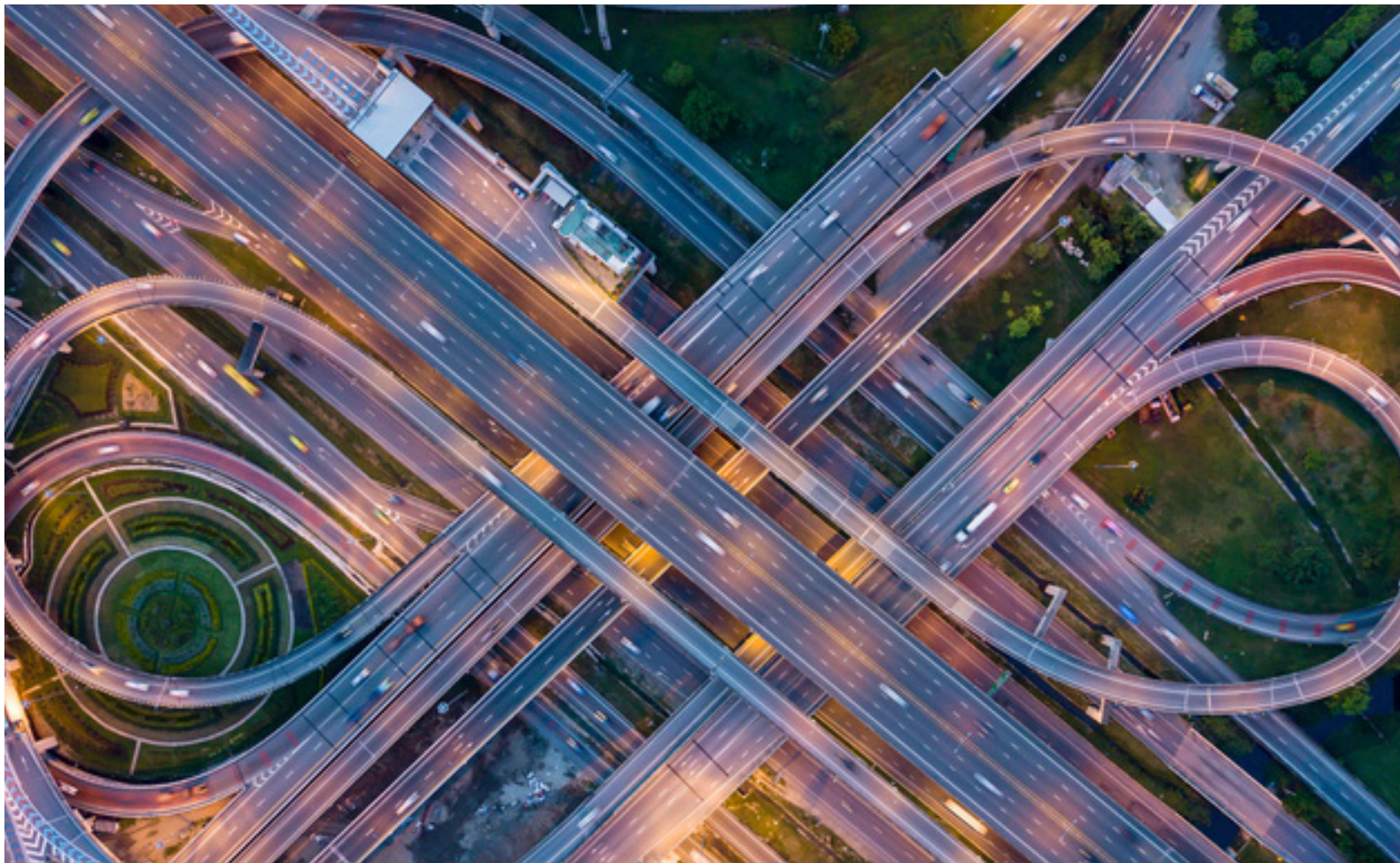


# Networks not Hierarchy: Expanding Leadership Capacity and Impact in a Complex World

---

**Institute For Contemporary Leadership**

By Stephen Garcia, EdD, MBA &  
Tony O'Driscoll, EdD, MS, Duke University Fuqua School of Business



## Introduction

In an increasingly complex world, none of us can meet all organizational challenges and objectives alone. We all have people we turn to for insight, guidance, assistance, motivation, and various other means of support. Our ability to reach out to the right person is often integral to success. Moreover, it is rare that a singular figure fulfills all our needs. The expert who harbors critical information may or may not be the trusted personal advisor or confidant to turn to with a sensitive problem, or the influencer who rallies people together. We must look in multiple directions to access the expertise and resources necessary to accomplish our goals. In this vein, leaders commonly

rely on networks to address their needs and achieve desired results. Those leaders who find the most success have fine-tuned networks in place to support them, offering diverse knowledge and resources. The ability for leaders to recognize the nuances of their networks and to optimize them has clear importance towards accomplishing objectives. For organizations, understanding the exact nature and dimensions of leadership—such as where leadership is concentrated, high-functioning, overlooked, or underperforming—can enhance leadership capacity and growth as part of an overall, pragmatic effort to navigate complexity and capitalize on leadership’s immense value.

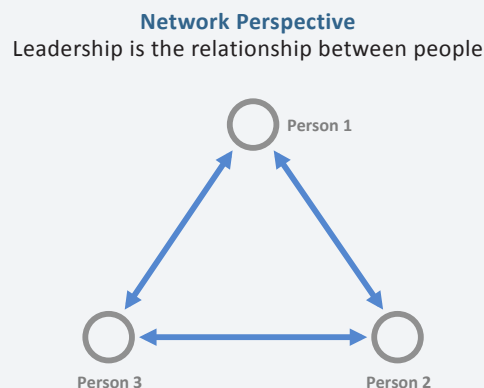
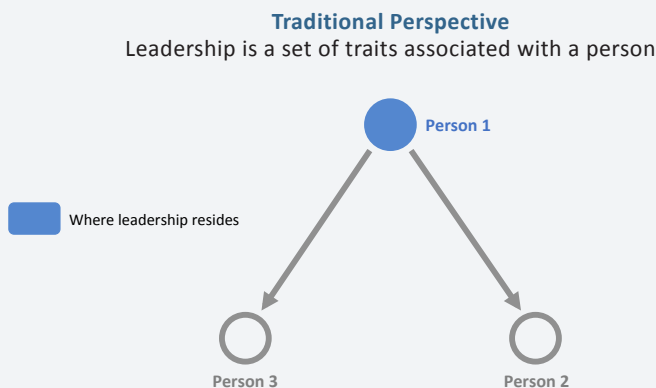
## Leadership Networks

Conventional perspectives of leadership characterize it as a set of individual traits and behaviors personified by a single person or a select group who inform, inspire, and direct followers (Yammarino, et al., 2012). This traditional view of leadership may be visualized as a pyramid, with leaders at the top and tiers of subordinates below. Alternatively, it is common for leadership to be regarded as a wheel, the leaders at the center of it all, like an axel, their followers extending from them like spokes. Such representations typically feature leaders who are formidable, decisive figures—chosen ones—whose

autonomous decision-making dictates and transforms their environment (Christopoulos, 2016). Hollywood has canonized this representation, and it makes for great entertainment, but it has limited relevance in the real world, where relationships are multifaceted, dynamic, and environmental complexity is inherent.

The fact is that leadership is not as straightforward as it is often depicted. Increasingly, leadership is understood as a relationship between people rather than as a set of individual attributes or competencies (Carter, 2015; Goldsmith & Morgan, 2004; McCauley, 2014; Lord, 2014).

Figure 1: Traditional vs. Network Perspective on Leadership



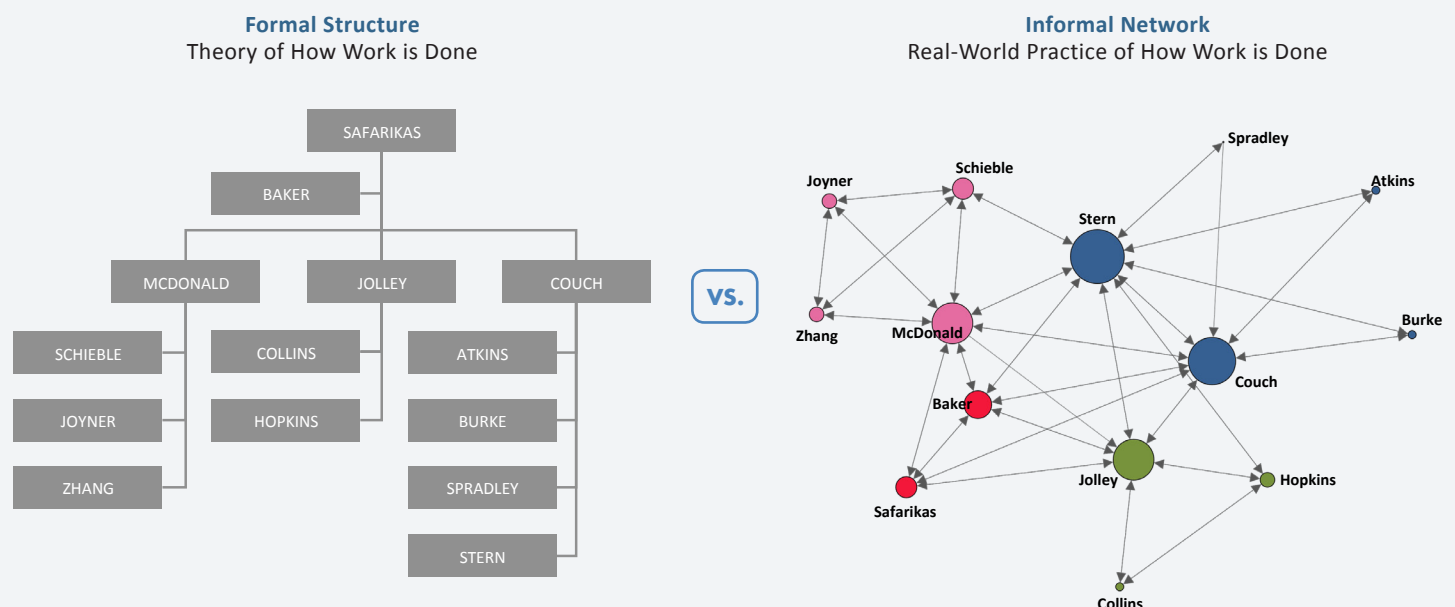
This understanding is based on a recognition that leadership is a social process; leadership cannot exist in the absence of followers. When we think of leaders possessing admirable qualities—such as integrity, empathy, vision, courage, and resiliency—it is the application of these competencies in social contexts that creates influence and amplifies impact. Additionally, seeing leadership as social helps to unveil the importance of dynamic human connections, group identity, as well as the roles that both leaders and followers play in achieving collective goals.

From this perspective, leadership within an organization is best viewed as an ever-changing network of relationships versus a fixed pyramid or set of hubs and spokes. These networks provide a medium through which leadership is operationalized. In biotechnology, cells and microorganisms are cultivated through use of a growth medium. A growth medium provides the needed resources and creates environmental conditions that enable cells and

other microorganisms to flourish. In organizations, networks provide a similar function. It is through networks of relationships that leadership is exerted and brought to life.

Why does it matter how leadership is viewed? The answer is that seeing leadership for what it truly is—a social relationship between individuals—best reflects how people and organizations actually work (see Figure 2). As described by management professors David Krackhardt and Jeffrey Hanson, “Much of the real work of companies happens despite the formal organization. Often what needs attention most is the informal organization, the networks that employees form across functions and divisions to accomplish tasks fast” (1993, p. 104). If one has a misguided view of leadership networks, individual and organizational leadership may falter. A network perspective is about understanding where leadership resides, how it functions, and how to optimize it.

Figure 2: Formal Structure vs. Informal Networks



Moreover, aptly understanding and visualizing leadership networks has practical real-world implications and applications. It can inform how to enhance leadership capacity, influence, and impact, including by uncovering hidden leaders and maximizing human potential. Who is connected to who is of course relevant, but it is also how people interact—the nature and results of their relationships—that reveals leadership capacity, impact, and growth.

### Complex Adaptive Systems

Understanding leadership networks is more imperative than ever given the fast-paced, complex nature of today's increasingly connected world (*Hoppe & Reinelt, 2010*). To better sense and respond to turbulent environments, many organizations seek to emulate the properties of complex adaptive systems. In complex adaptive systems, it is the relationships between the parts—often more than the nature of the parts themselves—that determines outcomes. Importantly, these relationships are not hard-wired but dynamic; they change in response to stimuli leading to new patterns, or structures, in real-time. As a result, complex adaptive systems can respond extremely quickly to changes in their environment. Within organizations, this reliance on networks of relationships versus formal structure is apparent in the growing emphasis on cross-boundary collaboration, matrix organizations, virtual teams, and business ecosystems.

Some powerful examples demonstrate organizations' use of leadership networks. Among them, the United States Army has begun leveraging leadership networks to deal with the complex, rapidly emerging and ill-defined problems associated with asymmetric warfare. Specifically, the U.S. Army is focusing on the concept of collective leadership, which they define as: "...a dynamic leadership process in which a defined leader, or set of leaders, selectively utilize skills and

expertise within a network, effectively distributing elements of the leadership role as the situation or problem at hand requires" (*Friedrich, Vessey, Schuelke, Ruark, & Mumford, 2011, p. 1*).

Although militaries are famous for hierarchical leadership, the reality is that even in the U.S. Army, leadership networks have emerged as a solution for dealing with increased complexity. According to the U.S. Army's Research Institute for the Behavioral and Social Sciences, the ability for leadership to flow fluidly between talented resources enhances innovation and adaptability. Of course, militaries can be rigid and strictly ordered—as they typically do designate clear roles and compartmentalize decision-making—but this is not mutually exclusive with them being comprised of valuable leadership networks that offer knowledge, resources, and support in a wide variety of directions. In this light, even though conventional notions of how militaries operate emphasize role-defining, standardization, and concentrated decision-making, they can also be seen as complex adaptive systems that depend on learning, relationship building, improvising, diversifying, and emergent thinking (*Paparone, Anderson, & McDaniel Jr., 2008*).

Another example underscores the remarkable benefits of high-functioning complex adaptive systems. In 2019, one of the greatest scientific achievements in human history occurred when a geographically, culturally, and professionally diverse range of experts captured the first ever image of a black hole. Accomplishing this momentous objective required forming a state-of-the-art global network of radio telescopes, collectively known as the Event Horizon Telescope (*Lutz, 2019*). It took several teams of leading specialists in locations as widely dispersed as the South Pole, Hawaii, and the French Alps, to closely synchronize eight telescopes in multiple phases, gather roughly five petabytes

of observational data, and systematically process it over the course of many months to create a composite image (Galison, 2020). Variables such as changing weather, celestial mechanics, and the Covid-19 pandemic challenged the ability of these experts—from sixty institutions spread over twenty countries—to coordinate and achieve an unprecedented mutual objective. Despite these obstacles and many more, they managed to generate an image of a black hole located nearly fifty-five million light years away. Such an astounding feat could only be achieved by integrating the distributed leadership and expertise of those around the globe.

Ultimately, both examples demonstrate the value of complex adaptive systems. Organizations that act as complex adaptive systems by distributing leadership across networks while understanding where leadership is concentrated and how it functions—even in the face of tremendous environmental complexity—are best positioned to adapt to change and seize upon the expertise and unique capabilities of various stakeholders to achieve mutual goals.

## Illuminating Leadership Networks

While leadership is increasingly viewed as a relationship rather than a set of individual attributes, historically we have not been able to visualize or analyze these relational networks. Fortunately, organizational network analysis (ONA) has emerged as a tool for this purpose. Using ONA, one can “x-ray” an organization to understand how people truly work together, including how they share information, collaborate, make decisions, and solve problems. The resulting analysis can be used to illuminate leadership networks and enhance their value.

In the case of leadership networks, ONA can discern who is most trusted and respected within an organization. Together, these two factors account for 90% of variance in followership (Cuddy, Kohut, Neffinger, 2014). As a result, those who are both trusted and respected are far more likely to be followed by others regardless of their formal position in the organizational hierarchy (see Figure 3). Often, senior executives are surprised to learn about employees lower down in the organization who benefit from significant influence.

Figure 3: Leadership Network



Leadership network in commercial function of medical device company. Different color nodes represent individuals in different departments. Lines connecting nodes illustrate trust and respect relationships. Larger nodes have greater degree of followership

In addition to pinpointing the organization’s true leaders, ONA can also determine the scope of their influence, including how far and where it extends across the organization. Moreover, because ONA essentially crowd-sources this insight, it provides a highly objective, data-based perspective. Network analysis is thus extraordinarily useful at uncovering how leadership is truly carried out in organizations.

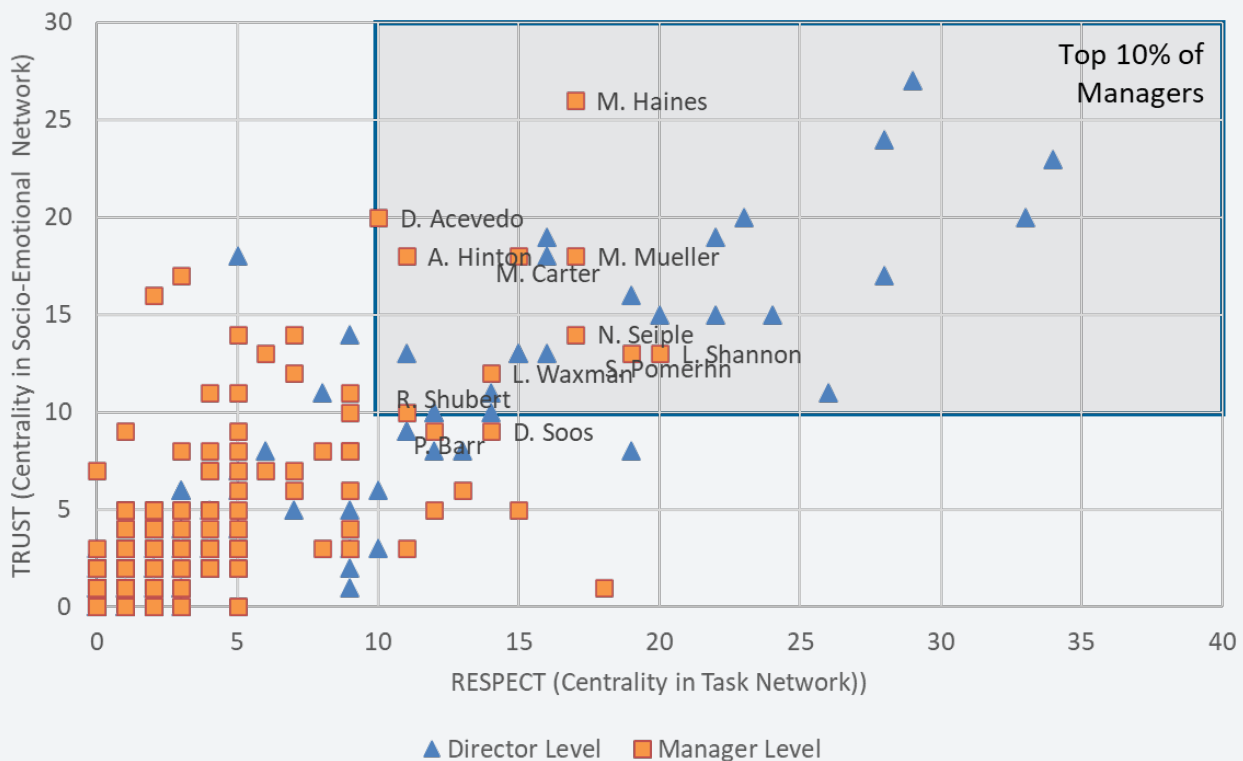
The resulting insights can be used to expand the organization’s leadership capacity as well as to develop and amplify the impact of individual leaders.

### Expanding Leadership Bench Strength

Many organizations today are constrained by

a lack of leadership capacity. According to a management consulting firm, Deloitte, more than half of all companies cannot meet their leadership needs (*Deloitte University Press, 2016*). Research firm, Gallop, estimates that this lack of leadership costs U.S. corporations up to \$550 billion each year (*Hougaard, 2018*). At the same time, senior executives often do not have visibility to employees at lower levels who others turn to for leadership. This creates an opportunity. Using network analysis, executives can uncover employees who have significantly greater followership than their peers (see Figure 4). These “hidden leaders” can then be leveraged to expand the organization’s leadership capacity.

Figure 4: Uncovering Hidden Leaders based on Followership



One organization that applied this approach is Allegis Group, a \$12B global professional services firm. Using network analysis, Allegis identified hidden leaders within the company, expanding the firm’s leadership pipeline by 30% in less than two months. Similarly, a \$9B biotechnology company applied network analysis to uncover new succession candidates for critical roles. In this instance, the company pinpointed internal employees who had both a high degree of followership and a network structure that matched that of the incumbent already in the role. This network similarity helped to ensure that when the succession candidate took over, he or she would have the necessary relationships in place to be successful. According to the company’s Head of Medical Affairs, “I can’t imagine leading without this information.”

### Developing Leaders

In addition to expanding leadership capacity at the organizational level, applying a network perspective allows organizations to expand individual leaders’ influence and impact. Early in their careers, many leaders operate within a single department or assume specific, functional roles. At this stage of their career,

their success is based predominately on their technical or analytical skills (*Ibarra & Hunter, 2007*). But as leaders progress from functional managers to business leaders, their performance becomes progressively more dependent on their ability to coordinate, inspire, and influence others. As a result, their ability to manage their network becomes increasingly important. **Figure 5** shows the average size of a leader’s network within one life sciences company at different levels.

Many leaders do not appreciate the increased importance of their networks as they progress in their career. At best, these leaders over-rotate on technical vs. relational skills. At worst, they perceive focusing on their network as a distraction from real work (*Ibarra & Hunter, 2007*). This is unfortunate because, as previously described, leaders’ success is dependent on the set of relationships they build and maintain (*Fang, Francis, & Hasan, 2018*). Our research within a technical professional organization indicates that the structure, or pattern, of a leader’s network of relationships is more predictive of their performance than their education, experience, and cognitive abilities combined (see **Figure 6**).

Figure 5: Number of Connections by Level

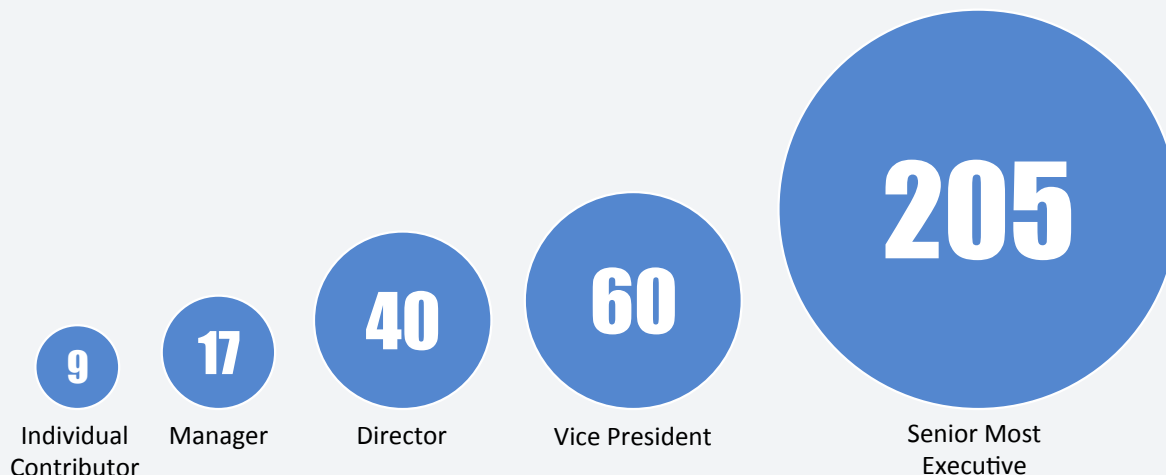
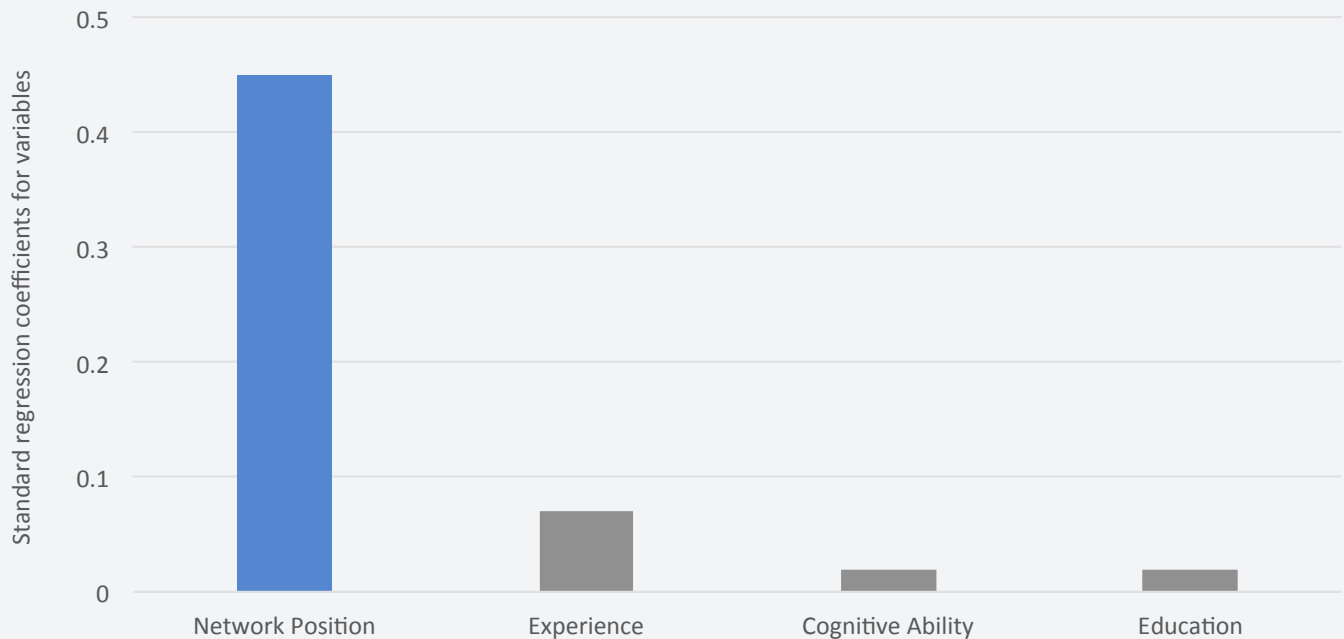


Figure 6: Factors Affecting Performance



Moreover, networks provide leaders with seven critical capabilities (see **Box on following page**). Networks do not simply offer access to these essential capabilities; they also enhance knowledge and capabilities throughout the organization. Along these lines, when an expert who is adept at offering a strategic perspective is accessed, their expertise has the potential

to inform and guide others—even to the point that their leadership may be transformational. Thus, it is imperative not only for organizations to harbor integral capabilities but to have networks in place that allow these capabilities to be efficiently accessed and disseminated, with benefits extending to and from a broad range of stakeholders.



**Box: 7 Network Capabilities**
**Strategic Perspective**


Strategic Perspective helps to understand the organization as a system and pinpoint what is truly important. Strategic Perspective helps leaders identify new threats and emerging opportunities in time to maneuver and succeed.

**Influence**


Influence enables leaders to persuade others across the organization to adopt a new perspective or to change how they work even when they do not have formal authority over them. Influence is often critical to driving organizational transformation.

**Innovation**


Innovation enables leaders to generate creative, new ideas. When we only rely solely on information from immediate team members, we are susceptible to “group think.” Alternatively, sourcing information from diverse groups opens us up to different perspectives and enables us to produce revolutionary insights.

**Collaboration**


Collaboration refers to one’s ability to connect and work with those outside of their immediate team or department. As organizations increasingly rely on matrix structures, cross-functional teams, and project-oriented work, the importance of collaboration increases. Those who collaborate well can work across different departments and assume a variety of functions to rapidly accomplish goals.

**Force Multiplication**


Leaders who act as Force Multipliers extend and amplify their impact by bringing out the best in others. In this way, they significantly increase the individual and group performance of those with whom they work and interact.

**Resilience**


Resilience is the ability to maintain energy and recover quickly in the face of challenges. Every leader experiences stress and adversity, but as the level of disruption in the business environment increases, so too does the importance of resilience.

**Personal Development**


Personal development refers to one’s ability to set career goals, understand what is needed to achieve them, objectively assess current capabilities, and develop the knowledge and skills to accomplish developmental goals.

Although leaders may appreciate the power of their network, many fall into the trap of assuming more is better. In truth, high-performing leaders typically have a core network with no more than 18 connections (Cross & Thomas, 2011). These are the people that you would go out of your way to help and who would do the same for you. Too few connections and leaders may not be leveraging their network to its fullest potential. Too many connections and they risk collaborative overload (Cross, Rebele, & Grant, *Collaborative overload*, 2016). Questions leaders may wish to consider as they refine their network include:

- Which relationships are most critical to achieving my business and career goals?
- How can I establish or maintain these relationships?
- Does my network include diverse points of view?
- Do I have too few relationships in a given area (e.g., too few connections outside of my organization)?
- Are all the relationships I'm currently maintaining genuinely important to me?

Taking the time to answer these questions is important, because every relationship takes time and effort to maintain. Consequently, leaders need to make tradeoffs. They must treat their network like a portfolio that they continually calibrate based on their objectives.

## Conclusion

At an organizational level, adopting a network perspective on leadership offers a meaningful, alternative way to view an immensely consequential issue, how leadership functions and can best drive success. A network perspective is likely to pay off on

various fronts, from uncovering how work really gets done to revealing hidden leaders and new succession candidates. As a tool, organizations should consider using organizational network analysis to illuminate their leadership networks and apply insights to generate tangible business value.

Additionally, individual leaders can expand their impact and influence by adopting a nuanced view of leadership and seeing it as a network phenomenon. Unfortunately, many leaders perceive networking as a distraction from work. Moreover, they do not think about or view organizations in terms of networks. In their quest to understand organizations, they focus instead on what they can most easily see—conventional organizational charts, business processes, and standard operating procedures. This leaves them with an incomplete picture of how work gets done and consequently, it renders them less prepared to lead.

Leadership is rarely a straightforward hierarchy; it is instead a social phenomenon. The time is right to reconsider conventional leadership paradigms and view leadership using a network lens. Although complexity can be daunting, the reality is that understanding and utilizing leadership networks provides discernible opportunities to realize human potential and capitalize on the diverse qualities, skills, and expertise that each stakeholder brings to the table.

---

## References

- Carter, D. D. (2015). Social network approach to leadership: An integrative conceptual review. *Journal of Applied Psychology*, 100(3).
- Christopoulos, D. C. (2016). The impact of social networks on leadership behavior. *Methodological Innovations*, 9, 1-15.

Cross, R., & Thomas, R. (2011). Managing yourself: A smarter way to network. *Harvard Business Review*, 89(7-8), 149-153.

Cross, R., Rebele, R., & Grant, A. (2016). Collaborative overload. *Harvard Business Review*, 94(1), 74-79.

Cuddy, A. (2014). Connect, then lead. *Harvard Business Review*, 91(7-8), 54-61.

Deloitte University Press. (2016). *Global Human Capital Trends*. Retrieved from *Global Human Capital Trends*: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/HumanCapital/gx-dup-global-human-capital-trends-2016.pdf>

Event Horizon Telescope Collaboration et al. (2019). NASA.gov. Retrieved from [https://www.nasa.gov/mission\\_pages/chandra/news/black-hole-image-makes-history](https://www.nasa.gov/mission_pages/chandra/news/black-hole-image-makes-history).

Fang, Y., Francis, B., & Hasan, I. (2018, April 10). Research: CEOs with diverse networks create higher firm value. Retrieved from *Harvard Business Review*: <https://hbr.org/2018/04/research-ceos-with-diverse-networks-create-higher-firm-value>

Friedrich, T. L., Vessey, W. B., Schuelke, M. J., Ruark, G. A., & Mumford, M. D. (2011). *A Framework for understanding collective leadership: The selective utilization of leader and team expertise within networks*. Arlington, VA: United States Army Research Institute for the Behavioral and Social Sciences.

Friedrich, T. L., Vessey, W. B., Schuelke, M. J., Ruark, G. A., Mumford, M. D., & Lussier, J. W. (2011). *A framework for understanding collective leadership: The selective utilization of leader and team expertise within networks*. Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Galison, P. (2020). *Black Holes: The Edge of All We Know* [Film]. Submarine Entertainment.

Goldsmith, M., & Morgan, H. (2004). Leadership is a contact sport: The "Follow-up Factor" in management development. *strategy + business*(36), 71-79.

Hoppe, B., & Reinelt, C. (2010). Social network analysis and the evaluation of leadership networks. *The Leadership Quarterly*, 21, 600-619.

Hougaard, R. (2018). The real crisis in leadership. *Forbes*. Retrieved from <https://www.forbes.com/sites/rasmushougaard/2018/09/09/the-real-crisis-in-leadership/?sh=45f29e3d3ee4>

Ibarra, H., & Hunter, M. L. (2007). How leaders create and use networks. *Harvard Business Review*, 85(1), 40 - 47.

Krackhardt, D., & Hanson, J. R. (1993). Informal networks: The company behind the chart. *Harvard Business Review*, 71(4), 104-111.

Lord, R. G. (2014). What have we learned that is critical in understanding leadership perceptions and leader-performance relations? *Industrial and Organizational Psychology: Perspectives on Science and Practice*(7), 158-177.

Lutz, O. (2019). How scientists captured the first image of a black hole. NASA Jet Propulsion Laboratory California Institute of Technology. Retrieved from <https://www.jpl.nasa.gov/edu/news/2019/4/19/how-scientists-captured-the-first-image-of-a-black-hole>.

McCauley, C. (2014). *Making leadership happen*. Greensboro, NC: Center for Creative Leadership.

Yammarino, J., F., Salas, E., Serban, A., Shirreffs,

K., & Shuffler, M. L. (2012). Collectivistic leadership approaches: Putting the "We" in leadership science and practice. *Industrial and Organizational Psychology*, 5, 382-402.

Paparone, C. R., Anderson, R. A., & McDaniel Jr., R. R. (2008). Where military professionalism meets complexity science. *Armed Forces & Society*, 34(3), 433-449.

Reicher, S. D., Haslam, S. A., & Platow, M. J. (2018). Shared social identity in leadership. *Current Opinion in Psychology*, 23, 129-133.

Yammarino, F.J., Mumford, M. Vessey, W.B., Friedrich, T.L., Ruark, G.A. Brunner, J.M. (2014). Collective leadership measurement for the U.S. Army. State University of New York at Binghamton Center for Leadership Studies, 1-285.