdependent and highly connected world, people have to communicate and coordinate across geographies, functions, levels, and organizational borders to achieve success.

Formal structures and leaders remain an integral part of organizations. However, individuals must also develop the ability to look beyond the organizational chart to see, understand, and engage the informal, invisible structure supporting their organization.

This invisible structure is built on relationships, which create channels that often differ from those identified by policies and procedures and that cross functional divisions, managerial levels, and organizational boundaries.

Individuals with network perspective see the informal networks. They understand the role of formal leaders in these networks. They also know the key players in the network who do not hold formal titles, but none the less, are important influencers because of their relationships with others. Understanding these connections is critical to implementing ideas and change, and aligning strategy and work across organizational boundaries. Individuals without network perspective may be working against the natural currents that flow throughout their organization.

In essence, networks are invisible and informal structures that have the ability to support and undermine leadership, which we understand to be the achievement of Direction, Alignment, and Commitment (DAC) toward shared goals.¹

Leaders must find and tap into social networks to achieve these outcomes.

Leaders need **network perspective**.



Network perspective is the ability to look beyond formal, designated relationships and see the complex web of connections between people in and beyond your organization.

Network-savvy leaders do these things:

Improve their understanding of how the organization really works. Organizational charts provide a poor picture of how work actually happens. Leaders with a network perspective look beyond prescribed flows and connections to informal structures and processes. They understand how information flows through the complex web of relationships within and across departments and up and down organizational levels. This perspective reveals densely connected clusters, bridging ties, and influential people who are often not formal leaders.

Identify, develop, and leverage hidden leaders. They expand their view of people beyond the formal roles and positions. They seek the hidden leaders, change agents, and key players in their organization. A network perspective allows leaders to recognize and support the people who are crucial to the work and the culture, but whose importance is underemphasized in formal systems and structures.

Understand and strengthen their personal network. They examine their current network, the opportunities and constraints it presents, and make choices to strengthen it. They see how their position in the organizational network—and the position of their group or team—influences whether they achieve desired outcomes.

Recognize network fluidity and variety. Multiple networks exist within organizations, including communication, leadership, energy, creativity, and development networks. (See Key Terms and Concepts box on page 7 for descriptions.) These networks are dynamic. Network-savvy leaders focus on the networks most relevant to the strategic challenges they face and how those networks change over time.

Foster a leadership culture of collaboration and interdependence. The cultural beliefs and behaviors of an organization determine how members interact within the network. Most organizations strive for more effective collaboration across boundaries. This process is aided by an awareness of networks and an understanding of interdependence.

Unfortunately, networks remain invisible to or misunderstood by many people in management and leadership roles. As a result, they are missing a powerful perspective to help them operate effectively in complex, changing times because networks are more responsive and flexible than hierarchical channels.

A network perspective is gained and enhanced through [network analysis](#), which allows individuals to see their personal networks and the networks within their organization.

Often a network analysis identifies a few key individuals, outside the formal structures, who play an instrumental role in holding together the network that supports critical and strategic processes.



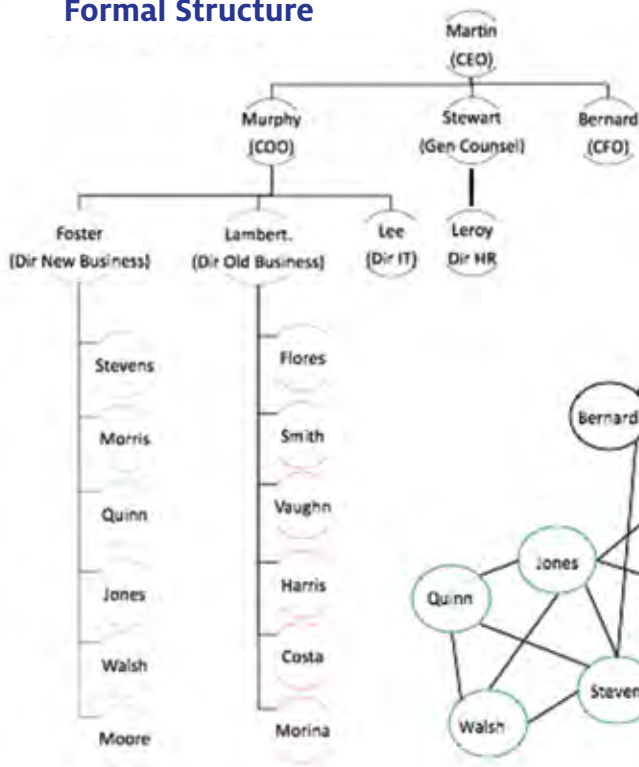
Consider *Fileshare* (a real company but not its real name), a software service company making a strategic shift in its product portfolio. The top 20 executives—individuals from both the new and old product lines—were in charge of implementing the change.

Using a quick online survey, we mapped the executives' network based on **frequency of information flow**. In other words, it is a network of relationships, or links, determined by how much the executives actually communicate with each other.

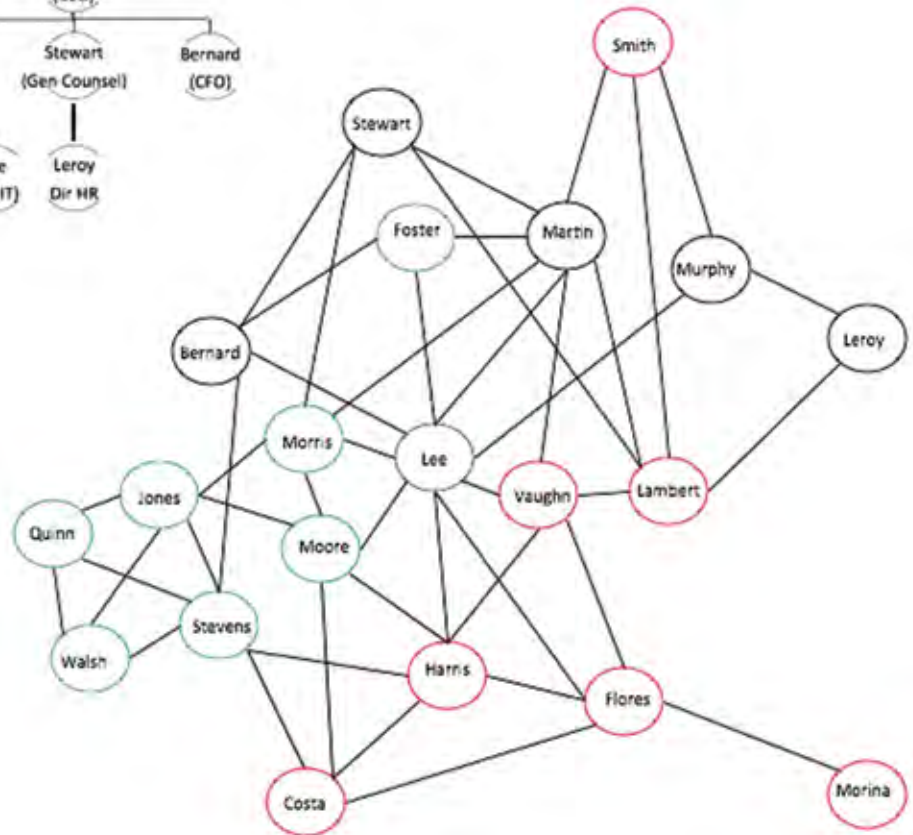
We compared the informal network of information exchange to the formal organization chart (see Figure 1). The results showed a striking contrast:

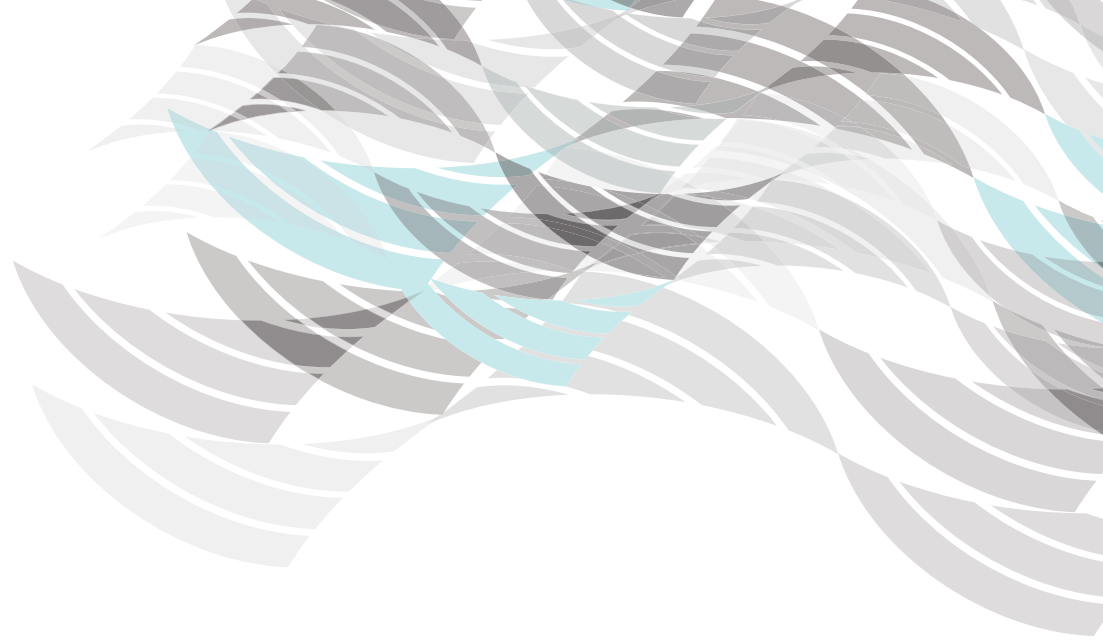
Figure 1

Formal Structure



Informal Structure





Without knowing anything else about networks, or how we analyzed the information flow, what's your reaction to the two diagrams?

- Which is more helpful for improving the transfer of information from the old to the new product line?
- Which is more useful for guiding the development of direction, alignment, and commitment with regard to this strategic initiative?
- Which is more likely to surface challenges or potential pitfalls before they happen?

When we show a network map like this to executive teams, they intuitively know they are seeing something powerful and practical. To start a discussion we might ask, "What do you notice about Lee? Murphy? The old business team and the new business team?"

With this simple line of questioning, you can begin to see how network perspective can make a clear difference in the ability of Fileshare to succeed in a mission-critical effort.

We'll return to Fileshare's story, but first let's step back and look at a key feature of network perspective and the basic mechanics of network analysis.

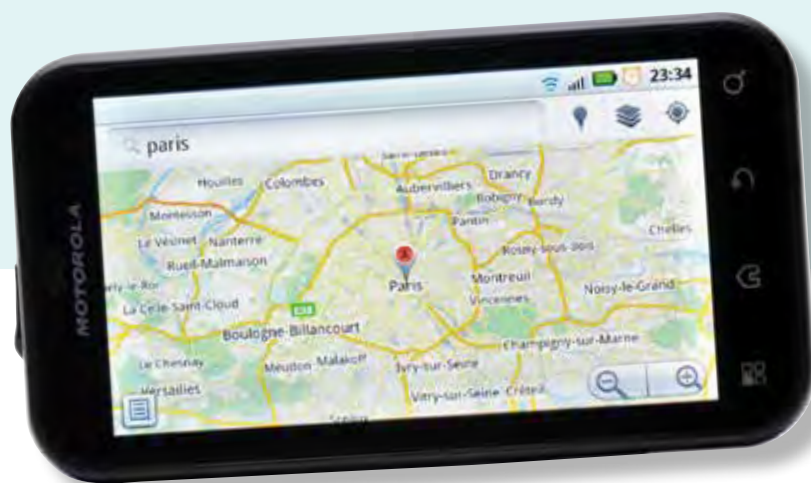
Scalability: From Personal to Societal

A key feature of network perspective is the ability to “zoom” to different levels of social interaction, from the scale of one’s personal network all the way up to the scale of the social networks that make up the larger society. Each scale offers its own perspective with unique applications to leadership and leadership development.

Think of network perspective as a powerful zoom lens. It can be expanded or contracted to get a wide range of information and insight, like “Google Maps” for the connectedness of your workplace.

Try this activity. Imagine or go to the “Street View” of where you are at this moment. You have a 360-degree view of ground level at a specific place. This view is like your **personal network**. You see the immediate surrounding environment—the individuals you are directly connected to. Very helpful, but if you only consider this view you are missing the larger picture.

Zoom out to the neighborhood and look down on where you were standing. You see yourself as part of your own neighborhood and you also see the surrounding neighborhoods. A neighborhood view is similar to mapping a **group network** within your organization. From this view you begin to get a sense of how you and your group fit within the larger organizational community.



Next, zoom out farther to see several countries. This view is like your **organizational network**. From here, you see connections between the individuals and groups within your organization and you can also look beyond your organization to the interactions your organization has with other organizations, clients, and external stakeholders.

Finally, zoom out to Earth and consider the **societal network**. How do your own, your group's and your organization's connections map onto this big blue ball? How are you tied to other organizations, locations, people, and perspectives around the world?

When you plan a trip, it is important to pay attention to formal paths and recommended directions. However, once you understand where you are and what's around you, you can also take shortcuts and alternative paths to your destination. Similarly, when you have network perspective, you are able to find new paths that criss-cross prescribed channels and span boundaries and borders.



How to Analyze and Interpret Networks

Network analysis is the process of getting useful, accurate information about your organization's network by looking at the connections between people. It allows leaders to see the networks within their organization, identify leverage points, and assess change in networks over time.

The analysis of organizational networks starts with a close look at the people-systems involved, the organization's strategy, the critical challenges facing the organization, and the boundaries that need to be spanned to enact the strategy and address these challenges.

Understanding the context and what is happening in the organization (through observation, interviews, focus groups, and other qualitative approaches) provides the information needed to ask appropriate and informative questions that reveal the key network connections. Different types of connections or ties can be mapped through network analysis, including communication, leadership, energy, creativity, development, and culture.

It is useful to examine a range of networks and levels to gain insight into the challenges facing the organization. In fact, strategic leadership development and organizational transformations are enhanced when leaders explore their own personal networks, plus group- and organizational-level networks.

Although the results of a network analysis can yield immediate insights, careful interpretation based on an understanding of the people-systems and organizational strategy is required in order to make sound recommendations.

Key Terms and Concepts

Nodes represent actors in the network, which may be individual people, groups, or other collectives. Nodes can also be designated by any chosen *characteristic*. For example, nodes could be designated by tenure in the organization, gender, geographic location, etc.

Relationships are represented by the links between nodes. Links may be *undirected* (i.e. two people communicate with each other) or *directed* (i.e., one person sees another as a source of leadership). When relationships are directional, they may be *reciprocated* (both people in a pair agree) or *asymmetric*.

Often network ties simply signify that a relationship exists, but the strength of ties may also be determined. *Strong ties* refer to close, enduring relationships characterized by frequent communication, emotional intensity or intimacy. *Weak ties* refer to relationships that are casual, temporary or indirect, such as acquaintances or friends of friends.

The following are a few examples of the types of networks that exist within organizations:

Communication—flow of information and advice

Leadership—creation of direction, alignment, and commitment toward shared goals

Energy—level of enthusiasm and support present in workplace interactions

Creativity—exchange of novel information and idea generation

Development—mentoring activities including challenge, guidance, and support

Culture—maintenance, creation, and dissemination of core beliefs and practices

Network Roles

Individuals hold different roles in informal networks. The following are several useful roles to identify when using network analysis.

Central connectors have a large number of direct connections. They have greater access to information that resides in network and they direct and distribute this information to others. Central connectors are often key influencers and important to execution, innovation, and successful organizational change. However, they can also create bottlenecks of information flow or decision-making—and put the organization in a vulnerable spot if they leave. Individuals with many indirect connections also play a key role. They hear information traveling through the grapevine.

Peripheral players have few network connections and appear isolated. They are often newcomers to the organization.² Specialists are also sometimes found on the edge of the network, which may or may not be an optimal position for them depending on the need to integrate their expertise and protect their time. Some high performers work most effectively on the fringe. For example, individuals who often connect with others outside the organization may be peripheral players from an internal network perspective.

Brokers connect people who would otherwise be disconnected. They hold the network together and control information flow. Brokers are in unique positions to drive—or block—change and innovation. They are key to whether strategic initiatives will be achieved or hit “road blocks” in the organization.

When individuals (often brokers) make connections across hierarchies, business units, locations, or other silos they span boundaries.

Boundary spanners are critical to gathering and transferring information from disparate parts of the organization and are especially important for implementing organizational change efforts that meet the needs of different groups. People in these roles hold a great deal of power, but boundary spanning can be a burden and they often go unrecognized. Brokers and boundary spanners can also become bottlenecks. If they leave, the network may become fragmented.

Energizers are people who create energy and excitement in their interpersonal interactions. Just a small number of energizers can infect a large number of colleagues with enthusiasm. When people are around energizers they tend to learn more, demonstrate greater creativity and innovation, and report more satisfaction with their jobs. Energizers are also important to engage in organizational change efforts. They create enthusiasm so their help leading change effort will go far. Conversely, if they begrudgingly comply with or resist the change, others will do the same.³

In addition to identifying individual roles, it is useful to see aspects of the network “as a whole.” Certain network patterns indicate different ways of working together (see the Appendix for more information).

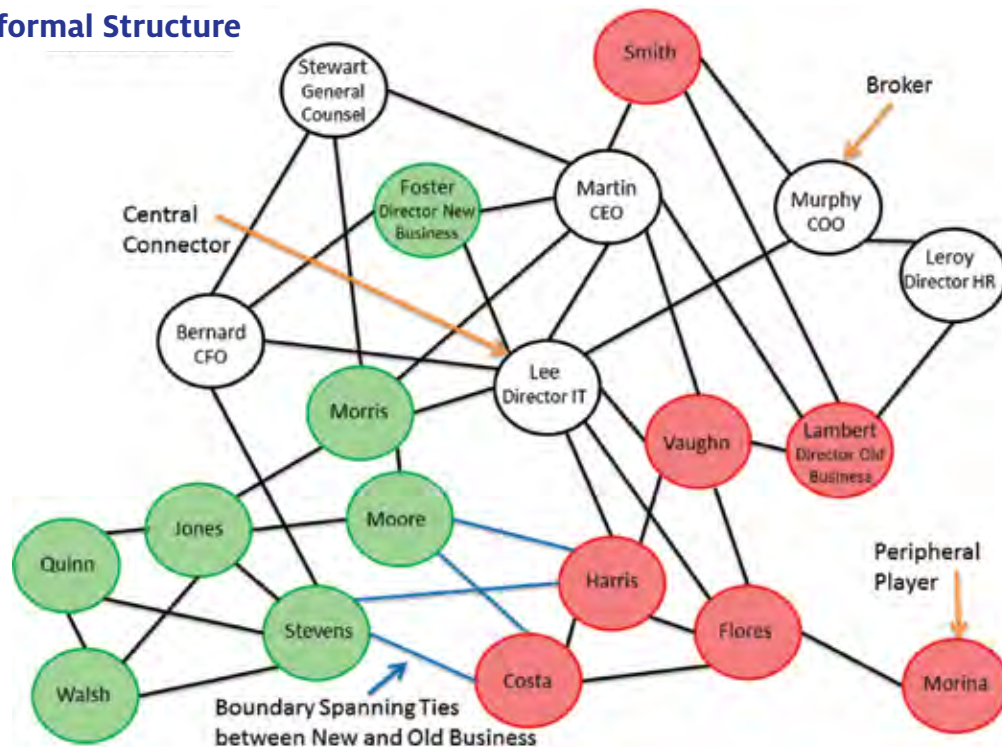
Fileshare: Improving Strategic Alignment

Let's return to the network map of Fileshare and consider the insights gained by looking at these roles and the network diagram.

Remember, the ovals represent 20 executives. If two ovals (or "nodes") are connected, the two people communicate with each other on a frequent basis. The color of the nodes indicate which executives were directly involved in the new and old business lines (see Figure 2). At a glance, you can see that the new business executives (green) are tightly collected together, with only a few connections to those running the old business (red) and to the executive team (white). This shows a low level of interaction between the groups.

Figure 2

Informal Structure

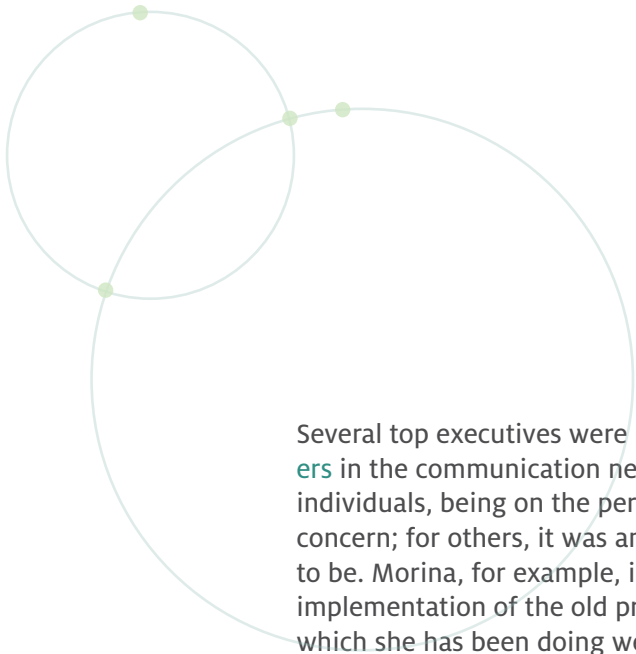


At an annual leadership retreat, the executives quickly spotted their limited interactions on the network map. A deeper look and discussion led to insights about the roles they each play within the informal network, the connections that exist between groups and the pitfalls of continuing in the current network pattern. We also provided each executive with information about their individual communication and energy networks. They were asked to reflect on their own network role and whether their existing connections were what they need to be for the organization to execute the new strategy and their personal career aspirations. This type of reflection exercise allowed executives to gain insight into the strengths and weakness of their network and think about actions they could take for their personal development.

At a group level, the network map and subsequent discussion revealed a major issue within this executive team. Despite all understanding the strategic changes taking place and the importance of the product shift, they were not changing the way they worked together.

The divisions were only connected through two executives in each division (Stevens, Moore, Harris, and Costa). These **boundary spanners** bridged the divide between the two divisions and made collaboration possible. The Fileshare executives recognized that more individuals needed to play boundary spanning roles if they were to collaborate effectively and meet their goals.

Another insight was that Lee, the director of technology, was a **central connector** who held the network together. If Lee departed from the organization, connectivity in the network would drop by 20 percent. Communication would be seriously disrupted, at least temporarily. The organization needed to recognize Lee's value in this role and ensure that he feels valued and supported. The team also saw a need to identify individuals with similar knowledge and to encourage new connections so that Lee would not become overloaded.



Several top executives were **peripheral players** in the communication network. For some individuals, being on the periphery was a concern; for others, it was an effective place to be. Morina, for example, is responsible for implementation of the old project line—a job which she has been doing well and which involved connections to others who are not part of this executive network. Her role on the periphery was not as concerning as Leroy, the director of Human Resources, who was not connected to the new business line. He would need to become more connected to provide appropriate resources for recruitment, selection, and development in support of the new work. Smith is also located on the fringe. His three connections are the COO (Murphy), the CEO (Martin), and the director of old business (Lambert). Smith may need to focus more on connecting with his unit and integrating with the other business line rather than being solely connected to the C-suite.

Other Fileshare executives held key **brokering** roles. For example, Murphy connects three individuals with no direct links: Lee, Smith, and Leroy. As chief operating officer, he is clearly aligned with the changing business strategy and, given his strength as a broker, it would be valuable to get him directly connected to the individuals leading the new business.

Although not pictured here, we collected and shared information on the Fileshare executives' energy network—analyzing which relationships and interactions are draining and which create enthusiasm and energy for the work. As with the communication network, we found that most energizing relationships were held within each business line—and not across business lines.

Using information from the network analysis as the foundation, Fileshare executives were able to identify next steps for improving connections and resolving problems—individually and as a group.

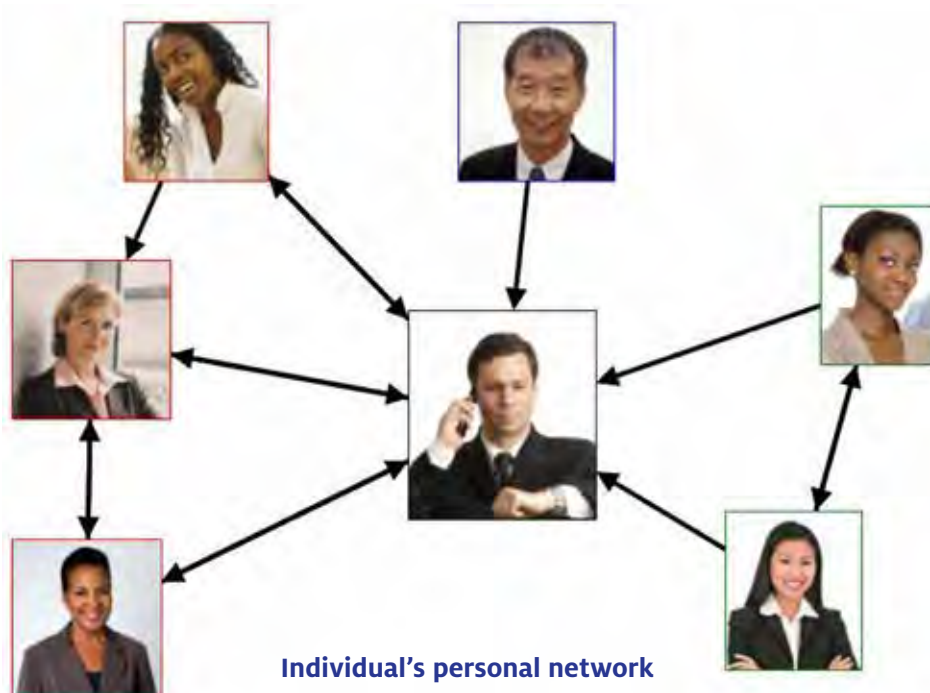
Applications for Leaders and Organizations

At CCL, we use network analysis as part of individual leader development, for the development of leadership within collectives, and to help organizations and communities address their most vexing challenges.

The appropriate level of “zoom” depends on the specific challenge individuals and organizations face. Exploring several levels provides a robust network perspective. Some of the ways network analysis can steer learning and improvement include:

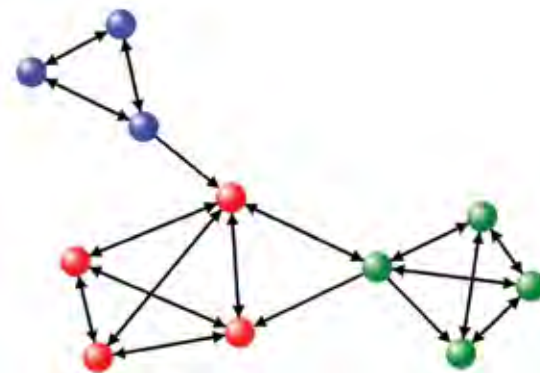
Individual leader development. An effective personal network can be a leader’s greatest asset. Many leaders think they have a good personal network; however, their networks are often *impaired*. Instead of building strategic networks, their relationships are formed through convenience or based on misconceptions of what makes an effective personal network. More ties are not always better than fewer ties, strong and weak ties serve different purposes, and connections are needed that foster a sense of community and break insularity.⁴

Leaders must assess and reassess their networks at key development points in their career to ensure they do not become trapped in networks that are too big, too hierarchical, too similar, or not challenging enough. After analyzing one’s network, hard choices are often required including backing away from some relationships and building connections to others who offer sources of support, energy, information, feedback, and diverse and challenging viewpoints. The end goal is to develop a personal network that allows leaders to be more effective and enjoy greater well-being.⁵ Further, leaders should work through their network to create shared direction, alignment, and commitment among co-leaders, followers, clients, and constituents toward shared goals.



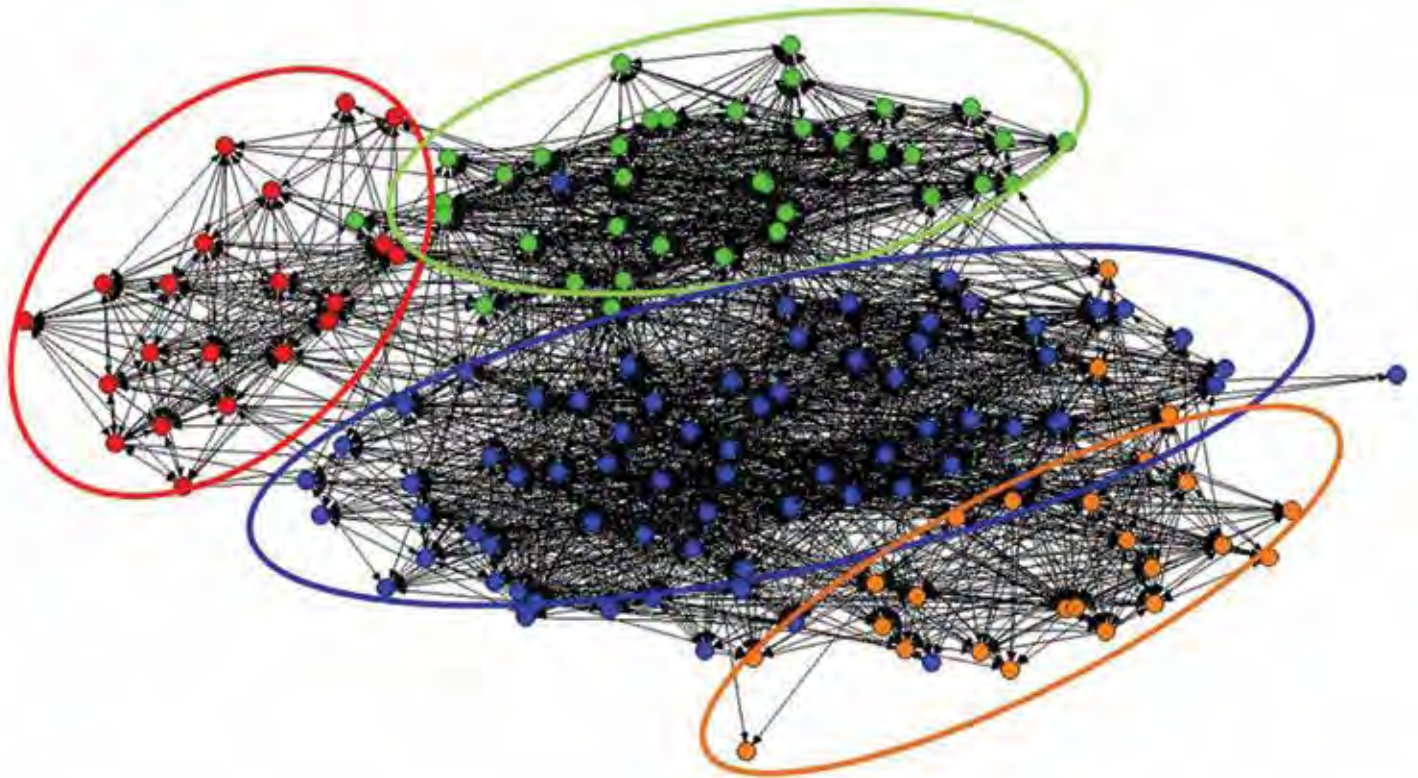
Group network development. Groups communicate and engage in leadership in a variety of ways. Leadership may be centralized around one or a few leaders or shared throughout the group. Network analysis can provide a snapshot of the internal connections within and across groups, and this information may be used to understand and improve group dynamics.⁶

In general, groups tend to be more effective when they have a high density of within-group communication ties that are influential and energizing. However, the most effective pattern for a group's internal communication and leadership network depends on the nature of the group and its goals. Further, as we discuss in the next section, the external connections groups form are critical to their success.



**Network within and between teams
(three teams are denoted by color)**

Developing the organizational network. A key aspect of organizational development is the identification and development of cultural change agents, boundary spanners, and innovation networks to support the implementation of strategic initiatives.



This is an organizational communication network that spans global regions.

Here are a few client insights gained from this network map:

- There is distinct clustering (grouping) by region
- High levels of communication occur within each region
- Clear boundaries exist in cross-region communication

Region

- Asian-Australian Region
- European Region
- North American Region-East
- North American Region-West

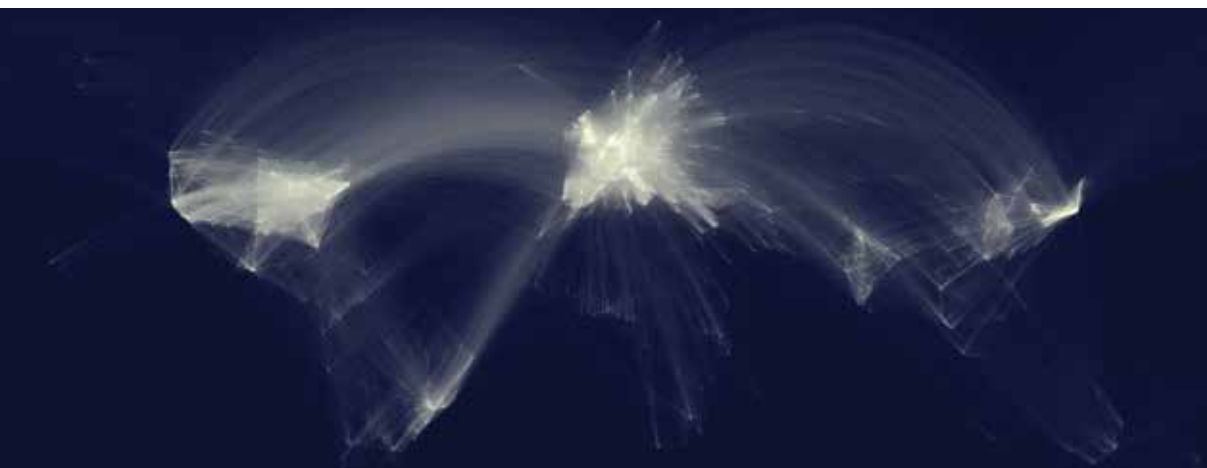
This communication pattern represents a major challenge for this client whose goal is to provide globally integrated services.

New ideas and behaviors can be contagious in social networks under the right conditions. Without the right cross-boundary connections creativity is stifled and innovative ideas fail to gain the momentum needed to spread and become implemented throughout the organization. *Boundary spanning leadership*⁷ refers to the capability to create direction, alignment, and commitment across boundaries in service of a higher vision or goal. Network analysis provides a fine-grained map of the connections across specific boundaries of strategic interest. This information combined with boundary spanning leadership practices may be used to improve collaboration across targeted boundaries to enhance efficiency and improve innovation. By developing boundary spanning capacity, multiple people participate and individuals do not become overburdened by boundary spanning work.

The habits of the organizational culture can support, or defeat, the efforts of an organization to execute its vision and strategy. *Changing the culture* in service of the mission can be enormously difficult. Network analysis can reveal subcultures within the organizations and allow for targeted development where resistance to change efforts may occur. Further, potential cultural change leaders can be identified by studying the natural information flow, ensuring that messages travel well through brokers and connectors, and overcome bottlenecks in the network. Network analysis may also be used to help organizations become more effective at bridging the silos that fragment the overall mission and to develop more interdependent leadership cultures.

Societal network development. Social networks extend beyond the bounds of any single organization. Network analysis is a useful tool for tracking and building *communities* and *professional partnerships*. Organizations can use it to improve the connections and relationships with their customers and suppliers to help materials and services flow more smoothly. Network analysis was part of the evaluation effort to track the impact of a program called *Ladder to Leadership*. This program (developed by CCL and the Robert Wood Johnson Foundation) fostered the development of approximately 300 emerging leaders in health-related nonprofits in eight U. S. communities. Through action learning projects designed to address challenges in their community, emerging leaders formed lasting connections as evidenced by an increase in network connections between the participants within each community over the course of the program.

On a much larger scale, the power of technology in supporting the formation of networks at the societal level has become apparent. Recall the large role played by Facebook and Twitter in recent societal movements including the Arab Spring.⁸ The need to understand and engage social networks has become a fundamental rule.



Map of scientific collaborations spanning the globe from 2005 to 2009

Computed by Oliver H. Beauchesne, Science-Metfix, Inc. Data from Scopus, based on books, trade journals, and peer-viewed journals.

Seven Reasons to Develop Network Perspective

In closing, consider seven reasons why developing network perspective is a 21st-century leadership imperative.

- 1. Connections matter.** Individuals do not exist in isolation and their connections provide opportunities (access to value information and resources) and also create constraints. The people they are connected to influence their ideas, attitudes, and behaviors.⁹
- 2. Work often happens through informal channels.** Even after decades of restructuring, work activities often occur through interactions outside of formal reporting and working relationships. Understanding informal networks is especially important in flat, team-based, and agile work environments where formal structure provides little guidance.
- 3. Leadership occurs through relationships.** Direction, alignment, and commitment are created through relationships between people working on shared challenges. All people contribute to this process and thus, leadership may be shared throughout the network. Further, boundary spanning leadership requires network perspective to accurately see and build connections between groups.
- 4. Successful leaders develop networks of strong, diverse relationships.** They realize that under- and over-connectivity stifles performance and limits outcomes. Purposeful (strategic) and authentic networking is the key to developing healthy networks that prevent insularity.
- 5. Network knowledge is an asset in change efforts.** Relying on formal, vertical channels alone hinders capacity to adapt to emerging issues. Change efforts may be accelerated by activating informal networks and enhancing the network's capacity to span boundaries.¹⁰ This approach is critically important in cultural transformation because organizational culture lives largely within the connections between people.¹¹ Understanding these connections provides insights into subcultures, pockets of resistance, and hidden champions of the transformation.
- 6. Innovation networks can be identified and supported.** Innovation first requires new, creative ideas. But new ideas are not enough; they must be implemented in the organization. Research suggests network structures that facilitate creativity and implementation differ from each other in specific ways.¹² Organizations need networks that support the generation and sharing of diverse ideas as well as collective action.
- 7. The most important challenges leaders face today are interdependent.** Complex challenges cannot be addressed by individuals alone. They can only be solved by groups of people working collaboratively across boundaries (hierarchies, geographic regions, functional silos, stakeholder interests, and demographic differences). A network perspective is key to thriving in a world in which everything is, or will be, connected.

If you're interested in learning more about how leading companies are utilizing network analysis, check out the Network Roundtable, a partnership between the Center for Creative Leadership and Activate Networks.

www.thenetworkroundtable.org

Appendix: Network Patterns and Structures

Aspects of the organization “as a whole” become apparent when data pertaining to the individuals and groups in an organization and the connections between them are collected and analyzed. The patterns described and depicted below are associated with different ways of working and thus are important for leaders to understand.

To illustrate, Ketchum (www.Ketchum.com), a global communications company, wanted to understand the relationships that fostered direction, alignment, and commitment (the outcomes of leadership) within their organization.

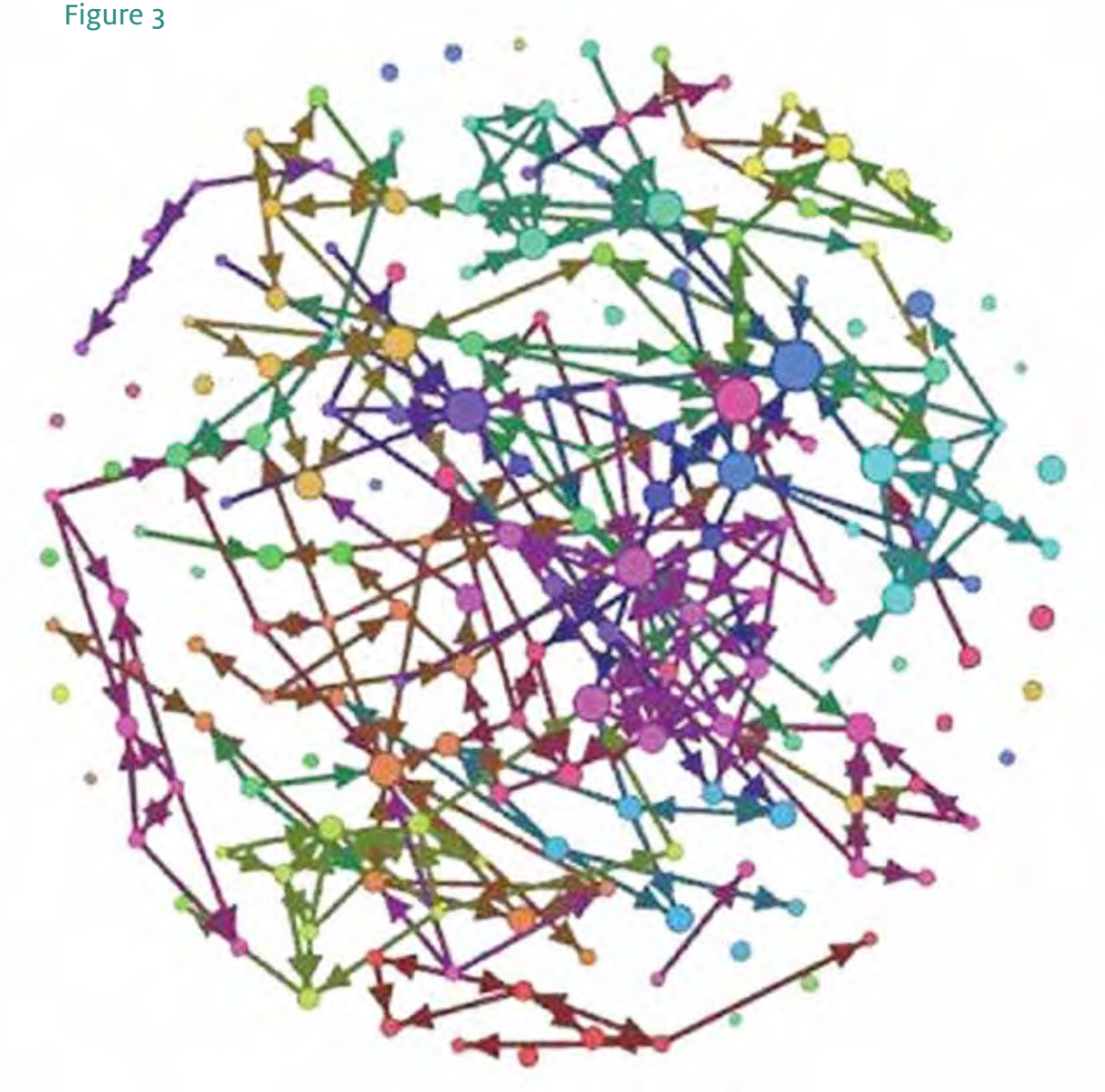
In the network diagram on the next page, arrows represent whether each person (node) saw the other as a source of direction, alignment, or commitment (DAC) for their organization’s goals. The width of the line indicates the extent to which the person was seen as a source of DAC by the person providing the rating. Node size is an indicator for the extent to which other people in the network saw the person as a source of DAC (i.e., as a leader). The color of the nodes represents different functional groups within Ketchum.

There is a clear tendency within this network to have leadership connections with others in one’s group. This tendency is called *homophily* and it refers to inclination for individuals to associate with similar others.

Think of birds of a feather flocking together.

This clustering within networks is often associated with gender, ethnicity, and other demographic characteristics and attributes such as personality traits and values or in this leadership network people’s workgroup. Individuals tend to share opinions and engage in similar behaviors as those they are connected to; having too many connections to similar people may limit the perspectives individuals consider.

Figure 3



Network map of leadership connections

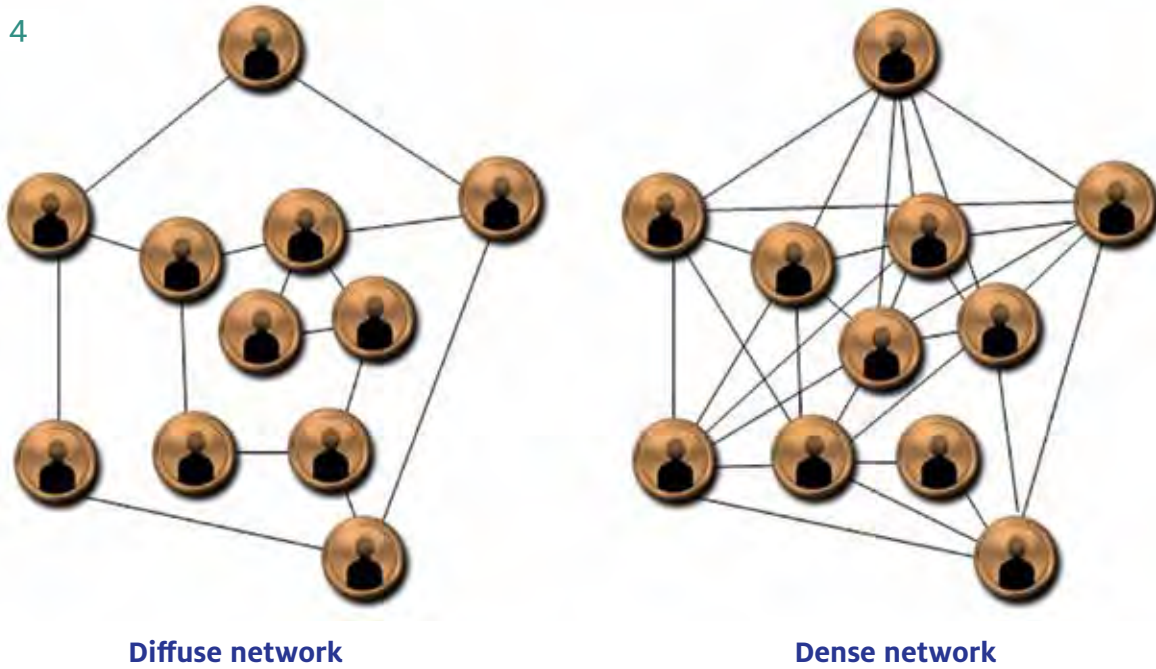
The connectedness of the network is also important. Consider the following aspects of this network:

Inclusiveness refers to the number of individuals who are not connected to anyone else in the network—that is they are completely isolated. Several individuals are isolated in this leadership network (see Figure 3). They did not see anyone else as a source of DAC, nor were they seen by others in this way. If a large number of *isolates* exist, it is something for leaders to consider carefully.

Connectivity indicates how easily the network could be fractured. How many nodes or ties would need to be removed to disconnect the network? Greater cross-group connection improves network connectivity.

Density is the extent to which all the possible connections that could exist in a network actually do exist (see Figure 4). Individuals in dense networks generally have easy access to information and are able to monitor the actions of others. Thus, norms of trust and reciprocity are high in these networks. However, diffuse networks provide local diversity as individuals have fewer overlapping connections and are more likely to receive new unique information. The groups in Figure 3 with higher density are likely operating through shared leadership.

Figure 4



Centralization is the extent to which the ties in a network are concentrated around one or a few actors (see Figure 5). This metric also provides insight into the structure of informal leadership within these groups. The pattern of informal leadership should be considered with regard to each group's objectives.

Figure 5



High centralization:
A primary individual is seen as the leader by others in the group.

Low centralization:
Many individuals are seen as leaders by others in the group.

References

- ¹ Drath, W. H., McCauley, C. D., Palus, C. J., Van Velsor, E., O'Connor, P. M. G., & McGuire, J. B. (2008). Direction, alignment, commitment: Toward a more integrative ontology of leadership. *The Leadership Quarterly*, 19(6), 635–653.
- ² Rollag, K., Parise, S., & Cross, R. (2005). Getting new hires up to speed quickly. *MIT Sloan Management Review*, 46(2), 35–41.
- ³ Cross, R., Baker, W., & Parker, A. (2003). What creates energy in organizations? *Sloan Management Review*, 44, 51–57.
- ⁴ Cross, R., & Cummings, J. N. (2004). Tie and network correlates of individual performance in knowledge-intensive work. *Academy of Management Journal*, 47(6), 928–937. Mehra, A., Dixon, A. L., Brass, D. J. D. J., & Robertson, B. (2006). The social network ties of group leaders: Implications for group performance and leader reputation. *Organization Science*, 17(1), 64–79. Sparrowe, R., Liden, R. C., Wayne, S. J., & Kraimer, M. L. (2001). Social networks and the performance of individuals and groups. *Academy of Management Journal*, 44, 316–325. Willburn, P., & Campbell, M. (2012). Leadership and organizational networks: A relational perspective. In C. S. Pearson (Eds.), *The transforming leader: New approaches to leadership for the twenty-first century*. (42–52). San Francisco, CA: Berrett-Koehler Publishers, Inc.
- ⁵ Cross, R., & Thomas, R. (2011). A smarter way to network. *Harvard Business Review*, 89(7/8), 149–153. Cross, R., Cowen, A., Vertucci, L., & Thomas, R. J. (2009). Leading in a connected world: How effective leaders drive results through networks. *Organizational Dynamics*, 38(2), 93–105. Ibarra, H., & Hunter, M. (2007). How leaders create and use networks. *Harvard Business Review*, 85(1), 40.
- ⁶ Cross, R., Ehrlich, K., Dawson, R., & Helferich, J. (2008). Managing collaboration: Improving team effectiveness through a network perspective. *California Management Review*, 50(4), 74–99. Mehra, A., Smith, B. R., Dixon, A. L., & Robertson, B. (2006). Distributed leadership in teams: The network of leadership perceptions and team performance. *The Leadership Quarterly*, 17(3), 232–245.
- ⁷ Ernst, C., & Chrobot-Mason, D. (2011). *Boundary spanning leadership: Six practices for solving problems, driving innovation, and transforming organizations*. McGraw-Hill.
- ⁸ Stephenson, K. (2011). From Tiananmen to Tahrir. *Organizational Dynamics*, 40(4), 281–291.
- ⁹ Balkundi, P., & Kilduff, M. (2006). The ties that lead: A social network approach to leadership. *The Leadership Quarterly*, 17, 419–439. Kilduff, M., & Brass, D. J. D. J. (2010). Organizational social network research: Core ideas and key debates. *The Academy of Management Annals*, 4(1), 317–357.
- ¹⁰ Cross, R., Ernst, C., & Pasmore, W. (in press). A bridge too far?: How boundary spanning networks drive organizational change and effectiveness. *Organizational Dynamics*.
- ¹¹ Stephenson, K. (2009). Neither hierarchy nor network: An argument for heterarchy. *People @ Strategy*, 32(1), 4–13.
- ¹² Burt, R. (2004). Structural holes and good ideas. *American Journal of Sociology*, 110(2), 349–399. Obstfeld, D. (2005). Social networks, the Tertius iungens orientation, and involvement innovation. *Administrative Science Quarterly*, 50, 100–130. Reagans, R. & McEvily, B. (2003). Network structure and knowledge transfer: The effects of cohesion and range. *Administrative Science Quarterly*, 4(2), 240–267.

About the Authors

Kristin L. Cullen, PhD, is a faculty member in Research, Innovation, and Product Development at the Center for Creative Leadership. Kristin's work focuses on leadership development, including improving leaders' understanding of organizational networks and the ability of organizations to facilitate collective leadership, complex collaboration, and change across organizational boundaries. She holds a BS degree in psychology and commerce from the University of Toronto, and an MS and PhD in industrial/organizational psychology from Auburn University.

Charles J. (Chuck) Palus, PhD, is a senior faculty member in Research, Innovation, and Product Development at the Center for Creative Leadership. He conducts research on interdependent leadership

and creates new knowledge for the Center's organization leadership development practice. Widely published on leadership, Chuck is coauthor of the book *The Leader's Edge: Six Creative Competencies for Navigating Complex Challenges*. He also is coinventor of the Visual Explorer™, Boundary Explorer™, and Leadership Metaphor Explorer™ tools for facilitating creative dialogue. He holds a PhD in developmental psychology from Boston College.

Craig Appaneal, M.A., has been affiliated with CCL since 2004 and was a full-time employee from 2007 to 2012. He holds a master's degree in organizational psychology from Columbia University. Craig is now an independent organizational development consultant living in Canberra, Australia.



Center for
Creative
Leadership®

The Center for Creative Leadership (CCL®) is a top-ranked, global provider of leadership development. By leveraging the power of leadership to drive results that matter most to clients, CCL transforms individual leaders, teams, organizations and society. Our array of cutting-edge solutions is steeped in extensive research and experience gained from working with hundreds of thousands of leaders at all levels. Ranked among the world's Top 5 providers of executive education by the *Financial Times* and in the Top 10 by *Bloomberg BusinessWeek*, CCL has offices in Greensboro, NC; Colorado Springs, CO; San Diego, CA; Brussels, Belgium; Moscow, Russia; Addis Ababa, Ethiopia; Johannesburg, South Africa; Singapore; Gurgaon, India; and Shanghai, China.

CCL - Americas

www.ccl.org

+1 800 780 1031 (U.S. or Canada)

+1 336 545 2810 (Worldwide)

info@ccl.org

Greensboro, North Carolina

+1 336 545 2810

Colorado Springs, Colorado

+1 719 633 3891

San Diego, California

+1 858 638 8000

CCL - Europe, Middle East, Africa

www.ccl.org/emea

Brussels, Belgium

+32 (0) 2 679 09 10

ccl.emea@ccl.org

Addis Ababa, Ethiopia

+251 118 957086

LBB.Africa@ccl.org

Johannesburg, South Africa

+27 (11) 783 4963

southafrica.office@ccl.org

Moscow, Russia

+7 495 662 31 39

ccl.cis@ccl.org

CCL - Asia Pacific

www.ccl.org/apac

Singapore

+65 6854 6000

ccl.apac@ccl.org

Gurgaon, India

+91 124 676 9200

cclindia@ccl.org

Shanghai, China

+86 182 0199 8600

ccl.china@ccl.org

Affiliate Locations: Seattle, Washington • Seoul, Korea • College Park, Maryland • Ottawa, Ontario, Canada
Ft. Belvoir, Virginia • Kettering, Ohio • Huntsville, Alabama • San Diego, California • St. Petersburg, Florida
Peoria, Illinois • Omaha, Nebraska • Minato-ku, Tokyo, Japan • Mt. Eliza, Victoria, Australia