



Complexity Leadership Theory: Shifting from Human Capital to Social Capital

By Michael J. Arena and Mary Uhl-Bien

For the past decade or more, HR professionals have dedicated much of their efforts to optimizing human capital strategies in an effort to win the war on talent—building out comprehensive talent management systems, validating leadership competency models, and designing the best possible leadership development programs. In more recent years, emphasis has turned to enhancing employee engagement, refining performance management systems, and leveraging people analytics. While it is hard to argue against the need for these human-capital-centric strategies, new research raises questions about whether they are as effective as currently believed. In particular, research suggests that HR professionals need to more strongly consider social capital strategies in driving both performance and innovation within complex organizations.

By definition, social capital refers to the competitive advantage that is created based on the way an individual is connected to others. Two primary aspects of social capital—group cohesion and brokerage—are particularly relevant to

HR practices. Group cohesion is best described as how connected an individual within a group is to others in the same group. Often referred to as clusters, groups are considered highly cohesive when they have many redundant connections within the group (see Figure 1). The benefits of cohesive groups are that individuals are able to quickly share information and typically demonstrate higher levels of trust than less cohesive groups (Fleming, Mingo & Chen, 2007). Brokerage represents the bridge connections from one cluster to another cluster (see Figure 2). It occurs as individuals, or brokers, act as connectors from one cluster to the next. For individuals, being in a broker role has three specific competitive advantages: wider access to diverse information, early access to new information and control over the diffusion of information (Burt, 2005).

High performers tend to be uniquely positioned as brokers in the organizational network (Mehra, Martin & Brass, 2001; Burt, 2004). These individuals generally perform better, get promoted sooner, and are better compensated than others. The implications of social capital are even greater when it comes to innovation. It appears that innovation is as much a social phenomenon within complex organizations as it is a technological one. Successful innovation in a social context requires a thorough understanding of the interplay between cohesion and brokerage. Despite this, routinely across organization only 50 percent of these high performers and innovators are identified by traditional human capital systems (Cross, Cowen, Vertucci & Thomas, 2009). Such research suggests that HR professionals would be wise to shift at least part of their focus to how they can unleash the hidden potential within organizations through a better understanding of social capital.

As HR professionals, we need to explore new leadership frameworks that more fully leverage the competitive advantages of brokers to drive better performance today, while enabling the organization to more effectively innovate and adapt to the challenges of tomorrow. To do this requires that we enable the capability of brokers to actively link up diverse information and solve existing problems. HR professionals must consider how we can foster approaches that enable brokers to actively access novel ideas across the network that emerge in response to unfolding pressures and challenges. They also need to leverage the capacity of cohesive groups to disperse and share information.

In today's dynamic world, leadership frameworks must also shift—from a predominantly human capital focus, such as the bias toward competency-based models, to a social capital em-

Figure 1. Highly Cohesive Clusters

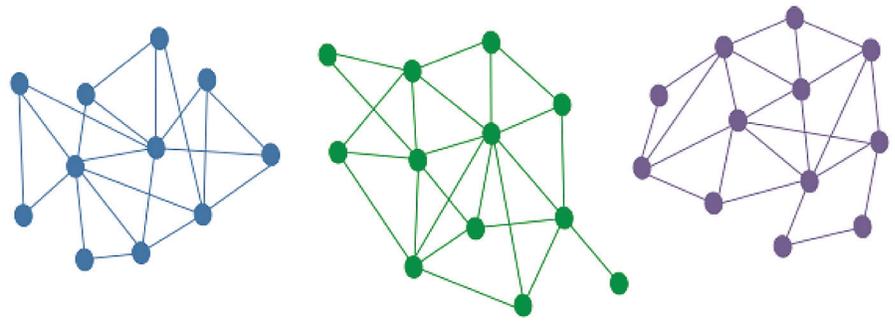
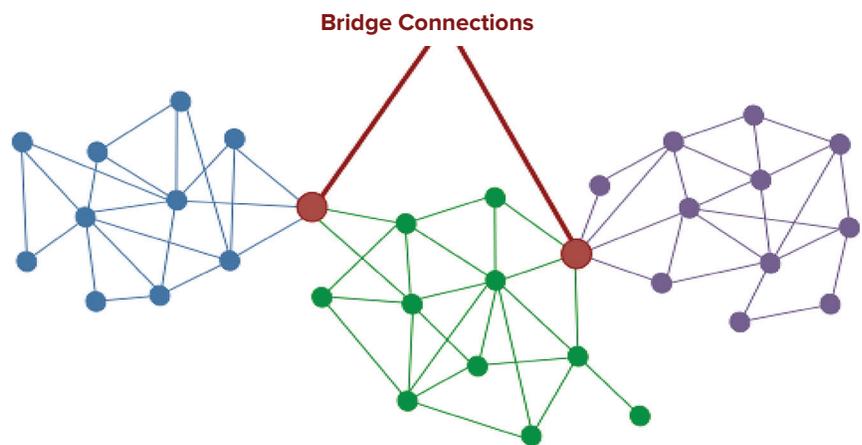


Figure 2. Brokerage across Clusters



phasis, focusing on facilitating the movement of ideas across a system through bridging and brokering.

Complexity Leadership Theory

This kind of leadership is described in emerging work on complexity leadership theory (CLT). CLT proposes that adaptability, which enhances performance and innovation, occurs in the everyday interactions of individuals acting in response to pressures and opportunities in their local contexts (Uhl-Bien & Marion, 2009). These local actions then link up with one another to produce powerful emergent phenomena (Lichtenstein & Plowman, 2009). But the problem is, in many organizations, these linkages are hard to make because organizational bureaucracy and silos can create obstacles to interconnectivity.

Therefore, the central question addressed by CLT is: How, in the context of bureaucratic organizing structures, can organizational leaders enable emergence of the new solutions and innovation needed to survive and thrive in today's complex world? The key in answering this question lies in the recognition that organizations have two primary systems—an operational system and an entrepreneurial system—that function in dynamic tension with one another. The operational system drives formality, standardization, and business performance, and the entrepreneurial system strives for innovation, learning and growth (see Figure 3).

What is being discovered in complexity leadership theory is that despite widespread belief that the role of the leader is to “manage conflict” (meaning “reduce” it), the conflict experienced in the dynamic tension between the two systems is actually the key to innovation and adaptability in organizations. It is in the tension that occurs between the operational system pushing for administrative efficiency (e.g., schedule, budget, results), and the entrepreneurial system pushing for creativity, learning and growth, that innovation and adaptability are enabled.

More specifically, a key discovery of our research in complexity leadership theory is that adaptive organizations possess a distinct advantage previously unrecognized in leadership and organization theory: what they are really good at is enabling adaptive space (see Figure 4).

Adaptive space occurs in the interface between the operational and entrepreneurial system by embracing, rather than stifling, the dynamic tension between the two systems. It does this by enabling brokerage across clusters to spark emergence of novel ideas and then leveraging the natural benefits of cohesion that occurs in the local, entrepreneurial context to foster idea development and sharing. Ultimately, this leads to diffusion across the organization when a network closes in on a sponsor to gain formal endorsement from the operational system (see Figure 5). In this way, novel ideas are more readily introduced, more openly shared and more effectively integrated into formal processes. All of this is essential to scaling and creating value in organizations.

Adaptive space, therefore, is essential in helping organizations become and remain adaptive. It helps address the most pressing problem facing organizations today: the need to overcome the overwhelming bias in organizations for the operational system to stifle the creative energy of the entrepreneurial system, thereby limiting bold innovations and inhibiting adaptive capacity.

The Research Program

These findings were generated through a series of research studies conducted from 2007 to 2015 across 30 complex organizations (Table 1). The data reveal that innovation and adaptation are the result of pressures on a system. These adaptive pressures are comprised of four components:

- A need for a novel solution (i.e., cannot do things the same way)

Figure 3. Entrepreneurial and Operational Systems

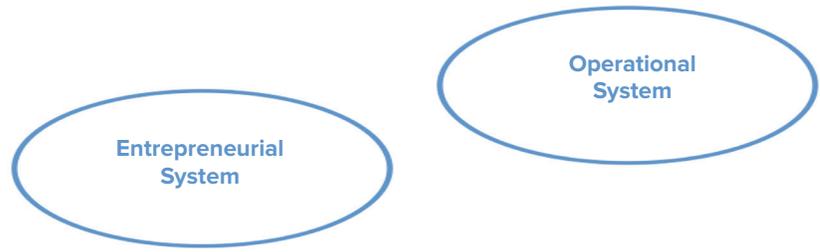


Figure 4. Adaptive Space Bridging the Two Systems

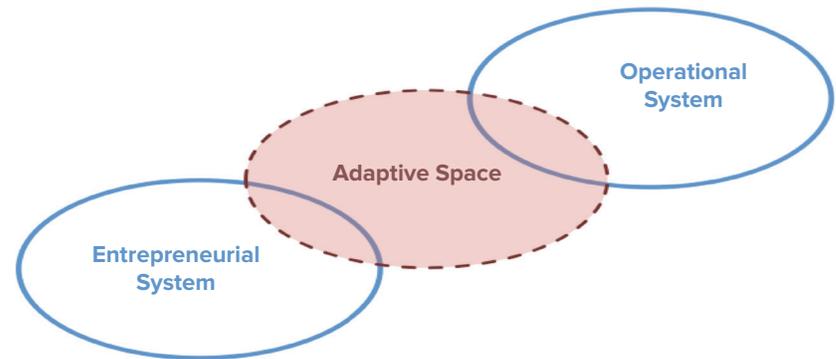
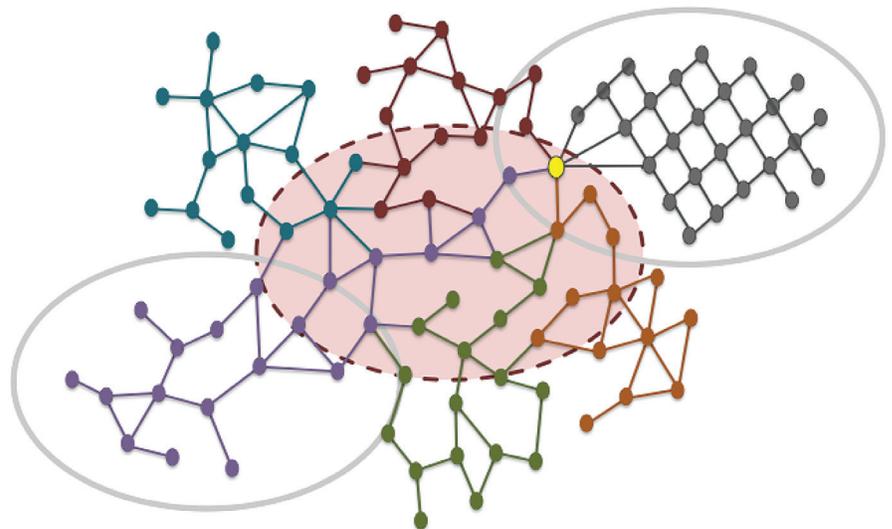


Figure 5. Network Intersections in Adaptive Space



- New relationships or partnerships (i.e., bridging relationship offer new perspectives),
- Conflicting perspectives (i.e., individuals bring different needs and diverse experiences)
- Interdependence (i.e., have no choice but to work together—adapt or die).

Each of these is more directly aligned to advance social capital across an organization.

The findings suggest that what is needed in complex organizations is an adaptive response—one that involves engaging, rather than suppressing, the tension generated in the conflicting perspectives of the operational and entrepreneurial systems. Adaptive responses are enabled through the opening up of adaptive space. This space acts as a bridge between the operational system and the entrepreneurial system that enables emergent solutions to take hold. That is, novel ideas that originate in the entrepreneurial system are advanced through adaptive space and formalized as new order within the operating system. The primary role of “enabling” leaders, therefore, is to loosen and tighten adaptive space in ways that allow emergence to occur.

HR Practices

As HR professionals, the findings from this research challenge us to shift many of our conventional practices. As previously stated, the overwhelming focus in HR has been on optimizing human capital strategies. In the context of complexity leadership theory, HR has focused on attracting, placing and developing operational talent to drive performance and, more recently, entrepreneurial talent to drive innovation. Both of these are human-capital-centric approaches, which are necessary, yet still insufficient. What complexity leadership research shows instead is that a primary focus in HR needs to be on enabling adaptive space.

We can do this by more fully leveraging social capital strategies to unleash latent potential already existing deep within the entrepreneurial and operational systems. For example, HR professionals can demonstrate enabling leadership by enabling novel solutions created locally in the entrepreneurial system to link-up with influencers and resources needed to help them gain momentum and advance into the formal system. They can also create adaptive space by encouraging conflicting interactions early on as a means to enhance the fitness of initial solutions, ultimately facilitating their sponsorship across the organization to leverage the scaling power of the operational system.

On a practical basis, there are three primary elements that are essential to enabling adaptive space: leveraging existing pressures, applying adaptive space practices, and employing adaptive space principles.

Enabling Adaptive Space = Pressures + Practices + Principles.

Adaptive Pressures

Adaptive space functions by capitalizing on adaptive tension to generate creative outcomes. Therefore, the key to enabling adaptive space is in understanding how to use pressures to advantage—hence the mantra, “never waste a good crisis.”

Pressures, both real and perceived, are driven by internal and external events. For example, external pressures come from new competitive situations, new regulatory policy or procedures, radical advancements in technology, major economic shifts, and so forth. Internal pressures come from changing strategy, new organizational initiatives, budget reductions, shifting demographics, and other changes. Regardless of where they originate, pressures are at the heart of adaptive space (see Table 1).

A primary role of pressures is to move a system out of equilibrium. Change is hard, and people won’t do it if they don’t have to. Therefore, pressures “loosen up” a system by forcing individuals out of their comfort zone and, when placed in the

TABLE 1. RESEARCH PROGRAM

Type of organization	Sample & data	Focus of research
Financial Services	32 interviews and archival data	Overall CLT Model
Aerospace	25 interviews	Enabling leadership
Medical Equipment	16 interviews	Administrative stifiers and inhibitors
6 Healthcare Systems	204 interviews and archival data	Strategic leadership and adaptability
Financial Services	80 participants organizational network analysis	Entrepreneurial system
18 Highly Innovative & Adaptive Companies	32 validity interviews	Adaptive space and emergence
Automotive	30 validity interviews	Adaptive space application

context of adaptive space, giving them a safe place to struggle through them to come up with novel ideas and solutions. Enabling leaders need to be adept at helping people to “play in the pressures.” They do this by being skillful at formulating and articulating challenges to the organization that create the appropriate amount of creative tension (not too much, not too little). Skillfully crafted challenges help to catalyze adaptive space. Enabling leaders also learn to be fluent at building a cadence around the four components of adaptive pressures previously mentioned, as a means to holding adaptive space open. Under CLT, the role of leaders shifts from a focus on driving and managing outcomes to a focus on enabling adaptive space, and leveraging pressures is essential to this role.

Within a large financial service organization, a leader discovered that cohesive teams within a call center were 37 percent more efficient at effectively closing out customer calls. By leveraging the pressure to enhance customer satisfaction, the current system was loosened up for local employees to experiment with such things as more routine huddles, shared team coffee breaks and inter-team instant messaging. The result was a 25 percent improvement in average handle time for calls.

Practices

Adaptive practices enable interactions and exchanges through various forums, methods, and frameworks designed to respond to an articulated adaptive challenge. Many of

these practices have been around for years—the difference is the broader understanding of CLT in which they are being applied. For example, adaptive practices include positive deviance, liberating structures, design thinking, adaptive salons, co-labs and adaptive summits, to name a few (see Table 2).

A frequent cadence of adaptive practices, when used in conjunction with pressures and applied over time, enables an organization to fluidly respond to a challenge. For example, one large company applied a multitude of adaptive practices across an 18-month cycle to enable sustained momentum around the same core challenge. Each of these sessions included between 20 and 250 participants. During these sessions, many participants personally identified with specific elements of the core challenge and took the initiative to progress it forward. At times, this would include local actions within their own subgroups, while at other times, they designed and launched adaptive practice themselves. The result was scores of bottom-up solutions being exchanged, developed, and implemented within the organization.

Understanding how to design and deploy adaptive practices can be heavily informed by network theory and complexity science. Interventions that are cross-function and multi-level help ensure diverse perspectives and novel ideas. Adaptive practices encourage adaptive responses to the inherent tensions and conflict that arise in bringing multiple groups together. They challenge participants to follow the energy of the group. Finally, they tap into the benefits of natural networks by encouraging brokerage, setting network boundaries to enhance ongoing interactions beyond the events, and inspiring local actions within cohesive sub-groups. Each adaptive practice has the capacity to improve performance and enhance innovation. When combined, they can catalyze bold, emergent change across an organization.

Principles

The third and final element of enabling adaptive space is

TABLE 2. ADAPTIVE PRACTICES

Practice	Practice Description
Positive deviance	An asset-based, problem-solving, and community-driven approach to enable the discovery of successful local behaviors and solutions
Liberating structures	Easy-to-learn, adaptable methods to solve problems and develop opportunities
Design thinking	A set of tools applied to achieve human centered innovation
Adaptive salons	Simple focus group frameworks that encourage short cross-organization brainstorming blitzes around critical issues
Co-labs	A intensive, 24-hour experience where teams both collaborate and compete against each other in pitching prototype solutions
Adaptive summits	A grassroots large-group event designed to unleash a community of change agents to co-create the way they work

TABLE 3. ADAPTIVE PRINCIPLES

Principle	Principle Description
Start Small	Think big, but start small. Getting started is the hardest part in solving problems and ideas are cheap. So get started, build it, test it and share it locally and then iterate.
Find a Friend	Forging both a new idea and a new relationship is challenging, so leverage the relationships you already have and focus on evolving the idea. Local allies embolden.
Follow the Energy	Link-up with existing ideas, strategies and advocates. Enable another's plan to build momentum. Find a way to make that passion flourish while advancing your own.
Set Boundaries	Proximity is essential to maintaining momentum, if people aren't talking about the idea, or concept it doesn't exist. Initially, limit engagement to a group of intersecting natural networks.
Embrace the Conflict	An idea must have fitness to be meaningful for an organization. The fitness of an original idea can only be enhanced with a modification or adaptive response to conflict.
Create Network Closure	As individuals engage in the development process of an idea and share it, the network closes in around it. Eventually a sponsor takes notice, enhancing the likelihood of formal endorsement.

adaptive principles. If adaptive pressures act as the spark and adaptive practices are the catalyst, adaptive principles are the fuel or energy that keeps it going on an everyday basis. These principles need to be leveraged across all three dimensions of CLT: the entrepreneurial system, the operating system, and adaptive space. They includes such notions as start small, find a friend, follow the energy, set boundaries, embrace conflict and create network closure (see Table 3).

For example, following the energy, setting the network boundaries, and embracing conflict are essential when operating with adaptive space. Adaptive principles encourage people to go back to their local cluster or the entrepreneurial system and take action, or to start small to build early momentum. Most change strategies seek to build leadership support, adaptive principles, encourage individuals to find a friend that will join them in implementing their idea. Supporting friends help embolden individuals to take risks.

Finally, after testing ideas locally, amplifying and refining them within the adaptive space, individuals are encouraged to create network closure around a critical sponsor within the more formal operating system. As these ideas grow, they create an internal buzz that echoes across the network, building significant credibility with a sponsor. This is essential to getting the idea fully endorsed and scaled for greater impact.

Within one large organization, a young engineer was interested in driving change in her local area after participating

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in a large adaptive practice event. Her first inclination was to propose some ideas she had to her local leader, then she remembered the find a friend principle. Instead, she reached out to another engineer she thought might be interested in her ideas. The two of them iterated on the ideas and invited a few additional peers into the dialogue. The small network began to implement a multitude of ideas, such as a local guru bar to answer routine questions, a non-tech newsletter to keep people informed, they even created an idea posting site where others could thumbs-up or thumbs-down responses for their own ideas. The duo and their band of local friends, were intent on creating a network that was more inclined to say “yes” than “no.” They recognized that if they followed the local energy, they could link-up the right people, with the right ideas at the right time. Ultimately, after building tremendous momentum, they approached their leader and asked him to support an adaptive practice event. After experiencing the local buzz first hand, he responded with a resounding “yes.”

Embrace Emerging Research

As HR professionals, we need to advance the field to keep pace with the dynamic nature of the world we live in. To help us in this, we should embrace emerging research from such disciplines as network theory and complexity science, and use it to challenge our organizations to seek out adaptive solutions. Without such solutions, we will not be able to remain competitive and innovative. Complexity leadership theory challenges us to reframe our human capital centric approach and embrace new practices that recognize and enable the value of social capital. As we embrace these methods, we will unleash the hidden potential that already exists. 🍌

References

- Amabile, T., Barsade, S., Mueller, S., & Staw, B., (2005), Affect and creativity at work, *Administrative Science Quarterly*, 50: 367–403.
- Cross, R., & Cummings, J. (2004), Tie and Network Correlates of Performance in Knowledge Intensive Work, *Academy of Management Journal*, 47 (6), 928–937.
- Cross, R., Cowen, A., Vertucci, L., & Thomas, R., (2009), Leading in a Connected World: How Effective Leaders Drive Results Through Networks, *Organizational Dynamics*, 38 (2), 93–105.
- Burt, R. (2004). Structural Holes and Good Ideas. *American Journal of Sociology*, 110(2), 349–99.
- Burt, R. (2005). Brokerage and Closure: An Introduction to Social Capital, *Administrative Science Quarterly*, 52(3), 482–485.
- Fleming, L., & Marx, M. (2006). Creativity in Small Worlds. *California Management Review*, 48(4), 6–27.
- Fleming, L., Mingo, S., & Chen, D. (2007). Collaborative Brokerage, Generative Creativity, and Creative Success, *Administrative Science Quarterly*, 52 (Sep.), 443–475.
- Lichtenstein, B., & Plowman, D. (2009). The leadership of emergence: A complex systems leadership theory of emergence at successive organizational levels. *The Leadership Quarterly*, 20(4), 617–630.
- Mehra, A., Kilduff, M., & Brass, D. (2001), The Social Networks of High and Low Self-Monitors: Implications for Workplace Performance, *Administrative Science Quarterly*, 46 (1), 121–146.
- Nerkar, A., & S. Paruchuri, S., (2005), Evolution of R&D capabilities: The role of knowledge networks within a firm.” *Management Science*, 51:771–786.
- Reagans, R., & McEvily, B., (2003), Network structure and knowledge transfer: The effects of closure and range. *Administrative Science Quarterly*, 48: 240–267.
- Singh, J., & Fleming, L. (2010) Lone Inventors as Sources of Breakthroughs: Myth or Reality? *Management Science*, 56(1), 41–56.
- Uhl-Bien, M., & Marion, R. (2009). Complexity leadership in bureaucratic forms of organizing: A meso model. *The Leadership Quarterly*, 20, 631–650.
- Uhl-Bien, M., & Marion, R. (2011). Complexity leadership theory. A. Bryman, D. Collinson, K. Grint, B. Jackson, & M. Uhl-Bien (Eds.) *The Sage Handbook of Leadership* (pp. 468–482). London: Sage.
- Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly*, 18(4), 29–318.

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