

Managing Change through Networks and Values

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Organizations must learn and adapt at an ever-increasing pace. Technological change, shrinking product life cycles, increasing customer expectations, and the never-ending search for efficiency all demand that executives respond not only by constantly revisiting product and service offerings, but also by re-aligning strategy, structure, and processes.¹ This is no surprise to those who have been living this experience for some time. We have all been inundated with volumes written on ways to manage change through leadership, participation, and organizational alignment.² Yet while the floodtide of advice grows, success in implementing change does not appear to be improving. One recent Gartner Group study found that although 90% of companies surveyed had undertaken significant organizational change within the previous two years, only 5% had avoided substantial disruptions and finished on time.³ Such delays can prove costly for firms engaged in major strategic initiatives. Corporate restructurings—a trend that has intensified recently—have often under-performed due to the substantial but often hidden costs of transition.⁴ Similarly, mergers and acquisitions often fail to deliver the expected financial results precisely because it is difficult to integrate different cultures in a timely manner.⁵

Managing change is so difficult because organizations resist change initiatives, frustrating managers' efforts to accommodate new environmental pressures. Unfortunately, there is a vast difference between knowing that resistance might occur and understanding where and why it will emerge. In the words of one executive, "[Change efforts] never die because of direct confrontation. Direct confrontation you can work with because it is known. Rather, they die a death of a thousand cuts. People and issues you never confront drain the life out of important [initiatives] and result in solutions that simply do not have the performance impact that they should have." Resistance is so difficult to diagnose

and confront because it usually emanates from the two sources, an organization's culture and its informal structure, which are most difficult to see. These forces influence the success of change initiatives in dramatic but invisible ways. Of course, informal structure and organizational culture are not entirely invisible. We have, in recent years, made great progress in understanding the former through organizational network analysis (ONA), which offers way to move beyond organizational charts and to understand how people actually interact in an organization.⁶ Research shows that appropriate connectivity in networks within organizations can have a substantial impact on performance, learning, and innovation,⁷ and benefits also accrue from well-connected networks between organizations.⁸ Likewise, cultural inventories administered by researchers and internal consultants provide useful indicators of how employees perceive the organization's culture. The challenge, however, is that viewing these forces in isolation may well render them (and the resistance to change they produce) almost as invisible as if we had not tried to measure them at all.

The dilemma lies in our perceptions. We perceive the world through frames, mental models that simplify the complex and draw attention to certain features. Yet, every frame excludes much more than it includes. Two of the most common ways to look at organizations are the structural and cultural frames.⁹ Taken alone, the structural frame draws attention to the roles and relationships in an organization. It simplifies these patterns and makes them seem concrete. This frame helps us to look more closely and systematically at particular forms of interaction, but in the name of simplicity, it obscures much about how people in an organization are thinking, feeling, and sharing meaning about a change initiative. The cultural frame, on the other hand, treats organizations holistically and encourages us to look at them as patterns of shared meaning. Yet, time and again, we have found that instincts about organizational culture can be highly unreliable, precisely because we think of culture in holistic terms, ignoring the inconsistencies and differences that can hinder change or enable it.¹⁰ In each case, the limits of our preferred frames may lead us to misunderstand or ignore the resistance to change, which arises from a combination of structural and cultural forces. Our question, then, is simple: What insights might we gain by considering structural and cultural frames simultaneously? Then in practical terms, how can managers implement better change initiatives by combining an awareness of where people or groups sit in a network with a deeper appreciation of their cultural values and practice?

Preliminary Insights: A Consumer Electronic Company

Our search for answers to these questions started with our work with a global consumer electronics company. In the face of dwindling market share, the company's computer division needed to improve the speed and quality of its product development efforts. To innovate rapidly, engineers with disparate expertise needed to collaborate across functional and divisional lines. Mechanical and electrical engineers needed to come together to design lightweight, thin,

and power-efficient notebook computers for a fast-growing segment of the market. Software developers needed to work closely with electrical engineers to develop multimedia components of the hardware. However, at every turn, decision-making delays hindered innovation and slowed the division's progress.

We conducted an assessment of this division's top 105 engineers and managers with a survey. The survey focused on both informal structure as revealed in an ONA and cultural values as measured by common cultural inventories. Each measure produced its own unique insights. The ONA gave a clear picture of the connections among people in the division. Lines in Figure 1 illustrate the division's information network, a map of who turned to whom for information to get their work done. (The shape of each node in the network indicates the person's hierarchical level.) Overall, however, the pattern of interactions was somewhat unsurprising. As one might expect, general managers sat at the center of the web of information-sharing ties, while engineers and lower-level employees were somewhat more isolated on the periphery of the network. Other analyses showed that information silos existed across departments and projects as well as between headquarters and a secondary site where much of the manufacturing occurred. On the whole, the network assessment confirmed that information flows varied in different ways, but it was not easy to see how they might be hindering collaboration or undercutting the division's ability to innovate. Interviews indicated that the formal structure was not, itself, to blame—decision authority, reporting relationships, and departmentalization all followed naturally from the organization's purpose and size. Nonetheless, something was leading project managers and engineers to spend a great deal of time reaching upward for information. Neither the organization chart nor a simple network map offered a diagram of these interactions detailed enough to explain why.

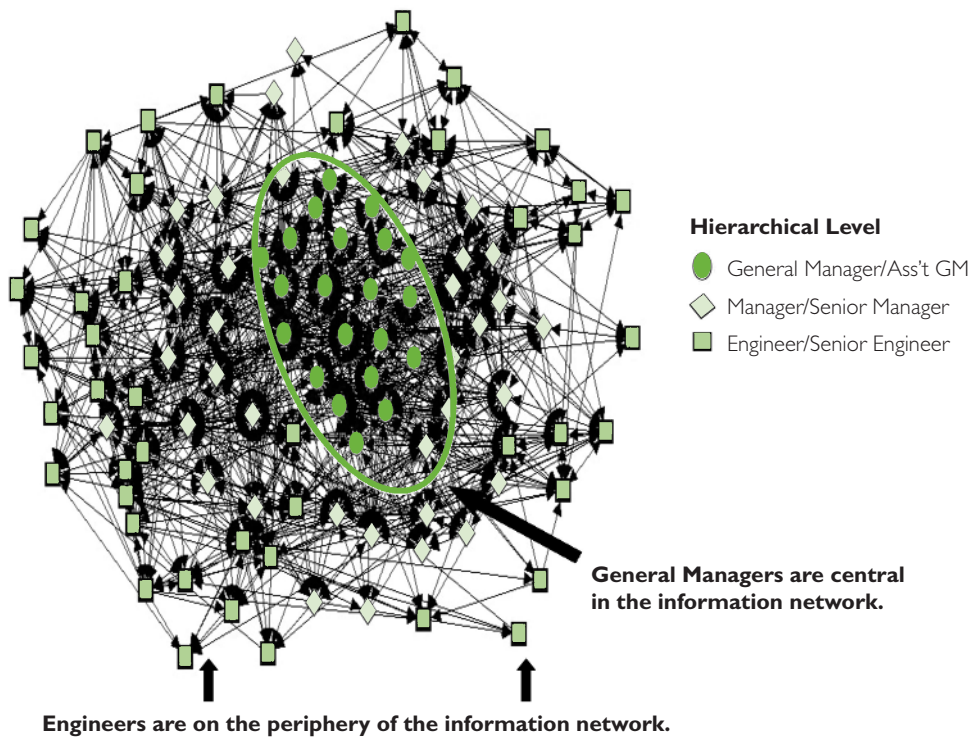
The cultural inventory gave a different picture of the organization, based on how people in the division perceived its culture. For example, there was a striking contrast between engineers, who perceived the culture as rigid, and upper management, who perceived the culture as highly flexible.¹¹ This was eye-opening to members of management, who felt they had created an adaptive organization. Somehow, management and many senior engineers had come to operate on very different norms and values. Senior managers were crafting market and product strategies that anticipated creativity and lateral collaboration while the engineers' actions reflected a belief that initiative and creativity were not valued in the organization. The perception of those in upper management was influenced by their experience rising through the ranks at a time when the company was growing rapidly and competition in the marketplace was not so fierce. Their experiences

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FIGURE 1. Hierarchical Levels of Employees in a Consumer Products Electronics Firm



contrasted starkly with those of current engineers, working in a more competitive environment. These engineers found their efforts driven by tight deadlines and hindered by constant sign-offs on critical decisions. Getting their work done left these engineers with little time for collaboration or exploration of ideas outside of immediate project goals. According to one senior manager, “Our culture *was* free and vigorous, but today, we might have lost that culture. Our young engineers feel isolated. We want the early days back.”

At this point, our analysis offered little hope for an effective change initiative. On the one hand, our structural measures suggested some fragmentation but made it difficult to see how problematic it might be. On the other hand, our cultural analysis suggested that, on the whole, the rift between managers and engineers was deep and potentially irreconcilable. At this point, however, we turned to consider these two pictures together, literally by mapping cultural characteristics onto the network pictures of the division. We soon began to uncover interesting disconnects. The fragmentation across departments corresponded not only with formal structure (e.g., reporting structure, physical location, and incentives), but also with very different occupational values. Certain engineers focused heavily on usability in product features; others worried most

about style and portability—values that often were not made explicit in team meetings but caused project delays as divergent decisions consumed time.

Cultural perceptions also differed depending on staffing. Employees who worked on multiple projects (e.g., both notebook and desktop computers) had a more holistic view of the organization's culture as participative, empowering, and flexible. They also had access to a broader network to tap into for information and resources. In contrast, project managers were central but found the culture centralized, closed, and rigid. These managers felt overburdened and pushed into a bottleneck position. This was, to some degree, a trap of their own making, as they continually reached upward in the hierarchy for solutions to technical questions. This pattern that both project managers and executives had fallen into consumed a great deal of everyone's time as people waited for answers. In essence, by combining cultural and structural insights, we came to see that the interaction patterns were, in many cases, problematic, while the cultural differences, in no small part, emerged from concrete structural features that could be remedied. These findings offered a way forward for the company's change efforts. Those in management knew there were problems with information flow, problem solving, and decision making that hindered innovation. However, they had difficulty determining exactly what was wrong and how to fix it. Their first step toward more effective change lay with a better understanding of how culture and informal structure were influencing and inhibiting change.

These preliminary insights also sparked our interest in how to integrate structural and cultural frames. We saw that each of the analyses was, in itself, insufficient to understand the sources of resistance to change and found ourselves asking how a combination of structural and cultural insights might help in other change initiatives we encountered. We also began to refine our methodology for understanding this interaction (see the Appendix for more specific insight on how we obtained and interpreted the combination of network and cultural assessments). Over time, based on experiences at several companies, we found several ways in which these structural and cultural forces interacted to inhibit or produce change. In doing so, we also saw new opportunities for executives to manage change, namely:

- Identify structurally important people who can help to enact cultural change.
- Highlight structural fragmentation points that are driven by clashes of cultural values or perspectives and that can undermine a change effort.
- Understand how certain cultural beliefs or values are dominant in the way an organization evolves due to their prominent position in the network.
- Design interventions targeting the right balance of structural and cultural dimensions.

Driving Change through People and Values in Certain Network Positions

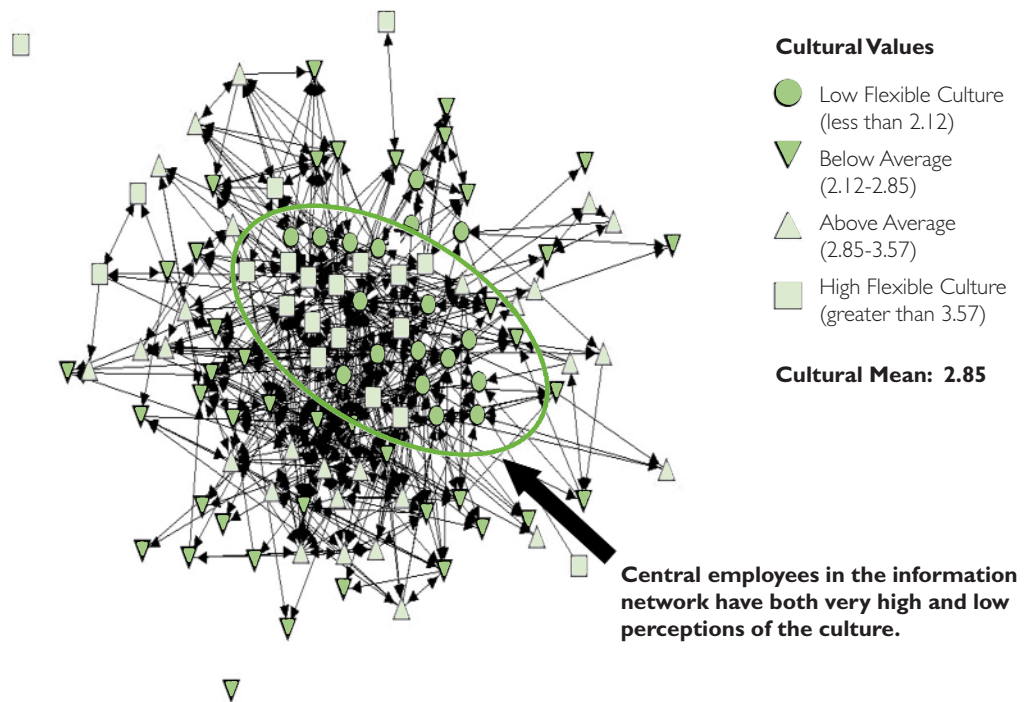
ONA is a set of analytical tools used to assess interaction patterns,¹² and network research has shown how these patterns can affect change via power,¹³ diffusion of ideas,¹⁴ and formation and maintenance of belief systems.¹⁵ Yet, to date, these approaches have been largely structural, with little emphasis placed on the characteristics, such as beliefs and values, of people in a network. Assessing culture as distributed throughout a network identifies people who are influential (by virtue of their network position) *and* either embrace or shun certain beliefs or ways of working. While standard culture assessments can be disaggregated to show subcultures by various contours of an organization (e.g., function, hierarchy, or site), formal organizational charts can be a poor indicator of how work is getting done,¹⁶ and managers often have inaccurate perceptions of who is collaborating with whom in their organization.¹⁷ With a combined assessment, the cultural component can help reveal who holds (and how strongly) certain beliefs, whereas the network component can help inform the relative influence of these people within the network.

Working through Key Culture Carriers

Influential people in an organization are often structurally central, a position reflected in any network analysis.¹⁸ Consider a well-known government agency where we assessed a network of 108 people distributed across the organization. This group was formed to model cross-organization collaboration for the agency. Traditional approaches to collecting and interpreting tactical information, developed during the Cold War era, had become obsolete. Sophisticated threats (e.g., biological, chemical, and nuclear weapons) coming from very different national contexts (e.g., North Korea, the Middle East) demanded new ways of acquiring intelligence and making key decisions. Problems with information flow across departmental lines—lines drawn during the Cold War—hampered the organization's ability to synthesize information regarding the technical, political, and cultural dimensions of threats. These problems were made worse by enduring features of the organization's culture. More established Cold War veterans clung to a way of looking at the world that was not consistent with newer and younger employees' views.

Here, our assessment combined the Competing Values Instrument¹⁹ with a network survey. We asked a series of twelve questions commonly used to measure people's perceptions of the organization's cultural disposition toward learning and openness. This provided a rich view of both what people saw as the current cultural values and what they thought those values should be. Figure 2 shows each network member's ratings on this measure along with his or her position in the information network.²⁰ We calculated the mean and standard deviation cultural score for the entire organization's network and then determined each member's rating based on four levels of cultural values (above and below one standard deviation from the organization mean). (See Appendix for more detail regarding this approach.)

FIGURE 2. Identifying Key Culture Carriers in a Government Agency



Items used to measure "flexible" culture:

- 1) Participation, open discussion
- 2) Empowerment of employees to act
- 3) Assessing employee concerns and ideas
- 4) Human relations, teamwork, cohesion
- 5) Flexibility, decentralization
- 6) Expansion, growth, and development
- 7) Innovation and change
- 8) Creative problem-solving processes
- 9) Task focus, accomplishment, goal achievement
- 10) Direction, objective setting, goal clarity
- 11) Efficiency, productivity, profitability
- 12) Outcome excellence, quality

Please assess the extent to which each characteristic is valued in your organization currently.

Response Scale: [1 to 5] from "little extent" to "great extent"

Several interesting themes emerged. It turned out that both high and low culture carriers were central to the network. That is, people who believed the organization *was* flexible and learning-oriented and those who believed it *was not* flexible and learning-oriented were highly connected. People holding extreme views (shown as white squares and black circles) mostly clustered in the center, while those holding more moderate views (shown as white and black triangles) remained on the periphery of the network. Why might this be? To

answer this question, we needed to look very carefully at how the patterns of information flowed and the psychological perspectives interacted, as neither alone gave us any real explanation for this odd scenario. Those that felt negatively about the culture tended to be central because other people came to them for information yet they did not reach out to others. These people were central because they held information or had expertise that others needed, not because they were inherently collaborative in their work. In contrast, those who felt positively about the culture tended to be central because they heavily sought out information (in addition to being sought after). In other words, the positive culture carriers were central because they were much more collaborative in their interactions.²¹ In short, what might have, on average, looked like a fairly consistent culture (with average ratings in the core group differing little from ratings at the periphery) was anything but homogeneous.

Insights such as this afford opportunities to drive cultural change in a very targeted way. Negative culture carriers who are highly central are prime candidates for coaching or other developmental experiences. Alternatively, behaviors of positive culture carriers can be reinforced through stories and formal mechanisms such as performance assessments. The sponsor in this case organized an offsite meeting to assess the network results and brainstorm opportunities to promote more effective inter-agency collaboration. The first portion of the meeting covered the network analysis results; the second focused on teaching narrative techniques²² as a way to effect cultural change through the network. In the workshop, success and vision narratives were crafted to be communicated to the broader network as a first step toward shifting cultural values and old work practices. With the results of the network/culture assessment, the sponsor was better able to ensure that those people most influential in the network were on board and communicating the change to others in an effective and engaging manner.

A second route to cultural change lay with each network member's personal connectivity. When we conduct these assessments, people spend about 15 minutes completing an on-line survey that yields the information necessary for network analytics. Once each survey is completed, a personal web site is generated that allows employees to assess their own network connectivity on dimensions that systematically influence learning and performance. Here it seemed that those who viewed culture negatively had fallen into a self-fulfilling trap. Not seeking opinions and advice, they reinforced their own perceptions that the culture was threatening and non-learning, and they never reached out or put themselves at risk to test these assumptions. Targeting such people specifically with developmental plans can help them begin to reach out or use other activities to shift their perspective of the culture. More broadly, change programs can leverage members' individual profiles to encourage desired shifts by building relationships and engaging in more collaborative behaviors.

Uncovering Cultural Brokers and Marginalized Perspectives

Sometimes, important attitudes and values reside not with those who are playing a central role but with people who work on the periphery of subgroups or the entire network. In some cases, views that are peripheral today may prove central to the organization that the change agents are trying to build. In other cases, brokers—those who sit between subgroups or functions in a network—prove critical to coordinating and getting buy-in to change efforts. Because they are often not immersed in the day-to-day interactions of any one group, brokers appreciate the expertise and values of one or more other subgroups and so have a unique ability to coordinate and execute change initiatives.²³

Consider Tom, a manager in the R&D function of a large consumer-products company. Though the formal structure of Tom's unit included several research branches, an ONA revealed two distinct collaborative subgroups: new product development and support. Product development received a disproportionate share of the resources and had higher status within the organization, whereas support found it difficult to influence decisions and resource allocations. The two groups also had very different cultures. Product development was influenced by the marketing function and so tended to take more risks, work on shorter time frames, and focus on market demands. The support groups put greater emphasis on scientific validity of claims, were more risk-averse in substantiating claims, and were much more comfortable with longer time frames.

Tom was responsible for substantiating the scientific validity of advertising claims. His role in a relatively small support group placed him well outside of the mainstream R&D unit. Yet, he was in constant contact with toxicologists and other scientists doing research on new product claims (a support function), product developers who were attempting to generate marketable innovations (new product development function), and marketers who were advancing the claims about certain products. In the course of his daily interactions, he had become fluent in the values and language of the two subcultures of R&D as well as the marketing department. At times, he found himself working on short time frames and suggesting possible reformulations of advertising claims that were more legally tenable. At other times, he appealed to the need to avoid litigation and emphasized the need for long-term research on a project. In short, Tom's skills and cultural awareness (i.e., deep connections to those with different values) allowed him to reduce friction between subcultures with competing interests and produce viable solutions on a day-to-day basis.

How does one go about finding people like Tom? In network diagrams, alone, brokers are common enough. Influential brokers exist in all companies, though even they often go unrecognized because they are not highly visible in any given subgroup and frequently are not in a position of formal authority. Culturally aware brokers such as Tom, however, can only be identified by looking at both their structural and cultural position. They have ties across subgroups tightly clustered around a given set of cultural practices or values, and despite their lack of immediate visibility, these brokers are effective at coordinating across subcultures. If you are initiating a change process, people such as Tom

are whom you want on the design and then implementation team. If you are communicating a change imperative, the Toms of the world can help you diffuse messages throughout the network in a much more effective way than proclamations at an all-hands meeting. Their structural position in the overall network and their connections across subcultures make them effective in translating and brokering commitment to a course of action.

Diagnosing How Culture Fragments Networks

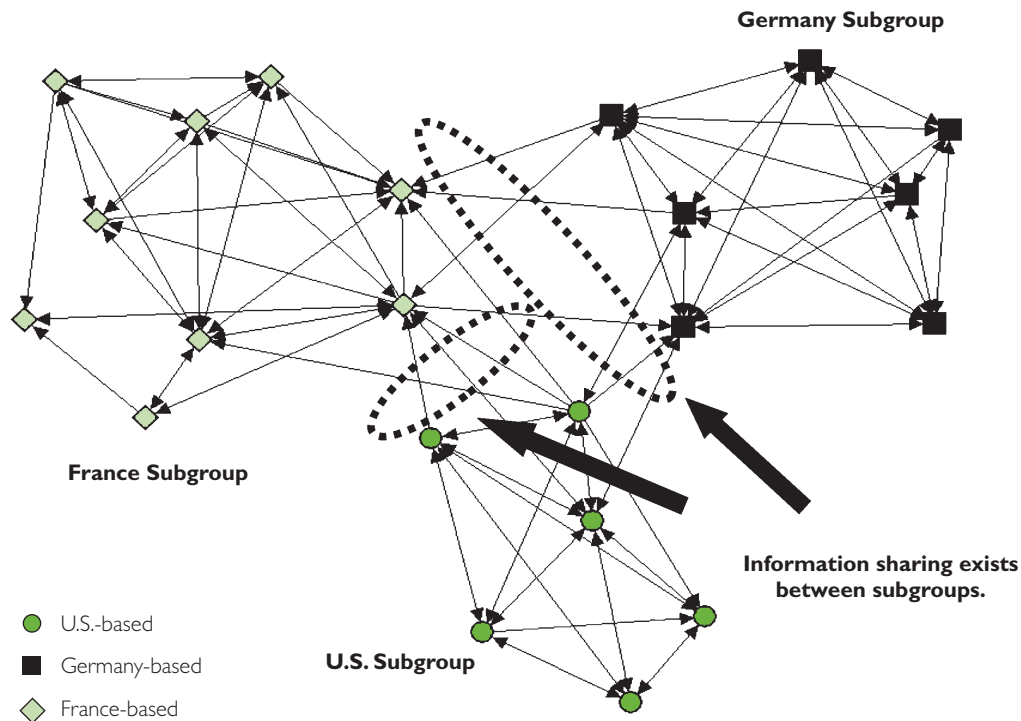
Managers need to strike a careful balance between encouraging conformity to corporate values and allowing creative friction among those holding different perspectives. The most successful corporate cultures are not uniform, coherent, or “strong.”²⁴ Rather, some degree of inconsistency and disagreement is important to innovation and survival over time.²⁵ Without a clear picture of culture, however, it is impossible for managers to tell whether the differences in their organization are constructive or destructive. Unfortunately, cultural assessment alone only gets us so far. Most cultural inventories characterize norms, values, and assumptions with averages of survey items.²⁶ Network analysis allows us to visualize culture as distributed throughout networks—a relational view that helps identify fragmentation points that can undermine a change effort but be invisible with standard culture assessments. Two subgroups—one that strongly advocates a value and another that equally opposes it—would cancel each other out in an average calculation and thus hide very substantial impediments to change if assessed with traditional survey measures. Rather than claim, based on average responses to a survey, that an organization or unit has a given culture, a network perspective lets us see the distribution of culture and where differences might be undermining performance.

Assessing Diffusion of Prescribed Values, Norms, or Practices

Consider the R&D function of a global pharmaceutical firm. The product of a merger between U.S. and European parent companies, the firm’s managers were keenly aware of potential cross-cultural problems. Decisions had been made to standardize many laboratory procedures to leverage complementary expertise of legacy R&D units. After the change process, management conducted an ONA to measure progress in integrating the R&D unit. Figure 3a depicts the information network across the R&D unit. Initial results were promising. Although there were three discernible national subgroups in the network, there appeared to be strong communication ties between the subgroups.

However, the picture became more nuanced when managers also focused on certain cultural practices. We conducted a series of interviews to identify norms and practices and then turned specific observations into questions in the network analysis. A typical question was “(True or False) Clinicians become involved in project teams early in the development process.” Our assessment revealed that although there was consensus on some matters there were many points where important practices had not diffused well in the network. For example, one value that immediately stood out involved management’s

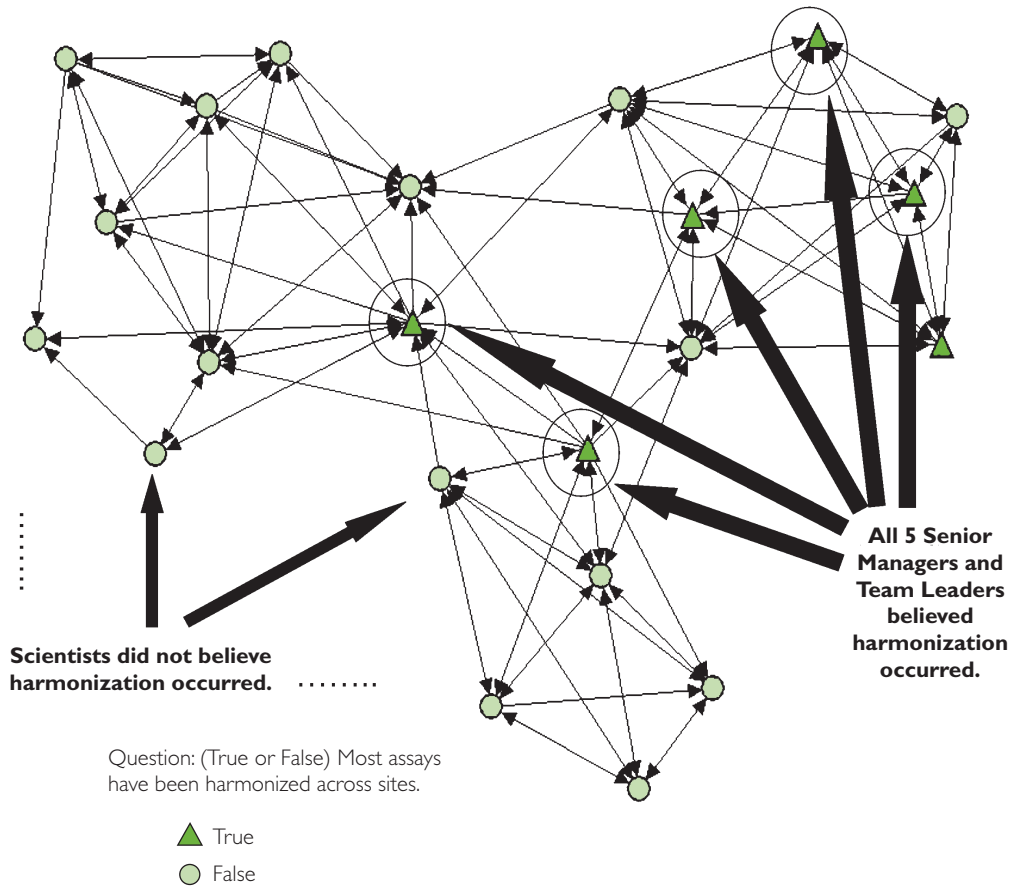
FIGURE 3A. Post-Merger Communication in a Pharmaceutical R&D Unit



widespread efforts to “harmonize,” or standardize, the assays that scientists used to determine a compound’s properties. Again, using the R&D unit’s information network, we depict (in Figure 3b) the responses to the harmonization assessment. Figure 3b shows that, although scientists in each of the units agreed that harmonization *had not* worked, the five senior managers and team leaders across all locations perceived that harmonization *had* occurred.

We derive two more general insights from this example. First, it is no more than stating the obvious to tell a manager, with a network analysis or cultural assessment alone, that two groups that need to work together are doing just fine. On average, there may be communication and cultural consensus. Yet, specific barriers to successful collaboration, such as the unstandardized testing procedures at this company, may persist only to surface at an inopportune moment. Second, the structural position of the managers in this network insulated them and allowed them to live in a world where their beliefs did not reflect reality on the issue of harmonization. Each senior manager was either highly networked with other senior managers (thus creating insularity in what they wanted to believe) or heavily tied to their own unit (leading them to see only those procedures in effect that were already standard in their geographical location).

FIGURE 3B. How Widespread Are Cultural Practices?



Visualizing Fragmentation Driven by Cultural Rifts

From a top-down perspective, viewing cultural features in their structural context can identify where fragmentation of prescribed practices or values is undermining performance. In addition, from a bottom-up perspective, doing so can also help isolate fragmentation caused by differing values and assumptions. Otherwise, invisible differences in belief systems can increase the costs of change yet go unrecognized or be inaccurately diagnosed. In one merged company, we found a lack of integration at key points driven by differing values: one group focused on product features and style; the other had a long lineage of concern for product safety. The resulting network had very few ties connecting the two legacy organizations. Similarly, we encountered structural disconnects in a major alliance between a well-known pharmaceutical company (that was progressive in thought and practice) and an established consumer products organization (which was highly controlling and conservative in thought and practice). In a

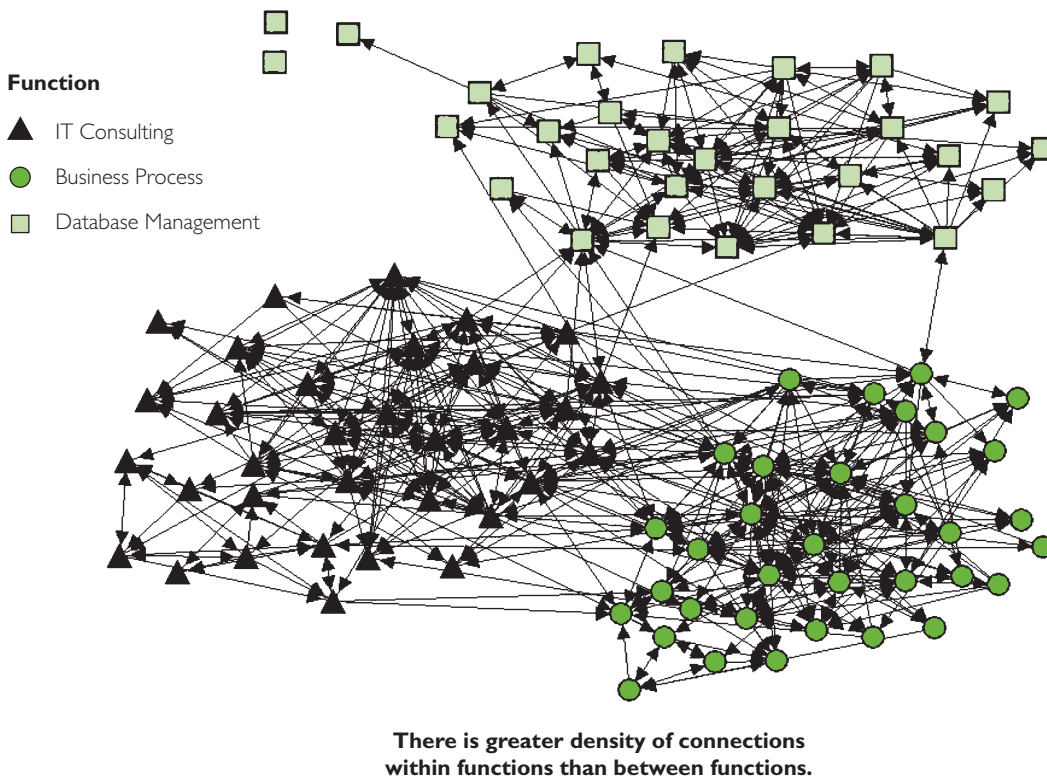
third organization, a merger of two consulting firms, hidden and often un-discussable conflicts emerged over legacy values: one focused on maintaining long-standing client relationships and the other on more immediate sales and profitability. Each of these cases demonstrates how good formal structures alone are often not enough. The organization design and leadership decisions should have resulted in a smooth transition. It was only after looking at informal structural features together with cultural dynamics that change agents were able to locate points of cultural resistance and diagnose change problems more accurately.

For example, we assessed an internal consulting practice of a large Canadian bank. The group was the product of a restructuring that integrated three practices: a business process reengineering group, an information technology consulting group, and a database management group. Overall, the company envisioned that capabilities in these three practices could complement each other and provide turnkey solutions to solve the bank's internal and external needs. However, months after the restructuring there was little evidence of effective collaboration.

As Figure 4 demonstrates, while there was a great deal of communication going on between the functions, there were few structural ties between them. Consultants in the various practices were not collaborating because they did not know how to integrate specialized expertise on projects. This problem stemmed from deeper differences concerning how each subgroup thought about and organized their work. As one example, members of the business process group had devised a highly defined six-step engagement methodology for diagnosing and solving client process problems. By contrast, the information technology group had long worked on problems in an informal way. The group tended to work on one-off projects such as devising information architectures and pricing structures. The nature of their projects demanded more flexible and customized approaches. By saying that they perceived the organization as inflexible and centralized, members of the information technology practice were saying that the department was becoming one in which it was difficult to work in their preferred ways. By contrast, consultants in the more production-oriented business process group hesitated to get involved with the information technology group for fear that projects would become "derailed" by IT consultants who were more focused on producing technically elegant solutions than on meeting client deadlines.

This is just one of many rifts uncovered by visualizing structural points where cultural differences (in what people cared about in their work) had resulted in subcultures and work practices that created silos in the network. These differences are common in most any restructuring or merger and can be output-oriented (e.g., a focus on product style versus safety) or process-oriented (e.g., flexible versus structured approaches to work). Regardless, value differences are often invisible and can quickly become labels applied to the "other" group (i.e., they are too rigid or they are too unreliable) rather than seen as different perspectives to be explored and bridged. Combining cultural values

FIGURE 4. Fragmentation in an Information Network at a Commercial Bank



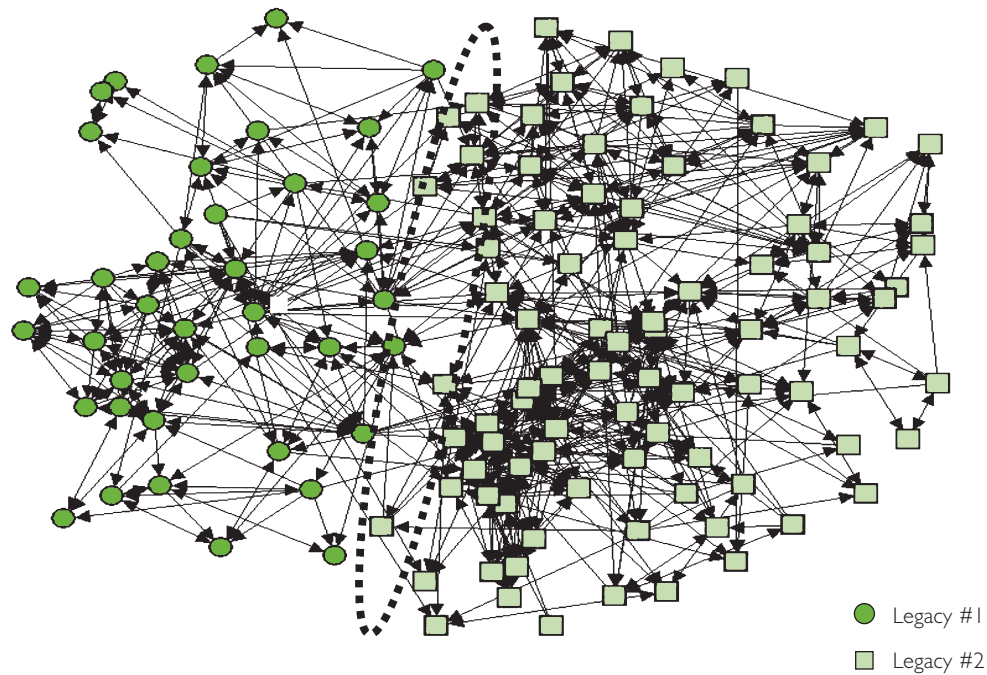
with network features enables an executive to move from intuitively knowing that two divisions do not talk to a more complete view of how different values and practices are causing fragmentation.

Identifying Dominant Beliefs and Values

In some cases, it is not merely the fact that views differ but that beliefs or assumptions become so pervasively held that they reinforce negative patterns of interaction and restrict new ways of working.²⁷ Sometimes these assumptions are obvious, can be articulated, and fall into classic cultural definitions such as flexible versus inflexible. Other times, they are more subtle and require change agents to be able to uncover values and norms particular to the local context. These can tacitly dictate how people spend their time or what they care about in their work.

Managers at another large pharmaceutical company learned this lesson the hard way. This organization was in the midst of restructuring the R&D function, a process complicated by familiar concerns. Business units were spread out over three continents, there were separate functional units involved, and there

FIGURE 5A. Legacy Subgroups in a Global Pharmaceutical R&D Unit

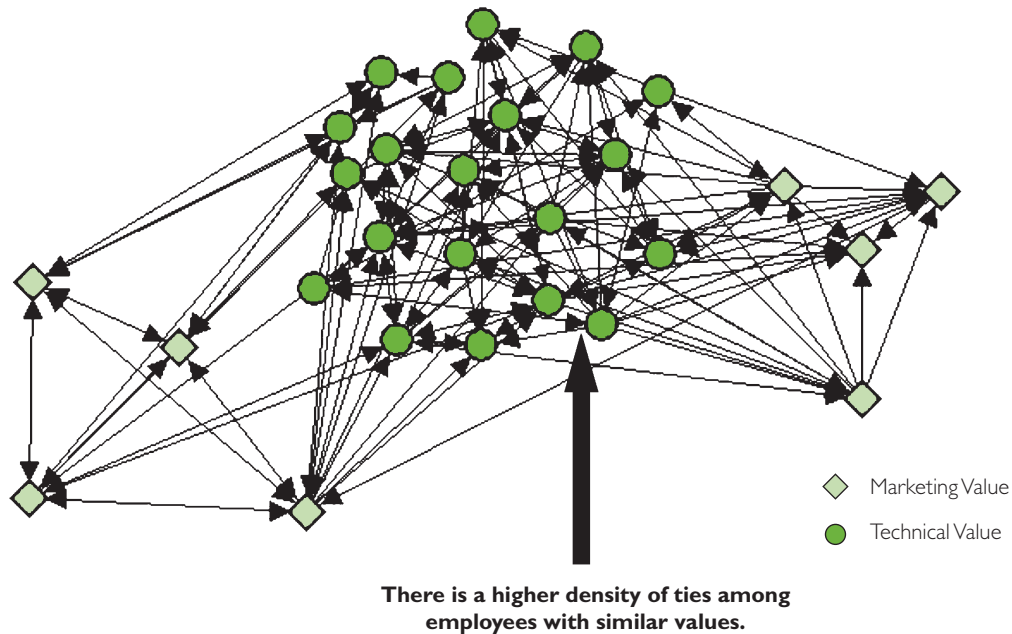


Information ties exist between legacy subgroups.

was still residual fragmentation due to a prior merger. Midway through integration, management paused to analyze the networks developing in various units. Figure 5a shows the information ties that had formed within and between the two major subunits. There were certainly signs of the legacy subunits, but there were also fairly robust cross-unit ties forming. Moreover, the cultural assessment suggested that people in both former subunits saw the organization as task-focused and structured and had clear direction, goals, and objectives. The picture seemed positive. In practice, though, the subunits were not able to devise projects that bridged the gaps between the old functional areas, and, as a result, there were frequent political struggles over resources.

At this point, we began a series of interviews with members of both legacy subunits. They acknowledged the challenges of restructuring but most expressed a genuine interest in finding projects on which the newly integrated unit could collaborate. We then asked them, “What is the key strategic priority for this new unit right now?” One after another, interviewees began to give different answers: “building our own skill set and knowledge base”; “speeding up R&D’s overall development cycle”; “adopting uniform technical standards.” In the end, we had a list of 18 *different* “top” priorities. As a follow-up in the network assessment, we asked everyone in the unit to identify, from the list of

FIGURE 5B. Dominant Value or Paradigms in an Information Network at a Pharmaceutical Company (major site)



18 possibilities, the top five priorities in rank order. In this case, 12 out of the 18 options received at least one first-place vote. Clearly although this group had consistent cultural perceptions at one level, they were tearing themselves apart at a deeper level in the pursuit of conflicting objectives.

Two overarching sets of priorities emerged. On the one hand, there were the “marketing” priorities: enhancing the unit’s product range and understanding internal client needs. On the other hand, there were “technical” priorities: specific applications to improve and technical standards to unify. People who rated the marketing priorities highly tended to come from one legacy company and also tended to rate the technical priorities low. The reverse also held. Employees who rated the technical priorities high tended to come from one legacy company and also rated the marketing priorities low. Further, as depicted in Figure 5b, employees had a higher concentration of ties with other employees with similar priorities versus other employees with different priorities. For example, employees with a marketing priority had more communication with other employees with a marketing priority than they did with employees with a technical priority.

Having such large numbers of employees subscribe to sharply different priorities was clearly a concern. Further, it appeared to be a self-reinforcing loop. The overarching cultural values in the organization—that were shaped by a

Germanic national cultural background and historic organizational norms—contributed to a sense that people should respect bureaucratic boundaries. This meant that the widely shared agreement that the unit’s culture was task-focused and structured, which managers had originally lauded as a sign of growing consensus, actually reinforced the idea that those pursuing one set of priorities had no need to consult with those pursuing the other. In short, the fact that employees agreed so much about the importance of divisional boundaries meant that they had no basis for agreeing on priorities.

Here, network analysis provided a rich yet simple intervention. What management had not done effectively was to articulate the objectives of the newly restructured unit or leverage the influential players in each unit to craft both a strategic and operational way of working together. Taking the time to identify the specific cultural elements impeding the change effort kept managers from undertaking an overly ambitious program of change. Staffing or other more temporary mechanisms can select highly influential people in each subgroup and bring them together in ways that help a transition to ensue. The more fine-grained a manager’s assessment of the dominant cultural paradigm in an organization, the more precisely they can work to change relevant norms and values.

Design Interventions Targeting the Right Relational Dimensions

To date, social network theorists have focused heavily on structural properties of networks and have paid comparatively less attention to the kinds of relationships that bind a network together.²⁸ Research linking network characteristics with important organizational outcomes has largely focused on instrumental ties, such as task-related communication, information flow, workflow, or material or monetary resources.²⁹ While some network research has explored expressive or emotional aspects of relationships—such as friendship, personal or career support, and trust³⁰—few have considered how these deeper relational dimensions affect important organizational outcomes such as change and innovation.

One starting point for assessing this impact is the notion of an “energizing” relationship. An energizing relationship is one in which contact with another person adds to one’s own enthusiasm and energy level. Low energy ties can leave a person feeling drained, while high-energy ties can leave a person feeling enthusiastic about possibilities. Early research on energy networks show links between a person’s centrality in a network of energizing interactions and their performance (i.e., colleagues perceived as energizing were consistently ranked as higher performers in annual HR evaluations).³¹ Additional evidence has emerged showing that energy and information seeking were also closely intertwined.³² In the pursuit of better change management, these relationships matter because of the complex interaction between emotions and cultural values. We tend to share opinions and views of those we enjoy being around, trust, or consider friends.³³ In turn, cultures create shared meaning not only because

they cause people to think about the same things, but also because they evoke similar emotional and aesthetic responses.³⁴

Looking at the network structure can help to assess the presence of these interactions, which executives intuitively know matter but have had little ability to visualize and influence. Culture is subjectively negotiated and validated in interactions with others—and quite often those we like being around tend to be more important in defining cultural perceptions than those whom we turn to for work-related information.³⁵ Understanding the structure of emotion-based, or affective, relationships provides another means of understanding where and how to intervene in cultural change efforts. For example, we assessed the HR division of a large northern European telecommunications company. In addition to information flow, we assessed whether members of the department energized each other in day-to-day interactions given recent findings relating energy to performance and innovation.³⁶ In particular, we asked, “How do interactions with the people below typically affect your energy level?” (response of positively, neutral, or negatively). We learned that people were energized by those with similar perceptions of cultural dimensions such as formality and centralization: Those sharing similar perceptions clustered much more strongly in the energy network than in the information network.

Similarly, in a financial services organization, those who felt the organization *did* value teamwork were much more likely to be connected in the energy network than were those who felt the organization *did not* value teamwork. In other words, people were energized in interactions that confirmed their views and were more likely to seek out those with similar views over time. At a high level, this suggests that efficient routes to cultural change must also consider affective networks in organizations such as trust, friendship, or energy. For example, interventions can focus on creating energizing bridges across subgroups when greater uniformity of values is desirable. Fairly consistent behaviors have been associated with energizing relationships that can be encouraged through training, development, or human resource processes (e.g., hiring, onboarding, and performance evaluation).³⁷ Creating targeted sets of ties through staffing, co-location, or just periodic meetings or task forces (combined with a focus on behavioral aspects of energy) helps to bridge these divides.

This perspective can also transform large-scale facilitated workshops designed to communicate the necessity for cultural change. Such workshops will succeed or fail based on their ability to motivate a case for cultural change by appealing to energy and emotion in addition to focusing on hard facts and figures. Too often visioning statements and the processes that produce them are intellectual exercises. However, some of the most successful vision statements and visioning processes leverage positive emotions such as fun, courage, and intensity. At Merix Corp, a leading manufacturer of advanced circuit boards, an early visioning process focused on space exploration as a metaphor for the product development process. Continuing its commitment to emotionally charged organizational change and growth, the company recently built its annual sales meeting around a team-building exercise. In each case, employees who had

connected with each other only via e-mails and phone calls came together in high-energy environments and left with a renewed commitment to the company's mission.³⁸

Finally, it is possible to reconsider work itself as a way to both bridge networks and generate energy and enthusiasm in a targeted way. At Research in Motion (RIM), the communication device company that created the Blackberry, the main cultural values—seriousness, technical competence, and intensity—are no less emotionally laden. The values support the kind of commitment and technical innovation that have allowed them to revolutionize e-mail communications. To support this kind of culture, the company is situated just across a parking lot from the Davis Computer Research Centre at the University of Waterloo. With a continual flow of interns and new employees from the university, the company constantly refreshes its social network with knowledgeable, committed, and energetic people.³⁹

At its logical extreme, building high-energy networks through shared values can also break down and transcend traditional functional and project-centered boundaries. Consider the case of IDEO, a leading product development firm based in Palo Alto, California. IDEO's managers pay a great deal of attention to the interaction patterns that allow effective collaboration, going as far as to use video cameras to study how designers and engineers interact.⁴⁰ In turn, these patterns find their roots in a strongly held commitment to brainstorming and information sharing. IDEO employees consider it a measure of status to be included in brainstorming and prototyping meetings in other departments.⁴¹ Employees seem energized by the company's commitment to breaking down boundaries and seeking out fresh, unstereotyped ideas. The result? IDEO's headquarters has been described, in various places, as a "zoo," a "playground," and a "kindergarten classroom."⁴² Yet, there can be no argument with the string of creative designs IDEO has produced, from the Palm Pilot to the Leap office chair line. The lesson, here, is that engaging the heart at work and encouraging values and practices that energize as well as connect organization members can be enormously fruitful. At the heart of the collaborative and creative culture, which so many firms aspire to, is a carefully managed overlap between values, emotions, and interactions.

Conclusion

Effective organizational change requires managers to go beyond formal organization charts and values statements. To understand the dynamics that promote greater integration and collaboration, managers need a clear view of how cultural forces may shape and, in turn, be shaped by the networks of interactions that constitute an organization's informal structure. Our research has demonstrated several ways in which networks and culture work together either to sustain effective organizational change or to undermine change interventions. Whether the context is a restructuring, a merger, or merely the ongoing

improvement of a business unit, successful interventions rest on an awareness of cultural values and assumptions as they are distributed across networks.

Of course, this awareness rarely derives from intuition or from a general feel for the organization. It is, after all, too easy to convince ourselves that the culture that we experience as individuals, through our immediate network interactions, must be the culture of the organization as a whole. It is also easy to imagine formal organizational structures and values statements to be much stronger than they actually are. It is too easy to underutilize central players who embody the desired cultural values and can play a key role in teaching others to collaborate; and it is all too easy to ignore marginal players who have developed broad-based outlooks that can help to reconcile different subcultures. In the end, the techniques described and illustrated in this article can help managers to go beyond their intuitions and to test their general assumptions about organizational realities. Social network analysis, combined with measures of organizational culture, offers a unique tool for managers seeking to create collaborative and adaptable organizations.

APPENDIX

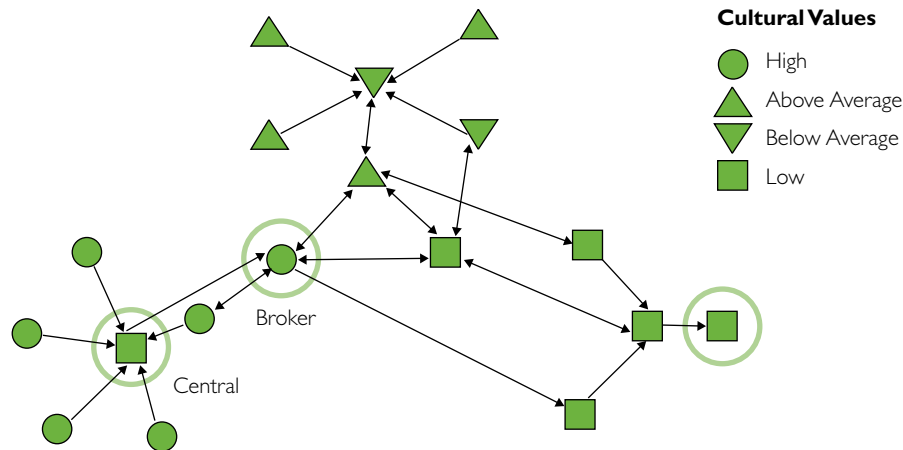
About The Research

This work has emerged from a broader program of research, conducted over the past eight years, focused on understanding various ways to promote organizational effectiveness through a network perspective. In this work, we have applied network analytic techniques in over 80 organizations, with a subset of these also focused on understanding how culture can be assessed as distributed in a network in an organization. There are two ways to go about this kind of work (this article is based on the first approach, but for interested readers we also outline a second that is provocative as well).

Measuring Cultural Values as Distributed in a Network

One way of assessing values as distributed in a group is to combine a culture and network assessment in a single survey. Although the relational data can be obtained in a variety of ways, from tracking e-mails to observing people over time, the most efficient means is often to administer a 10- to 20-minute survey. These surveys are delivered via an on-line instrument and capture both relational characteristics of a network and cultural beliefs and values. Cultural items included in this kind of an assessment can either be established and validated scales relevant for the context at hand or ethnographically generated via open-ended interviews that inform question items. Regardless of approach, the key output is being able to generate network diagrams that show how culture (and its various dimensions) is distributed in a network.

The results of the social network analysis survey are then used to create a network diagram, as shown below. Connections (depicted as arrows) among people (depicted as nodes) are drawn to show the level of connectedness, fragmentation points, and positions people have in the network (e.g., central,



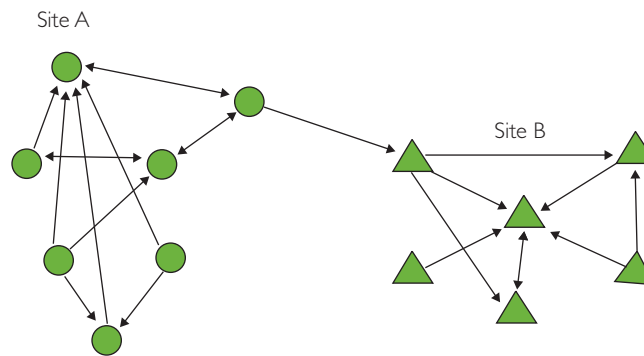
broker, and peripheral). We can then highlight nodes in the network by a person’s demographic attribute, such as tenure, department affiliation, or work location. In this study, we depicted nodes by their perception of the organization’s culture. In many cases, we used the Competing Values Instrument (as shown in Figure 2) to develop our culture value metric. We conducted both a factor analysis and reliability analysis to validate the scale. Either two levels of cultural values (above and below the organization mean) or four levels of cultural values (above and below one standard deviation from the organization mean) were used in our figures.

In the diagram, four levels of culture values are shown. Employees who have a culture score that is one standard deviation above the organization’s mean has a high perception of cultural values (depicted as a circle). Employees who have a culture score that is between the organization’s mean and one standard deviation above the organization’s mean has an above average perception of cultural values (depicted as an upward triangle).

A critical consideration in a network survey is what dimensions of the relationships one is interested in assessing. In most companies, managers are very interested in assessing information flow in networks (e.g., “Who do you turn to for information to help you with your work?”). In addition, they are also frequently interested in relationships that help to assess aspects of social capital within a given group. For example, we will often map networks of trust (e.g., “I trust each person in this group to keep in mind my best interests”) or energy (e.g., “When you interact with this person how does it impact your energy?”). A key point here is that we often find people with similar values clustering more in networks of these expressive dimensions than in instrumental dimensions (and so this is a powerful lever of change).

Identifying Key Culture Carriers in an Organization

An alternative way to assess culture is to use network analytics techniques to identify the people who all others in an organization feel most reflect or embody the values of that organization. For example, we will often map a relationship to the effect: Please indicate the people below whom you feel



most represent and embody the values of <organization x>? For example, in the diagram below, this question was asked at two different sites in an organization. In this case, the employees tend to perceive others at their own site to represent the values of the organization. There was only one instance where an employee from Site A felt an employee from Site B embodied organizational values.

Networks generated in this way help to identify culture carriers in a given organizational context (but no information about the values themselves). This approach is often very powerful in associations or other non-profit scenarios where departures of key people (as defined by the network) might dramatically shape or leave a void in terms of maintaining the values a group stands for over time. A common application of the ideas in these realms is to identify the key culture carriers, do interviews to determine what they represent, and then ensure these perspectives are built into leaders entering the network.

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